

FACULTY OF LAW  
QUEENSLAND UNIVERSITY OF TECHNOLOGY

**The future of the Internet Economy:  
Addressing challenges facing the  
implementation of the Australian National  
Broadband Network**

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***"Those who hear not the music think the dancers mad."***

Chinese Proverb

***"Knot leder till fördärv och ej till seger."***

*"Moaning/whining will lead to corruption/demise/destruction and not to victory."  
Swedish Army tutorial, 1889*

***"The empires of the future are the empires of the mind."***

Sir Winston Churchill, *Speech at Harvard University*, September 6, 1943



## DEDICATION

I planned to dedicate my thesis to my late father – Frank John William Craddock – as he always supported my studies, was equally interested in technology and, although he did not live to see it, was quietly certain I would get here. As 2010 would have been a significant birthday for him, this seemed very appropriate.

On reflection, however, sometimes where we are going is more important than where we have been. A fact my forward-looking technology-loving Dad would understand. Similarly to my thesis, while the NBN is built on and supported by the past, it is not part of it. Although he has my thanks, my dedication is not to Dad.

High-speed broadband is the future. It is for this reason that I dedicate my thesis to all Australians and non-Australians who were just, or are yet to be, born and for who a world without broadband will be but a page in a history e-book.

In particular I dedicate my thesis to:

Tillena-Mei Lam Robinson  
Tomas Ollin Milton Searle Garduño  
Reuben Perring Fulloon  
Jacob Immanuel Petzold  
Thomas Steven Gallop  
Lula June Cook  
Charles ZhongYong Hopkins-Ng  
Mia Isabel Hall  
Ned Lyons  
Charles ('Charlie') Elliott Hutton

Collectively – *The Future!*



## **KEYWORDS**

*connectedness*, cyberinfrastructure, broadband, *digital divide*, digital literacy, e-research infrastructure, high-speed broadband, innovation theory, internet, internet economy, NBN, National Broadband Network, network neutrality, open access, open government, *political divide*, *physical divide*, natural law theory





## ABSTRACT

Innovation is vital for the future of Australia's internet economy. Innovations rely on businesses' ability to innovate. Businesses' ability to innovate relies on their employees. The more these individual end users engage in the internet economy, the better businesses' engagement will be. The less these individual end users engage, the less likely a business is to engage and innovate. This means, for the internet economy to function at its fullest potential, it is essential that individual Australians have the capacity to engage with it and participate in it.

The Australian federal government is working to facilitate the internet economy through policies, legislation and practices that implement high-speed broadband. The National Broadband Network will be a vital tool for Australia's internet economy. Its '*chief importance*' is that it will provide faster internet access speeds that will facilitate access to internet services and content. However, an appropriate infrastructure and internet speed is only part of the picture. As the Organisation for Economic Co-operation and Development identified, appropriate government policies are also needed to ensure that vital services are more accessible by consumers.

The thesis identifies essential theories and principles underpinning the internet economy and from which the concept of *connectedness* is developed. *Connectedness* is defined as the ability of end users to connect with internet content and services, other individuals and organisations, and government. That is, their ability to operate in the internet economy. The NBN will be vital in ensuring *connectedness* into the future. What is not currently addressed by existing access regimes is how to facilitate end user access capacity and participation. The thesis concludes by making recommendations to the federal government as to what the governing principles of the Australian internet economy should include in order to enable individual end user access capacity.



# CONTENTS

DEDICATION.....	i
KEYWORDS.....	iii
ABSTRACT.....	v
CONTENTS.....	vii
RELEVANT PUBLICATIONS.....	xiii
SPECIFIC PUBLICATIONS AND CONFERENCES.....	xiii
LIST OF DIAGRAMS.....	xiii
APPENDICES.....	xiv
LIST OF ABBREVIATIONS.....	xiv
STATEMENT OF ORIGINAL AUTHORSHIP.....	xvii
ACKNOWLEDGEMENTS.....	xix
CHAPTER 1 – INTRODUCTION: OF EMUS.....	1
A.    Introduction.....	1
B.    Overview of Australia’s telecommunication industry.....	7
C.    What is the internet?.....	10
D.    What is the internet economy?.....	12
E.    Government regulation of the internet economy.....	14
F.    The Broader Picture.....	17
G.    Aims.....	19
H.    Methodology and Scope.....	21
1.    Underpinning the internet economy (Chapter 2).....	24
2.    Connectedness and Australia in the internet economy (Chapter 3).....	25
3.    A Broadband Network (Chapter 4).....	26
4.    Challenges (Chapter 5).....	26

5.	Addressing the Challenges (Chapter 6).....	28
I.	Delimitations .....	29
J.	Conclusion .....	31
CHAPTER 2 – UNDERPINNING THE INTERNET ECONOMY .....		35
A.	Introduction.....	35
B.	Innovation .....	37
1.	Defining innovation .....	38
2.	Innovation theory .....	39
3.	Innovation in practice .....	40
4.	Innovation in the user context .....	44
C.	Rights.....	47
1.	Defining rights .....	47
2.	Natural law theory and human rights.....	49
3.	Which rights?.....	51
4.	Rights in the user context.....	54
D.	Openness .....	57
1.	Defining openness .....	58
2.	Openness in context .....	60
3.	Openness in practice .....	61
4.	Open access in the user context.....	64
E.	Neutrality .....	67
1.	Defining network neutrality.....	68
2.	The infrastructure .....	69
3.	Neutrality in practice .....	70
4.	Neutrality in the user context.....	72

F.	The central concept: Introducing ‘connectedness’ .....	74
G.	Conclusion.....	78

### CHAPTER 3 – CONNECTEDNESS AND AUSTRALIA IN THE INTERNET

ECONOMY .....	81	
A.	Introduction .....	81
B.	Clarifying connectedness.....	81
C.	Identifying Australia in the internet economy .....	83
1.	Defining community.....	84
2.	The impact of the internet.....	85
3.	Community in the internet.....	89
4.	Life in the internet economy .....	91
D.	The impact of connectedness for Australia in the internet economy.....	96
E.	Conclusion.....	98

### CHAPTER 4 – A BROADBAND NETWORK .....

A.	Introduction .....	101
B.	What is broadband?.....	103
C.	Why a broadband network is important for the internet economy .....	105
D.	What is (to be) the NBN? .....	109
E.	Why do we need the NBN?.....	115
1.	Economic considerations.....	116
2.	Innovation considerations.....	123
3.	Societal considerations .....	129

F.	What type of network is needed?.....	133
G.	Conclusion .....	138
CHAPTER 5 – CHALLENGES.....		141
A.	Introduction.....	141
B.	Overview of relevant access regimes .....	145
1.	Access to land.....	146
2.	Access to facilities and services .....	156
3.	Access to content and information.....	170
C.	Barriers to connectedness .....	179
1.	Digital divide .....	179
2.	Physical divide.....	186
3.	Political divide.....	190
D.	Challenges.....	192
E.	Conclusion .....	194
CHAPTER 6 – ADDRESSING THE CHALLENGES.....		195
A.	Introduction.....	195
B.	How should policy be developed?.....	197
C.	NBN policy development considerations .....	201
D.	Recommendations.....	211
E.	Conclusion .....	229

CHAPTER 7 – CONCLUSION: ... AND KANGAROOS .....	231
A.    The end of the beginning.....	231
B.    Why high-speed broadband? Why the NBN? .....	231
C.    The importance of <i>Connectedness</i> .....	234
D.    The Challenges .....	236
E.    NBN policy development considerations.....	238
F.    Recommendations .....	239
G.    Future Research .....	240
H.    Beyond 2010 .....	244
 BIBLIOGRAPHY .....	 247
CASES.....	289
LEGISLATION.....	290
CODES AND STANDARDS .....	292
INTERNATIONALTREATIES/AGREEMENTS .....	292
 APPENDIX A – LINK TO SEOUL DECLARATION 2008 .....	 293
APPENDIX B – LINKS TO COPIES OF LEGISLATION.....	295
APPENDIX C – LINKS TO WEBSITES.....	297





## RELEVANT PUBLICATIONS

- Kee K, L Cradduck, B Blodgett and R Olwin, 'Cyberinfrastructure Inside Out: Definition and Influences Shaping Its Emergence, Development, and Implementation in the Early 21<sup>st</sup> Century', in D Araya, Y Breindl and T Houghton (Eds) *Nexus: New Intersections in Internet Research* (Peter Lang, New York, 2011) – reproduced in part in Chapters 2, 4 and 5
- Cradduck, L. A McCullagh and W Caelli, 'Synopolies: The use of cryptographic technologies to impede competition in multiple jurisdictions', *The Forum on Public Policy: A Journal of the Oxford Round Table*, 2008, Spring, 1-43 – reproduced in part in Chapters 2, 4 and 6

## SPECIFIC PUBLICATIONS AND CONFERENCES

- Cradduck L, 'The future of the Internet Economy: Addressing challenges facing the implementation of the Australian National Broadband Network', presentation at *Oxford Internet Institute Summer Doctoral Programme 2009*, Creative Industries, QUT, 6-17 July 2009
- Cradduck L, '(Smart) Infrastructure Issues', presentation at *Realising Our Broadband Future* Brisbane Forum, QUT, 10 December 2009
- Cradduck L, 'Submission to Senate Select Committee on the National Broadband Network', 30 March, 2010, Sub. No. 119 [http://www.aph.gov.au/Senate/committee/broadband\\_ctte/submissions\\_from\\_march\\_2010/Sub119.pdf](http://www.aph.gov.au/Senate/committee/broadband_ctte/submissions_from_march_2010/Sub119.pdf) – reproduced in part in Chapter 6
- Cradduck L, 'Property, planning and purpose: Legal concerns facing broadband roll out in Australia', *The 17<sup>th</sup> Annual Conference for the Pacific Rim Real Estate Society*, 16-19 January 2011 – reproduced in part in Chapters 4 and 5
- Cradduck L, 'Concerns about the rollout of broadband: A legal consideration of Australia's NBN Greenfield Policy', *Pacific Rim Property Research Journal* [forthcoming March 2011] – reproduced in part in Chapters 4 and 5
- Cradduck L, 'Submission to House Standing Committee on Infrastructure and Communications – Inquiry into the role and potential of the National Broadband Network', 25 February, 2011, Sub. No. 152 <http://www.aph.gov.au/house/committee/ic/NBN/subs/Sub152.pdf> – reproduced in part in Chapter 6

## LIST OF DIAGRAMS

- Diagram 1: Concept of *connectedness* – Chapter 2 – page 75

## APPENDICES

- A. Link to The Seoul Declaration for the Future of the Internet Economy, 18 June 2008, OECD
- B. Links to copies of Legislation
- C. Links to Websites

## LIST OF ABBREVIATIONS

<b>AAP</b>	Australian Associated Press
<b>ABS</b>	Australian Bureau of Statistics
<b>ABG</b>	Australian Broadband Guarantee
<b>ACCC</b>	Australian Competition and Consumer Commission
<b>ACLS</b>	American Council of Learned Societies
<b>ACMA</b>	Australian Communications and Media Authority
<b>ACTU</b>	Australian Council of Trade Unions
<b>ADSL</b>	Asymmetric Digital Subscriber Line
<b>AFACT</b>	Australian Federation Against Copyright Theft
<b>AFL</b>	Australian Football League
<b>AICTEC</b>	Australian ICT in Education Committee
<b>ALP</b>	Australian Labor Party
<b>ANU</b>	Australian National University
<b>ATUG</b>	Australian Telecommunications Users Group
<b>AUD</b>	Australian Dollar
<b>CCCLM</b>	Council of Capital City Lord Mayors
<b>CEDA</b>	Committee for Economic Development Australia
<b>CI</b>	Cyberinfrastructure
<b>COAG</b>	Coalition of Australian Governments

<b>Code</b>	Internet Industry Code of Practice
<b>Covenant</b>	International Covenant on Civil and Political Rights
<b>CP Act</b>	<i>Telecommunications (Consumer Protection and Service Standards) Act 1999</i>
<b>CSS</b>	<i>Telecommunications (Competition and Consumer Safeguards) Bill 2010</i>
<b>DBCDE</b>	Department of Broadband, Communications and the Digital Economy
<b>DCITA</b>	Department of Communications, Information Technology and the Arts
<b>DEEWR</b>	Department of Education, Employment and Workplace Relations
<b>DFAT</b>	Department of Foreign Affairs and Trade
<b>EI</b>	e-Research Infrastructure
<b>EU</b>	European Union
<b>FCC</b>	Federal Communications Council (US)
<b>FTTN</b>	Fibre-to-the-node
<b>FTTP</b>	Fibre-to-the-premises
<b>GDP</b>	Gross Domestic Product
<b>GFC</b>	Global financial crisis
<b>HRC Act</b>	<i>Australian Human Rights Commission Act 1986</i>
<b>HRPS Bill</b>	Human Rights (Parliamentary Scrutiny) Bill
<b>ICT</b>	Information and communications technology
<b>IIA</b>	Internet Industry Association
<b>IP</b>	Internet Protocol
<b>ISP</b>	Internet service provider
<b>ITU</b>	International Telecommunications Union
<b>LDA</b>	Land Development Agency
<b>LGA</b>	Local Government Authority

<b>MBAQ</b>	Master Builders Association Queensland
<b>NBDG</b>	National Broadband Development Group
<b>NBN</b>	National Broadband Network
<b>NBN Access Bill</b>	<i>Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010</i>
<b>NBN Co Bill</b>	<i>National Broadband Network Companies Bill 2010</i>
<b>NC Code</b>	<i>National Classifications Code</i>
<b>NSFCC</b>	National Science Foundation Cyberinfrastructure Council
<b>NTIA</b>	National Telecommunications and Information Administration (US)
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>R&amp;D</b>	Research and development
<b>RTIRC</b>	Regional Telecommunications Independent Review Committee
<b>Telstra</b>	Telstra Corporation Ltd
<b>TIO</b>	Telecommunications Industry Ombudsman
<b>TPA</b>	<i>Trade Practices Act 1974</i>
<b>URL</b>	Uniform Resource Locator
<b>US</b>	United States of America
<b>USO</b>	Universal Service Obligation
<b>VoIP</b>	Voice over Internet Protocol
<b>WTO</b>	World Trade Organisation

## **STATEMENT OF ORIGINAL AUTHORSHIP**

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature:

Date:



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Lucy Margaret Craddock  
9 December 2010  
Buderim



## CHAPTER 1 – INTRODUCTION: OF EMUS<sup>1</sup>

*“WE STATE our common desire to promote the Internet Economy and stimulate sustainable economic growth and prosperity by means of policy and regulatory environments that support innovation, investment, and competition in the ... ICT ... sector.”<sup>2</sup>*

### A. Introduction

The future success of the Australian internet economy is inextricably linked with the use of the internet by individual Australians. Individual end users are the primary drivers of economic growth.<sup>3</sup> As such, businesses’ ability to grow in the 21<sup>st</sup> Century will depend on the capacity of their employees to engage and innovate. This in turn will require that individuals have the ability to access and use the internet.<sup>4</sup> The internet, a network by itself,<sup>5</sup> enables the creation of non-physical networks with friends, family and work colleagues. It also provides a gateway to essential services and information, in ways not previously possible.<sup>6</sup> The internet generally is open and accessible to all potential users. For the future of the internet economy, it will be important to ensure that the content and services of the internet are easily accessible to all, from anywhere. This will enable businesses and consumers to easily engage with each other. It will facilitate innovations<sup>7</sup> that in turn will also lead to economic

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<sup>1</sup> DFTA, ‘about Australia: coat of arms’, January 2008 – “*The supporters [of Australia’s coat of arms] are ... the red kangaroo ... and the emu ... chosen to symbolise a nation moving forward, reflecting a common belief that neither animal can move backwards easily.*” [http://www.dfat.gov.au/facts/coat\\_of\\_Arms.pdf](http://www.dfat.gov.au/facts/coat_of_Arms.pdf) (viewed 16/04/2010) The first chapter is thus entitled as, as will be explained, for our future there is no going back.

<sup>2</sup> OECD, ‘The Seoul Declaration for the Future of the internet Economy’ OECD Ministerial Meeting on the Future of the internet Economy, Seoul, Korea, 17-18 June 2008 <http://www.oecd.org/dataoecd/49/28/40839436.pdf> (viewed 16/01/2010)

<sup>3</sup> Florida R, C Mellander and K Stolarick, ‘Inside the black box of regional development – human capital, the creative class and tolerance’ (2008) 8 *Journal of Economic Geography*, 615, 616 – these authors go so far as to suggest that it is “*human capital [that] drives economic growth*”.

<sup>4</sup> *Betfair Pty Limited v Western Australia* [2008] HCA 11 – The majority [114], in reference to the market for ‘wagering services’, observed “*The inhibition to competition presented by geographic separation between rival suppliers and between supplier and customer is reduced by the omnipresence of the internet and the ease of its use.*” (emphasis added) (NB – Heydon J agreed with the majority but delivered separate reasons.)

<sup>5</sup> Kariyawasm R, *International Economic Law and the Digital Divide: A New Silk Road* (Edward Elgar Publishing Limited, Cheltenham, 2007) 19 – also referred to as a “*network of networks*”.

<sup>6</sup> Chin G, ‘Technological Change and the Australian Constitution’ [2000] *MULR* 25, 7 <http://www.austlii.edu.au/au/journals/MULR/2000/25.html> (viewed 15/06/2010)

<sup>7</sup> Stoneman P, *Soft Innovation: Economics, Product Aesthetics, and the Creative Industries* (OUP, Oxford, 2010) 134

growth.<sup>8</sup> The internet economy<sup>9</sup> is only part of the entire digital economy.<sup>10</sup> It is common, however, that users first engage in the services and applications of the internet before engaging with other facets of the digital economy.<sup>11</sup> Ensuring that individuals can innovate in the internet economy will be vital for the economy as a whole. It is how to enable this engagement that is the focus of the thesis.

In order for individuals to be able to innovate they require certainty and ease of access to internet content and services. ‘Access’ has been given a variety of meanings; which meaning applies depends on the author and their field of endeavour.<sup>12</sup> Its meaning also can be influenced by a variety of criteria ranging from “*physical access to technology ... [to] ... political will and public support*”.<sup>13</sup> The thesis is concerned with access as relates to what is required to enable access by individual end users. In order to achieve this it will be necessary to overcome certain divides.<sup>14</sup> These include the means of accessing the internet (i.e. the necessary hardware and connection to the network) and the personal skills so do to (i.e. being *digitally literate*).<sup>15</sup> For ease of reference these divides will be referred to collectively as the *digital divide*. The other divides are Australia’s *physical* and *political* divides.

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<sup>8</sup> Lee S, R Florida and G Gates, ‘Innovations, Human Capital, and Creativity’ (2010) 14(3) *International Review of Public Administration*, 13, 13 – “[i]nnovation has long been understood as a fundamental factor in spurring economic growth.”

<sup>9</sup> Note 2, OECD

<sup>10</sup> ACMA, ‘Technology developments in the digital economy’, August 2010, 1 – “*There are three broad groups of technologies currently relevant to the development of the networks that support the digital economy and consumer applications and use of services – infrastructure, smart technologies and digital community.*” [http://www.acma.gov.au/webwr/\\_assets/main/lib311925/technology\\_developments\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/_assets/main/lib311925/technology_developments_in_digital_economy.pdf) (accessed 09/10/2010)

<sup>11</sup> ACMA, ‘Australia in the Digital Economy – Report 2: Online Participation’, May 2009, 1 [http://www.acma.gov.au/webwr/aba/about/recruitment/online\\_participation\\_aust\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/aba/about/recruitment/online_participation_aust_in_digital_economy.pdf) (viewed 07/01/2010)

<sup>12</sup> Peña-López I, ‘Measuring digital development for policy-making: Models, stages, characteristics and causes’, PhD Thesis (2009) [mimeo] [http://ictlogy.net/articles/20090908\\_ismael\\_penalopez\\_measuring\\_digital\\_development.pdf](http://ictlogy.net/articles/20090908_ismael_penalopez_measuring_digital_development.pdf) (viewed 15/01/2010) 67-78

<sup>13</sup> Note 12, Peña-López, 69

<sup>14</sup> Gunkel D, ‘Second thoughts: toward a critique of the digital divide’ (2003) 5(4) *New Media & Society*, 499, 522. In Australia, the side of the divide on which a user is located is influenced by the lifestage, age, gender, household income, education level, occupation, location, and country of origin of the end users. See – Ewing S and J Thomas, *CCI Digital Futures 2010: The Internet in Australia*, CCI, May 2010, 2-4 <http://cci.edu.au/sites/default/files/sewing/CCi%20Digital%20Futures%202010.pdf> (viewed 08/07/2010)

<sup>15</sup> To be considered in detail in Chapter 5

The ability of Australians to innovate in the internet economy will be dependent upon whether they can access the internet. Reliance on dial-up or slow-speed broadband will affect the level of access achieved. The technology that now enables faster internet speeds is broadband.<sup>16</sup> Although broadband enables the delivery of a variety of services, Witt advocates that enabling faster internet speeds is “*the chief importance of broadband*”.<sup>17</sup> From a holistic basis, as Middleton explained, the benefits of accessing broadband can be categorised as belonging to one of four groups – *societal, communal, individual* or *commercial*.<sup>18</sup> West goes further in his observations. He holds that it is the faster speed of broadband that will provide the greatest economic and societal benefits.<sup>19</sup> A network to deliver high-speed broadband will be fundamental to Australia’s new “*all-encompassing digital system*”.<sup>20</sup> It also will be fundamental for the future of Australia’s internet economy.<sup>21</sup> The most recently proposed, and partially constructed, Australian ubiquitous high-speed broadband network is the National Broadband Network (‘NBN’).

The vastness and isolation of the Outback presents unique challenges to the full implementation of high-speed broadband access throughout Australia.<sup>22</sup> This is

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<sup>16</sup> Explained by the Australian Bureau of Statistics as “(c) ... an ‘always on’ internet connection with an access speed equal to or greater than 256kbps.” ABS, 8153.0 – *Internet Activity, Australia, December 2008*, released 11.30 am 06/04/2009 <http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/CF7797B9875B9A98CA25762E0017BE71?opendocument> (viewed 07/06/2009)

<sup>17</sup> Whitt R, ‘Evolving Broadband Policy: Taking Adaptive Stances to Foster Optimal Internet Platform’ (2009) 17 *Commlaw Spectus*, 417, 439. Also see 442-455

<sup>18</sup> Middleton C, ‘Understanding the Benefits of Broadband: Insights for a Broadband Enabled Ontario’, paper prepared for the Ministry of Government Services, Ontario, July 2007 [http://www.broadbandresearch.ca/ourresearch/middleton\\_BB\\_benefits.pdf](http://www.broadbandresearch.ca/ourresearch/middleton_BB_benefits.pdf) (viewed 29/08/2009)

<sup>19</sup> West D, *An International Look at High Speed Broadband* (2010) Governance Studies at Brookings, 2 – “*Faster speeds are vital to take advantage of new digital tools such as GIS mapping, telemedicine, virtual reality, online games, supercomputing, video on demand, and video conferencing. New developments in health information technology and mobile health, such as emailing X-rays and other medical tests, require high-speed broadband. And distance learning, civic engagement, and smart energy grids require sufficient bandwidth.*” [http://www.brookings.edu/~media/Files/rc/reports/2010/0223\\_broadband\\_west/0223\\_broadband\\_west.pdf](http://www.brookings.edu/~media/Files/rc/reports/2010/0223_broadband_west/0223_broadband_west.pdf) (viewed 07/10/2010)

<sup>20</sup> Mitchell W, *E-topia: Urban Life, Jim – But Not As We Know It* (Massachusetts University of Technology Press, Cambridge, Massachusetts, 1999) Chapter 1

<sup>21</sup> OECD, ‘Network Developments in Support of Innovation and User Needs’, Working Party of Communication Infrastructures and Services Policy, Directorate for Science, Technology and Industry, Committee for Information, Computer and Communications Policy, 9 December 2009, DSTI/ICCP/CISP(2009)2/FINAL, 5 – “*Future innovations in many sectors will be linked to the availability of high-speed, competitive data networks and the new applications they support.*” [http://www.oilis.oecd.org/oilis/2009doc.nsf/LinkTo/NT0000889E/\\$FILE/JT03275973.PDF](http://www.oilis.oecd.org/oilis/2009doc.nsf/LinkTo/NT0000889E/$FILE/JT03275973.PDF) (viewed 07/01/2010)

<sup>22</sup> Tasmanian government, submission to the ‘Call for submissions on broadband solutions for remote area’, 30 June 2008. An added concern is the population base in some regional areas is, in addition to

particularly so when considered in the context of the diminishing population bases in many remote areas.<sup>23</sup> Because of the differences in geography and population density, different approaches may be required for regulation of high-speed broadband, as well as deciding what will be constructed and where it will be constructed.<sup>24</sup> This was more recently noted by the Organisation for Economic Co-operation and Development's ('OECD') Australian representative.<sup>25</sup> Appropriate infrastructure by itself is only part of the solution.<sup>26</sup> As the OECD identified, appropriate and consistent policies, with clear policy objectives, also are needed.<sup>27</sup> These are required to ensure that vital services, such as health and education, are more accessible by consumers and therefore can more easily be delivered to them.

As information and communications technology ('ICT') now pervades almost every aspect of everyday life,<sup>28</sup> the focus for the federal government needs to be on ensuring end user capacity. Aiming for universal access<sup>29</sup> will include addressing issues of physical access, economic means and non-place-specific ability to access

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being decentralised, very small. Also see Cave M, 'Building the broadband network' in M Jones (Ed), *Australia's Broadband Future: Four doors to greater competition*, CEDA (2008) Growth 60, 18

<sup>23</sup> The RTIRC, 'Framework for the Future', 5 September 2008 ('Glasson Report') 4 [http://www.rtirc.gov.au/Report/RTIRC\\_Report.pdf](http://www.rtirc.gov.au/Report/RTIRC_Report.pdf) (viewed 04/02/2010)

<sup>24</sup> Note 22, Cave 19 – "*Design of the project should take account of the different competitive endowments of different geographic areas due to population density and commercial opportunity. Such an approach would maximise the competitive potential of existing assets and minimise the threat of re-monopolisation of infrastructure. A three-pronged approach is proposed, differentiating those areas:*

- *Where there is existing infrastructure that could compete with the NBN based on an upgrade of the Optus HFC ... network*
- *Where infrastructure is not currently duplicate*
- *Where the NBN is uncommercial and would not be built without public funding"*

<sup>25</sup> Strutchbury M and S Maher, 'OECD queries cost of new Broadband network', *The Australian*, February 05, 2010 – "*the head of the [OECD's] ... Australia desk, Claude Giorno, called on the Rudd government to apply more rigorous cost-benefit analysis to its infrastructure spending, including its \$43 billion broadband network ... 'Maybe not everybody needs to have a very-high-speed broadband connection,' he said. 'Maybe it would be less costly to develop alternative technology depending on where you are geographically.'*" <http://www.theaustralian.com.au/business/industry-sectors/oeecd-queries-cost-of-new-broadband-network/story-e6frg9hx-1225826908447> (viewed 05/02/2010)

<sup>26</sup> Note 23, Glasson Report, XIV

<sup>27</sup> OECD, 'Shaping Policies for the Future of the internet Economy', OECD Ministerial Meeting on the Future of the internet Economy, Seoul, Korea, 17-18 June 2008 6 – "*Policy objectives to further the diffusion of broadband and better measure its use include ... Encouraging policy co-ordination among agencies, ministries and the private sector for the deployment of advanced broadband applications in vital sectors such as health, education, the environment and transport.*" <http://www.oecd.org/dataoecd/1/29/40821707.pdf> (accessed 14/08/2009)

<sup>28</sup> Note 6, Chin, 7

<sup>29</sup> ACCC, submission to the 'National Broadband Network: Regulatory Reform for 21<sup>st</sup> Century Broadband Discussion Paper', June 2009, 15 – "*'Universal access' is a 'government social policy tool'".* Also see –Note 23, Glasson Report – recommended a Communication Service Standard

the internet.<sup>30</sup> The federal government will need to address these issues by ensuring the adoption of appropriate policies regarding digital education generally, as well as ongoing financial assistance for those with limited capacity. The overriding concern must be to ensure appropriate access to high-speed broadband for all citizens on an equal and ongoing basis. A lack of “*access to affordable, reliable broadband is ... a limiting factor to the growth of business, regional economic development and comparable education opportunities*”.<sup>31</sup> A lack of appropriate access also will lead to further feelings of isolation in rural Australia. This is most recently witnessed in rural Queensland where the small town of Brigalow only three hours west of Brisbane will not be connected to the NBN because it is too small, i.e. only 188 houses. As The Australian reported on 9 December, 2010 – the NBN “*will run along the Warrego Highway, right outside their doors ... [but] ... Brigalow will not be connected to the NBN ... [i]nstead they will be offered a wireless internet service that is nine times slower ... [with residents left feeling] ... ‘very frustrated’*”.<sup>32</sup>

The thesis takes up the invitations by the federal government<sup>33</sup> to make comment about the appropriate legislative and access frameworks for the operation of the NBN. It does this in a unique way. It comments from the perspective not of business but of the individual end users without whom business both has no market and cannot operate. The thesis considers the appropriate framework from both the policy and the legal perspectives.<sup>34</sup> In this regard the individual’s rights and obligations are

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<sup>30</sup> Note 12, Peña-López, 97 – “*universal access would mean physical access ... for anyone ... despite their socioeconomic circumstances ... and independent from the place where this access should take place*”

<sup>31</sup> Central Highlands Development Corporation, submission to the ‘Call for submissions on broadband solutions for remote area’.

<sup>32</sup> Barrett R and N Bitá, ‘NBN entrenching rural disconnect’, The Australian, 9 December, 2010; also as Curtin observed almost a decade ago – “*Digital technology has not created a new social divide. Rather it has built upon, and may exacerbate, inequalities that already exist in Australian society. So, before the Internet can be heralded as an egalitarian medium, a range of social, economic and technical barriers will have to be addressed.*” see – Curtin J, ‘A Digital Divide in Rural and Regional Australia?’, Economics, Commerce and Industrial Relations Group, 7 August 2001 <http://www.aph.gov.au/library/pubs/cib/2001-02/02cib01.htm> (viewed 10/11/2010) [references omitted] In recent years the disparity in existing telecommunications services has seen regional and rural Australia treated as a ‘*special case*’ by government. See discussion in – Gerrand P, ‘Accelerating broadband rollout – initiatives in regional Spain’ (2006) 56 (3&4) *Telecommunications Journal of Australia*, 84, 85

<sup>33</sup> For example – Conroy, Hon. S. ‘Views sought on legislative framework for National Broadband Network’, Ministerial media releases, 3 July 2009 [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/061](http://www.minister.dbcde.gov.au/media/media_releases/2009/061) (viewed 05/08/2009)

<sup>34</sup> Farrar J, *Legal Reasoning* (Thomson Reuters, Sydney, 2010) 134 – “*legislation is now the principal expression of policy in legal form*”.

important. Public policy affects, and is affected by, the entire community.<sup>35</sup> As such, properly formulated laws are not created in isolation but only after a rigorous policy development processes to determine what is required and how it should be implemented.<sup>36</sup> Howkins proposes that the process of law making itself is more important than the policy it creates.<sup>37</sup> This may be so because, as Engle identified, “[t]he role of a legislator is to establish, *ex ante*, rules which will prospectively bind members of society”.<sup>38</sup> In regulating for access to high-speed broadband the federal government needs to be mindful that they do not “*impose rules or principles which favour particular or sectional interests and don’t necessarily favour interests that [do not] speak up for their rights and for their interests in the use of the internet*”.<sup>39</sup> They also must remember there is demand for citizen participation in the process.<sup>40</sup>

The thesis will examine current access regimes and consider whether these address the need to ensure ongoing access by individual end users. New policy and legislation, or amendments to existing, or proposed, policy and legislation, will be examined as appropriate. As Huxley observed some alleged “[t]echnological progress has merely provided us with more efficient means for going backwards”.<sup>41</sup> There are adverse risks for the future of Australia’s internet economy if the access regimes for high-speed broadband are not implemented appropriately so that all may access it. Separately there are threats to the future of Australia’s internet economy if the high-speed broadband network is operated in such a way that all are not able to appropriately access and/or use the available content and services. The primary risk is that Huxley’s prediction, of going backwards not forwards, will come true. In order to set the scene for the thesis, the chapter next provides an overview of the Australian telecommunications industry and then the internet economy.

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<sup>35</sup> Althaus C, P Bridgman and G Davis, *Australian Policy Handbook*, 4<sup>th</sup> ed (Allen & Unwin, Crows Nest, 2007)1

<sup>36</sup> Edwards M, *Social Policy, Public Policy: From problem to practice* (Allen & Unwin, Crows Nest, 2001)

<sup>37</sup> Howkins J, *Creative Ecologies: Where Thinking is a Proper Job* (University of Queensland Press, St Lucia, 2009) 119 – “*How laws are made is as important as the laws themselves. I am tempted to say that the process is even more important than the policy.*”

<sup>38</sup> Engle E, ‘Law: *Lex v Ius*’ (2008) *J. Juris.* 31, 46

<sup>39</sup> Kirby M, ‘Four Parables and a Reflection on Regulating the Net’, *Speech delivered to the internet Industry Association, Annual Dinner*, Sydney, Australia, 21 February 2008 (Edited Transcript) [http://www.highcourt.gov.au/speeches/kirbyj/kirbyj\\_21feb08.pdf](http://www.highcourt.gov.au/speeches/kirbyj/kirbyj_21feb08.pdf) (viewed 26/02/2010)

<sup>40</sup> Bishop P and G Davis, ‘Mapping Public Participation in Policy Choices’ (2002) 61 (1) *Australian Journal of Public Administration*, 14, 14

<sup>41</sup> Aldous Huxley (1894-1963) novelist <http://www.brainyquote.com/quotes/quotes/a/aldoushux1101185.html> (viewed 16/03/2008)



## B. Overview of Australia's telecommunication industry

It is only in the past few decades that the Australian telecommunications market has been opened to competition and the main supplier has ceased to be a 'publicly mandated monopoly'.<sup>42</sup> Section 51(v) of the Commonwealth Constitution<sup>43</sup> gives exclusive power to the federal government<sup>44</sup> to legislate with respect to "postal, telegraphic, telephonic, and other like services".<sup>45</sup> The role of the federal government in the delivery of telecommunications has changed since federation from that of supplier to that of regulator. Prior to 1997 telecommunications operated as a federal government monopoly, as the Australian Telecommunications Commission and ultimately as Telecom; before changing to a duopoly and then a three-licensee system.<sup>46</sup> In November 1991, Telstra Corporation Ltd ('Telstra') was created.<sup>47</sup> In February 1997,<sup>48</sup> Australia was one of 69 signatory nations to the World Trade Organisation's ('WTO') *Agreement on Basic Telecommunications Services*.<sup>49</sup> The general effect of the agreement was that all telecommunications markets were

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<sup>42</sup> For a consideration of the economic justification for this monopoly see – Cooper R, G Madden and G Coble-Neal, 'Measuring TFP for an Expanding Telecommunications Network', in R Cooper and G Madden (Eds) 'Frontiers of Broadband, Electronic and Mobile Commerce' (Physica-Verlag, Heidelberg, 2004) 113 – "Justification ... based on natural monopoly arguments."

<sup>43</sup> *Commonwealth of Australia Constitution Act* (63 & 64 Victoria, Chapter 12) ('Constitution')

<sup>44</sup> Section 52(iii) *cf.* *Karlsson v Sorbello* (1998) 148 FLR 379

<sup>45</sup> Prior to federation regulation was the responsibility of the various Colonial governments. See – *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7 per Gleeson CJ, Gummow, Kirby, Hayen, Heydon, Creenan and Kiefel JJ [9] – "Before Federation, the telephone services ... were provided by the colonial governments. Section 69 of the Constitution provided for the transfer to the commonwealth of the posts, telegraphs and telephone departments ... in each State".

<sup>46</sup> For a history of telecommunications regulation in Australia see – Note, 23, Glasson Report, Appendix F

<sup>47</sup> For the legislative provenance of Telstra see – *Telstra Corporation Ltd v Worthing* [1999] HCA 12 [9] – "Amendments made to the Telecommunications Act by s 6 of the Telecommunications Amendment Act 1988 (Cth) preserved and continued the [Australian Telecommunications] Commission as a body corporate under the name Australian Telecommunications Corporation. Later legislation continued this body under the name 'Telecom'. All of the property, rights and liabilities (actual, contingent and prospective) of Telecom were, by s 11 of the Australian and Overseas Telecommunications Corporation Act 1991 (Cth)... vested in a company incorporated under the Corporations Law of the Australian Capital Territory under the name Australian and Overseas Telecommunications Corporation Limited... AOTC was registered under the Australian Capital Territory law on 6 November 1991 as an unlisted public company limited by shares. Section 26 of the AOTC Act provided that, for the purposes of Commonwealth, State and Territory laws, AOTC was not to be taken as incorporated for a purpose of the Commonwealth, or as being a public authority, instrumentality or agency of the Crown or as entitled to any immunity or privilege of the Commonwealth. On 13 April 1993, AOTC was renamed Telstra Corporation Limited. Finally, the Transport and Communications Legislation Amendment Act 1994 (Cth) amended the title of the AOTC Act to *Telstra Corporation Act 1991 (Cth)*" [references omitted]

<sup>48</sup> WTO, 'Ruggiero congratulates governments on landmark telecommunications agreement', 17 February 1997, 1997 Press Releases, Press/67 – Footnote 1 [http://www.wto.org/english/news\\_e/pres97\\_e/pr67\\_e.htm](http://www.wto.org/english/news_e/pres97_e/pr67_e.htm) (viewed 19/03/2010)

<sup>49</sup> WTO, 'Fourth Protocol to the General Agreement on Trade in Services', 30 April 1996, S/L/20 (96-1750) [http://www.wto.org/english/docs\\_e/legal\\_e/4prote\\_sl20\\_e.pdf](http://www.wto.org/english/docs_e/legal_e/4prote_sl20_e.pdf) (viewed 19/03/2010)

opened up to competition. Simultaneously, market liberalisation was taking place in many countries. This was also occurring in most WTO member nations, including Australia.<sup>50</sup> The combined consequence was that the then federal government facilitated the deregulation of the Australian telecommunications industry.

In February 2002, the assets of the then public-switched telephone network were vested in Telstra.<sup>51</sup> These were subject to statutory provisions regarding access rights by other carriers,<sup>52</sup> and guarantees of supply to consumers.<sup>53</sup> The current Australian telecommunications industry and participants encompass a variety of infrastructure and services. These range from ‘old’ technology and services (i.e. copper cables and land telephone lines) provided at little or no up-front cost to consumers,<sup>54</sup> to the ‘new’ (i.e. mobile and satellite technology and services) provided at greater cost.<sup>55</sup> The potential for further new services is unlimited.<sup>56</sup> Industry deregulation in 1997,

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<sup>50</sup> Marko M, ‘An Evaluation of the Basic Telecommunications Services Agreement, *CEDA*, Policy Discussion Paper No. 98/09, December 1998, 40 “41 out of the 69 member countries have made rollback commitments ... It does not mean that these countries have more open telecommunications markets but that they have liberalised their market to some extent. A problem with this method is that it disadvantages countries such as Australia which have liberalised their telecommunications markets unilaterally but do not receive credit for having done so. This can lead to countries suspending their liberalisation efforts until the multilateral negotiations rather than doing so unilaterally. For countries such as Australia, UK and US their commitments only locked in unilateral progress.” <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.8.9521&rep=rep1&type=pdf> (viewed 19/03/2010)

<sup>51</sup> *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7 per Gleeson CJ, Gummow, Kirby, Hayne, Heydon, Crennan and Kiefel JJ [15] and [52] – “Telstra’s bundle of rights in respect of the PSTN has always been subject to the rights of its competitors to require access to and use of the assets.”

<sup>52</sup> Part XIC *Trade Practices Act 1974*

<sup>53</sup> Section 11A, and Sections 12A, 12C and 12D *Telecommunications (Consumer Protection and Service Standards) Act 1999* and Section 3 *Telecommunication Act 1997*

<sup>54</sup> The Senate, ‘Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010 [Provisions]’, Environment, Communications and the Arts Legislation Committee, May 2010, 14-15 “Telstra’s previous approach [to the installation in greenfield estates] was to install copper based infrastructure for free on the expectation that its high upfront capital costs would be recouped from usage charges over the long lifespan of the infrastructure (some 20 to 330 years).” [references omitted] [http://www.aph.gov.au/Senate/committee/eca\\_ctte/fibre\\_deployment/report/report.pdf](http://www.aph.gov.au/Senate/committee/eca_ctte/fibre_deployment/report/report.pdf) (viewed 10/07/2010)

<sup>55</sup> For an overview of the history of Australian broadband technologies see – Ayre R, K Hinton, B Gathercole and K Cornick, ‘A Guide to Broadband Technologies’ (2010) 43 (2) *The Australian Economic Review*, 200-8. For a more detailed consideration of current services and technologies see the discussion in McKinsey & Company/KPMG, *National Broadband Network Implementation Study*, 6 May 2010 (‘McKinsey Report’) Chapter 3 <http://data.dbcde.gov.au/nbn/NBN-Implementation-Study-complete-report.pdf> (accessed 08/05/2010). For an overview of the technologies themselves see – Tucker R, ‘Broadband facts, fiction and urban myths’ (2010) 60(3) *Telecommunications Journal of Australia*, 43.10 <http://publications.epress.monash.edu/doi/pdf/10.2104/tja10043> (viewed 13/10/2010)

<sup>56</sup> Note 55, McKinsey Report, 132 – “The NBN will need to serve and enable an evolving set of market needs. Today, fixed-line networks mainly deliver Internet connectivity, voice, and broadcast [radio frequency] television. The NBN will initially serve these same needs, only better – with faster Internet, interactive on-demand IPTV and VoIP. Over time, the superior platform offered by the fibre access network will unlock new value-creating services and business models – for example, through

however, was without any structural separation of Telstra's wholesale and retail divisions. Telstra maintains "a monopoly position in most fixed-line access and many backhaul routes".<sup>57</sup> Since its incorporation Telstra has expanded its physical network and services. As a result, its network now encompasses most of Australia. As the primary owner of the current telecommunications infrastructure in Australia, including the cabling and exchanges,<sup>58</sup> Telstra has a network that is "designed to make use of existing infrastructure, including underground ducts and existing poles".<sup>59</sup> Importantly, however, Telstra has never owned its assets separate from its legislated obligation to provide access to its network to competitors.<sup>60</sup> Full privatisation and operational separation did not occur until 2006-07 after the full implementation of relevant legislation.<sup>61</sup> This was subject to Telstra maintaining a presence in regional Australia.<sup>62</sup> Therefore, although the current Australian telecommunications industry,<sup>63</sup> which includes broadband, has a range of providers<sup>64</sup> and methods of service delivery,<sup>65</sup> Telstra remains a 'dominant player'.<sup>66</sup> This is unlikely to change in the immediate future.<sup>67</sup>

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*direct delivery of applications, premium classes of service, and other innovation. It will also provide a platform for government e-services."*

<sup>57</sup> Note 55, McKinsey Report, 9

<sup>58</sup> *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7 per Gleeson CJ, Gummow, Kirby, Hayen, Heydon, Creenan and Kiefel JJ [1]; Also see – Clear Advantage & Assocs, 'Broadband Technology Rollout Costing Study', November 2003, Report for DCITA, 56 [http://www.dbcde.gov.au/\\_data/assets/pdf\\_file/0018/20439/Broadband\\_Technology\\_Rollout\\_Costing\\_Study.pdf](http://www.dbcde.gov.au/_data/assets/pdf_file/0018/20439/Broadband_Technology_Rollout_Costing_Study.pdf) (viewed 24/06/2009)

<sup>59</sup> *Bayside City Council v Telstra Corp Ltd* [2004] HCA 19 [4]

<sup>60</sup> *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7 [53]

<sup>61</sup> For the operational (only) separation of Telstra see – Schedule 11, *Telecommunications Legislation Amendment (Competition and Consumer Issues) Act 2005*

<sup>62</sup> *Telecommunications Legislation Amendment (Future Proofing and Other Measures) Act 2005*

<sup>63</sup> ACMA, 'Reconnecting the Customer – Consultation Paper', ACMA public inquiry, July 2010, 7 – "As at June 2010, there were 1,162 carriage service providers registered with the TIO and 177 carriers licensed in Australia. At the same time, the number of telecommunications services continues to grow. In 2009, there were an estimated 24.22 million mobile services in operation, 10.67 million fixed-line services and around 8.4 million internet subscribers." [references omitted] [http://www.acma.gov.au/webwr/\\_assets/main/lib311902/reconnecting\\_the\\_customer\\_consultation\\_paper.pdf](http://www.acma.gov.au/webwr/_assets/main/lib311902/reconnecting_the_customer_consultation_paper.pdf) (accessed 09/10/2010)

<sup>64</sup> Note 23, Glasson Report, 122

<sup>65</sup> Note 10, ACMA, 4 – current infrastructure technologies include those relevant for optical fibre networks; a variety of wireless delivery methods (i.e. 2G GSM, #G HSPA, WiMax, WiFi, and WCDMA)

<sup>66</sup> AAPT, 'Submission to NBN National Broadband Network: Regulatory Reform for 21<sup>st</sup> Century Broadband', 19 [http://www.dbcde.gov.au/\\_data/assets/pdf\\_file/0020/115364/AAPT.pdf](http://www.dbcde.gov.au/_data/assets/pdf_file/0020/115364/AAPT.pdf) (viewed 24/06/2010)

<sup>67</sup> Ashkanasy N, 'The Australian Enigma', in J Chhokar, F Brodbeck, and R House (Eds), *Culture and Leadership Across the World: The GLOBE Book of In-Depth Studies of 25 Societies* (Psychology Press, 2007) 319. Particularly when Telstra, unlike its predecessors, has shareholders it must answer to as well as to ASIC.

### C. What is the internet?

In the beginning, “*the internet* [operated as] ... *a point-to-point network like the telephone*”.<sup>68</sup> Now, combined with its underlying technologies and protocols,<sup>69</sup> the internet is not simply one technology or network. For example, the World Wide Web, although perhaps the best known, is but one of the available internet applications.<sup>70</sup> The internet is constructed by, and of, many networks and technologies<sup>71</sup> and as such has been more accurately described as being a “*network of networks*”.<sup>72</sup> As Svantesson identified, the internet is recognised as being “*a unique combination of features that makes [its] communication significantly different and a novel phenomenon*”.<sup>73</sup> As Howkins observed, “*it is cheap, informal, fragmented, decentralised and alternative*”.<sup>74</sup> The internet is “*a diversity of software and hardware technologies which can be used differently and in different combinations*”<sup>75</sup> depending on who you are and what your wants and needs are. For example, Web 2.0 enables not just access to knowledge but to connectivity by individuals. As they are the users of these technologies, as well as providing the ideas for future developments, individual end users are now essential for the

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<sup>68</sup> Note 37, Howkins, 82; *Mantra Group Pty Ltd v Tailly Pty Ltd* (No 2) [2010] FCA 291 per Reeves J [19] referring to judgment by Aldous LJ in *British Telecommunications Plc v One in a Million Ltd* (1998) 42 IPR 289, 290 – the internet as “*a collection of computers which are connected through the telephone network to communicate with each other*”. As will be considered later in this chapter, access to a telephone network no longer is essential to enable connection to the internet.

<sup>69</sup> See – Note 5, Kariyawasm, 19-24 for the ‘technological milestones’ in the internet’s development commencing with the development of the US Defense Department’s ARPA project in 1965.

<sup>70</sup> Anderson C and M Wolff, ‘The Web Is Dead. Long Live the Internet’ (2010) 8, *Wired*, August 17, 2010 – “*The applications that account for more of the Internet’s traffic include peer-to-peer file transfers, email, company VPNs, the machine-to-machine communications of APIs, Skype calls, World of Warcraft and other online games, Xbox Live, iTunes, voice-over-IP Phones iChat, and Netflix movie streaming. Many of the newer Net applications are closed, often proprietary, networks.*” [http://www.wired.com/magazine/2010/08/ff\\_webrip/all.1](http://www.wired.com/magazine/2010/08/ff_webrip/all.1) (viewed 04/09/2010)

<sup>71</sup> For a concise discussion of the history and method of operation of the Internet see – Burmeister K, ‘Jurisdiction, Choice of Law, Copyright, and the internet: Protection Against Framing in an International Setting’ (1999) 9 *Fordham Intell. Prop. Media & Ent. LJ*, 625, 629. Also see – Murray A, *The Regulation of Cyberspace: Control in the Online Environment* (Routledge-Cavendish, Oxon, 2007) 30, 59 – 73; Keane J, *Global Civil Society* (Cambridge University Press, Cambridge, 2003); and – *State of Minnesota v Granite Gate Resorts Inc.* No C6-95-7227 (Minn. Ct. App. September 5, 1997) at ‘History of the Internet’; and Note 11, Economides, 2. Also see – Fitzgerald B, A Fitzgerald, G Middleton, Y Lim and T Beale, *Internet and E-Commerce Law: Technology, Law and Policy* (Lawbook Co, Sydney, 2007) 23 – “*Lessig ... explains that the internet is a system of technology and coding that limits, constrains and structures the way we do things.*”

<sup>72</sup> Note 5, Kariyawasm, 19

<sup>73</sup> Svantesson D, ‘The characteristics making internet communication challenge traditional models of regulation – What every international jurist should know about the internet’ (2005) 13(1) *International Journal of Law and Information Technology*, 39, 41

<sup>74</sup> Note 37, Howkins, 84

<sup>75</sup> Slater D, ‘Social Relationships and Identity Online and Offline’ in L Lievrouw and S Livingston (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 535

operation of the internet and the innovations that it enables.<sup>76</sup> What services are delivered over the internet is influenced by the demands and desires of individuals.<sup>77</sup> By promoting access to information and services, the internet can be used to protect the disadvantaged by enforcing basic human rights.<sup>78</sup>

In order to connect to the internet, a user “*requires a Uniform Resource Locator (URL) or domain name*”.<sup>79</sup> Access to the internet is provided to end users by means of a service contract (either fixed or flexible) with one of a variety of internet service providers (‘ISPs’). Once end users are connected, websites are accessed either through their internet protocol (‘IP’) address or, more commonly, through the website’s domain name.<sup>80</sup> The internet has become essential for everyday life; it is no longer just a tool for research and work.<sup>81</sup> As described by former Justice Kirby, the internet is “*ubiquitous, borderless, global and ambient in its nature*”.<sup>82</sup>

The internet is also used for radio broadcasts and conferencing,<sup>83</sup> and video/television program delivery.<sup>84</sup> It can create communities and is a communication ‘space’.<sup>85</sup> It is a means of sharing knowledge<sup>86</sup> and a

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<sup>76</sup> von Hippel E, *Democratizing Innovation* (MIT Press, London, 2005) 170

<sup>77</sup> Note 3, Florida *et al*, 617

<sup>78</sup> Note 5, Kariyawasm, xxiii – “*such as reducing poverty, improving literacy and healthcare*”

<sup>79</sup> *Mantra Group Pty Ltd v Tailly Pty Ltd* (No 2) [2010] FCA 291 per Reeves J [20]

<sup>80</sup> *Mantra Group Pty Ltd v Tailly Pty Ltd* (No 2) [2010] FCA 291 per Reeves J [21]. Also see [23] – “*Each domain name consists of at least three levels. The first level is the internet protocol ‘www’, which is an acronym for ‘world wide web’. The second level is the name of the specific domain, eg in this case, ‘circleoncavill’. The third level is the generic or open domain, eg, ‘.com’ or ‘.net’. Many countries also have, as a fourth level, a country code domain, eg, for Australia, ‘.au’.*”

<sup>81</sup> Note 12, Peña-López, 41 – this was in the 1990s and subsequent to “*the release of the first web browser ... and its release to the non-scholarly community*”. [http://ictlogy.net/articles/20090908\\_ismael\\_pena-lopez\\_measuring\\_digital\\_development.pdf](http://ictlogy.net/articles/20090908_ismael_pena-lopez_measuring_digital_development.pdf) (viewed 15/01/2010)

<sup>82</sup> *Dow Jones and Company Inc v Gutnick* [2002] HCA 56; 210 CLR 575 per Kirby J [80]

<sup>83</sup> ACMA, ‘Changes in the Australian VoIP market’, December 2009 – VoIP “*is the name for technologies which allow for transmitting voice telephony over packet-switched data networks. VoIP is a catch-all term used to describe a range of services, including computer-to-computer voice communications and services that interconnect to traditional ... fixed-line telephone and mobile services ... Other benefits are additional features that can include voicemail, electronic notification of voicemails, call blocking, conference calling, rerouting to a selected phone number, instant messaging, video calls, the ability to send text, visual information or files during a conversation, and the ability to use a VoIP number regardless of geographic location.*” [http://www.acma.gov.au/webwr/\\_assets/main/lib310658/changes\\_in\\_australian\\_voip\\_market.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310658/changes_in_australian_voip_market.pdf) (viewed 07/01/2010) 3

<sup>84</sup> Note 73, Svantesson, 59

<sup>85</sup> Note 11, ACMA, 23 – “*the internet has ... enabled the emergence of new channels for communicating and the development of online communities*”.

<sup>86</sup> Mintz D, ‘Government 2.0 – Fact or Fiction?’ (2007) 36(4) *Public Manager* 21, 21-24

communications tool.<sup>87</sup> All this is achieved from the comfort of lounge rooms, schools or offices.<sup>88</sup> At the end of the first decade of the 21<sup>st</sup> Century the internet has changed from being the mere *'bulletin board'* it was when the millennium arrived, to a transformative communication space.<sup>89</sup> Its future potential is unlimited,<sup>90</sup> other than by the capacity of end users and the available means of access.<sup>91</sup>

#### D. What is the internet economy?

ICT underpins the internet economy.<sup>92</sup> The internet has the capacity to enable everyone to compete<sup>93</sup> and communicate at the touch of a button. The internet economy is constituted by the business operations that are enabled through use of the internet as an information source and method of service delivery.<sup>94</sup> Internet economic activity includes the production, acquisition and consumption of digital goods and

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<sup>87</sup> Note 75, Slater, 533 referring to Poster's observations

<sup>88</sup> ACMA, 'Communications Report 2008-09', 10 November 2009, 78 – *"Australians are accessing the internet from multiple locations but the home and work environments remains the main sites for internet use"* with 94 per cent accessing from home and 46 per cent accessing from work. [http://acma.gov.au/webwr/\\_assets/main/lib311252/08-09\\_comms\\_report.pdf](http://acma.gov.au/webwr/_assets/main/lib311252/08-09_comms_report.pdf) (viewed 17/01/20140)

<sup>89</sup> IIA, 'Principles for a Digital Economy', 27 July 2010, *Internet Industry Association*, 12 – *"In a decade, the internet for consumers has moved from being a information bulletin board to a two-way platform for free and open communication of information, view and opinions. The internet has most recently become the key medium for familby and social interaction enabling person, family, community and social relationships, form photo and video sharing sites to social networking sites to citizen interactions with business and government."* <http://iia.net.au/images/resources/pdf/manifestor-2010.pdf> (accessed 09/10/2010)

<sup>90</sup> Rheingold H, 'The Virtual Community', in D Trend (Ed) *Reading Digital Culture* (Blackwell Publishers Ltd, Oxford, 2001) 276 – as the author identifies, although "[w]e now know something about the ways previous generations of communications technologies changed the way people lived", we are not able to fully understand the changes that the internet will bring.

<sup>91</sup> Note, 89, IIA, 15 – *"The pace at which broadband internet is made available in Australia and the ability of Australian embrace [of] digital literacy by adoption of new internet based applications will be an important factor in Australia's future competitiveness, both in the [online] world itself and the real world"*.

<sup>92</sup> ACMA, 'Convergence and Communications – Report 2: Take-up and use of voice communications services by small and medium enterprises', March 2009, 3 – *"widespread use of communication technologies ... [underpins] economic development, productivity growth and the emergence of the digital economy."* [http://www.acma.gov.au/webwr/\\_assets/main/lib100068/convergence\\_comms\\_rep-2\\_small\\_medium\\_enterprises.pdf](http://www.acma.gov.au/webwr/_assets/main/lib100068/convergence_comms_rep-2_small_medium_enterprises.pdf) (viewed 07/01/2010)

<sup>93</sup> Macey J, 'Regulatory Globalization as a Response to Regulatory Competition' (2003) 52 *Emory Law Journal*, 1353, 1355 – technological change is one factor that has *"increased global competition by making it easier for distant companies to compete with local businesses."*

<sup>94</sup> Choi S and A Whinston, 'The IT revolution in the USA: the current situation and problems', in *The Internet Revolution: A Global Perspective* (Cambridge University Press, Cambridge, 2003) 203, 205 – *"As the effect of the Internet becomes all pervasive, the size and scale of the Internet economy cannot be gauged simply by an amalgamation of various IT sectors, nor by recording the share of the economy represented by online, digital versions of physical products and services. The Internet economy encompasses the whole economic sphere, physical and well as online, which is affected by digital technologies and applications."*

services occurring purely online;<sup>95</sup> the online collaboration, design and production tracking of physical goods;<sup>96</sup> and advertising and/or selling of real-world goods.<sup>97</sup>

Although many internet economy activities will have a physical-world construction and/or delivery point, arriving at that point takes place in a manner that is unlike previous methods of economic activity.<sup>98</sup> A fundamental difference between real-world economic activity and internet economic activity lies in the increased ability of the internet to enable the leveraging of knowledge, collaboration between partners, and businesses' understanding of their customers' and consumers' demands and requirements.<sup>99</sup> Internet economic activity thus has an appreciable impact on the physical economy.<sup>100</sup> However, unlike the physical economy that in the past has been

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<sup>95</sup> Mandorf S, *Processes in the Internet Economy: The View of Electronic Processes* (GRIN Verlag, Norderstedt, 2008) 6 – “there is ... a rising amount of virtual companies that only exist in the net and design virtual products for the customers. A typical example can be given by the internet schools producing CBT applications for their students.” Or, for example, that of online gaming. See – Park K, ‘Internet Economy of the Online Game Business in South Korea: The Case of NCsoft’s *Lineage*’, in H Kehal and V Singh (Eds) *Digital Economy: Impacts, Influences and Challenges* (Idea Group Publishing, London, 2005) 286

<sup>96</sup> OECD, *Focus on Citizens: Public Engagement for Better Policy and Services* (2009) OECD Studies on Public Engagement, 67 – “Online collaborative tools, such as wikis and data-sharing sites, allow asynchronous collaboration with actors inside and outside government ... They can be used to pool knowledge and ideas but can also harness the power of tagging, ranking, data visualisation and state-of-the-art search engines to sort through information, analyse data, establish priorities and develop recommendations.” [references omitted]

[http://books.google.com.au/books?id=HNEQ6CHRJmEC&pg=PA67&dq=%22internet+economy%22+online+collaborations&hl=en&ei=yoKRTN-wCtS8caqYte4G&sa=X&oi=book\\_result&ct=result&resnum=2&ved=0CDYQ6AEwAQ#v=onepage&q&f=false](http://books.google.com.au/books?id=HNEQ6CHRJmEC&pg=PA67&dq=%22internet+economy%22+online+collaborations&hl=en&ei=yoKRTN-wCtS8caqYte4G&sa=X&oi=book_result&ct=result&resnum=2&ved=0CDYQ6AEwAQ#v=onepage&q&f=false) (viewed 16/09/2010)

<sup>97</sup> Note 95, Mandorf, 6 – “B2C is the most famous kind of e-business. It refers to the many online-stores and shopping sites on the Internet. Even small retail stores offer their products online. Also many companies in the real world use the Internet as a channel of direct distribution.”

<sup>98</sup> Sadeh N, D Hildum, D Kjenstad, and A Tseng, ‘MASCOT: an agentbased architecture for dynamic supply chain creation and coordination in the internet economy’ (2001) 12(3) *Production Planning & Control*, 212, 213 – “The ... global internet economy is characterized by more dynamic business practices where new supply chain arrangements are set up in response to constantly changing and increasingly customized market demands. To compete in this fierce environment, companies need the ability to rapidly evaluate new business opportunities and dynamically identify potential partners to respond to them. They also need the ability to effectively coordinate production and delivery of goods or services across the resulting value chains.”

<sup>99</sup> Note 95, Mandorf, 6 – “the Internet has occupied all areas of the private and public life. It takes influence on customers’ habits, what customers buy, how they buy it and why they buy it ... It changes structures of manufacturing processes and how employees work ... and it changes the internal arrangements of organizations”.

<sup>100</sup> Barua A, J Pinnell, J Shutter and A Whinston, ‘Measuring the Internet Economy: An Exploratory Study’, (1999) *Working Paper*, 2– “the Internet Economy is comparable to the Industrial Revolution that began in the 18th century in potential scope, size and impact on the physical economy. While certain aspects of any economy (physical or digital) will always depend on labor and raw materials like oil and gas, the Internet Economy is fundamentally different from the physical economy in terms of leveraging information, knowledge and speed for coordination and collaboration between trading partners; knowing and fulfilling current and future customer requirements; understanding customers’ willingness to pay to design suitable pricing and promotion schemes.”

driven by specialised industries and does not require the consumer to have an understanding of how they operate,<sup>101</sup> the internet economy is dependent on the engagement of the individual end users in the internet.<sup>102</sup>

In particular, as Australia moves forward, it is necessary to note that at the heart of “*the Web 2.0 model is internet content generated by individuals and households as opposed to commercially generated content*”.<sup>103</sup> Individuals must have the capacity to create. In the internet economy, this is dependent upon those individual end users having both specific internet-related skills and access capacity.<sup>104</sup> In addition to end users with access capacity, internet economic activity also is dependent upon there being “*ubiquitous high-speed networks*”<sup>105</sup> through which the end users may engage. Business engagement in the internet economy is dependent upon businesses having employees with appropriate internet skills and engagement capacity. As has been recognised by government and industry alike, “[*t]he ability of individuals to adopt and benefit from the internet and associated ... ICT ... has major social and economic benefits, influencing participation in the online economy, education and learning, access to services, political participation and social inclusion*”.<sup>106</sup>

## **E. Government regulation of the internet economy**

As part of the future economy, your place (i.e. location) will continue to be important for lifestyle reasons<sup>107</sup> and economic development.<sup>108</sup> Nonetheless, the current physical location of individuals will be less important due to decentralisation of

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<http://www.singstat.gov.sg/statsres/conferences/e-commerce/f109.pdf> (viewed 16/09/2010)

<sup>101</sup> Burcham P, ‘Toxicology Down Under: Past Achievements, Present Realities, and Future Prospects’ (2008) 21(5) *Chemical Research in Toxicology*, 967, 969 – even scientists note “*the historical dominance of agriculture and mining as key drivers of the Australian economy*”.

<sup>102</sup> Kellerman A, ‘Internet Access and Penetration: An International Urban Comparison’ (2004) *Journal of Urban Technology*, 63, 64 – “*Access, penetration, and use [by individuals] comprise the consumption side of the Internet economy.*”

<sup>103</sup> Quiggin J and J Potts, ‘Economics of Non-market Innovation and Digital Literacy’ (2008) 128 *Media International Australia* incorporating *Culture & Policy*, 144, 146

<sup>104</sup> Note 102, Kellerman, 64 – “*Access to the Internet may ... relate to ... the ability to access the Internet in a technical sense (i.e., the knowledge of how a computer and the Internet works)*”.

<sup>105</sup> Note 100, Barua *et al*, 2; Note 95, Park, 291

<sup>106</sup> ACMA, ‘ACMA Communications Report 2006-07’, 14 Feb 2008, 191 [http://www.acma.gov.au/webwr/\\_assets/main/lib310631/0607commreport\\_complete.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310631/0607commreport_complete.pdf) (viewed 17/01/2010)

<sup>107</sup> Florida R, ‘The Economic Geography of Talent’ (2002) 92(4) *Annals of the Association of American Geographers*, 743, 746 “*places attract people by providing a range of lifestyle amenities*”.

<sup>108</sup> Florida R, *Who’s Your City? How the Creative Economy is making where to live the most important decision of your life* (Basic Books, New York, 2008) 7



economic activity<sup>109</sup> and the fact that the internet, usually, can be accessed from anywhere. However, through government regulation and control of users and commercial operations<sup>110</sup> (i.e. of the telecommunications systems and content), the internet still has a connection with specific jurisdictions. As such the internet is subject to the control of individual States.<sup>111</sup> Although such control may not be easy to achieve,<sup>112</sup> enforcement of jurisdiction-specific law is possible.<sup>113</sup> Likewise, internet economies have a connection with a physical jurisdiction.<sup>114</sup> Australia's internet economy is thus connected with the physical Australia and its laws and people. Internet services are deemed to be an "other like service"<sup>115</sup> and regulated as part of the Australian telecommunications industry. The regulation of telecommunication services and providers within Australia is governed by an array

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<sup>109</sup> Florida R, 'Megaregions: The Importance of Place' (2008) 86(3) *Harvard Business Review*, 18, 19 – "The amalgamation of technology and trade leads to the dispersal and decentralization of economic activity."

<sup>110</sup> Stein L and N Sinha, 'New Global Media and Communication Policy: the Role of the State in the Twenty-First Century' in L Lievrouw and S Livingston (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 411

<sup>111</sup> Murdoch S and R Anderson, 'Shifting Borders' (2007) 36(4) *Index on Censorship*, 156, 156 <http://ezproxy.usc.edu.au:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ulh&AN=27777748&site=ehost-live> (accessed 22/08/2009); Johnson and Post assert that "The power to control activity in Cyberspace has only the most tenuous connections to physical location." Johnson D and D Post, 'Law and Borders – The Rise of Law in Cyberspace' (1996) 48(5) *Stanford Law Review*, 1367, 1371. The issues they raise in respect of filtering are outside the scope of the thesis.

<sup>112</sup> *Dow Jones and Company Inc v Gutnick* [2002] HCA 56; 210 CLR 575; 194 ALR 433; 77 ALJR 255, per Kirby J [86] – "In addition to these difficulties of controlling access to a website by reference to geographic, national and subnational boundaries, the internet has recently witnessed a rapid growth of technologies ... that enable internet users to mask their identities (and locations). By reason of these developments, the provision of cost effective, practical and reliable identity verification systems, that could afford a universally reliable recognition of the point of origin of an internet user, has not emerged. This is why the nature of internet technology itself makes it virtually impossible, or prohibitively difficult, cumbersome and costly, to prevent the content of a given website from being accessed in specific legal jurisdictions when an internet user in such jurisdictions seeks to do so. In effect, once information is posted on the internet, it is usually accessible to all internet users everywhere in the world. Even if the correct jurisdiction of an internet user could be ascertained accurately, there is presently no adequate technology that would enable non-subscription content providers to isolate and exclude all access to all users in specified jurisdictions."

<sup>113</sup> *Griffiths v United States of America* [2005] FCAFC 34 Whitlam, Finn and Conti JJ [1] – [2] "If there is apparent novelty in this appeal it lies in the nature of the extradition offences the appellant is alleged to have committed and for which his surrender is sought by the United States of America when, at all relevant times, he was residing in Australia ... is claimed to have conspired to engage in, and to have ... engaged in, internet software piracy in the United States in violation of federal criminal copyright laws".

<sup>114</sup> Kogut B, *The Global Internet Economy*, in B Kogut (Ed) (MIT Press, Massachusetts, 2004) 7 – "the Internet has borders. The Internet economy developed differently in each country, reflecting different national systems of law and regulation, business networks, competition and technological legacies... the global Internet did pierce borders, but with effects depending upon the national specificities."

<sup>115</sup> Chin G, 'Technological Change and the Australian Constitution' [2000] *MULR* 25 <http://www.austlii.edu.au/au/journals/MULR/2000/25.html> (viewed 15/06/2010)

of federal legislation<sup>116</sup> enacted to address matters such as access to infrastructure, competition issues, and what is appropriate content. In addition, there is a variety of industry codes, standards and rules enforced on an industry self-regulatory basis.<sup>117</sup>

Primary oversight of the telecommunications industry is given to the Minister responsible for the Department of Broadband, Communications and the Digital Economy,<sup>118</sup> as well as the Australian Communications and Media Authority ('ACMA').<sup>119</sup> Telecommunications competition regulation is the responsibility of the Australian Competition and Consumer Commission ('ACCC').<sup>120</sup> The power to investigate consumer complaints against service providers is vested in the Telecommunications Industry Ombudsman ('TIO').<sup>121</sup> The focus of the thesis will be on the legislated access regimes. Government regulation as a means of promoting individual end user engagement in the internet economy is limited. A primary purpose of the existing access regimes is the regulation of competition in the telecommunications industry and access to the relevant infrastructure by competitors. The regimes also operate to restrict access by users to 'inappropriate' content. These purposes are not specifically targeted to enabling individual end users. As Kariyawasm noted, such existing frameworks may be inadequate for "*regulating*

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<sup>116</sup> i.e. the *Broadcasting Services Act 1992*, the *Broadcasting Services (Online Services) Act 1999*, the *Telecommunications (Universal Service Levy) Act 1997*, the *Telstra Corporation Act 1991* and the *Crimes Legislations Amendment (Telecommunications Offences and Other Measures) Act 2004*

<sup>117</sup> For an overview of the telecommunications regulatory landscape and industry see – Note 63, ACMA, 5 – 7; most recently it is proposed to give the power to the Minister to direct the ACMA to make an industry standard. See – item 253 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010* proposed Section 125AA(4) and (5)

<sup>118</sup> This is Senator Conroy – Part 3, 'Administrative Arrangements Order', 14 September 2010, 9 [http://www.comlaw.gov.au/comlaw/legislation/administrativearrangementsorder1.nsf/0/DCC6DE608B2B05E6CA2577A0001768AA/\\$file/AAO14092010Word.pdf](http://www.comlaw.gov.au/comlaw/legislation/administrativearrangementsorder1.nsf/0/DCC6DE608B2B05E6CA2577A0001768AA/$file/AAO14092010Word.pdf) (viewed 14/11/2010)

<sup>119</sup> Section 5 *Broadcasting Services Act 1992* – Role of the ACMA – (1) ... *the Parliament*:

- (a) *charges the ACMA with responsibility for monitoring the broadcasting industry, the datacasting industry, the Internet industry and the commercial content service industry; and*
- (b) *confers on the ACMA a range of functions and powers that are to be used in a manner that, in the opinion of the ACMA, will:*

- (i) *produce regulatory arrangements that are stable and predictable; and*
- (ii) *deal effectively with breaches of the rules established by this Act.*

- (2) *Where it is necessary for the ACMA to use any of the powers conferred on it by this Act to deal with a breach of this Act or the regulations, the Parliament intends that the ACMA use its powers, or a combination of its powers, in a manner that, in the opinion of the ACMA, is commensurate with the seriousness of the breach concerned.*

For legislation under which ACMA has responsibilities – ACMA, 'Communications Report 2009-10', 30 September 2010, 214 [http://acma.gov.au/WEB/STANDARD/pc=PC\\_312295](http://acma.gov.au/WEB/STANDARD/pc=PC_312295) (viewed 09/12/2010)

<sup>120</sup> Section 6A(1) *Trade Practices Act 1974* – "*The Australian Competition and Consumer Commission is established by this section.*" And Parts XIB and XIC

<sup>121</sup> Part 6, *Telecommunications (Consumer Protection and Service Standards) Act 1999*

*complex digital networks*".<sup>122</sup> A specifically designed framework is required for the internet economy.<sup>123</sup>

## **F. The Broader Picture**

The thesis focuses on the ability of the end user, as employee and individual, to engage in the internet economy. The thesis asserts that the role of the individual and their level of digital literacy and access are directly relevant to businesses' ability to innovate and to engage in the internet economy. It is important therefore for Australian businesses that individual end users are given specific consideration by government policy.<sup>124</sup> Keeping up with technological change can be addressed through appropriate skills training. Many school students receive specific lessons on how to maximise their use of the services available on the internet.<sup>125</sup> Some adult training also is available. Still, not all Australians have the same access capacity and skills; and many are not able to afford internet skills training. This is a concern for the future of the economy and consumers in general, as many business and government agencies now use the internet as their primary tool for information distribution. A great deal of information that is readily available via the internet<sup>126</sup> is not available as easily or cheaply offline.<sup>127</sup>

However, operating in the internet economy raises a variety of issues for business that are unrelated to the capacity of a business' employees. Although employees can be crucial for economic growth,<sup>128</sup> the success or failure of a business usually does

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<sup>122</sup> Note 5, Kariyawasm, 95

<sup>123</sup> Note 5, Kariyawasm, 96

<sup>124</sup> Note 55, McKinsey Report, 122 – "*The capacity of the NBN to serve the national interest through the economic and social benefits associated with its services will be correlated with [its] responsiveness to stakeholder needs.*" The stakeholders identified include, as end users, 'home users'.

<sup>125</sup> Moyle K and S Owen, 'Listening to Students' and Educators' Voices: The Views of Students and Early Career Educators About Learning with Technologies in Australian Education and Training', Research Findings, DEEWR, 2009, 12-14 <http://www.deewr.gov.au/Schooling/DigitalEducationRevolution/Resources/Documents/ListeningToStudentsVoices.pdf> (viewed 04/02/2010)

<sup>126</sup> *Bayside City Council v Telstra Corp Ltd* [2004] HCA 19 [3] – "*A broadband cable network ... permits a flow of information for a number of purposes, including internet services and cable television.*"

<sup>127</sup> For example, as my mother recently discovered, many terms and conditions of basic consumer contracts (i.e. for warranties on products) while readily accessible over the internet can take 1 – 2 weeks to arrive by post.

<sup>128</sup> Florida R and C Mellander, 'Skill and Cross-National Economic Performance' (2010) *CESIS Electronic Working Paper Series*, Paper 220, 4 [http://cesis.abe.kth.se/documents/CESISWP220\\_000.pdf](http://cesis.abe.kth.se/documents/CESISWP220_000.pdf) (viewed 06/06/2010)

not rest with one individual.<sup>129</sup> The success of a business in a market is influenced by a variety of factors separate from those of end user engagement. A primary concern for any market and its participants is that the market is appropriately competitive.<sup>130</sup> Therefore, for businesses operating in the internet economy, and for the customers of those businesses, effective competition in the retail broadband market will be important.<sup>131</sup>

In order for businesses to operate in the internet economy they must have a network over which to operate. Determining the appropriate infrastructure for the high-speed broadband network will, to a large degree, involve identification of more than merely the appropriate physical infrastructure for delivery of services. As research and development ('R&D') will be vital for the future of the internet economy, it also will be necessary to identify the appropriate e-Research Infrastructure<sup>132</sup> ('EI') for Australia. High-speed broadband's place in that infrastructure and the requirements of researchers in order to implement it and encourage its development will need to be clarified. From an innovation perspective, the creation, sharing and use of intellectual property is a vital element for enabling business capacity. The level of protection modern copyright law provides to authors is often criticised as being inappropriate.<sup>133</sup> That is, because it may unreasonably restrict use of the copyright material by the protections the copyright regime grants to owners/authors. Business' ability to share information and to innovate can be restricted by such protections. Therefore the achievement of a true copyright commons<sup>134</sup> is important for the future of the internet economy; as is the ability to access public sector materials.<sup>135</sup>

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<sup>129</sup> Unless for example it is a sole working director company or they are THE key personnel.

<sup>130</sup> Interested readers are referred to – Atkinson R, 'The Role of Competition in a National Broadband Policy' (2009) 7 *J. on Telecomm. & High Tech. L.*, 1

<sup>131</sup> For an identification and consideration of specific NBN competition issues see – Note 55, McKinsey Report, 370, Chapter 9

<sup>132</sup> Schroeder R, 'e-Research infrastructures and open science: Towards a new system of knowledge production?' (2007) 25(1) *Prometheus*, 1

<sup>133</sup> See – Lessig L, 'The Creative Commons' (2003) 55 *Florida Law Review*, 763, 763-778 as to the ability to publish an 'alternative' version of 'Gone With The Wind' and teaching your robot dog to 'dance jazz'.

<sup>134</sup> For a broad discussion of relevant issues see – Fitzgerald B, J Coates, and S Lewis, *Open Content Licensing: Cultivating the Creative Commons* (Sydney University Press, Sydney, 2007) <http://eprints.qut.edu.au/6677/1/6677.pdf> (viewed 21/02/2010)

<sup>135</sup> Fitzgerald A, B Fitzgerald and N Hooper, 'Enabling open access to public sector information with Creative Commons Licences: the Australian experience' in *Access to Public Sector Information: Law, Technology & Policy* (Sydney University Press, 2009) [http://eprints.qut.edu.au/29773/1/29773\\_final.pdf](http://eprints.qut.edu.au/29773/1/29773_final.pdf) (viewed 21/02/2010)

To enable maximum participation by businesses in the new services that high-speed broadband will bring requires that businesses transition from the existing infrastructure and methods of service delivery. Maximum participation will be important for the NBN's success. However, transitioning from existing infrastructure and systems can be a costly process. Depending on a business' location and operations, addressing these issues may impact upon its rate and speed of uptake of the services. This must be taken into account in any roll-out plan. Finally, attempting to predict the future of high-speed broadband, or its impact on NBN business operations, is complicated by the uncertainty surrounding the ongoing negotiations between NBN Co Ltd, Telstra and the federal government.<sup>136</sup>

## **G. Aims**

The thesis examines whether current federal government policy and the law enables individuals to engage in the internet economy. If the government's current course of action is found wanting, the thesis will consider how those policies and the laws should be changed.

The thesis identifies the theories and principles underpinning the internet and therefore the internet economy and considers where these overlap. This overlap is in respect of the individual end users. From this, the central concept of *connectedness* is developed. This refers to the ability of Australians to engage in the internet economy is dependent upon their ability to access internet services and content, and connect with others. *Connectedness* supports the internet economy and is the rationale for the development of specific end-user-focussed policy and laws. The aims of the thesis are to:

1. evaluate the place of high-speed broadband in the future of Australia's internet economy;
2. identify barriers to Australia's full participation in the internet economy; and

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<sup>136</sup> Note 55, McKinsey Report, 398 – “*The amount and structure of potential agreements with Telstra must be factored in when determining NBN Co's funding requirement. Due to the commercial sensitivity and the uncertainty surrounding such agreements, the mechanics of any such deal are not discussed [in this report] in detail.*” Also see - NBN Co Limited, ‘Annual Report 2009-2010, 29 October 2010, [http://www.nbnco.com.au/wps/wcm/connect/a69fc5804479c76aa31fab72ea64545/NBNCo\\_AnnualReport\\_2010.pdf?MOD=AJPERES&CACHEID=a69fc5804479c76aa31fab72ea64545](http://www.nbnco.com.au/wps/wcm/connect/a69fc5804479c76aa31fab72ea64545/NBNCo_AnnualReport_2010.pdf?MOD=AJPERES&CACHEID=a69fc5804479c76aa31fab72ea64545) (accessed 22/11/2010)

3. make recommendations to the federal government as to what the governing principles of the Australian internet economy should include in order to enable *connectedness*.

Promoting and supporting *connectedness* by means of enabling high-speed broadband access requires the federal government to establish specific policy,<sup>137</sup> and related strategies and programs. Specific policy is needed to address issues occurring:

1. during implementation of the NBN – by considering what is required to ensure that all Australians have the physical means of accessing the NBN and the services and content it will deliver. This includes the means to adopt the new technologies and related hardware; and
2. on an ongoing basis – by considering what is required to ensure that all Australians have the skills and capacity necessary to adopt and use the NBN to its fullest extent. That is, to ensure people are *digitally literate* and have the desire, and means, to engage in the internet economy. Consideration will also be required to ensure that access remains free and open for all and does not become restricted.

Appropriate policy would support and implement measures to ensure that all Australians, irrespective of location or personal circumstances, have access to:

1. high-speed broadband infrastructure;
2. services and content delivered via high-speed broadband;
3. existing infrastructure and services until the full roll-out of high-speed broadband and adoption of the required accessing technology by all Australians; and
4. education and skills to enable full engagement in the internet economy.

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<sup>137</sup> Note 35, Althaus *et al*, 6 -7 – such specific policy would be “*an authoritative response to a public issue or problem. This suggests that public policy:*

- *is intentional ...*
- *is about making decisions ...*
- *is political ...*
- *express a considered response to a policy issues*
- *helps shape a government’s philosophy*
- *are an authoritative framework of the government’s beliefs and intentions in the policy area”*

The thesis identifies the barriers to *connectedness* as being the *digital, physical and political divides*. The scope of the thesis is limited and as such it aims to identify the legal and regulatory solutions<sup>138</sup> for the *digital divide* available to the federal government as it moves to roll-out high-speed broadband. While relevant technologies will be critical to the future of the internet economy,<sup>139</sup> any purely technical consideration of these technologies is beyond the scope of the thesis. In view of the inherent difficulties of drafting for unseen technological changes,<sup>140</sup> any policy and/or legislative solution proposed will be technologically neutral.

## H. Methodology and Scope

The methodology used was to commence research by reviewing the federal government's proposal for the NBN as articulated in their *National Broadband Network: Regulatory Reform for the 21<sup>st</sup> Century Broadband Discussion Paper*. For historical and comparative purposes, consideration – where relevant – was given to previous proposals for broadband implementation. It is noted, however, that the relevance of these, in light of the impact of the global financial crisis ('GFC'), is limited.<sup>141</sup> The legislation, policy and material considered is that current as at 9 December 2010.

Improving access to and use of the internet by, for example, overcoming the tyranny of distance<sup>142</sup> is not an Australian-specific challenge. Addressing the issues of broadband implementation remains an international concern<sup>143</sup> and the establishment

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<sup>138</sup> Part of the solution may be the adoption of new standards which is beyond the thesis' scope. See – Yoo C 'What can Antitrust Contribute to the Network Neutrality Debate?' (2007) 1 *International Journal of Communication*, 493, 493-530. In any event, as that author recognises, standardisation is not always beneficial.

<sup>139</sup> Technology's ability to control essential aspects of commercial operations makes it a "critical focal point for competition policy" See – Foer A, 'Personal letter to the US Federal Trade Commission', 29 August 2007 the American Antitrust Institute, <http://breakfree.amd.com/en-us/assets/AAI%20FTC%20Letter%208.30.07.pdf> (viewed 04/09/2007)

<sup>140</sup> Note 6, Chin, 8

<sup>141</sup> Scott P, J Wylie, T Shaw, K Henry, T Mitchell, R Coutts and R Tucker, 'Extract from the Evaluation Report for the Request for Proposals to Roll-out and Operate a National Broadband Network for Australia' 20 January 2009 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0007/110014/Summary\\_observations\\_for\\_website.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0007/110014/Summary_observations_for_website.pdf) (viewed 25/09/2009)

<sup>142</sup> Blainey G, *The tyranny of distance: how distance shaped Australia's history* (Macmillan, Sydney, 2001)

<sup>143</sup> ITU, 'The World in 2009: ICT Facts and Figures', ITU Telecom World 2009 brochure, Geneva 5-9 October, 2009, Market Information and Statistics Division, Telecommunication Development Bureau – many nations still having limited or no connection of any kind to the internet [http://www.itu.int/ITU-D/ict/material/Telecom09\\_flyer.pdf](http://www.itu.int/ITU-D/ict/material/Telecom09_flyer.pdf) (viewed 16.01.2010)

of an affordable and easily accessible high-speed broadband network is a legislative agenda item of many nations.<sup>144</sup> As it moves forward, Australia should be aware of developments overseas so that it can work to ensure that whatever is implemented here is of the highest standard.<sup>145</sup> The Europe Union ('EU') for example, despite the effects of the GFC, has seen a steady increase in broadband penetration<sup>146</sup> and has been proactive in the implementation and updating of policies focussed on furthering broadband adoption and use.<sup>147</sup> Ensuring functionality in the internet economy is not just a focus for the EU. As then Senator, now President, Obama identified, in order for the United States ('US') to "*compete in the digital age*" it is necessary to "*lay down broadband lines through the heart of [both] inner cities and rural towns*".<sup>148</sup> Similarly to Australia, the US's physical geography and current regulatory regime<sup>149</sup>

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<sup>144</sup> DBCDE, 'Request for Proposals to roll-out and operate a National Broadband Network for Australia', Request for Proposals number: DCON/08/18, 11 April 2008 ('RFP1') 1 – Background 1.1.5 "*The situation in Australia is not unique. Carriers and, in some cases, government are working to roll-out high-speed broadband networks in other countries ... USA, Canada, Singapore, Japan, Korea, New Zealand, Germany and France*" [http://www.archive.dbcde.gov.au/2009/april/national\\_broadband\\_network/request\\_for\\_proposals](http://www.archive.dbcde.gov.au/2009/april/national_broadband_network/request_for_proposals) (viewed 22/05/2010) For example see the Broadband Data Improvement Act, P.L. 110-385 (USA); the Farm Bill, P.L. 110-234 (USA); and the American Recovery and Reinvestment Act of 2009

<sup>145</sup> Note 35, Althaus *et al*, 10 – "*The demands of globalisation and localisation promote new ways of looking at the world and fresh calls for innovative cultural practices that deliver global solidarity at the same time as renewed local identity.*"

<sup>146</sup> European Commission, 'Broadband access in the EU: situation at 1 July 2010', Information Society and Media Directorate-General, COCOM09-29 FINAL, DG INFSO/C4, 18 November 2009, 7 – for example the total fixed broadband penetration increased from 4.9% in January 2004 to 23.9% in July 2009, with increases in mobile and non-DSL connections

<sup>147</sup> For a consideration of the history of telecommunications regulation in the European Union see – Dods D, P Brisby, R Hubbard, K Ollerenshaw and B Ingram, 'Reform of European electronic communications law: a special briefing on the radical changes of 2009' (2010) 16(4) *Computer and Telecommunications Law Review*, 102, 102 – the Common Regulatory Framework, developed specifically to simplify and modernise the existing 20 plus directives to take account of technological developments, was established in 2002. It consists of the Access Directive (Directive 2002/19/EC); the Authorisation Directive (Directive 2002/20/EC); the Framework Directive (Directive 2002/21/EC); the Universal Service Directive (Directive 2002/22/EC); and the Telecoms Data Protection Directive (2002/58/EC). More recent changes to EU processes are mentioned in Chapter 6 as examples of legislative amendments the Australian federal government should consider, the most important of these is the recognition that access to the internet is a right and that network neutrality is essential.

<sup>148</sup> The White House, The Agenda – Technology, quoting Barack Obama, Springfield IL, February 10, 2007, The US technology agenda is stated to include – "*Deploy Next-Generation Broadband: Work towards true broadband in every community in America through a combination of reform of the Universal Service Fund, better use of the nation's wireless spectrum, promotion of next-generation facilities, technologies and applications, and new tax and loan incentives. America should lead the world in broadband penetration and internet access.*" <http://www.whitehouse.gov/agenda/technology/> (viewed 05/04/2009).

<sup>149</sup> For a recent overview of telecommunications regulation in the US see – Note 5, Kariyawasm, 97-98; and Benkler Y, 'Next Generation Connectivity: A review of broadband Internet transitions and policy from around the world', *The Berkman Center for Internet & Society at Harvard University*, February 2010, Report for FCC [http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/Berkman\\_Center\\_Broadband\\_Final\\_Re](http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/Berkman_Center_Broadband_Final_Re)



may complicate this process. In many other countries, the involvement of government in broadband provision is specifically targeted to rural and/or regional areas only.<sup>150</sup> Separately, Australia should take note of the US's position as to the importance of enhanced broadband for research as part of the US's cyber infrastructure (referred to in Australia as EI) of the future.<sup>151</sup> Observations as to what is being achieved internationally are relevant for the recommendations in Chapter 6.

The research was undertaken by means of a documentary analysis of primary source material. This included legislation and background materials and court judgements; secondary source materials, including journal articles, other peer-reviewed material and regulatory documents; and tertiary materials, including various government reports as well as submissions to the various government reviews. One of the most relevant reports is the report of the *National Broadband Network Implementation Study* ('McKinsey Report').<sup>152</sup> The McKinsey Report is extremely detailed and comprehensive and, as such, aspects of it will be referred to in various chapters. However, it provides limited assistance in addressing the *digital divide*. Despite the fact that recent research shows that income still greatly influences broadband adoption,<sup>153</sup> the McKinsey Report makes no recommendations as to how to facilitate

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port\_15Feb2010.pdf (viewed 20/05/2010)

<sup>150</sup> Note 19, West, 8 – “*A serious challenge for most countries has been bringing service to rural areas with low population densities or other under-served geographic places. The cost of wiring the ‘last mile’ is high because of low concentrations of people and limited demand for service. It is here ... the public sector ... has played a significant role*”; Note 32, Gerrand, 89 – “*Since 2001 some of the northern regional governments [in Spain] ... became concerned about the implications of poor levels of Internet and telephone communications in their rural regions. At least four of these ... took bold, independent initiatives with public-private partnerships to accelerate the rollout of broadband.*” As Chapter 6 notes Spain has now codified the right to broadband.

<sup>151</sup> Tapia A, B Blodgett and J Jang, ‘The Merging of Telecommunications Policy and Science Policy through Broadband Stimulus Funding’, *paper presented at The 37<sup>th</sup> TPRC Research Conference on Communication, Information and internet Policy*, 25-27 Sept., 2009, George Mason University School of Law, Arlington, VA.

<sup>152</sup> Note 55, McKinsey Report. This is so partly because the full 400 page NBN Business Plan has not yet been released by government, despite the endeavours of the Greens and Opposition, with only the Case Summary released on 24 November 2010. See – NBN Company Limited, ‘NBN Co. Business Case Summary’, 24 November 2010 <http://www.nbnco.com.au/wps/wcm/connect/5b05280044cfe6e9803289c72ea64545/NBN+Co+Business+Case+Summary.PDF?MOD=AJPERES&CACHEID=5b05280044cfe6e9803289c72ea64545> (accessed 02/12/2010); Kelly J, ‘Greens will seek to force the government to release NBN business plan’, *The Australian*, November 16, 2010 <http://www.theaustralian.com.au/national-affairs/greens-will-seek-to-force-the-government-to-release-nbn-business-plan/story-fn59niix-1225954248903> (viewed 05/12/2010); Kelly J, ‘Julia Gillard fights off Coalition bid to force release of NBN business plan’, *The Australian*, November 18, 2010 <http://www.theaustralian.com.au/national-affairs/julia-gillard-fights-off-coalition-bid-to-force-release-of-nbn-business-plan/story-fn59niix-1225955769241> (viewed 05/12/2010)

<sup>153</sup> Note 14, Ewing and Thomas, 10

the adoption of high-speed broadband by low-income households. Instead, the McKinsey Report states that “[t]he need for and shape of policies directed at providing broadband to low-income households is a matter for Government and beyond the scope of the ... Study”.<sup>154</sup>

The available material was limited to some extent in that the author only had access to publicly available documents. Some documents were not fully available because of their being recognised as containing confidential commercial material<sup>155</sup> or because of the process followed in government policy and legislation development. The structure of the thesis, and the chapter focus and content is:

### **1. Underpinning the internet economy (Chapter 2)**

The chapter identifies and considers the theories and principles that are vital for ensuring the future of the internet economy. These are the theories and principles that are relevant for the operation of the internet in general and are considered under the headings of innovation, rights, openness and neutrality. The chapter commences by defining and examining innovation. A consideration of innovation theory reveals the factors that are essential for the innovation process. As Lee *et al* identified, “*innovation is seen to be a function of human capital*”.<sup>156</sup> The individual end user is one of the essential factors in the innovation process and is accordingly crucial in enabling innovation in the internet economy. The ability to innovate is linked to the protection and enforcement of fundamental human rights. In order to be able to innovate, individuals must have the right of access to information, services, education and skills training.

However, capacity of end users by itself is not sufficient to ensure the future of the internet economy. To be able to access the content and services of the internet, and to be able to engage with others, individuals

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<sup>154</sup> Note 55, McKinsey Report, 110

<sup>155</sup> For example a personal email from the National Broadband Network Taskforce to the author of 11 June 2009 advised *inter alia* that – “*An extract from the Evaluation Report for the Request for Proposals to Roll-out and Operate a National Broadband Network for Australia outlining observations of the National Broadband Network Panel of Experts has been released, and is available online ... The remainder of the Evaluation Report contains confidential commercial information, and as such is not expected to be released.*”

<sup>156</sup> Note 8, Lee *et al*, 14

must have access through appropriate infrastructure networks. Appropriate access is linked with the openness of the internet and the ability of content and services providers, and end users to easily access the necessary infrastructure and networks. Once the infrastructure is accessed, individuals require access to the content and services available via the internet. This will require material to be provided in a non-discriminatory manner. In order for this delivery to be achieved, it is necessary that the internet and the networks used to access it are operated on a neutral basis, so that network operators cannot discriminate between the content and services available. Open access and network neutrality underpin the internet economy and are essential for its continuation.

An examination of the theories and principles show that although they are different in purpose and focus, they have one thing in common. They all are relevant for individual end users. An examination of where these theories and principles overlap leads to the development of the concept of *connectedness*. As Chapter 3 considers, *connectedness* is vital for the future of the internet economy.

## **2. Connectedness and Australia in the internet economy (Chapter 3)**

The chapter expands upon the concept of *connectedness* and identifies what it is and why it is important for the future of the Australian internet economy. In order to do this the chapter identifies Australia in the internet economy. It does this by defining what community is and identifying the impact of the internet on how community may now be created and maintained.<sup>157</sup> The chapter concludes by identifying the importance of the internet for *connectedness* as relevant for the creation and maintenance of community; as a means to enable innovation by means of collaboration; as supporter and developer of the economy; and as a means of facilitating access to education and to government and its services. The chapter identifies that what is needed to ensure *connectedness* is a means of ensuring better and more reliable access to the internet. As Chapter 4

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<sup>157</sup> Note 73, Svantesson, 46 – “internet communication ... is virtually instantaneous. There is not great time difference between visiting a website stored on ... the other side of the planet, as compared to ... a [local] website.”

considers, although high-speed broadband enables more than just access to the internet, it will be a primary enabler of *connectedness* and the internet economy.

### **3. A Broadband Network (Chapter 4)**

The chapter considers the benefits that a national high-speed broadband network will bring and identifies the NBN as the vehicle through which it will be delivered. The future of Australia's internet economy cannot occur in isolation from what will be the main enabler of access to its content and services. Likewise, issues regarding access are not relevant merely to the implementation stage of the NBN. As will be considered, ensuring *connectedness* by means of ensuring ongoing use of high-speed broadband is an important aspect of ensuring the future of the internet economy. In order to discuss the importance of the NBN, it is necessary to understand what broadband is. The chapter positions broadband as a driver of the internet economy.<sup>158</sup> This involves examining rationales that support broadband as a means of accessing the internet for communications, research collaborations and government and business service delivery. The economic, social and innovation issues relevant for the adoption of high-speed broadband are discussed. A more in-depth consideration of the access regimes and the challenges that may impede the deployment of high-speed broadband is undertaken in Chapter 5.

### **4. Challenges (Chapter 5)**

The chapter identifies and discusses the challenges facing the attainment of *connectedness* and thus the implementation of the NBN. Issues arising from the *physical, digital and political divides* will be discussed in the context of these being barriers to *connectedness* and how the NBN is a means of overcoming such barriers. The current access regime will be identified prior to discussion of the barriers. One regime that is of particular relevance as the NBN roll-out occurs is the land access regime.

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<sup>158</sup> DBCDE, 'Australia's Digital Economy: Future Directions', Final Report, 14 July 2009, 2 – "*Digital economy* has been defined by the Australian federal government as the 'global network of economic and social activities that are enabled by information and communications technology such as the internet, mobile and sensor networks.'" [http://www.bcde.gov.au/digital\\_economy/final\\_report](http://www.bcde.gov.au/digital_economy/final_report) (viewed 12/08/2009)

This is because, as roll-out of the NBN continues, access may be required not just by telecommunications industry participants but also possibly by the government and its entities as part of the process of determining what land is viable for construction of related infrastructure.

The existing telecommunications access regimes with respect to facilities, services and content will then be identified. This will include a consideration of legislation and relevant judgements with respect to the access to services.<sup>159</sup> Where necessary, the policy rationale behind the existing regimes is reviewed. These regimes, however, are not identified and discussion for the purpose of an in-depth study or critique. Rather, they are considered for the purpose of identifying that, generally, their purpose is to ensure access for service providers or to enable competition. The chapter will review relevant policy announcements made and legislative changes announced and/or introduced and/or implemented since the announcement of the NBN in 2009. This is because these too will have an impact upon the NBN's successful implementation and future federal government policy. The specific policy and legislation that the chapter will consider is that which is relevant for telecommunications access and regulation;<sup>160</sup> land access and use;<sup>161</sup> and content provision. These will be considered to determine whether they address access issues for individual end users. The barriers to connectedness then will be identified. As a consequence of the politicizing of the NBN, these barriers are the *physical divide*, the *digital divide* as well as the *political divide*.

Access issues for individuals will be considered in the context that the most appropriate form of legislation and regulation is one that is technology neutral; wholesaler neutral, retailer neutral and price neutral. The discussion will be premised on the understanding that in the internet economy access to the internet is essential for all Australians.<sup>162</sup> The

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<sup>159</sup> i.e. *Telstra Corporation Ltd v ACCC* [2008] FCA 1758 (24 November 2008); *Telstra Corporation Limited v ACCC* [2009] FCA 757 (17 July 2009)

<sup>160</sup> i.e. the *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010*

<sup>161</sup> i.e. the expected *Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010*; and *National Broadband Network Companies Bill 2010*

<sup>162</sup> Parliament of Australia, 'Australia as an Information Society: Grasping New Paradigms', Report of

chapter concludes by identifying the challenges facing the deployment of high-speed broadband in Australia and by clarifying that the challenge Chapter 6 will address is that of the *digital divide*.

## 5. Addressing the Challenges (Chapter 6)

The chapter proposes how the issues of regulation for the NBN may be addressed to ensure *connectedness* now and into the future. Consideration will be given to the need to ensure digital literacy and access capacity for all citizens. This will include the need to have the means of access to the physical structure of the NBN, as well as access to the financial means of upgrading existing technological devices. The chapter identifies how a lack of skills or financial capacity to use the internet can be addressed by policy and legislation and will draw from international examples, as well as the example of the current transitioning of Australia to digital television, as comparators. In so doing the chapter will identify the specific matters that are better addressed by policy and those requiring the additional attention and protection of legislation.

Although most laws may be enacted in response to a “*market failure*”<sup>163</sup> this is not the case for the NBN, however, as the market will not fully exist until roll-out is complete. This presents unique, ongoing challenges for the federal government, industry and end users as it will be many years before construction is complete. The chapter concludes by making recommendations for policy and legislative amendment to overcome the *digital divide* and to ensure ongoing *connectedness*. The thesis proposes appropriate policy and legislation as instruments of social change.<sup>164</sup> Such legislation should be implemented in a manner that honours Australia’s international obligations<sup>165</sup> and promotes its internet economy.

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the House of Representatives Standing Committee for Long Term Strategies, May 1991, 39-40 – “4.15 Access to information is a basic right ... a precondition to personal and national autonomy.” [http://www.aph.gov.au/house/committee/reports/1991/1991\\_PP145.pdf](http://www.aph.gov.au/house/committee/reports/1991/1991_PP145.pdf) (accessed 24/06/2009)

<sup>163</sup> Note 36, Edwards, 119 – “Most regulation is a response to market failure, and, as regulations are imposed and business respond, so the nature of the market failure changes. Regulation is seldom a zero sum gain.”

<sup>164</sup> Galligan D, *Law in Modern Society* (Oxford University Press, Oxford, 2007) 331

<sup>165</sup> Note 158, DBCDE, 20 – “Australia’s legislative setting must be considered in an international context and must reflect the standards agreed to by Australia in relevant international treaties.”

## I. Delimitations

The NBN will be important for research and researchers as a means of facilitating grid computing<sup>166</sup> and internet cloud computing.<sup>167</sup> The NBN therefore is significant from an economic perspective for the value of the research it can enable. However, the thesis does not argue that access to EI is a fundamental right. Rather, it is acknowledged that EI access will require a higher, more specialised level of access.<sup>168</sup> Therefore, while the concept of *connectedness* also will be important for EI, it will require separate consideration by the federal government. Separate consideration also will be required to address issues of specific concern for research, researchers and R&D encouragement.

Quality content service provision is likely to be a stimulator or driver for adoption of the NBN by end users.<sup>169</sup> Once fully rolled out, it is envisaged that the NBN will be an enabler of a variety of online content.<sup>170</sup> Superior content and services also will be a trigger for ongoing use once NBN access is adopted as it will stimulate end use desire for the services. However issues specifically relevant for achieving this quality of content service provision is beyond the scope of the thesis.<sup>171</sup> Issues pertaining to how to prevent the undesired receipt of content (i.e. of spam)<sup>172</sup> or in respect of the process for determining what appropriate content is, will also not be considered.<sup>173</sup>

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<sup>166</sup> Líška, M and J Pelán, 'Grid Computing Architecture I' (2006) 1 *Science & Military*, 49; Foster I, C Kesselman and S Tuecke, 'The Anatomy of the Grid: Enabling Scalable Virtual Organizations' (2001) 15(3) *International Journal of Supercomputer Applications*, 200

<sup>167</sup> Voas J and J Zhang, 'Cloud Computing: New Wine or Just a New Bottle?' (2009) 11(2) *IT Professional*, 15

<sup>168</sup> Kee K, L Cradduck, B Blodgett and R Olwin, 'Cyberinfrastructure Inside Out: Definition and Influences Shaping Its Emergence, Development, and Implementation in the Early 21<sup>st</sup> Century', in D Araya, Y Breindl and T Houghton (Eds) *Nexus: New Intersections in Internet Research* (Peter Lang, New York, 2011) 167

<sup>169</sup> AFACT, 'Submission to NBN National Broadband Network: Regulatory Reform for 21<sup>st</sup> Century Broadband', 1 June 2009 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0003/115365/Australian\\_Federation\\_Against\\_Copyright\\_Theft\\_AFACT.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0003/115365/Australian_Federation_Against_Copyright_Theft_AFACT.pdf) (viewed 24/06/2010); Note 158, DBCDE, 35 – "*Content is a significant draw for attracting Australians online and particularly in driving broadband adoption.*"

<sup>170</sup> Note 158, DBCDE, 38 – "*The Government's role with respect to online content is that of an enabler. Through the [NBN] ... the Government is providing significant infrastructure to support the growth of online content.*"

<sup>171</sup> AICTEC, 'Submission to NBN National Broadband Network: Regulatory Reform for 21<sup>st</sup> Century Broadband', June 2009 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0003/115356/Australian\\_ICT\\_in\\_Education\\_Committee\\_AICTEC.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0003/115356/Australian_ICT_in_Education_Committee_AICTEC.pdf) (viewed 24/06/2010)

<sup>172</sup> Coroneos P, 'Perceptions of Spam' (2003) 6(5) *Internet Law Bulletin*

<sup>173</sup> For those interested in this area see – Coroneos P, 'Internet Content Policy and Regulation in Australia', in B Fitzgerald, F Gao, D O'Brien and S Shi (Eds) *Copyright Law, Digital Content and the Internet in the Asia-Pacific* (Sydney University Press, Sydney, 2008) 49

Similarly, issues of spectrum allocation<sup>174</sup> and pure technical solutions to address issues of access to communications services generally, or data casting services specifically, are beyond the scope of the thesis.

Planning and land-use laws generally are State-based and can vary markedly even between regions of one State. However, as related policy and legislation in respect of the NBN implementation is federal law this would take precedence over any State laws;<sup>175</sup> consideration of land laws and policy will be limited to the proposed specific federal policy. State policies and laws will not be considered. Consideration of Native Title issues must be factored into any roll-out plan,<sup>176</sup> however, these issues are beyond the scope of the thesis. Also outside the scope of the thesis are any environmental issues that maybe relevant to the ecological footprint of the NBN. Access to the NBN once constructed, as well as more effective access to the existing networks requires a consideration of policy and legislation, both existing and proposed. As Althaus *et al* identified “[e]ach government must work from the legacy of its predecessors”.<sup>177</sup> A detailed historical review of telecommunications provision in Australia however is not undertaken in the thesis. A detailed analysis of all

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<sup>174</sup> See – the Section 5 *Radio Communications Act 1992* – “‘spectrum’ means the range of frequencies within which radio communications are capable of being made.” And Section 31 –

“(1) The Minister may, after consulting the ACMA, and in accordance with the spectrum plan, by written instrument:

(a) designate a part of the spectrum as being primarily for broadcasting purposes or restricted datacasting services, or both; and

(b) refer it to the ACMA for planning under Part 3 ...

(1A) The Minister may, after consulting the ACMA, and in accordance with the spectrum plan, by written instrument:

(a) designate a part of the spectrum as being partly for the purpose of:

(i) digital radio broadcasting services; and

(ii) restricted datacasting services; and

(b) refer that part of the spectrum to the ACMA for planning under Part 3 of the *Broadcasting Services Act 1992*.”

<sup>175</sup> Where there is any inconsistency between state and federal legislation the federal legislation will prevail. See Section 109, Commonwealth Constitution – “When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid.” *Amalgamated Society of Engineers v Adelaide Steamship Co* (1920) 28 CLR 129, 155

<sup>176</sup> AARNET, ‘Submission to NBN National Broadband Network: Regulatory Reform for 21<sup>st</sup> Century Broadband’, 3 May 2010, 4 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0009/115398/AARNet.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0009/115398/AARNet.pdf) (viewed 24/06/2010) Also, for the NBN Co Limited’s most recent plan see – NBN Co Limited, ‘NBN Co Consultation Paper: Connecting to the National Broadband Network (Fibre Network)’, October 2010 <http://www.nbnco.com.au/wps/wcm/connect/9d43058044799af9a280abc72ea64545/Connecting+to+t he+Fibre+Network.pdf?MOD=AJPERES&CACHEID=9d43058044799af9a280abc72ea64545> (viewed 02/12/2010) consultation only closed on 25 November 2010 and as yet the results of that consultation are not available. For an overview of the NBN’s timeline and critical dates, see – Note

152, NBN Company Limited, 11-13

<sup>177</sup> Note 35, Althaus *et al*, 7



regulatory issues also is beyond the scope of the thesis.<sup>178</sup> Likewise, issues specific only to Telstra, the current main network supplier, are not considered. This includes issues that will need to be addressed as the NBN Co Limited and Telstra work towards finalising their ‘Heads of Agreement’.<sup>179</sup> The proposed policies, depending how and if they are implemented, may make some of the recommendations in Chapter 6 redundant. If the agreement with Telstra and the NBN Co comes to fruition then other recommendations also may be made redundant. These matters have not yet been finalised and as such are not able to be addressed by the thesis.

Cost clearly will impact upon the successful delivery of the NBN. However specific issues as to the cost of implementation,<sup>180</sup> the method of calculation of cost; and the actual cost of access by consumers,<sup>181</sup> although impacting on the NBN<sup>182</sup> are beyond the scope of the thesis. The internet is a vital tool for health service delivery. A consideration of such issues also is beyond the scope of the thesis. Finally, the thesis will identify the importance of the internet for education and government services and participation. However, a detailed consideration of all relevant educational and social impacts of the NBN is not undertaken.

## J. Conclusion

As Mitchell envisaged,<sup>183</sup> broadband is a new means of communication that is used for domestic purposes as well as for business purposes. Broadband however is not just “*a means of rapidly surfing the internet*”.<sup>184</sup> The importance of broadband to the internet economy was acknowledged by world leaders, including Australia’s Senator

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<sup>178</sup> For an overview of previous reviews of the regulation of the telecommunications industry see Note 23, Glasson Report, Appendix F

<sup>179</sup> NBN Co Limited, ‘NBN Co and Telstra reach heads of agreement’, Media Release, 20 June 2010 – “*Heads of Agreement signed leading to negotiations of contract in coming months.*” [http://www.nbnco.com.au/content/upload/files/Press\\_Releases/NBNCo\\_MediaRelease\\_20.06.2010-TelstraHeadsOfAgreement.pdf](http://www.nbnco.com.au/content/upload/files/Press_Releases/NBNCo_MediaRelease_20.06.2010-TelstraHeadsOfAgreement.pdf) (viewed 22/06/2010)

<sup>180</sup> As to the costs facing a new market entrant in developing network infrastructure from scratch see – Note 58, Clear Advantage & Assocs

<sup>181</sup> Note 171, AICTEC, 12 – re disparity of pricing throughout Australia, and 18 re data charges; and see – ITU, ‘Measuring the Information Society’ (2009) Telecommunication Development Bureau, 65 re prices disparities internationally [http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009\\_w5.pdf](http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009_w5.pdf) (viewed 07/10/2010)

<sup>182</sup> Cost and risk of investment also may impact upon access and retailers – see section 152AH *Trade Practices Act 1974* re the matters to be taken into account when imposing terms and conditions under the telecommunications access regime.

<sup>183</sup> Note 20, Mitchell

<sup>184</sup> Axia NetMedia Corporation, submission to the ‘Call for submissions on broadband solutions for remote area’, June 30, 2008, 1

Conroy, in June 2008.<sup>185</sup> As telecommunications currently has a key role in the global economy,<sup>186</sup> broadband will also have a significant role to play in its future. For this reason the international community is working towards a transition to the “*greatest practical national coverage and use*” of high-speed broadband.<sup>187</sup>

The development of appropriate high-speed broadband infrastructure is a government priority.<sup>188</sup> Working to enable the greatest coverage however has other non-cost related impediments. The implementation of ubiquitous broadband services in Australia was adversely impacted by the change of federal government that occurred in late 2007. This resulted in existing projects and policies being cancelled.<sup>189</sup> The 2009 changes to the NBN proposal also resulted in loss of time; incurring of irrevocable costs<sup>190</sup> and lost opportunity. Implementation could be further delayed if issues of appropriate regulation and access are not quickly resolved. The disparity of political positions<sup>191</sup> means until fully rolled out the NBN may be cancelled.

The internet economy<sup>192</sup> will play a significant role in Australia’s economic and social future<sup>193</sup> as evidenced by the growth of related services.<sup>194</sup> There needs to be

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<sup>185</sup> Note 2, OECD

<sup>186</sup> Economides N, ‘Public Policy in Network Industries’, *NYU School of L*, Year 2006, Paper 78 <http://lsr.nellco.org/nyu/lewp/papers/78> (viewed 14/12/2007)

<sup>187</sup> Note 2, OECD, 6

<sup>188</sup> Note 18, Middleton, 4

<sup>189</sup> i.e. the Howard government’s [now defunct] OPEL project.

<sup>190</sup> The Auditor-General, ‘The National Broadband Network Request for Proposal Process’, The National Audit Office, Audit Report No.20 2009-10, Performance Audit, 22 [29] “*The RFP process has come at a significant cost ... with costs incurred being in excess of \$30 million. DBCDE’s costs were some \$17 million and the proponents’ costs (where advised) ranged between \$1 million and \$8 million.*” [http://www.anao.gov.au/uploads/documents/2009-10\\_Audit\\_Report\\_20.PDF](http://www.anao.gov.au/uploads/documents/2009-10_Audit_Report_20.PDF) (viewed 05/02/2010)

<sup>191</sup> Abbott T, ‘Budget Reply Speech’, 13 May 2010, *House of Representatives Hansard*, 81 <http://aph.gov.au/hansard/rep/dailys/dr130510.pdf> (viewed 03/06/2010)

<sup>192</sup> Note 2, OECD, 5 “*the Internet Economy ... covers the full range of our economic, social and cultural activities supported by the Internet and related information and communications technologies (ICT)*”; Note 106, ACMA, 191 – “[t]he ability of individuals to adopt and benefit from the internet and associated ... ICT ... has major social and economic benefits, influencing participation in the online economy, education and learning, access to services, political participation and social inclusion.”

<sup>193</sup> Note 27, OECD, 4 – “*The Internet is transforming our economies and societies. It provides an open, decentralised platform for communication, collaboration, innovation, productivity improvement and economic growth. Along with information and communication technologies (ICTs) it promotes closer integration of the global economy and interactions that increase general well-being. As the services it supports become pervasive, ubiquitous and more essential in everyday life, the economy is increasingly the Internet economy.*”

<sup>194</sup> ACMA, ‘Communications Report 2008-09’, 10 November 2009, 16 – “*Digital communications and media are underpinning the development of the digital economy in Australia with internet and internet protocol technologies increasingly underpinning service delivery.*” And at 22 – available data shows that revenue generated by the online information services section is worth \$1.4 billion.

appropriate reflection as to what is required for both the short-term and long-term needs of Australia.<sup>195</sup> As is clear from State projects,<sup>196</sup> implementation of the NBN will require appropriate planning; funding; government, industry and community cooperation;<sup>197</sup> regulation; and, perhaps most importantly, time.<sup>198</sup>

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[http://acma.gov.au/webwr/\\_assets/main/lib311252/08-09\\_comms\\_report.pdf](http://acma.gov.au/webwr/_assets/main/lib311252/08-09_comms_report.pdf) (viewed 17/01/20140)

<sup>195</sup> Note 25, Strutchbury and Maher, – “*Mr Giorno said ‘questions need to be answered’ about Labor’s broadband network because of the amount of spending involved and the apparent lack of any cost-benefit analysis. The government’s proposed fixed fibre technology network required ‘very careful assessment’.*” More recently see the ACCC’s consultation regarding the appropriate number and location of NBN points of interconnect, see – ACCC, ‘National Broadband Network Points of Interconnect: An ACCC Discussion paper on points of interconnect to the National Broadband Network’, October 2010, 6 – “*In considering the number and location of the initial NBN POIs that will best meet the [long-term interests of end-users] ... the ACCC will have regard to the following objectives (consistent with how that test is described under section 152AB(2) of the TPA):*

- *promoting competition in markets for listed services;*
- *achieving any-to-any connectivity in relation to carriage services that involve communication between end-users; and*
- *encouraging the economically efficient use of, and ... investment in, infrastructure by which telecommunications services are supplied and any other infrastructure by which telecommunications services are, or are likely to become, capable of being supplied.*

*Competition is the process of rivalry between firms, where each market participant is constrained in its price and output decisions by the activity of other market participants. The benefits of competition to end-users are lower prices, better quality and a better range of services over time. Any-to-any connectivity, which encompasses the objective of end-users on different networks being able to communicate with each other, is central to the NBN.”*

<http://www.accc.gov.au/content/item.phtml?itemId=952788&nodeId=ba62b7d9c49edbd240976a8d8753fb01&fn=ACCC%20discussion%20paper%20on%20NBN%20POIs.pdf> (viewed 02/12/2010)

Whether or not the proposed number of points of interconnection available to industry is sufficient or desirable, or how competition or compensation issues arising should be addressed, is outside the scope of the thesis. That it will continue to occupy the ACCC, industry and the federal government for some time, however, is clear. See – Roxas R, ‘Feds to decide on NBN’s interconnecting concerns’, *International Business Times*, December 8, 2010 – an announcement is due next week <http://au.ibtimes.com/articles/89811/20101208/feds-to-decide-on-nbn-s-interconnecting-concerns.htm> (viewed 08/12/2010); Durie J, ‘Getting to the point over NBN’, *Business with The Wall Street Journal*, December 8, 2010 – “*The ACCC also queried why there was a need to limit the POIS when competitive infrastructure already existed with the likes of Optus and NextGen providing alternatives along with Telstra.*” <http://www.theaustralian.com.au/business/getting-to-the-point-over-nbn/story-e6frg8zx-1225967265293> (viewed 08/12/2010). In any event the ACCC’s final report is yet to be presented to Cabinet. See – Lee T and M Bingemann, ‘ISPs, telcos may file NBN compo claims’, *The Australian*, December 08, 2010 – “*The potential for litigation puts further pressure on the government to accept the Australian Competition & Consumer Commission’s advice that NBN Co should adopt the industry-backed position on the points of interconnect. The ACCC’s advice is set to be presented to cabinet this week for final consideration.*” <http://www.theaustralian.com.au/news/nation/isps-telcos-may-file-compo-claims/story-e6frg6nf-1225967249352> (viewed 08/12/2010)

<sup>196</sup> For example South Australia commenced its broadband project in 2003 (Broadband Development Fund [http://www.informationeconomy.sa.gov.au/broadband/broadband\\_development\\_fund](http://www.informationeconomy.sa.gov.au/broadband/broadband_development_fund) (accessed 09/06/2009) and yet more of its projects are currently suspended than there are completed or under construction. See ‘SA Regional Community Broadband Projects Status’ updated as at May 2008 [http://www.informationeconomy.sa.gov.au/\\_data/assets/image/0017/5048/BroadbandProjectsStatus\\_Map\\_May28\\_2008.jpg](http://www.informationeconomy.sa.gov.au/_data/assets/image/0017/5048/BroadbandProjectsStatus_Map_May28_2008.jpg) (accessed 22/11/2010). And yet in the early 1990s it had clearly identified ‘the rural isolated’ as one of eight disadvantaged target groups, see – Note 162, Parliament of Australia, 47

<sup>197</sup> A need recognised by the Federal Government, see – Note 158, DBCDE, 7 – “*Developing Australia’s digital economy requires action by government, industry and the community as a whole.*”

<sup>198</sup> That policy development takes time is evident from the long range planning undertaken. See –

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Telecom, 'Telecom 2000: An exploration of the Long Term Development of Telecommunications in Australia', 1976 – referred to in Note 96, Parliament of Australia, 29. Also see Ysilanti D and S Paltridge, 'OECD Broadband Market Developments', in 'Frontiers of Broadband, Electronic and Mobile Commerce', R Cooper and G Madden (Eds) (Physcia-Verlag, Heidelberg, 2004) 309

## CHAPTER 2 – UNDERPINNING THE INTERNET ECONOMY

*“He who thinks and thinks for himself, will always have a claim to thanks; it is no matter whether it be right or wrong, so as it be explicit. If it is right, it will serve as a guide to direct; if wrong, as a beacon to warn.”*<sup>1</sup>

### A. Introduction

Enabling all Australians to be engaged in the internet economy will be vital for its future. The starting point for enabling this engagement by individual end users will be to address access and skills discrepancies across the Australian population. How policy and legislation can assist in this purpose, and whether current regimes are adequate, will be addressed in later chapters. The function of this chapter is to lay the foundation upon which later discussion is based and from which any recommendations for change may be supported. It does this by identifying the underpinnings of the internet economy.

This chapter considers the theories and principles underpinning the internet and thus the internet economy. These fall under the headings of: innovation, rights, openness and neutrality. It examines the overlap between these theories and principles. This examination reveals that, while each theory and principle has a different focus and application, all are relevant to individual end users and have them at their core. The outcome of this examination is the identification of the concept of *connectedness*. The relationship between the internet and *connectedness* will be explored further in Chapter 3.

Networks to enable the internet economy are vital for the long-term sustainability of that economy.<sup>2</sup> Nonetheless, it is not just physical networks that underpin the internet economy. How the physical networks are used by individuals to create their own

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<sup>1</sup> Jeremy Bentham (1748-1832)

<sup>2</sup> OECD, ‘The Seoul Declaration for the Future of the internet Economy’ OECD Ministerial Meeting on the Future of the internet Economy, Seoul, Korea, 17-18 June 2008, 6 “*WE STATE our common desire to promote the Internet Economy and stimulate sustainable economic growth and prosperity by means of policy and regulatory environments that support innovation, investment, and competition in the information and communications technology (ICT) sector. We will work with the private sector, civil society and the Internet community to secure the ICT networks that underpin the Internet Economy as well as to take measures to protect the users of the Internet Economy, including the necessary cross-border co-operation.*” <http://www.oecd.org/dataoecd/49/28/40839436.pdf> (viewed 16/01/2010)

networks, and communities, is equally important for the internet economy. Consequently, the internet economy also will be underpinned by fundamental theories and principles that are relevant for access to the internet. In turn, the growth of the internet economy will promote the recognition and protection of a variety of individual rights.<sup>3</sup>

A business' ability to succeed in the internet economy will depend upon the skills and capacity of its employees. As Florida observed "*future economic success depends on our ability to harness the creative talents of each and every member of the workforce*".<sup>4</sup> This workforce is referred to by other authors as human capital,<sup>5</sup> and by the thesis as individual end users. In the internet economy, for a business to make the best use of its individual end users, the end users must have the skills necessary to enable them to connect with others and operate via the internet. It is accepted that businesses' needs and desires may be fundamentally different from that of the individual end user. Nevertheless it remains, although at law they are a separate legal entity, a business cannot operate without the input of individual end users. It cannot operate independently from them. Thus businesses' capacity to engage in the internet economy is limited to employees' engagement capacity.

In the internet economy, an individual's capacity is linked to their use of technology and in particular their ability to use and engage via the internet. Reports confirm that "[u]se of the internet is typically the first step to engagement with the digital economy".<sup>6</sup> Enabling all Australians to engage effectively in the internet economy will require them to be able to access internet services and content. As individual end users become better able to engage in the internet economy, so too does business. Ensuring individual end users' capacity will therefore be significant for economic growth.<sup>7</sup> Many Australians are already able to access internet content and services.

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<sup>3</sup> Note 2, Seoul Declaration, 4 "*The further expansion of the Internet Economy will bolster the free flow of information, freedom of expression, and protection of individual liberties, as critical components of a democratic society and cultural diversity.*"

<sup>4</sup> Florida R, *Who's Your City? How the Creative Economy is making where to live the most important decision of your life* (Basic Books, New York, 2008) 99

<sup>5</sup> Cutler T, '*Venturous Australia – building strength in innovation*', Cutler & Company Pty Ltd, 29 August 2008, 62 [http://www.innovation.gov.au/innovationreview/Documents/NIS\\_review\\_Web3.pdf](http://www.innovation.gov.au/innovationreview/Documents/NIS_review_Web3.pdf) (viewed 02/04/2010); Note 8, Florida, 6

<sup>6</sup> ACMA, '*Australia in the Digital Economy – Report 2: Online Participation*', May 2009, 6 [http://www.acma.gov.au/webwr/aba/about/recruitment/online\\_participation\\_aust\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/aba/about/recruitment/online_participation_aust_in_digital_economy.pdf) (viewed 07/01/2010)

<sup>7</sup> Florida R and C Mellander, '*Skill and Cross-National Economic Performance*' (2010) *CESIS*

They use one of the internet's underlying networks for their employment and/or personal use.<sup>8</sup> Similarly most Australian school students have access to the internet at school. Nevertheless, even with access, not all Australians are able to use the related internet technology as effectively or efficiently as others. As Papandrea observed, although most Australians are “*eager adopters of new technologies*”<sup>9</sup> this does not apply to all Australians or all technologies. There may be a variety of reasons for this including, as the ACMA noted, some Australians find it difficult to “*keep up with the rapid pace of technological change*”.<sup>10</sup>

## B. Innovation

Innovation is recognised as being important for the future as it is “*an engine of economic growth*”.<sup>11</sup> More recently the federal government identified that “[i]nnovation is the key to making Australia more productive and more competitive”.<sup>12</sup> What then is innovation? One meaning provided by the Macquarie Dictionary is that ‘innovation’ is “*the act of innovating*”.<sup>13</sup> This definition requires that innovation must be understood in the context of doing something. That is, it must be considered in practice.

To a certain extent, the meaning given to the term innovation will depend on the relevant author and the school of thought to which they belong.<sup>14</sup> Creativity clearly

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*Electronic Working Paper Series, Paper 220, 5*  
[http://cesis.abe.kth.se/documents/CESISWP220\\_000.pdf](http://cesis.abe.kth.se/documents/CESISWP220_000.pdf) (viewed 06/06/2010)

<sup>8</sup> Kariyawasm R, *International Economic Law and the Digital Divide: A New Silk Road* (Edward Elgar Publishing Limited, Cheltenham, 2007) 19. These networks are more than just the infrastructure. They include the social networks created by groups and individuals. See – Shirky C, *Here Comes Everybody: The Power of Organizing Without Organizations* (The Penguin Press, New York, 2008) 1 -24, *Chapter 1 – It takes a village to find a phone*

<sup>9</sup> Papandrea F, ‘Digital Three-Card Trick’ (2000) *Review* 12, 12

<sup>10</sup> Note 6, ACMA, 84 – 82 per cent of users; with the other main barrier to internet use (34 per cent) being that users “*were intimidated by its complexity.*” Shapiro H, ‘Final Report: topic report 4 – Conclusions and recommendations based on reviews and findings’, *Danish technological Institute*, April 2009, 5 – “*developments in ICTs could lead to a second digital divide associated with higher intensity and quality in internet use and skills for critical assessment of information sources.*” [http://ec.europa.eu/information\\_society/eeurope/i2010/docs/benchmarking/dl\\_topic\\_report\\_4.pdf](http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/dl_topic_report_4.pdf) (accessed 29/10/2010)

<sup>11</sup> Mytelka L and K Smith, ‘Policy learning and innovation theory: an interactive and co-evolving process’ (2002) 31 *Research Policy*, 1467, 1471

<sup>12</sup> Commonwealth of Australia, ‘Powering Ideas: An Innovation Agenda for the 21<sup>st</sup> Century’, 2009, at p. 1 [http://www.innovation.gov.au/innovationreview/Documents/PoweringIdeas\\_fullreport.pdf](http://www.innovation.gov.au/innovationreview/Documents/PoweringIdeas_fullreport.pdf) (accessed 01/04/2010)

<sup>13</sup> The Macquarie Dictionary, 2<sup>nd</sup> Revised Edition, 1989

<sup>14</sup> Terziovski M, ‘Introduction’ in M Terziovski (Ed) *Building Innovation Capability in Organizations: An International Cross-Case Perspective* (Imperial College Press, London, 2007) 1 – “*The study of innovation appears in different literatures such as sociology, education, management,*

plays a role in the internet economy.<sup>15</sup> Creativity however is not the same as innovation.<sup>16</sup> Defining the term innovation becomes more complicated in practice. The meaning, or emphasis, given to the term also depends on the particular sector and/or type and size of business being examined.<sup>17</sup> Recognising innovation is perhaps easier than defining it. Having provided that disclaimer, in order to try to define innovation it is necessary to return to last century.

## 1. Defining innovation

At the start of the 20<sup>th</sup> Century innovation was defined as the application of something new.<sup>18</sup> However newness in the purest sense may no longer be as important as it once was. Innovation also can be a cumulative process as new ideas build on existing ideas.<sup>19</sup> That is, innovation is defined as occurring by incremental measures, where the measures occur continuously.<sup>20</sup> As Morrison and Potts considered “‘[i]nnovation’ is the translation of ideas into new sources of economic value”.<sup>21</sup> The end result, although perhaps a new economic source, does not necessarily arise from a new idea and can develop over time. As Lundvall identified, “*innovation is a ubiquitous phenomenon ... [such that] at all times, we expect to find on-going processes of learning, searching and exploring, which result in new products, new techniques, new forms of organisation and new markets*”.<sup>22</sup> This view is confirmed by other definitions, including that innovation is “*the introduction of new elements or the new combination of old*

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*etc.*”

<sup>15</sup> Howkins J, *Creative Ecologies: Where Thinking is a Proper Job* (University of Queensland Press, St Lucia, 2009) 10

<sup>16</sup> Note 15, Howkins, 10 – “*Creativity is not the same as innovation. Creativity is internal, personal and subjective, whereas innovation is external and objective. Creativity often leads to innovation, but innovation seldom leads to creativity.*”

<sup>17</sup> Cobbenhagen J, *Successful Innovation: Toward and New Theory for the Management of Small and Medium-sized Enterprises* (Edward Elgar, Cheltenham, 2000) 25

<sup>18</sup> Schumpeter J, *The theory of economic development* (Rutgers, New Jersey, 2004, originally printed 1911, English translation) xix “*The strategic stimulus to economic development in Schumpeter’s analysis is innovation, defined as the commercial or industrial application of something news – a new product, process, or method of production; a new market of source of supply; a new form of commercial, business, or financial organization.*” [references omitted]

<sup>19</sup> Lundvall B, ‘Introduction’ in B Lundvall (Ed) *National Systems of Innovation: Toward a Theory of Innovation and Interactive Learning* (Anthem Press, London, 2010) 9 – “*The first step in recognising innovation as an ubiquitous phenomenon is to focus upon its gradual and cumulative aspects ... here, Schumpeter’s choice of terminology, where ‘innovations’ and ‘new combinations’ are used as synonyms, is enlightening. Almost all innovation reflects already existing knowledge, combined in new ways.*”

<sup>20</sup> Note 14, Terziovski, 2

<sup>21</sup> Morrison K and J Potts, ‘Industry policy as innovation policy’ in G Hearn and D Rooney (Eds) *Knowledge policy: challenges for the 21st century* (Edward Elgar, Cheltenham, 2008) 166

<sup>22</sup> Note 19, Lundvall, 8



*elements in industrial organizations*".<sup>23</sup> Or, as others define it, innovation is "variations on known themes"<sup>24</sup> which includes taking something from one market and redeveloping it for another. In the latter case, the clear communication of information and ideas, often between collaborators, is important.

For the purpose of the thesis, innovation may be defined as the development of an end product that is novel; even if the underlying parts or the process used to develop the product is not. Having defined innovation, what are the factors that will influence whether or not it occurs?

## **2. Innovation theory**

Innovation theory, however, as fathered by economist Schumpeter last century,<sup>25</sup> remains relevant today.<sup>26</sup> Schumpeter questioned what creates economic development and answered it with innovation.<sup>27</sup> As Mytelka and Smith discuss, "innovation theory over the past 20 years has involved a major reformulation, with innovation no longer seen primarily as a process of discovery ... but rather as a non-linear process of learning".<sup>28</sup> From a sociology base, albeit with an economic output,<sup>29</sup> innovation is referred to as "a phenomenon which is partly rational, [and] partly an unpredictable social process".<sup>30</sup> The internet is both a business tool and a social environment.<sup>31</sup> Innovations from both economic and social sources will be relevant to the future of the internet economy.

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<sup>23</sup> Sundbo J, *The Theory of Innovation: entrepreneurs, technology and strategy* (Edward Elgar Publishing Limited, Cheltenham, 1998) 1

<sup>24</sup> Note 17, Cobbenhagen, 27 – "From an economist's point of view [defining innovation as being 'new to the world'] might perhaps be the best criterion to study. However, innovation in the majority of firms stops well short of [this]"

<sup>25</sup> Sundbo J, *The Strategic Management of Innovation* (Edward Elgar Publishing Limited, Cheltenham, 2001) 12

<sup>26</sup> Note 15, Howkins, 105-106 – Howkins asserts that the theory that comes closest to being the "growth model for an ecology where imagination and learning are more important than physical resources" is Schumpeter's Theory of Economic Development

<sup>27</sup> Note 25, Sundbo, 12; and see Note 18, Schumpeter

<sup>28</sup> Note 11, Mytelka and Smith, 1467

<sup>29</sup> Note 25, Sundbo, 4 – "innovation, which is considered to be behavioural, and thus sociological. However, the result of the behaviour is economic."

<sup>30</sup> Note 25, Sundbo, 1

<sup>31</sup> ACMA, 'Technology developments in the digital economy', August 2010, 30 – as evidenced by the increase in the number of social media applications and users access social network sites [http://www.acma.gov.au/webwr/\\_assets/main/lib311925/technology\\_developments\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/_assets/main/lib311925/technology_developments_in_digital_economy.pdf) (accessed 09/10/2010)

Innovation theory has been used to examine the activities in the manufacturing and technology industries, as well as more recently regarding the provision of services.<sup>32</sup> Innovation theory (using the term ‘theory’ as a collective to recognise there exist many theories) considers innovation by means of examining the factors that create or enable it.<sup>33</sup> This varies between industries. Adopting a modified version of Metz *et al*’s list<sup>34</sup> the factors that enable innovation to occur in the internet economy include: the market, the available technologies, the level of government regulation, the available resources and infrastructure, business strategies and the level of inter-business collaboration, and individual end users.

### 3. Innovation in practice

During the 1990s<sup>35</sup> there was “*an explosive wave of innovation*” fuelled by the then newly commercialised internet.<sup>36</sup> One impact of this explosion of innovation is that although previously most data (i.e. information) was located on an individual’s personal computer, it now is located, and can be just as easily accessed “*somewhere on the Internet*”.<sup>37</sup> As a consequence, innovation by means of sharing of information and participation and collaboration with international colleagues although still occurring face-to-face<sup>38</sup> is now more easily achieved at a distance.<sup>39</sup>

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<sup>32</sup> Drejer I, ‘Identifying innovation in surveys of services: A Schumpeterian perspective’ (2004) *Research Policy*, 33, 551

<sup>33</sup> Note 23, Sundbo, 4 – “*Looking at international innovation literature as a whole, we find a variety of views of the process of innovation and the factor that creates innovation. Some theories focus on technological development, technical research and R&D functions in companies ... Other theories focus on the individuals who create and develop new elements ... Other theories again attack the issues from the market side*”

<sup>34</sup> Metz I, M Terziovski and D Samson, ‘Development of an Integrated Innovation Capability Model’ in M Terziovski (Ed) *Building Innovation Capability in Organizations: An International Cross-Case Perspective* (Imperial College Press, London, 2007) 21-40 – external factors include government regulation, environmental regulation, e-Commerce regulation, industry, customers and competitors, and a business’ partnerships (the other businesses it operates with). Internal factors include – size, business’ strategy, structure, the type of organization, excess resources, culture and climate, internal and external communications, social structures, people and human resource management.

<sup>35</sup> For a consideration of the evolution of innovation from the 1930s see – Note 14, Terziovski, 3

<sup>36</sup> West J, ‘Policy Challenges of Open, Cumulative, and User Innovation’ (2009) 30 *Journal of Law & Policy*, 17, 32 and 40

<sup>37</sup> Zittrain J, ‘The Generative Internet’ (2006) 119(7) *HarvLRev* 1974, 1995 <http://hhr.rubystudio.com/media/pdf/zittrain.pdf> (viewed 09/04/2010)

<sup>38</sup> Maslen G, ‘Knowledge Networks’ (2010) May *About the House*, 36, 36 – the article discusses the international collaboration process which devised “*a method for measuring the weight of a single atom of hydrogen*”. It also considers the impediments to that collaboration process, i.e. Australian visa requirements.

<sup>39</sup> Note 14, Terziovski; although not necessarily a replacement for face to face collaborations. See – Perry M, K O’Hara, A Sellen, B Brown and R Harper, ‘Dealing with Mobility: Understanding Access

Nonetheless, even with the ease by which information now may be created and shared, the cost of obtaining information can restrict a business' potential for economic growth.<sup>40</sup> Without the ability to obtain information, a business' ability to innovate may be restricted. Once cost is not an issue, information asymmetries still can adversely affect the innovation process. When access to information is restricted for any reason, this can impact on the capacity to innovate.<sup>41</sup> The “*ability [of a business] to continuously innovate is of critical importance to the long-term success of the organization*”.<sup>42</sup> Collaboration and knowledge transfer,<sup>43</sup> and the ability to freely exchange information, are vital components of the innovation process. The ability to share information is crucial for economic growth.<sup>44</sup> Innovation by collaboration is not a recent phenomenon;<sup>45</sup> however, it is one that receives specific support. National programmes to improve interactions between parties “*recognise the importance of informal flows of knowledge and access to technical networks; [and from this] supportive information technology policies and infrastructures are ... implemented*”.<sup>46</sup>

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Anytime, Anywhere' (2001) 8(4) *ACM Transactions on Computer-Human Interaction*, 323, 325 – “*It is well established that face-to-face access to colleagues is different, and usually much richer, than remote collaboration. Thus there are different kinds of access to people, and we need to look carefully at whether new technologies can deliver the necessary support for the task at hand. Similarly, if we look at access to documents and information, different kinds of tasks require different kinds of access. For example, the kind of access required to exchange a document as an email attachment is different from the level of access necessary to allow editing the document.*”

<sup>40</sup> Note 12, Commonwealth of Australia, 49

<sup>41</sup> von Hippel E, *Democratizing Innovation* (MIT Press, London, 2005) 80 – “*The ‘private investment model’ of innovation assumes that innovation will be supported by private investment if and as innovators can make attractive profits from doing so. In this model, any free revealing or uncompensated ‘spillover’ of proprietary knowledge developed by private investment will reduce the innovator’s profits. It is therefore assumed that innovators will strive to avoid spillovers of innovation-related information.*” 81 – “*Innovators seeking to protect innovations they have developed as their intellectual property must establish some kind of monopoly control over the innovation-related information. In practice, this can be done either by effectively hiding the information as a trade secret, or by getting effective legal protection by patents or copyrights.*”

<sup>42</sup> Note 34, Metz *et al*, 19

<sup>43</sup> Note 14, Terziovski, 10-12

<sup>44</sup> Whitt R, ‘Evolving Broadband Policy: Taking Adaptive Stances to Foster Optimal Internet Platform’ (2009) 17 *CommLaw Conspectus*, 417, 420 – “*knowledge and technology are not just outputs of the economy, but also essential inputs that drive economic growth and countless other social benefits. Further, game-changing disruptive innovations tend to emerge from the edges of the Net. These innovations in turn create far-reaching benefits to unaffiliated entities throughout the network, in the form of economic innovation ‘spillovers,’ and through outputs serving non-pecuniary personal, social, and democratic values. This sort of edge-driven, broadly beneficial, mutually reinforcing activity thrives in an environment of open ‘generativity’ where no market player – whether government or firm – unilaterally can pick winners and losers.*” [references omitted]

<sup>45</sup> Note 36, West, 39 and 40 – “*collaboration, however, has been common in industrial districts for centuries, and although records are scarce, it likely existed within medieval guilds before that.*”

<sup>46</sup> OECD, ‘National Innovation Systems’, 1997, 41 <http://www.oecd.org/dataoecd/35/56/2101733.pdf>

Management of information is an important aspect of the innovation process.<sup>47</sup> In the knowledge (internet) economy, no longer is information non-rivalrous.<sup>48</sup> Information now is as vital to the economy as “oil and ... electricity are to transportation”.<sup>49</sup> Digital technologies have revolutionised the available means of creating and accessing information and its place in society. Digital technologies also have led to innovations in information creation. This new type of information – digital information<sup>50</sup> – typically includes “the *eservices, content and applications of the Internet provider*”.<sup>51</sup> It also includes the content created by formerly static information receivers (i.e. the individual end users).

The internet enables access to this digital information irrespective of where that information is located<sup>52</sup> or the intention of its creator.<sup>53</sup> Digital information unlike real-world information is not static. Digital information uniquely flows both ways – from creator to consumer and *vice versa*.<sup>54</sup> In this regard the internet is an enabler of individual creation, as it facilitates the sharing of information, and the distribution of other materials.<sup>55</sup> Australians are generally able to access this information by a variety of means, such as digital subscriber lines, hybrid fibre coaxial, wireless broadband, satellite and optical fibre.<sup>56</sup> As will be considered in the thesis this does not mean all can access or from anywhere.

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(viewed 08/04/2010)

<sup>47</sup> Note 12, Commonwealth of Australia, 1

<sup>48</sup> Note 11, Mytelka and Smith, 1471

<sup>49</sup> Julien P, *A theory of local entrepreneurship in the knowledge economy* (Edward Elgar, Cheltenham, 2007) 142

<sup>50</sup> Peña-López I, ‘Measuring digital development for policy-making: Models, stages, characteristics and causes’, PhD Thesis (2009) [mimeo], 45 – “*For the first time ... information has become input, capital and output*” [http://ictlogy.net/articles/20090908\\_ismael\\_pena-lopez\\_measuring\\_digital\\_development.pdf](http://ictlogy.net/articles/20090908_ismael_pena-lopez_measuring_digital_development.pdf) (viewed 15/01/2010)

<sup>51</sup> Lovelock P and J Ure, ‘The New Economy: Internet Telecommunications and Electronic Commerce?’ in L Lievrouw and S Livingstone (Eds), *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 359

<sup>52</sup> Slater D, ‘Social Relationships and Identity Online and Offline’ in L Lievrouw and S Livingstone (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002)

<sup>53</sup> ‘*The Habermas Reader*’, W Outhwaite (Ed) 2<sup>nd</sup> ed (Policy Press, Cambridge UK, 2000) 59

<sup>54</sup> Quiggin J and J Potts, ‘Economics of Non-market Innovation and Digital Literacy’ (2008) 128 *Media International Australia incorporating Culture & Policy*, 144, 146

<sup>55</sup> ACMA, ‘Telecommunications Today – Report 6: Internet activity and content, September 2008, 28 [http://www.acma.gov.au/webwr/\\_assets/main/lib310210/report\\_6\\_telecommunications\\_today.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310210/report_6_telecommunications_today.pdf) (viewed 07/01/2010)

<sup>56</sup> ACMA, ‘Communications Report 2008-09’, 10 November 2009, 33-35. A well as over the existing copper network. [http://acma.gov.au/webwr/\\_assets/main/lib311252/08-09\\_comms\\_report.pdf](http://acma.gov.au/webwr/_assets/main/lib311252/08-09_comms_report.pdf) (viewed 17/01/2014)

A unique aspect of digital information is that any copy, unlike analogue materials, is of equal quality to the original.<sup>57</sup> This quality of the copy by itself raises separate concerns, particularly for content such as music.<sup>58</sup> These concerns arise regarding the illegal copying of music. Copyright holders have (allegedly) experienced a decrease in physical sales because of unauthorised sharing of illegally copied songs via the internet.<sup>59</sup> Such sharing however is vital for innovation. As Lee *et al* observed, “[h]uman capital, creativity, and diversity operate jointly in the production of innovation”.<sup>60</sup> Enabling innovation in the internet economy will require businesses to be able to engage and communicate both internally and externally.<sup>61</sup> For that reason innovation is no longer the domain of one firm or manufacturer. In addition to the input of the individual end user as employee, sharing of information and ideas in a collaborative manner with business competitors may have a significant impact on innovation.<sup>62</sup>

Although innovation “*has always occurred, whether government industry and innovation policies exist or not*”,<sup>63</sup> there is a role for government in the process. This is to support researchers by promoting innovation and entrepreneurship.<sup>64</sup>

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<sup>57</sup> Cradduck L and A McCullagh ‘Designing Copyright – TPM: A Mutant Digital Copyright’ (2005) *International Journal of Law and Information Technology*, 13(2), 155, 165

<sup>58</sup> Lessig L, *Cyberspace’s Architectural Constitution*, 12 June 2000 <http://cyber.law.harvard.edu/works/lessig/www9.pdf> (viewed 22/05/2010); Fisher W ‘*Digital Music: Problems and Possibilities*’, Harvard Law School’s Berkman Centre for Internet and Society, October 10, 2000 <http://www.law.harvard.edu/faculty/ffisher/Music.html> (viewed 22/05/2010)

<sup>59</sup> *Recording Industry Association of America Inc (RIAA) v Diamond Multimedia Systems Inc* 180 F 3d 1072 (9<sup>th</sup> Cir 1999) Opinion by O’Scannlain, Circuit Judge “*RIAA ... predicts losses ... will soon surpass \$300 million*”

<sup>60</sup> Lee S, R Florida and G Gates, ‘Innovations, Human Capital, and Creativity’ (2010) 14(3) *International Review of Public Administration*, 13, 14

<sup>61</sup> Note 14, Terziovski, 10-12

<sup>62</sup> von Hippel E, *The Sources of Innovation* (Oxford University Press, Oxford, 1988) 6 – “*Informal know-how trading is essentially a pattern of informal cooperative R & D. It involves routine and informal trading of proprietary information between engineers working at different firms-sometimes direct rivals. (Know-how is the accumulated practical skill or expertise that allows one to do something smoothly and efficiently ... Firms often consider a significant portion of such know-how proprietary and protect it as a trade secret.) Know-how trading exists in a number of industries ... and it seems to me to be an important phenomenon.*”

<sup>63</sup> Note 21, Morrison and Potts, 166

<sup>64</sup> Parliament of Australia, ‘Australia’s International Research Collaboration’, Report of the House of Representatives Standing Committee on Industry, Science and Innovation, June 2010, 82 “*Recommendation 17 – The Committee recommends that the Minister for Innovation, Industry, Science and Research be given full ministerial responsibility for supporting international research collaboration.*” And 83 – “*The overwhelming weight of evidence supports more involvement from the Australian Government in supporting research collaboration. It is clear that the research community does not wish to have the government take a heavy handed approach, dictating the direction of Australian research from above. Rather ... [that] ... a body to be established to centralise the knowledge surrounding research collaboration and to develop strategies to support Australian*

Government can “*help develop rich and complex networks, beyond traditional networks, and to forge better connections between entrepreneurs and these rich networks*”.<sup>65</sup> Policy also has a role to play by itself, for example it has been used to sustain and grow “*Australia’s rural industries*”.<sup>66</sup> In the past couple of decades, government policy has been recognised as being “*central ... for achieving outcomes that lie well beyond the field of ... innovation alone*”.<sup>67</sup>

#### **4. Innovation in the user context**

“*Innovation plays a key role in driving productivity and broader prosperity*”<sup>68</sup> and is a recognised benefit of competitive markets.<sup>69</sup> However, innovation is not just about financial issues. Nor is it just about the level of a business’ place in the market. At the “*heart of knowledge production*”<sup>70</sup> are the individual end users. Aside from the ability to enable communication between individual end users, the internet enables end users to form networks and to innovate collaboratively through online communities.<sup>71</sup> One of the key factors of interorganisational innovation is that of self-motivated “*user-contributed innovation*”.<sup>72</sup>

Many innovations rely on the specific skills of individuals for their development.<sup>73</sup> As von Hippel observed, “*studies show quantitatively that some of the most important and novel products and processes have been developed by user firms and by individual users*”.<sup>74</sup> The capabilities of a business thus are tied up with the “*expertise and skills of people and groups within the organization*”.<sup>75</sup> Also, as “*human capital theorists have shown ... economic growth [of regions] is*

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*researchers in establishing and maintaining research collaboration.*”  
<http://www.aph.gov.au/house/committee/isi/intresearch/report/fullreport.pdf> (viewed 29/08/2010)

<sup>65</sup> Note 49, Julien, 243

<sup>66</sup> Note 5, Cutler, Annexure 11

<sup>67</sup> Note 11, Mytelka and Smith, 1468

<sup>68</sup> Note 5, Cutler, 149

<sup>69</sup> Note 24, Soros, 293

<sup>70</sup> Note 41, von Hippel E, 170

<sup>71</sup> Chan, H, ‘Linkage Community Based Innovation and Speed to Market: The Mediating Role of New Product Development Process’, (2010) 2(4) *The International Journal of Organizational Innovation*, 49, 57

<sup>72</sup> Note 36, West, 20; Note 8, Shirky, 120

<sup>73</sup> Harty C, ‘Implementing innovation: designers, users and actor-networks’ (2010) 22(3) *Technology Analysis & Strategic Management*, 297, 299

<sup>74</sup> Note 41, von Hippel, 22

<sup>75</sup> Note 17, Cobbenhagen, 48

*closely associated with concentrations of highly educated people*".<sup>76</sup> Thus a business' future is in the hands of its individual end users.

Improving the innovation capacity of a business may require an investment by the business in its employees. This could include investment in business-specific training for employees,<sup>77</sup> or enabling them to acquire general internet skills. As Metz *et al* identified, "[h]aving people with the technical and professional knowledge, keeping knowledge in-house and being able to leverage from it by sharing it appear to be important factors to innovation ... [with] the level of education of a population ... related to [its] capacity to innovate".<sup>78</sup>

As Baldwin *et al* note, innovations by individuals are common.<sup>79</sup> Individual end users thus are important participants in the innovation process.<sup>80</sup> Bogers *et al* even go so far as to state that "*users are the most fundamental sources of innovation*".<sup>81</sup> In many industries, individual innovations result in commercially viable products that would not exist without an individual's input.<sup>82</sup> However, not all individual innovations are for either immediate or future commercial benefit. In some instances the individual end user will provide their services for free as, for example, in the case of the open-source software development communities.<sup>83</sup> In others, the individual end user chooses to innovate for themselves, rather than use an existing (tangible) product, because of the level of satisfaction they derive from the process. Von Hippel noted "*to the extent that individual user-innovators*

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<sup>76</sup> Florida R, *Cities and the Creative Class* (Routledge, London, 2005) 38

<sup>77</sup> Note 46, OECD, 42

<sup>78</sup> Note 34, Metz *et al*, 33

<sup>79</sup> Baldwin C, Hienert C, and von Hippel E, 'How user innovations become commercial products: A theoretical investigation and case study' (2006) 35(9) *Research Policy*, 1291, 1293

<sup>80</sup> Awa H, B Nwibere and B Inyang, 'The uptake of electronic commerce by SMES: A Meta Theoretical Framework expanding the determining constructs of TAM and TOE Frameworks' (2010) 6(1) *Journal of Global Business and Technology*, 1, 2; also see – Oliveira P and E von Hippel, 'Users as Service Innovators: The Case of Banking Services', August 24, 2009, *MIT Sloan Research Paper No. 4748-09*, <http://ssrn.com/abstract=1460751> (viewed 12/08/2010). That individual end users are innovators is not a recent realisation. See – Note 62, von Hippel, 4 – "*In each study ... the innovator is defined as the individual or firm that first develops an innovation to a useful state, as proven by documented, useful output.*"<sup>13</sup> – "*As my students and I worked over the summer, we began to see that there was a clear answer to our question regarding the source of innovation in the field of scientific instruments ... it emerged that users were the developers of fully 77% of all the innovations we studied.*"

<sup>81</sup> Bogers M, A Afuah and B Bastian, 'Users as Innovators: A Review, Critique, and Future Research Directions' (2010) 36(4) *Journal of Management*, 857, 869

<sup>82</sup> Note 79, Baldwin *et al*, 1307 – in the example used by the authors of kayak helmets the commercial worth of the product is inextricably linked with the innovativeness of the creator.

<sup>83</sup> Lakhani K and J Panetta, 'The Principles of Distributed Innovation' (2007) 2(3) *Innovations: Technology, Governance, Globalization*, 97, 103

*benefit from the process of developing or modifying a product as well as from the product actually developed, they are likely to innovate even when the benefits expected from the product itself are relatively low”.*<sup>84</sup>

Innovation to an extent relies on the willingness of individuals to try something new. This will require that the individual end user have the skills to experiment. Without the skills to ‘play’ on the internet, individual end users are less likely to experiment and less likely to innovate in the internet economy. As Awa *et al* observed end users’ perceptions of “*ease of use*”<sup>85</sup> of a product will influence the end users’ desire to use/adopt a product. As Awa *et al* also note, end users’ perceptions of how easy a product is to use are directly related to their education and skills capacity.<sup>86</sup> To ensure that a country has ongoing innovation capacity, it is necessary to review the education and skills of the individual end users. These may need upgrading through the processes of interactive learning with a “*national education and training system ... [being] of central importance to the innovation system*”.<sup>87</sup> As Cutler identified, “[h]igh quality human capital is critical to innovation”.<sup>88</sup>

The individual end user is a vital element in the innovation process. When the innovation capacity of others (i.e. businesses, regions and countries) rest on the capabilities of the individual end users, ensuring those users have innovation capacity is crucial for the future.

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<sup>84</sup> Note 41, von Hippel, 6; although as Note 81, Bogers *et al*, 862 observe, selling a product for profit is a benefit

<sup>85</sup> Note 80, Awa *et al*, 9 – “*PEOU measures the prospective user’s assessment of the mental efforts required of the use of a target system*’ (Davis, 1989). *Mental effortlessness demanded by an IT/EC attracts more adoption behaviour whereas Opia (2008) observes that ITs with perceived complexities and steep learning curve are thought risky to adopt and to use.*”

<sup>86</sup> Note 80, Awa *et al*, 13 – “*Another influential variable, personal innovativeness (Agarwal and Prasad, 1998) aligns with professionalism and training/education backgrounds (Awa, 2003). Education, to some extent, serves as an indicator of a person’s value systems, cognitive preferences (Hambrick and Mason, 1984) and determines consistently the receptivity of an innovation (Becker, 1970). All things being equal, the level of education reflects on personal innovativeness and the propensity to seek and try out new information or take risk (innovation). Literature suggests that people with weak education exhibit high level of risk aversion because they are often threatened by change or new approach to issues and as such invest only when the air of doubts may have been cleared (imitation) by prime movers/innovators, who perhaps have better education.*”

<sup>87</sup> Dalum B, B Johnson and B Lundvall, ‘Public Policy in the Learning Society’, in B Lundvall (Ed) *National Systems of Innovation: Toward a Theory of Innovation and Interactive Learning* (Anthem Press, London, 2010) 299

<sup>88</sup> Note 5, Cutler, 62 – it is noted however that “*lack of user trust in the security of the transactions*” acts as inhibitor of e-Commerce and it is suggested of innovation.



## C. Rights

The rights that will be discussed refer to the rights of individual end users and not those of sovereign states or businesses.<sup>89</sup> Although perhaps more easily defined than innovation, there is not a consensus internationally as to what constitute rights, or how those rights should be protected. This is reflected in the fact that, while many countries are signatories to the treaties to be discussed, not *all* countries are signatories. In an Australian context, identifying and defining rights is no less difficult. Despite the existence of some State-based rights legislation,<sup>90</sup> the required method of treaty adoption and the lack of a federal Bill of Rights mean that rights are not clearly nor consistently defined.

### 1. Defining rights

Originally rights law<sup>91</sup> was viewed as “*just law ... which is in harmony with the universal laws of nature*”.<sup>92</sup> The concept was developed further by Romans in their law<sup>93</sup> and by reliance of Roman jurists on the notion of *ius*.<sup>94</sup> As Holland explained, the objects of “[l]aw are the creation and protection of legal rights”.<sup>95</sup> Protection of legal rights, however, is not the same as the recognition of essential rights. Natural law theory maintains that certain rights are fundamental and exist “*simply by virtue of our nature as human beings*”.<sup>96</sup> These fundamental rights are not dependant on where or when we live, or the contents of the written law of our domicile.<sup>97</sup> These fundamental rights (should) act as restrictions on the functions of legislatures and courts, and (should) impact

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<sup>89</sup> For example see – Section 6, *Human Rights Act 2004* (ACT) – “*Only individuals have human rights.*”

<sup>90</sup> It is noted that both the ACT and Victoria have rights related legislation – *Human Rights Act 2004* (ACT) *Charter of Human Rights and Responsibilities Act 2006* (Vic)

<sup>91</sup> Leiboff M and M Thomas, *Legal Theories in principle*, 2<sup>nd</sup> ed (Lawbook Co, Pyrmont, 2005) 53-55 – natural law theory had its origins in ancient times in Greek Society

<sup>92</sup> Ratnapala S, *Jurisprudence: An Introduction* (Cambridge University Press, 2009) 125

<sup>93</sup> Coyle S, *From Positivism to Idealism: A Study of the Moral Dimensions of Legality* (Ashgate Publishing Limited, Hampshire, 2007) 26-27

<sup>94</sup> Note 93, Coyle, 49 – “*The dominant usage among the Roman jurists treated ius as signifying something objectively right or just. In this way it had functioned as a synonym for ‘law’ as long as the dominant legal treatises were composed in Latin.*”

<sup>95</sup> Holland T, *The Element of Jurisprudence* (The Lawbook Exchange Ltd, Clark, New Jersey, 2006) 66

<sup>96</sup> Meyerson D, *Understanding Jurisprudence* (Routledge-Cavendish, Oxon, 2007) 118

<sup>97</sup> For a detailed consideration of the philosophy and history of human rights, which is beyond the scope of this thesis, see – National Human Rights Consultation Report, 30 September 2009 (‘Brennan Report’) Chapter 3– Rights and responsibilities, 52 – “*There is a long history of philosophical musing about the reality of human rights.*” [http://www.humanrightsconsultation.gov.au/www/nhrcc/nhrcc.nsf/Page/Report\\_NationalHumanRightsConsultationReportDownloads](http://www.humanrightsconsultation.gov.au/www/nhrcc/nhrcc.nsf/Page/Report_NationalHumanRightsConsultationReportDownloads) (accessed 13/01/2010)

upon what these bodies “ought or ought not” do.<sup>98</sup> Using Finnis’ concept of basic values<sup>99</sup> as the foundation, legal rights may be considered to be the “*capacity residing in one man of [protecting their right to basic values by] controlling with the assent and assistance of the State, the actions of others*”.<sup>100</sup> Or, in the words of the recent Australian National Human Rights Consultation Report (‘the Brennan Report’),<sup>101</sup> “*legal rights are individual entitlements recognised and protected by governments, courts and parliaments*”.<sup>102</sup>

Rights in modern Australia then are those entitlements existing in legislation that may be enforced by one party against others, or for our own benefit. Without a federal law that articulates what these rights are, identifying applicable rights can be confusing. The Australian State law that exists is State-specific only and generally only applies to government entities.<sup>103</sup> Further, the State laws define rights exclusively rather than inclusively. Unless a right is included in the legislation, the legislation will not assist in enforcing it. The Victorian *Charter of Human Rights and Responsibilities Act 2006* does not provide one definition of ‘human rights’, instead including within a variety of rights that are specifically protected within Part 2.<sup>104</sup> These rights include freedom of expression,<sup>105</sup> and the

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<sup>98</sup> Note 92, Ratnapala, 121

<sup>99</sup> John Finnis’ restatement is discussed in detail in – Note 92, Ratnapala, 152 – Finnis’ basic values as explained by Ratnapala are “(1) life, (2) knowledge, (3) play, (4) aesthetic experience, (5) sociability (friendship), (6) religion (in a broad sense), and (7) practical reasonableness.”

<sup>100</sup> Note 95, Holland, 68

<sup>101</sup> Note 97, Brennan Report

<sup>102</sup> Note 97, Brennan Report, 51

<sup>103</sup> Section 40(D)(1) *Human Rights Act 2004* (ACT) – a non government entity may elect to subject itself to the public authority obligations in the Act.

<sup>104</sup> Sections 7, *Charter of Human Rights and Responsibilities Act 2006* (Vic) –

“(1) *This Part sets out the human rights that Parliament specifically seeks to protect and promote.*

(2) *A human right may be subject under law only to such reasonable limits as can be demonstrably justified in a free and democratic society based on human dignity, equality and freedom, and taking into account all relevant factors including-*

(a) *the nature of the right; and*

(b) *the importance of the purpose of the limitation; and*

(c) *the nature and extent of the limitation; and*

(d) *the relationship between the limitation and its purpose; and*

(e) *any less restrictive means reasonably available to achieve the purpose that the limitation seeks to achieve.*

(3) *Nothing in this Charter gives a person, entity or public authority a right to limit (to a greater extent than is provided for in this Charter) or destroy the human rights of any person.*”

<sup>105</sup> Section 15(2) *Charter of Human Rights and Responsibilities Act 2006* (Vic) – “*Every person has the right to freedom of expression which includes the freedom to seek, receive and impart information and ideas of all kinds*”.

right to take part in public life.<sup>106</sup> Similarly, the ACT *Human Rights Act 2004* does not provide one definition of ‘human rights’ as the term is used to mean the rights detailed in Part 3 of that Act.<sup>107</sup> The ACT also recognises the right to freedom of expression<sup>108</sup> and the right to take part in public life.<sup>109</sup> Both the Victorian and ACT Acts are subject to criticism generally as to their construction and/or practical operation.<sup>110</sup> Further, neither Act identifies any internet-specific right. Having no clear legislative guidance to determine what rights should apply in the internet economy necessitates an examination of natural law theory and international principles of human rights.

## 2. Natural law theory and human rights

A modern supporter of natural law theory is Fuller.<sup>111</sup> As he contemplated “*the creation and implementation of legal rules is guided and constrained by principles relating to the purpose of these rules ... [and] the exercise of legal powers is constrained by the requirements of procedural fairness*”.<sup>112</sup> Natural law theory has particular relevance and influence in the context of the development of human rights obligations post World War II.<sup>113</sup> Natural law theory is “*expressed ... in the not uncommon belief that legal officials, councils and governments cannot act in a way which is contrary to natural justice or reasonableness*”.<sup>114</sup> This is evidenced, for example, by a finding that legislative provisions are unconstitutional<sup>115</sup> and thus invalid.<sup>116</sup>

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<sup>106</sup> Section 18 (1) *Charter of Human Rights and Responsibilities Act 2006* (Vic) – “Every person ... has the right, and ... opportunity, without discrimination, to participate in ... public affairs”

<sup>107</sup> Section 6 *Human Rights Act 2004* (ACT)

<sup>108</sup> Section 16 *Human Rights Act 2004* (ACT)

<sup>109</sup> Section 17 *Human Rights Act 2004* (ACT)

<sup>110</sup> Note 97, Brennan Report, 256 – ACT and 262 – Victoria

<sup>111</sup> Head M and S Mann, *Law in Perspective: Ethics, Society and Critical Thinking*, 2<sup>nd</sup> ed (University of New South Wales Press Ltd, Sydney, 2009) 212 – Although he has been criticised by others who consider that his “*scheme is not correctly termed ‘naturalist’ in that it is primarily concerned with the minimal procedural prerequisites for a legal system, not the substantive content of a legal system*”.

<sup>112</sup> As discussed by Tebbit M, *Philosophy of Law: An introduction* (Routledge, London, 2000) 47

<sup>113</sup> Note 111, Head and Mann, 214 – “*Notwithstanding ... problems, which are arguably inherent in contemporary natural law theory, conceptions of natural law have been broadly influential since the middle of the 20<sup>th</sup> century, notably in international law. This can be seen in the development of ... the Universal Declaration of Human Rights (1948) ... the International Covenant on Civil and Political Rights (1966) ... and the International Covenant on Economic, Social and Cultural Rights (1966).*”

Note 96, Meyerson, 118 – “*The best-known attempt to formulate a list of [fundamental rights] ... is the Universal Declaration of Human Rights*”

<sup>114</sup> Note 112, Tebbit, 12

<sup>115</sup> Note 112, Tebbit, 12

<sup>116</sup> For an example of such operation in relation to internet specific law see – *Betfair Pty Limited v*

Of particular relevance for the thesis is Fuller's "*tenet of substantive naturalism in the maintenance of 'channels of communication' between people and peoples*"<sup>117</sup> and his "*revival of the importance of [the] community and the common good as the basis of natural law thought ... [with] ... rules ... requiring the legal system to move towards achievement constituted by the 'morality of aspiration'*".<sup>118</sup> Although not contemplated, communication via the internet would be an extension of Fuller's support of "*communicating as a way to achieve the good life*"<sup>119</sup> which leads to economic success. For the purpose of the thesis, natural law theory, in its embodiment as fundamental human rights, is of relevance in its own right.<sup>120</sup> As Weston explained, "[t]he expression 'human rights' replaces the phrase 'natural rights' which fell into disfavour in part because the concept of natural law (to which it was intimately linked) had become a matter of great controversy".<sup>121</sup> Despite lacking a specific Bill of Rights, Australia does recognise certain fundamental rights.<sup>122</sup> Australia does this as signatory to significant international treaties and other rights related documents.<sup>123</sup> The most notable of these is the *Universal Declaration of Human Rights* ('Declaration').<sup>124</sup> The rights it embodies are reinforced by later treaties.

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*Western Australia* [2008] HCA 11. The case went straight to the High Court, as cases of constitutional challenge may, and is in respect of WA's attempt to regulate online gambling by amendments introduced to its *Betting Control Act 1954*. However, the provisions under consideration were held to be contrary to Section 92 of the Commonwealth Constitution which requires that "*trade, commerce, and intercourse among the States ... shall be absolutely free*" [the High Court did not provide answer to question 3 in respect of Section 118.] and not *per se* for any internet-specific problem.

<sup>117</sup> Note 111, Head and Mann, 213

<sup>118</sup> Note 91, Leiboff and Thomas, 68 and 69 – "*The inner morality of law is Fuller's guide to the operation of a legal system, so that it will confirm, at least at a basic level, to the needs of a good community. The legal system and its rules should do more, in order to achieve the good life in the community, than merely protect people against harm.*"

<sup>119</sup> Note 91, Leiboff and Thomas, 70

<sup>120</sup> It is noted that natural law theory is not without its critics. For those interested in this debate see – Harrison R, *Bentham* (Routledge & Kegan Paul plc, London, 1983); Morison W, *John Austin* (Stanford University Press, California, 1982); Comte A, *Positive Philosophy* (William Gowans, New York, 1868) (Translated by H Martineau); Davies M, *Asking the Law Question: The Dissolution of Legal Theory*, 2<sup>nd</sup> ed (Lawbook Co., Sydney, 2002) 67 – 112; Note 91, Leiboff and Thomas, 80; and Note 92, Ratnapala, 160

<sup>121</sup> Weston B, 'Human Rights', 20 *New Encyclopaedia Britannica* 15<sup>th</sup> ed (1992) in H Steiner, P Alson and R Goodman (Eds) *International Human Rights in Context: Law, Politics, Morals*, 3<sup>rd</sup> ed (Oxford University Press, Oxford, 2008) 476

<sup>122</sup> The Constitution primarily is the legislative instrument by which the Commonwealth of Australia was created and powers divided between the then [powerful] existing Colonies and the [to be] new Commonwealth. See – *Commonwealth of Australia Constitution Act 1900* (63&64 Victoria, Chapter 12) 9<sup>th</sup> July 1900 [http://parlinfo.aph.gov.au/parlInfo/download/handbook/newhandbook/2008-12-19/toc\\_pdf\\_repeat/Part%204%20-%20The%20Constitution.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/handbook/newhandbook/2008-12-19/toc_pdf_repeat/Part%204%20-%20The%20Constitution.pdf;fileType%3Dapplication%2Fpdf) (viewed 13/02/2010)

<sup>123</sup> International obligations – "*also include the International Convention on the Elimination of All*

### 3. Which rights?

Certain longstanding human rights are fundamental for the operation of the internet economy. There are three fundamental human rights contained within the Declaration that are of particular relevance to the thesis. These are also rights that could be better protected and promoted by the federal government. These are:

1. the right of access to information;<sup>125</sup>
2. the right of access to an education;<sup>126</sup> and
3. the right of participation in government.<sup>127</sup>

The right of access to information has been recognised in the context of the right to receive information that is personal to an individual. This has been accepted, for example, in respect to health information<sup>128</sup> and information that would enable a person to understand their identity.<sup>129</sup> As Howkins observed, the right of access to education and the right of access to information are linked in that “[l]earning depends on a free flow of information”.<sup>130</sup> The right of access to education therefore is contingent on the existence and upholding of the right of access to information.

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*Forms of Racial Discrimination 1965, the Convention on the Elimination of All Forms of Discrimination against Women 1979, the Convention against Torture and Other Cruel, Inhuman and Degrading Treatment or Punishment 1984, the Convention on the Rights of the Child 1989 and the Convention on the Rights of Persons with Disabilities 2006.” See – Note 97, Brennan Report, 73*

<sup>124</sup> *The Universal Declaration of Human Rights*, December 10, 1948, The United Nations <http://www.un.org/en/documents/udhr/> (viewed 16/02/2010)

<sup>125</sup> Article 19.

*Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.*

<sup>126</sup> Article 26.

*(1) Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.*

*(2) Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights ...*

<sup>127</sup> Article 21.

*(1) Everyone has the right to take part in the government of his country, directly or through freely chosen representatives.*

*(2) ... has the right of equal access to public service in his country.*

<sup>128</sup> Bakker S, M van den Berg, D Düzenli and M Radstaake, ‘Human Rights Impact Assessment in Practice’ *The Case of the Health Rights of Women Assessment Instrument (HeRWAI)* (2009) 1(3) *Journal of Human Rights Practice*, 436, 453

<sup>129</sup> Marshall J, *Personal Freedom through Human Rights Law? Autonomy, Identity and Integrity under the European Convention on Human Rights* (Martinus Nijhoff Publishers, Leiden, 2009) – see Chapter 8

<sup>130</sup> Note 15, Howkins, 122

Participation, as referred to above, includes participation in the creation of government policy.<sup>131</sup> In practice this is reflected in the community and other consultations that government undertakes as part of its legislative development process. The right of participation extends to include the right to be enabled to participate.<sup>132</sup> The “*third wave of rights*”<sup>133</sup> occurring since the end of the Cold War reinforces the importance of the right of participation. In this regard participation is seen as both a social and a political right.<sup>134</sup> Likewise participation is conditional on upholding of the right of access to information, as the more informed a user is, the more likely they are to participate.

Other significant international obligations regarding human rights are those as contained in the *International Covenant on Civil and Political Rights 1966* and the *International Covenant on Economic, Social and Cultural Rights 1966*.<sup>135</sup> The *International Covenant on Civil and Political Rights* in particular provides *inter alia* that:

“Article 1 –

1. *All peoples have the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development.*

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<sup>131</sup> Lister R, ‘Citizen in Action: Citizenship and Community Development in a Southern Ireland Context’ (1998) 33(3) *Community Development Journal*, 226, 228 – “*right of participation in decision-making in social, economic, cultural and political life should be included in the nexus of basic human rights*”

<sup>132</sup> Cornwall A and J Gaventa, ‘From Users and Choosers to Makers and Shapers: Repositioning Participation in Social Policy’ (2001) *Brighton: Institute of Development Studies*, IDS Working Paper no. 127, 3 – “*Effective participation in social policy, then, may require looking beyond national institutions to enhancing the capacities of citizens to influence supranational, as well as national, policy.*”

<http://www.eldis.org/vfile/upload/1/document/0708/DOC2894.pdf> (viewed 06/06/2010)

<sup>133</sup> Note 129, Marshall, 26

<sup>134</sup> Note 132, Cornwall and Gaventa, 3 – “*The concept of participation, of course, is not a new one in development. Over the last thirty years it has acquired a spectrum of meanings and given rise to a diversity of practices. For much of this time, ‘community participation’, usually in projects, has remained distinct from political participation, conventionally through voting, political parties and lobbying. In recent years, there has been a convergence of concern with citizen engagement in policy formation and implementation and with ‘good governance’, broadening political participation to include a search for new, more direct, ways through which citizens may influence governments and hold them accountable .... Both of these shifts contribute to new discussions of participation as citizenship and as a social, as well as a political right.*” [references omitted]

<sup>135</sup> Australia also is a signatory to – *Convention on the Elimination of All Forms of Racial Discrimination*, *Convention on the Elimination of All Forms of Discrimination Against Women*, *Convention Against Torture and other Cruel, Inhuman and Degrading Treatment or Punishment*, *Convention on the Rights of the Child*, and *Convention on the Rights of Persons with Disabilities*. See – Australia’s Human Rights Framework, April 2010, 4 and 7 <http://www.ag.gov.au/humanrightsframework> (viewed 12/06/2010)

*Article 3 –*

*The States Parties to the present Covenant undertake to ensure the equal right of men and women to the enjoyment of all civil and political rights set forth ...in the present Covenant.*

*Article 25 –*

*Every citizen shall have the right and the opportunity, without any of the distinctions mentioned in article 2 and without unreasonable restrictions:*

- (a) To take part in the conduct of public affairs, directly or through freely chosen representatives;*
- (b) To vote and to be elected at genuine periodic elections which shall be by universal and equal suffrage and shall be held by secret ballot, guaranteeing the free expression of the will of the electors;<sup>136</sup>*
- (c) To have access, on general terms of equality, to public service in his country.”*

However these rights, generally,<sup>137</sup> are not binding in Australia until there is “*an act of transformation*”.<sup>138</sup> They have no legal effect until implemented by Australian domestic legislation<sup>139</sup> at either or both the federal and State/Territory level<sup>140</sup> and as such treaties “*cannot operate as a direct source of individual*

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<sup>136</sup> This right however does not extend to the right to any particular political system or the method of holding elections. Vidmar J, ‘The Right of Self-determination and Multiparty Democracy: Two Sides of the Same Coin?’ (2010) 10(2) *Human Rights Law Review*, 239, 260

<sup>137</sup> *Minister of State for Immigration & Ethnic Affairs v Ah Hin Teoh* (‘Teoh’s case’) [1995] HCA 20 [26] – It is noted however that, “[w]here a statute or subordinate legislation is ambiguous, the courts should favour that construction which accords with Australia’s obligations under a treaty or international convention to which Australia is a party, at least in those cases in which the legislation is enacted after, or in contemplation of, entry into, or ratification of, the relevant international instrument. That is because Parliament, prima facie, intends to give effect to Australia’s obligations under international law”. And [27] also “[i]t is accepted that a statute is to be interpreted and applied, as far as its language permits, so that it is in conformity and not in conflict with the established rules of international law.” [references omitted]

<sup>138</sup> Note 25, Farrar, 235

<sup>139</sup> Carver R, ‘A New Answer to an Old Question: National Human Rights Institutions and the Domestication of International Law’ (2010) 10(1) *Human Rights Law Review*, 1, 7 – as a response “Australia, with a doctrinally similar approach to the domestication of international law, has given its Human Rights and Equal Opportunity Commission a more expansive mandate, defining human rights as ‘the rights and freedoms recognised in the Covenant [on Civil and Political Rights], declared by the Declarations or recognised or declared by any relevant international instrument.”

<sup>140</sup> *Teoh’s case* [1995] HCA 20 [25]; *Chow Hung Ching v. The King* (1948) 77 CLR 449 at 478; *Bradley v. The Commonwealth* (1973) 128 CLR 557 at 582; *Simsek v. Macphee* (1982) 148 CLR 636 at 641-642; *Koowarta v. Bjelke-Petersen* (1982) 153 CLR 168 at 211-212, 224-225; *Kioa v. West* (1985) 159 CLR 550 at 570; *Dietrich v. The Queen* [1992] HCA 57; (1992) 177 CLR 292 at 305; *J.H. Rayner Ltd. v. Dept. of Trade* (1990) 2 AC 418 at 500. Also see – Note 97, Brennan Report, 100

*rights and obligations*".<sup>141</sup> This creates discord between the rights Australia acknowledges and supports and the ability of the courts to protect those rights when applying legislation.<sup>142</sup> This inability of Australian courts to directly apply these treaties does not alter the fact that Australia has acknowledged that the rights they contain are fundamental human rights.

#### **4. Rights in the user context**

Access to information for all Australians, irrespective of their abilities or location, was recognised as a fundamental right almost two decades ago. In 1991 the Australian Federal Parliament noted that "*access to information is a ... precondition to personal and national autonomy*".<sup>143</sup> The importance of the other rights identified above was more recently reinforced as part of the Brennan Report<sup>144</sup> delivered on 30 September 2009. The Brennan Report made 31 Recommendations to the Australian federal government.<sup>145</sup> These included:

1. *Recommendation 8 ... [it] develop a whole-of-government framework for ensuring that human rights – based either on Australia's international obligations or on a federal Human Rights Act, or both – are better integrated into public sector policy and legislative development, decision making, service delivery, and practice more generally...*
2. *Recommendation 21 ... Priority should be given to the following...*
  - *the right to education*

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<sup>141</sup> *Teoh's case* [1995] HCA 20 [25]

<sup>142</sup> Note 139, Carver, 9 – "*Conversely, it might be that states with dualist systems would need such an explicit provision precisely because a legislative act is required to give effect to ratified treaties. Such is indeed the case with Australia, where there has been a disjuncture between the relationship of the HREOC and the judiciary to treaties that have not been incorporated by legislative act.*" *Teoh's case* [1995] HCA 20 [27] where legislation is not ambiguous the courts are reluctant to introduce such rights by means of a '*backdoor*' development of the common law.

<sup>143</sup> Parliament of Australia, 'Australia as an Information Society: Grasping New Paradigms', Report of the House of Representatives Standing Committee for Long Term Strategies, May 1991, 39-40 –

*"4.15 Access to information is a basic right ... a precondition to personal and national autonomy ...*

*4.20 The entitlement of Australians to access to information, should be without regard to where they live ... their social and economic position, language, sex, age, mobility or physical disabilities."*

[http://www.aph.gov.au/house/committee/reports/1991/1991\\_PP145.pdf](http://www.aph.gov.au/house/committee/reports/1991/1991_PP145.pdf) (accessed 24/06/2009)

<sup>144</sup> Note 97, Brennan Report

<sup>145</sup> Note 97, Brennan Report, *Recommendations*



In the era of the internet economy, as will be considered in later chapters, the right to education must include the right to be educated so that a person is digitally literate.

3. *Recommendation 25 ... the following additional civil and political rights be included in any Human Rights Act: ...*

- *the right to freedom of expression ...*
- *the right to freedom of association ...*
- *the right to take part in public life ...*

These recommended rights<sup>146</sup> also should by implication include the right to digitally participate and engage with government; and the right to be able to participate in online communities and sites.<sup>147</sup>

The federal government's response to the Brennan Report was twofold. First, it introduced the *Australian Human Rights Framework*<sup>148</sup> on 21 April 2010. Second, it introduced the *Human Rights (Parliamentary Scrutiny) Bill 2010* ('HRPS Bill') to the Federal Parliament.<sup>149</sup> The HRPS Bill defines human rights to be the "*rights and freedoms recognised or declared by*" various international instruments including those recognised by the *International Covenant on Civil and Political Rights* and the *International Covenant on Economic, Social and Cultural Rights 1966*.<sup>150</sup>

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<sup>146</sup> While not a specific recommendation it is noted that that right to access to information was raised on numerous occasions as of specific importance to those Australians with a disability. See Note 97, Brennan Report, 86

<sup>147</sup> McClelland R, 'National Human Rights Consultation Report', Media Statement 8<sup>th</sup> October 2009 <http://www.alp.org.au/media/1009/msag080.php> (viewed 13/01/2010)

<sup>148</sup> Note 135, Australia's Human Rights Framework

<sup>149</sup> Introduced on 2 June 2010 and referred to the Senate Legal and Constitutional Affairs Committee [Inquiry into the *Human Rights (Parliamentary Scrutiny) Bill 2010* and the *Human Rights (Parliamentary Scrutiny) (Consequential Provisions) Bill 2010* [http://www.aph.gov.au/Senate/committee/legcon\\_ctte/human\\_rights\\_bills/info.htm](http://www.aph.gov.au/Senate/committee/legcon_ctte/human_rights_bills/info.htm) (viewed 16/06/2010)] the original Bill lapsed on the dissolution of the 42<sup>nd</sup> Parliament and was reintroduced on 30<sup>th</sup> September 2010. The Bills are identical even as to the proposed commencement date of 1<sup>st</sup> January 2011. The Bill was referred (again) to LACA on 30 September. LACA's report was deliverable on 7 December, 2010, however this has been extended to 28 January, 2011. See – [Inquiry into the *Human Rights (Parliamentary Scrutiny) Bill 2010* and the *Human Rights (Parliamentary Scrutiny) (Consequential Provisions) Bill 2010* [http://www.aph.gov.au/Senate/committee/legcon\\_ctte/human\\_rights\\_bills\\_43/index.htm](http://www.aph.gov.au/Senate/committee/legcon_ctte/human_rights_bills_43/index.htm) (viewed 07/12/2010)]. The final Senate report is not reviewed as it was not available as at 9 December 2010.

<sup>150</sup> Section 3(1) *Human Rights (Parliamentary Scrutiny) Bill 2010*

Australia has affirmed its recognition of various international human rights.<sup>151</sup> Regrettably no specific human rights Act is proposed or expected.<sup>152</sup> Therefore, although Australia is by deliberate action<sup>153</sup> a party to the above treaties, the treaties by themselves do not have legal effect in Australia. However, it would be prudent for the federal government to take heed of the views of many Australians. First, access to the internet, its services and the content available via it, is “*a fundamental right of all people*”.<sup>154</sup> Second, the government should allocate funds to ensure access is available to all Australians.<sup>155</sup>

A consequence of Australia’s lack of a Bill of Rights is that there are laws that may breach human rights. Although some laws are constitutionally permitted, as they are legally valid,<sup>156</sup> nevertheless they may breach one or more fundamental rights.<sup>157</sup>

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<sup>151</sup> Note 135, Australia’s Human Rights Framework, 3 – “*The Government reaffirms its commitment to promoting awareness and understanding of human rights in the Australian community and respecting the seven core United Nations human rights treaties to which Australia is a party.*”

<sup>152</sup> Note 135, Australia’s Human Rights Framework, 1 – “*The Framework does not include a Human Rights Act or Charter. While there is overwhelming support for human rights in our community, many Australians remain concerned about the possible consequences of such an Act. The Government believes that the enhancement of human rights should be done in a way that as far as possible unites, rather than divides, our community. The Government is committed to positive and practical change to promote and protect human rights. Advancing the cause of human rights in Australia would not be served by an approach that is divisive or creates an atmosphere of uncertainty or suspicion in the community.*” The framework and explanatory memoranda confirm this position on interpretation. See – Australia’s Human Rights Framework, 10 – “*Statements of compatibility and any report of the Joint Committee on Human Rights ... will be referred to in the event of a court finding that the provisions of a statute are unclear or ambiguous. The courts will have no additional powers to strike down or amend legislation.*” And Explanatory Memorandum, ‘*Human Rights (Parliamentary Scrutiny) Bill 2010*’, 5 – “*Consistent with current rules of statutory interpretation, a statement of compatibility in relation to a disallowable legislative instrument could be used by a court to assist in ascertaining the meaning of provisions in a legislative instrument where the meaning is unclear or ambiguous.*” [http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4420\\_ems\\_4eca7319-bef3-4812-9f36-5c88efcbce4c/upload\\_pdf/347523.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4420_ems_4eca7319-bef3-4812-9f36-5c88efcbce4c/upload_pdf/347523.pdf;fileType=application%2Fpdf) (viewed 13/11/2010)

<sup>153</sup> Galligan D, *Law in Modern Society* (Oxford University Press, Oxford, 2007)193

<sup>154</sup> Internet access is ‘a fundamental right’, 8 March 2010, *BBC News*, referring to GlobeScan, ‘Four in Five Regard internet Access as a Fundamental Right: Global Poll’, Survey for the BBC, 10 – “*Australian respondents are among the most firmly convinced that internet access should be a fundamental right, with 85 per cent agreeing that this is the case. While still regarding the internet’s role as a source of information as its most valuable aspect, they are more likely than average to value the ability to communicate and interact with other people.*” See 17 for the country by country results. 19 – The interviews were conducted between 30/11/2009 and 07/02/2010. [http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/08\\_03\\_10\\_BBC\\_internet\\_poll.pdf](http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/08_03_10_BBC_internet_poll.pdf) (accessed 09/03/2010)

<sup>155</sup> Ewing S and J Thomas, *CCI Digital Futures 2010: The Internet in Australia*, CCI, May 2010, 2-4, 42 – “*The Australian government should allocate funds to enable all Australians to have access to internet services – A clear majority of Australians agree with this contention (57.9%). Slightly more than a quarter disagree (26.1%) and of these less than one in ten (7.8%) disagree strongly.*” <http://cci.edu.au/sites/default/files/sewing/CCI%20Digital%20Futures%202010.pdf> (viewed 08/07/2010)

<sup>156</sup> Note 96, Meyerson, 130

<sup>157</sup> i.e. Australian laws generally permit a tenant to be given a notice to leave without grounds at the end of their tenancy. This is a concept that may be in breach of fundamental rights. See – Wharton N

Conversely, there are rights that although recognised as rights are unenforceable at law in Australia.<sup>158</sup> What rights vest in individuals, in the context of the rights that a court will assist them in protecting depend on what rights are recognised by the legislature. Therefore to underpin the internet economy, the rights of access to information, access to education and participation in government will need to be clearly and consistently articulated in federal and State/Territory legislation. As part of its commitment to achieving its Millennium Development Goals<sup>159</sup> the UN supports the need to make the benefits of ICT available to all.<sup>160</sup>

#### D. Openness

The importance of the “*openness of the channels of electronic commerce*”<sup>161</sup> for the internet economy was noted in 2002. Openness of the internet, as opposed to the closure that comes from pay-per-view or subscription only information services, remains important for both businesses and individual end users. In particular, openness of the internet is important for obtaining access to government data,<sup>162</sup> for business operations and for consumer interaction. Openness in the context of the thesis, and as relevant for the internet economy, is best articulated by reference to the

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and L Craddock ‘Enabling sustainable property practices by ensuring security of tenure’, *The 17<sup>th</sup> Annual Conference for the Pacific Rim Real Estate Society*, 16-19 January 2011

<sup>158</sup> Note 97, Brennan Report, 348 – “*At present not all human rights are recognised and protected in Australian domestic law, but citizens, non-government organisations, corporations, public authorities and governments have a moral obligation not to breach the human rights of others, even when those rights have not been expressly recognised in Australian law.*”

<sup>159</sup> UN, ‘Millennium Development Goals: At a Glance (2010) *United Nations*, MDG 8 – “*Global partnership*” updated September, 2010  
<http://www.un.org/en/mdg/summit2010/pdf/MDGs%20at%20a%20Glance%20SEPT%202010.pdf>  
 (viewed 07/10/2010)

<sup>160</sup> UN, ‘Millennium Development Goals Report’ (2010) *United Nations*, 71 – “*Target: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications*”  
<http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-pdf> (viewed 07/10/2010); As Foreign Minister Kevin Rudd noted – “*As the Secretary-General reminded us in his report ‘Keeping the Promise’, the MDGs are an expression of basic human rights, the rights of everyone to good health, education and shelter. I believe these ... are self-evident.*” – Rudd Hon, K, *Statement to the High-level Plenary Meeting on the Millennium Development Goals*, UN General Assembly, 22 September 2010, New York  
[http://www.un.org/en/mdg/summit2010/debate/AU\\_en.pdf](http://www.un.org/en/mdg/summit2010/debate/AU_en.pdf) (viewed 07/10/2010)

<sup>161</sup> Fitzgerald A, ‘General Report: Regulating Electronic Commerce – Emerging Principles for the Regulation of Internet Transactions’ in A Fitzgerald and A Moens (Eds) in *International E-Commerce Regulation: Proceedings of the Regulating Electronic Commerce Group of the XVI<sup>th</sup> Congress of the International Academy of Comparative Law, 14 – 20 July 2002, Brisbane, Australia* (eLaw Practice, 2002) 16

<sup>162</sup> Fitzgerald A, B Fitzgerald and N Hooper, ‘Enabling open access to public sector information with Creative Commons Licences: the Australian experience’ in *Access to Public Sector Information: Law, Technology & Policy* (Sydney University Press, 2009)  
[http://eprints.qut.edu.au/29773/1/29773\\_final.pdf](http://eprints.qut.edu.au/29773/1/29773_final.pdf) (viewed 21/02/2010)

principle of open access generally. That is, the network cannot be inappropriately closed to competitors by the network operator.

## 1. Defining openness

The viewer's perspective of the term open access, and the perception of the stakeholder who is the viewer, can affect the given meaning of the term. As Kelso noted, how the term open access is defined is "*in the eyes of the beholder*".<sup>163</sup> Australian legislation does not define the term open access, although the term is used in an array of contexts. For example, it is used to refer to the period<sup>164</sup> after which government documents may be accessed.<sup>165</sup> It also is used in reference to the eligibility criteria for grants,<sup>166</sup> access to petroleum pipelines,<sup>167</sup> and information about objects launched into space.<sup>168</sup> While not judicially defined, open access has been considered or used by the courts in various ways. For example, it has been considered in a competition context in relation to the requests for access by competitors to a gas pipeline.<sup>169</sup> It also has

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<sup>163</sup> Kelso R, *Open Access to Next Generation Broadband*, PhD Thesis (2009) *Institute for Creative Industries and Innovation, QUT* <http://eprints.qut.edu.au/12663/> (viewed 11/02/2010) 8

<sup>164</sup> Sections 3(7), 22A and 22B *Archives Act 1983* – generally "a record is in the open access period if ... 30 years has elapsed since the end of the year ending on 31 December in which the record came into existence."

<sup>165</sup> Section 31(1) *Archives Act 1983* – "Subject to this Part, the Archives must cause the record to be made available for public access." Also Section 12(1)(a) *Freedom of Information Act 1982* – "A person is not entitled to obtain access under this Part to ... a document, or a copy of a document, which is, under the *Archives Act 1983*, within the open access period within the meaning of that Act unless the document contains personal information"; Section 66(c) *Inspector of Transport Security Act 2006* – "Protected information ... does not include ... Commonwealth records as defined by ... [Sec. 3(1) of] the *Archives Act 1983* that are in the open access period for the purposes of that Act"; and Section 6 *Privacy Act 1988* – "record ... does not include ... Commonwealth records as defined by ... 3(1) of the *Archives Act 1983* that are in the open access period for the purposes of that Act"

<sup>166</sup> Section 41.10 *Higher Education Support Act 2003* – "Grants for activities that ... support open access to higher education across Australia"

<sup>167</sup> Section 5(a) and Article 8(h), Schedule 1 *Petroleum (Timor Sea Treaty) Act 2003* – "There shall be open access to pipelines for petroleum from the JPDA. The open access arrangements shall be in accordance with good international regulatory practice. If Australia has jurisdiction over the pipeline, it shall consult with East Timor over access to the pipeline. If East Timor has jurisdiction over the pipeline, it shall consult with Australia over access to the pipeline."

<sup>168</sup> Section 8 and Article III.2, Schedule 2 *Space Activities Act 1998* – "There shall be full and open access to the information in [the United Nations maintained] ... register."

<sup>169</sup> *Re Duke Eastern Gas Pipeline Pty Ltd* [2001] ACompT 2 – application was made that the pipeline be determined to be a 'covered pipeline' under the *National Third Party Access Code for Natural Gas Pipeline Systems* the consequence of which would have been that Duke [5] "must establish an arrangement for access to the pipeline (an 'Access Arrangement') that has been approved by the 'Relevant Regulator' ... the ... ACCC ... In very general terms, an Access Arrangement is a statement of the policies and basic terms and conditions, including the tariff structure, which apply to third party access to the pipeline ... Coverage of the EGP will result in significant compliance and regulatory costs being incurred by the operator of the EGP, in addition to exposing its tariff structure to regulatory control." Duke however argued [71] – "that the EGP ... [already was] an open access pipeline: all users or potential users of services provided by means of the pipeline have access

been used in relation to a rail link<sup>170</sup> and “*to and [for] use of electricity transmission and distribution facilities*”.<sup>171</sup> As relates to the internet, it has been discussed for the purpose of determining where publication occurred for defamation purposes. This was in the context of the level of accessibility by users to a website for determining whether “*any web user can access the site*”.<sup>172</sup>

The term open access also has been used to refer to litigants’ right of access to the court. That is, as a reference to the principle of access to justice for all. This right is held to apply even to the impecunious, although not without regard to the issue of the appropriateness of the provision of security of costs by such parties.<sup>173</sup> Open access, however, has not been given one clear, consistent legislative or judicial definition in that the term is used in connection with some other right rather than as a right on its own. Open access therefore, without a specific definition, must be understood in the context of the case and legislation being reviewed. However, although not consistently defined, the term open access appears to have almost universal acceptance as a fundamental premise for the method of operation of a broadband network.<sup>174</sup> It also appears to have a generally accepted meaning. That is, it refers to the legislated obligation of network owners to make available their networks to competitors on a competitive basis, whether they would otherwise do so or not.<sup>175</sup>

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... in the sense that third parties have the opportunity to avail themselves of those services if they wish to do so.” The Tribunal was not satisfied that the relevant elements were met in that [134] “*coverage of the EGP will not promote competition in either upstream or downstream markets over the existing voluntary access offered*”. The decision of the Minister to cover the pipeline was set aside.

<sup>170</sup> *BHP Billiton Iron Ore v The National Competition Council* [2007] FCAFC 157 – Greenwood J [66] the issue being *inter alia* whether the rail link was a service or not for the purpose of making a declaration for access. See Finkelstein J [61] and Greenwood J [199] – it was not.

<sup>171</sup> *NT Power Generation v Power & Water Authority* [2002] FCAFC 302 Lee, Branson and Finkelstein JJ, per Branson J [32]

<sup>172</sup> *Dow Jones and Company Inc v Gutnick* [2002] HCA 56; 210 CLR 575; 194 ALR 433; 77 ALJR 255, per Kirby J [83]. However more recently see Roy B, ‘Online libel – open access does not amount to substantial publication’ (2009) 20(4) *Ent. L.R.*, 159, 161 – more than accessibility by itself is required in order to determine to whom publication has been made and if privilege extends.

<sup>173</sup> *Jeffery & Katauskas Pty Limited v SST Consulting Pty Ltd; Jeffery & Katauskas Pty Limited v Rickard Constructions Pty Limited* [2009] HCA 43 per Heydon J [91]

<sup>174</sup> Benkler Y, ‘Next Generation Connectivity: A review of broadband Internet transitions and policy from around the world’, *The Berkman Center for Internet & Society at Harvard University*, February 2010, Report for FCC, 14 – the US being the notable western exception [http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/Berkman\\_Center\\_Broadband\\_Final\\_Report\\_15Feb2010.pdf](http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/Berkman_Center_Broadband_Final_Report_15Feb2010.pdf) (viewed 20/05/2010)

<sup>175</sup> Note 174, Benkler, 85 – “*The theory underlying open access obligations is that entry barriers in telecommunications markets are high and deter competitive entry. By requiring incumbents to sell, at regulated rates, the most expensive, and in the case of local loop and shared access, lowest-tech*

## 2. Openness in context

What open access means for individual end users is perhaps more easily understood by its use outside the court structure. Most commonly perhaps, open access is used to refer to funded literature being freely accessible to all.<sup>176</sup> It also has been used to describe the right to use, copy and/or publish copyright protected material without charge.<sup>177</sup> The right of free access to research materials, irrespective of where they may be located on the internet, is identified as a fundamental principle for the information society.<sup>178</sup> The access principle on which these types of meanings are based has its beginnings in the “*great [public] libraries of the past ... [such as] ... at Alexandria ... or the mosque libraries, such as the one at al-Azhar in Cairo*” which were freely open to all scholars.<sup>179</sup>

The phrase open access also refers to the right of unfettered access to the internet and its contents without risk of internet censorship<sup>180</sup> or of content filtering.<sup>181</sup> A lack of internet access is one of the creators of the *digital divide*. The adoption of government policy to promote appropriate internet access is one of the means of bridging the *digital divide*.<sup>182</sup> The term open access is used by many authors to refer to the desire that there be a right of unrestricted free access to the research knowledge and other information available via the internet. Thus, in these contexts, the concept of what is or is not open access and what privileges are given to those with the right of access is very much intertwined with intellectual

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*elements of their networks, regulators enable competitors to invest a fraction of the total cost of setting up a competing network, focus that investment on the more technology-sensitive and innovative elements of the network, and compete. In this model, regulated access provides one important pathway to make telecommunications markets more competitive than they could be if they rely solely on competition among the necessarily smaller number of companies that can fully replicate each other's infrastructure.”*

<sup>176</sup> Terry R and R Kiley, ‘Open access to the research literature: a funder’s perspective’ in N Jacobs (Ed) *Open Access; Key Strategic, Technical and Economic Aspects* (Chandos Publishing, Oxford, 2006) 101-109

<sup>177</sup> Bailey Jr. C, ‘What is open access?’ in N Jacobs (Ed) *Open Access; Key Strategic, Technical and Economic Aspects* (Chandos Publishing, Oxford, 2006) 13-18

<sup>178</sup> Fitzgerald A, K Pappalardo, B Fitzgerald, A Austin, J Abbot, B Cosman, D O’Brien, and B Singleton, *Building the infrastructure for data access and reuse in collaborative research: An analysis of the legal context* (2007) *The OAK Law Project*, 201 referring to the *World Summit on the Information Society Declaration of Principles* (2003) <http://eprints.qut.edu.au/8865/1/8865.pdf> (viewed 02/03/2010)

<sup>179</sup> Willinsky J, *The Access Principle: The Case for Open Access to Research and Scholarship* (Massachusetts Institute of Technology, Cambridge, 2006) 5

<sup>180</sup> Bambauer D, ‘Cybersieves’ (2009) 59 *Duke Law Journal*, 3, 377

<sup>181</sup> ‘Kids and the internet: the promise and the perils’, an NCLIS hearing in Arlington, Virginia, November 10, 1998, 61(2) 230

<sup>182</sup> Mutula S, *Digital Economies: SMES and E-Readiness* (Business Science Reference, Hershey, 2010) 67

property rights and the protections the law grants, or waives, to users. Adoption of, or continuing development of the existing, copyright commons<sup>183</sup> would support this meaning, however, as identified, purely intellectual property issues are outside the scope of the thesis. Interestingly, while many may make information to share, this sharing is now dependant on the innovations of others. That is, the “*new communication-based Internet requires the use of sophisticated software and users become dependent on sites that provide this software*”<sup>184</sup> in order to share and access information.

### 3. Openness in practice

In a telecommunications context, and relevant also as a competition concept, openness is used to describe the structure of networks and the level of integration between the network owner and the content deliverer.<sup>185</sup> That is, whether the networks are owned and operated only by the same party, or whether access is granted to others. If open to others, this may occur voluntarily or under a legislative obligation. Open access in this context is used in reference to the appropriate means of access by competitors<sup>186</sup> to infrastructure and related facilities that are deemed to be essential or non-duplicable.<sup>187</sup>

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<sup>183</sup> Uhlir P and P Schroder ‘Chapter 8 – Open Data for Global Science’ [2008] *SydUPLawBk* 39 in B Fitzgerald (Ed) *Legal Framework for e-Research: Realising the Potential* (Sydney University Press, Sydney, 2008) 188 “*Together, these various open access activities constitute an emerging globally networked ‘commons’ for public science, representing a broad range of information types, institutional structures, disciplines, and countries. A common policy aspect of all these activities is their provision of free and open access online, with either reduced retention of intellectual property rights through permissive licensing mechanisms or, much less frequently, a statutory public domain status.*” [references omitted] <http://www.austlii.edu.au/au/journals/SydUPLawBk/2008/39.html> (viewed 07/03/2010)

<sup>184</sup> Komito L, ‘Information society policy’ in G Hearn and D Rooney (Eds) *Knowledge policy: challenges for the 21st century* (Edward Elgar, Cheltenham, 2008) 85

<sup>185</sup> Battiti R, R Lo Cigno, F Orava and B Pehrson, ‘Global Growth of Open Access Networks: from War Chalking and Connection Sharing to Sustainable Business’, *Proceedings of the 1st ACM International Workshop on Wireless mobile applications and services on WLAN hotspots*, September 19, 2003, San Diego, CA, USA <http://delivery.acm.org/10.1145/950000/941330/p19-battiti.pdf?key1=941330&key2=8926587621&coll=GUIDE&dl=GUIDE&CFID=80700548&CFTOKEN=28371014> (viewed 06/03/2010)

<sup>186</sup> *Re Duke Eastern Gas Pipeline Pty Ltd* [2001] ACompT 2 (4 May 2001) [3] – “*The notion underlying ... Part IIIA of the Trade Practices Act 1974 (Cth) (“TPA”) is that ‘access to certain facilities with natural monopoly characteristics, such as electricity grids or gas pipelines, is needed to encourage competition in related markets, such as electricity generation or gas production’ (Competition Policy Reform Bill, Second Reading Speech, 30 June 1995 Hansard at 2799).*” And [50] “*The authors of the Hilmer Report indicate that it is difficult to define precisely the term ‘natural monopoly’, but cite major pipelines as an example. Some facilities that exhibit the characteristics of a natural monopoly occupy strategic positions in an industry, and are thus ‘essential facilities’ in the sense that access to the facility is required if a business is to be able to compete effectively in*

Open access also has been used to refer to open internet access in respect of the access controls put in place over networks. Open internet access is a “*regime of common carriage*”.<sup>188</sup> The phrase open internet access also has been used in the context of the fundamental right of freedom speech contained in the US Constitution.<sup>189</sup> An equivalent right however does not exist in Australia. Achieving open access to infrastructure may be enhanced by achieving any-to-any connectivity and by restricting the ability of dominant players to inappropriately control the market.<sup>190</sup> In this context therefore the phrase open access also can be used as a descriptor of the method of deployment of broadband that, as a solution, may address cost prohibition issues and may prove an incentive for private investors to invest in infrastructure.<sup>191</sup> Ensuring any-to-any connectivity will be important for ensuring the interoperability between new and existing systems during the transition period to high-speed broadband.

High-speed broadband networks could easily fall into the category of essential non-duplicable infrastructure. As such, they are networks that should be regulated by government to ensure they are open to all service providers and as a result individual end users will have true choice of the provider they wish to use. That requirement would include addressing issues of access to the hardware or for maintenance purposes. As will be identified, there is a risk that Australia’s high-speed broadband network of the future will not be one network but many networks. Ensuring open access to all networks is vital if individual end users are to be able to innovate and engage with business, government and others.

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*upstream or downstream markets.”*

<sup>187</sup> Waller S and W Tasch, ‘Harmonising Essential Facilities and Refusals to Deal’ (2010) 76(3) *Antitrust Law Journal*, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1418081#](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1418081#) (viewed 02/06/2010)

<sup>188</sup> Cooper M, ‘Open Access to the Broadband internet: Technical and Economic Discrimination in Closed, Proprietary Networks’ (1998) 69 *University of Colorado Law Review*, 331, 339

<sup>189</sup> Ku R, ‘Open internet Access and Freedom of Speech: A First Amendment Catch-22’ (2000) 75 *Tul L Rev*, 87

<sup>190</sup> Cutler T, ‘Chapter 3 – Innovation and Open Access to Public Sector Information’ [2008] SydUPLawBk 34 in B Fitzgerald Legal Framework for e-Research: Realising the Potential (2008) 24, 28 – “*Access regulation for telecommunications networks is based on two major premises:*

- *The utility and benefits of networks are promoted by ‘any to any’ connectivity (interoperability); and*
- *Dominant players should not be able to create ‘bottlenecks’ to access.”*

<http://www.austlii.edu.au/au/journals/SydUPLawBk/2008/34.txt> (viewed 23/02/2010)

<sup>191</sup> Sadowski B, A Nucciarelli and M de Rooij, ‘Providing incentives for private investment in municipal broadband networks: Evidence from the Netherlands’ (2009) 33 *Telecommunications Policy*, 582, 588



However, although open access assists in promoting competition as it promotes a level playing field by preventing a competitor from being unfairly advantaged,<sup>192</sup> from an individual end user perspective a purely competition-focussed access regime may not be the answer. Strict enforcement of competition or anti-trust laws may have a similar effect to a lack of openness on the benefits of innovation. That is, strict enforcement of competition law may stifle innovation,<sup>193</sup> rather than promoting innovation and growing the internet economy. The internet is able to provide services that enable business conducted with government to be timely and cost-effective<sup>194</sup> and its use is seen by some as a new mechanism for service delivery and participation.<sup>195</sup> Although others considered it is merely “*another medium of participation*”,<sup>196</sup> the internet remains a valuable tool for information and service provision by government.<sup>197</sup> Many consumers now expect the ease of access the internet brings.<sup>198</sup> This is clearly recognised by government<sup>199</sup> with a recent report going further to recommend the establishment of a website to enable online petitioning.<sup>200</sup>

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<sup>192</sup> Woroch G, ‘Open Access rules and Equilibrium Broadband Deployment’, in R Cooper and G Madden (Eds) *Frontiers of Broadband, Electronic and Mobile Commerce* (Physcia-Verlag, Heidelberg, 2004) 221 – “*Proponents of ‘open access’ ... emphasize how sharing creates competition in retail service without the waste of duplicate investment. In its strong form, this view foresees future facilities-based competition which results in net increase in advanced network investment.*” [references omitted]

<sup>193</sup> Greenspan A, *Antitrust Capitalism: The Unknown Ideal* (New American Library, 1967) 63 – “*No one will ever know what new products, processes, machines, and cost-saving mergers failed to come into existence, killed by the Sherman Act before they were born. No one can ever compute the price that all of us have paid for that Act which, by inducing less effective use of capital, has kept our standard of living lower than would otherwise have been possible.*”

<sup>194</sup> Plumb I and A Zamfir, ‘Improving Urban Management through E-Government Services: the Romanian Experience’ (2009) 13 *Theoretical and Empirical Researches in Urban Management*, 165, 165-176

<sup>195</sup> Strieb G and I Navarro ‘City Managers and E-Government Development’ Assessing Technology Literacy and Leadership Needs’ (2008) 4 *International Journal of Electronic Government Research*, 37, 39

<sup>196</sup> Goldfinch S, R Gauld and P Herbison, ‘The Participation Divide? Political Participation, Trust in Government, and E-government in Australia and New Zealand’ (2009) 68(3) *Australasian Journal of Public Administration*, 333, 346

<sup>197</sup> Ypsilanti D and S Paltridge, ‘OECD Broadband Market Developments’, in ‘Frontiers of Broadband, Electronic and Mobile Commerce’, R Cooper and G Madden (Eds) (Physcia-Verlag, Heidelberg, 2004) 303

<sup>198</sup> Balutis A, ‘Addressing the Technology Challenge’ (2009) 38(1) *Public Manager*, 81, 85; Note 155, Ewing and Thomas, 43 – “*Two thirds [of Australians] had used the internet to access information about government while over half had actually used government services online (50.7%) and to pay taxes, fines or a licence (52.9%). A further 43.6% had logged into to a secure area to access government services.*”

<sup>199</sup> For example see Senator Kate Lundy’s ‘Public Spheres’ website – <http://www.katelundy.com.au/category/campaigns/publicsphere/> (viewed 10/07/2010). Also see – Morgeson III, F and S Mithas, ‘Does E-Government Measure UP to E-Business? Comparing End

#### 4. Open access in the user context

Some authors considered that for end users open access is about choice. That is, that open access addresses “*maximum end-user choice*”<sup>201</sup> or that “*open access provides individuals with a choice of service providers, offering the promise of choice in accessing all types of information and/or ... services plus the freedom to communicate or publish via channels of their choosing*”.<sup>202</sup> However, open access to the internet is not just about choice, either generally or in a pure competition context. It is about access for both economic and social reasons as relevant to enabling the internet economy.

The internet is a valuable resource in ensuring access to government and government services, by both individuals and businesses.<sup>203</sup> The importance of the internet economy for government is that the internet is more than just a mechanism for sharing information. The internet is important as a means of ensuring public participation in the policy process.<sup>204</sup> The prerequisite being that you must have appropriate access.<sup>205</sup> Frequency of use is a factor in encouraging participation by consumers in that the easier it is to use the internet, the more people will tend to use it. Ease of use of government websites consequently will facilitate general participation in the internet economy.<sup>206</sup> A recent study however

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User Perceptions of U.S. Federal Government and E-Business Web Sites’ (2009) 69(4) *Public Administration Review*, 740, 740-752; although the Australian non-users remain sceptical about its effectiveness. See – Note 155, Ewing and Thomas, 36 – “*We asked a series of questions about peoples’ attitudes to the internet and politics, and the broad issues of contemporary internet policy and regulation. In general, non-users were more sceptical than users about the internet’s capacity to empower citizens. Perhaps more importantly, a sizeable proportion of non-users said they didn’t know what impact the internet was having on politics and the role of citizens.*”

<sup>200</sup> The House of Representatives, ‘Electronic petitioning to the House of Representatives’, Standing Committee on Petitions, October 2009, 70 – “*Recommendation 1 – The Committee recommends that the House: (a) establish an electronic petitions website and system under the administration of the House*” <http://www.aph.gov.au/house/committee/petitions/epetitioning/report/fullreport.pdf> (viewed 11/06/2010) It is noted that as yet there has not been a government response to the report. See – <http://www.aph.gov.au/house/committee/petitions/reports.htm> (viewed 05/12/2010)

<sup>201</sup> Krechmer K, ‘Open Standards Requirements’ (2006) 4(1) *The International Journal of IT Standards and Standardization Research*, 14, 24 <http://www.csrstds.com/openstds.pdf> (viewed 08/04/2010)

<sup>202</sup> Note 163, Kelso, 1

<sup>203</sup> Note 194, Plumb and Zamfir, 165-176

<sup>204</sup> Referred to by some authors as ‘*civic engagement*’, see – West D, *An International Look at High Speed Broadband* (2010) Governance Studies at Brookings, 11 [http://www.brookings.edu/~media/Files/rc/reports/2010/0223\\_broadband\\_west/0223\\_broadband\\_west.pdf](http://www.brookings.edu/~media/Files/rc/reports/2010/0223_broadband_west/0223_broadband_west.pdf) (viewed 07/10/2010)

<sup>205</sup> Citron D, ‘Open Code Governance’ [2008] *The University of Chicago Legal Forum*, 355, 357

<sup>206</sup> ACMA, ‘Australia in the Digital Economy – Report 2: Online Participation’, May 2009, 17 [http://www.acma.gov.au/webwr/aba/about/recruitment/online\\_participation\\_aust\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/aba/about/recruitment/online_participation_aust_in_digital_economy.pdf) (viewed 07/01/2010)

shows that participation engagement levels generally of those in rural areas and of older citizens are considerably less than their counterparts in urban areas.<sup>207</sup> Part of encouraging use will be to ensure information is easily accessible. Open access to government means that government makes its information and material available in a format that is easily accessed and accessible to all. This is more than just open government.

Unfortunately, Australia generally lacks a consistent policy addressing access to government information. This is evidenced by the fragmented processes necessary for obtaining access to the information created and/or held by public service entities.<sup>208</sup> Information held or created by business is even less accessible.<sup>209</sup> To ensure ease of access to government information by end users it will be crucial to ensure that open access via the internet is available to a variety of service providers.<sup>210</sup> This principle also has been recognised as being “*crucial to achieving Government’s competition objectives*”.<sup>211</sup> In the era of e-government and Government 2.0 the “*key [government] goals are better service delivery, a focus on citizen needs, and community ownership*”.<sup>212</sup> Government services and systems therefore must be properly implemented, easy to use, and secure in order to encourage citizens to use them and thus to be truly effective.<sup>213</sup>

Lack of clarity of government policy, available infrastructure and time constraints may impact on the smooth delivery of services particularly in comparison with businesses’ service provision.<sup>214</sup> It could be argued that access to public documents (as information) is a right. Where more governments are

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<sup>207</sup> Note 196, Goldfinch *et al*, 344 – “*the chances of town and rural respondents being e-government users were less than half of their city counterparts.*”

<sup>208</sup> For a review of public sector access regimes see – Fitzgerald A, *Open access policies, practices and licensing : a review of the literature in Australia and selected jurisdictions* (2009) School of Law, Queensland University of Technology, Brisbane, Queensland, 25-129 <http://eprints.qut.edu.au/28026/> (viewed 12/02/2010)

<sup>209</sup> In part this may be because of the need for compliance with privacy obligations or due to the sensitive nature of the material. It is noted that a wealth of information is prescribed by various laws to be made available, i.e. Annual Returns, Annual Reports although this is in a sanitised format.

<sup>210</sup> McKinsey & Company/KPMG, *National Broadband Network Implementation Study*, 6 May 2010 (‘McKinsey Report’) 341 “*Once the backhaul network is in place, there is an opportunity to create value by enabling other access networks – for example, mobile providers, or WiMAX ISP operators – to access backhaul.*” <http://data.dbcde.gov.au/nbn/NBN-Implementation-Study-complete-report.pdf> (accessed 08/05/2010)

<sup>211</sup> Note 210, McKinsey Report, 28

<sup>212</sup> Note 195, Strieb and Navarro, 38

<sup>213</sup> Note 194, Plumb and Zamfir, 168

<sup>214</sup> Note 199, Morgeson and Mithas, 749

moving (and are being actively encouraged so to move)<sup>215</sup> to information provision by digital means, this is now a fundamental right. As will be considered in later chapters, the need for the free exchange of information, including for R&D, and the ability to access and develop relevant channels by means of the expansion of EI, is critical for innovation and thus the internet economy. Open access in a similar context, albeit in relation to standards, has been used to describe the importance to end users of accessibility in the physical and security context.<sup>216</sup>

The internet can be used by governments to assist end users in building and protecting communities. After recent natural disasters governments (and businesses), both in Australia and elsewhere, are looking beyond just information and traditional service delivery via the internet. They are seeking to use SMS and other social networking services, such as Twitter, as an additional means of warning of potential disasters.<sup>217</sup> These services and sites also have been used overseas in assisting community recovery.<sup>218</sup>

It appears many ISPs and governments have forgotten the internet was founded on openness.<sup>219</sup> They also seem to forget that without this openness of the internet, for sharing, learning and experimenting, many of the services (innovations) we currently take for granted would be unlikely to exist.<sup>220</sup> A consideration of openness therefore would be incomplete without a reference to hackers.<sup>221</sup> Hackers believe that access to data should be unlimited and that information should be freely available to all.<sup>222</sup> The thesis does not condone their criminal activities,<sup>223</sup> however justifiable the hackers

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<sup>215</sup> Curtin D, 'Citizens' Fundamental Right of Access to EU Information: An Evolving Digital Passepartout?' (2000) 37 *Common Market Law Review*, 7

<sup>216</sup> Note 201, Krechmer, 31 – "Open access describes the importance of accessibility by the users of standardized implementations ... [and] divides into ... physical access ... and defined access (e.g. ... mark indicating equipment is safe to use)."

<sup>217</sup> 'Fire Alerts Available on Twitter', *Incident Alert* [http://incidentalalert.com.au/iav5/index.php?option=com\\_content&view=article&id=54:fire-alerts-now-available-on-twitter&catid=1:latest-news](http://incidentalalert.com.au/iav5/index.php?option=com_content&view=article&id=54:fire-alerts-now-available-on-twitter&catid=1:latest-news) (viewed 15/06/2010)

<sup>218</sup> Schellong A, 'Government 2.0: An exploratory study of social networking services in Japanese local government' (2008) 2(2) *Transforming Government: People, Process and Policy*, 225, 225-242

<sup>219</sup> Lessig L, *Code and other laws of cyberspace* (Basic Books, US, 1999) 39

<sup>220</sup> i.e. Facebook, Ebay etc, see – Johnson K, 'The importance of Net Neutrality to the digital economy' (2009) 59(2) *Telecommunications Journal of Australia*, 19.1, 19.1

<sup>221</sup> Hacking history commenced with 'playing around' with telephone and the movement increased exponentially with the invention of the computer. See – Goldstein E, *The Best of 2600: A Hacker Odyssey Collector's Edition* (Wiley Publishing Inc., Indianapolis, 2009) 120

<sup>222</sup> Levy S, *Hackers: Heroes of the computer revolution* (Anchor Press, New York, 1984) 27-33

<sup>223</sup> Grabosky P, 'Computer Crime: A Criminological Overview', presentation at the *Workshop on*

might consider their action to be.<sup>224</sup> Nor does it share their ethics<sup>225</sup> or philosophies.<sup>226</sup> However, the thesis supports their position that access to information and content should be both open and free; and sees their previous actions to be a warning. If high-speed broadband networks are not operated so that anyone can access the content they wish, when they wish to, the hackers will make it so.

Openness of the internet is more clearly understood by means of describing the nature of the competitiveness of the underlying networks. An open-access network is one to which all providers must be given access on a competitive basis and from which the owner is unable to exclude any party. Openness also means ensuring the network is open to be accessed by the individual end users as and when they choose, and from where they choose. The networks do not exist for themselves. They exist to provide content and services to consumers. Individual end users therefore must be able to access content and services as and when they wish.

## **E. Neutrality**

The ability to access content and services relies on more than just openness. One method of addressing issues of appropriate access, which also addresses competition concerns, is by means of ensuring network neutrality.<sup>227</sup> Some authors argue that network neutrality has overtaken the open-access debate.<sup>228</sup> However, although neutrality is also concerned with openness, network neutrality is not the same as openness or open access. Issues of non-favouritism of content, which to an extent forms part of the content filtering debate, is not the same as openness to the underlying network. The issues are not the same either in the sense of a competitor having physical access rights; or a user having access skills. Matters are complicated when, as in the US for example, those that oppose “*network neutrality regulation*

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*Crimes Related to the Computer Network, Tenth United Nations Congress on the Prevention of Crime and the Treatment of Offenders*, Vienna, 15 April 2000, Australian Institute of Criminology <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.3.4660&rep=rep1&type=pdf> (viewed 06/03/2010)

<sup>224</sup> Taylor P, ‘From hackers to hacktivists: speed bumps on the global superhighway’ (2005) 7*New Media Society*, 625, 629 – “the mid-1990s marked the merging of hacking activity with an overtly political stance ... politics provid[ing] the raison d’être of the activity.”

<sup>225</sup> Note 224, Taylor, 28

<sup>226</sup> For a discussion of various hacking philosophies see – Note 221, Goldstein, Chapter 7 in particular 207

<sup>227</sup> Note 44, Whitt, 452

<sup>228</sup> Note 163, Kelso, 163

*support an open Internet*".<sup>229</sup> To clarify, the thesis looks to neutrality as a means of assisting in achieving access to content and services. Network neutrality as referred to in the thesis is not equivalent to openness.

## 1. Defining network neutrality

In the 1990s, network neutrality was considered by engineers from a theoretical perspective and within a closed community. In the context of the internet itself, network neutrality may not be easy to define.<sup>230</sup> It is perhaps best considered by the consequences of not having network neutrality. A lack of network neutrality can restrict end user access to content and services. This occurs when service providers, who also are network access providers, act to prevent access by users to their competitors' services or can operate their networks in such a way as to make access by consumers to their competitors less effective. As Sarnoff considered, competition may be great for product and service development but not necessarily for participant behaviour.<sup>231</sup>

Meinrath and Pickard propose a "*more expansive conception of network neutrality*".<sup>232</sup> Their definition requires that, to be neutral, the relevant network infrastructure will require "*common carriage; is open architecture and support open source driver development; is open protocol and open standard; is based upon a 'dumb network'; is private; is application neutral; requires adequate capacity; is interoperable; is business model neutral; and is run by its users*".<sup>233</sup> A recent definition that is of particular relevance for the provision of broadband internet access is that network neutrality means that the "*broadband providers should not be able to use their networks in a way that discriminates against competing content and services*".<sup>234</sup>

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<sup>229</sup> Note 44, Whitt, 454

<sup>230</sup> Cave M and P Crocioni, 'Does Europe Need Network Neutrality Rules?' (2007) 1 *International Journal of Communication*, 669

<sup>231</sup> David Sarnoff, Russian-born American Inventor (1891-1971) – "*Competition brings out the best in products and the worst in people*" <[http://thinkexist.com/quotation/competition\\_brings\\_out\\_the\\_best\\_in\\_products\\_and/177116.html](http://thinkexist.com/quotation/competition_brings_out_the_best_in_products_and/177116.html)> (viewed 16/03/2008)

<sup>232</sup> Meinrath S and V Pickard, 'The New Network Neutrality: Criteria for Internet Freedom' (2008) 12, *International Journal of Communications Law & Policy*, 225, 236 [http://www.ijclp.net/files/ijclp\\_web-doc\\_10-12-2008.pdf](http://www.ijclp.net/files/ijclp_web-doc_10-12-2008.pdf) (viewed 22/06/2010)

<sup>233</sup> Note 232, Meinrath and Pickard, 236

<sup>234</sup> Johnson K, 'The importance of Net Neutrality to the digital economy' (2009) 59(2) *Telecommunications Journal of Australia*, 19.1, 19.1

## 2. The infrastructure

The issue of network neutrality arises in the context of the attempted closure of a network by the provider by restricting access to certain content or services. Infrastructure is the term generally used to describe the public works that are required for an industrial economy to function.<sup>235</sup> In some cases government has both built the infrastructure and owns it. In others the government, in partnership with private enterprise, ensures that it is constructed. In yet other cases the government will regulate that construction of a particular infrastructure must occur.<sup>236</sup> For Australian telecommunications the provider of the network has mainly been the federal government or a government owned entity. Telecommunications therefore has been provided as a public work.

Towards the end of the 19<sup>th</sup> Century, through the 20<sup>th</sup> Century and into the 21<sup>st</sup> Century there was an increased intervention by governments generally in research and technology.<sup>237</sup> Although relevant infrastructure also is required, the same level of government intervention was not evident regarding public work construction. Changes were made in 2007,<sup>238</sup> however in the early years of the 21<sup>st</sup> Century it was apparent that increased intervention still did not mean increased investment. While Australia might then have had a very low level of national debt as a percentage of gross domestic product ('GDP'), this saving was at the expense of its spending on public works.<sup>239</sup> Australia's "*urban infrastructure has undergone major changes, both in its technological forms and in its ownership, management and financing*"<sup>240</sup> and in the past few decades there have been disputes as to what, and why infrastructure is provided.<sup>241</sup>

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<sup>235</sup> Atkins D, K Droegemeier, S Feldman, H Garcia-Molina, M Klein and P Messina, 'Revolutionizing science and engineering through cyberinfrastructure' January 2003, Report of the National Science Foundation blue-ribbon advisory panel on cyberinfrastructure, Washington, DC: National Science Foundation, 5n [http://www.communitytechnology.org/nsf\\_ci\\_report/](http://www.communitytechnology.org/nsf_ci_report/) (viewed 20/05/2010); Unsworth J, 'Cyberinfrastructure for the Humanities and Social Sciences' in B Fitzgerald (Ed) *Legal Framework for e-Research: Realising the Potential* (Sydney University Press, Sydney, 2008)

<sup>236</sup> As is the cases with broadband in greenfield estates. See – the previously proposed *Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010*

<sup>237</sup> Note 53, Habermas

<sup>238</sup> Note 174, Benkler

<sup>239</sup> The Allen Consulting Group, 'Funding Urban Public Infrastructure: Approaches Compared', Report for the Property Council of Australia, August 2003

<sup>240</sup> Gleeson B, J Dong and N Low, 'Urban Infrastructure' in S Thompson (Ed) *Planning Australia: an overview of urban and regional planning* (Cambridge University Press, Melbourne, 2007) 309

<sup>241</sup> More recently see – Abbott T, 'Budget Reply Speech', 13 May 2010, *House of Representatives Hansard*, 139 <http://aph.gov.au/hansard/reps/dailys/dr130510.pdf> (viewed 03/06/2010)

Specifically, there have been clashes over infrastructure provision by communities with both developers, who appear to be driven by profit, and in some cases cherry picking where they will deploy infrastructure;<sup>242</sup> and governments who too often appear to not be acting “*in the interests of communities*”.<sup>243</sup> The issue of profitability is one that has directly influenced the private development of broadband networks in the past, as lack of profitability has prevented deployment in certain areas. What is the best and appropriate method of delivery of a high-speed broadband network also remains in dispute.

Australian telecommunications services and infrastructure have been previously provided by either the Australian government directly, or through a corporation or other entity under its control or direction.<sup>244</sup> Similarly because of the high cost of implementing a high-speed broadband network, ubiquitous broadband provision is now being driven by the federal government. As Whitt observed, this type of infrastructure generally cannot be created or maintained without the use of public resources.<sup>245</sup> Of necessity Australia’s high-speed broadband network must be a public work and on this basis the government has enabled the creation of the NBN. It also remains therefore that it is a federal government responsibility,<sup>246</sup> as the ‘owner’ of the NBN, to ensure that all related infrastructure is available to be accessed by all citizens and that all content and services flowing via the NBN can be used by them.

### **3. Neutrality in practice**

Lack of network neutrality as a potential issue for internet services and content only came to the public’s attention in the United States during 2002.<sup>247</sup> The real threat of lack of network neutrality to the future of the internet was not

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<sup>242</sup> Note 210, McKinsey Report, 210

<sup>243</sup> Thompson S ‘Conclusion: Planning Australia into the Future’ in S Thompson (Ed) *Planning Australia: an overview of urban and regional planning* (Cambridge University Press, Melbourne, 2007) 330

<sup>244</sup> *Bayside City Council v Telstra Corp Ltd* [2004] HCA 19 per Gleeson CJ, Gummow, Kirby, Hayne And Heydon JJ [6]

<sup>245</sup> Note 44, Whitt, 434; As Ayre *et al* observes, the cost of maintenance and upgrading of the existing networks is millions of dollars see Ayre R, K Hinton, B Gathercole and K Cornick, ‘A Guide to Broadband Technologies’ (2010) 43 (2) *The Australian Economic Review*, 200, 202

<sup>246</sup> Neutze M, *Funding Urban Services: Options for physical infrastructure* (Allen & Unwin, St Leonards, NSW, 1997) 179

<sup>247</sup> Endres J, ‘Net neutrality – How relevant is it to Australia?’ (2009) 59(2) *Telecommunications Journal of Australia*, 22.1-22.10



appreciated until more recently.<sup>248</sup> Technology by itself, or protection of related intellectual property rights, is not a concern for network neutrality or competition law. Internationally, however, there is a focus on this area as regards regulating practices deemed inappropriate.<sup>249</sup> Restrictions on consumer choice (i.e. what users are able to access); and impediments to network neutrality can arise both by means of technological prevention and/or by means of contractual obligation. On the other hand, competition in the market may provide value to consumers<sup>250</sup> and ensure their unrestricted choice.<sup>251</sup> Competition, although detrimental to some, also may increase economic efficiency<sup>252</sup> and growth.<sup>253</sup> Just as “[k]nowledge builds on knowledge”<sup>254</sup> most technology builds on and from prior technologies.<sup>255</sup> The result is that a completely independent technology is the exception not the rule.<sup>256</sup> Policy makers and regulators therefore need to strike a balance between the benefits technology brings and the possible methods by which it may be used inappropriately to restrict choice or access. This is necessary in particular in order to address issues arising from what some commentators refer to as “‘High Tech’ competition technology”.<sup>257</sup>

The arguments supporting the continuing neutrality of the internet are threefold. First, it prevents anti-competitive practices by the dominant participants in the

<sup>248</sup> Berner-Lee T, ‘Net Neutrality: this is Serious’, 21 June 2006 <http://dig.csail.mit.edu/breadcrumbs/node/144> (viewed 22/05/2010)

<sup>249</sup> Asher A, ‘Microsoft monopoly split’, ACCC NewsRelease, 9 June 2000, Release #MR122/00 <http://www.accc.gov.au/content/index.phtml/itemId/323029> (28 February 2008); *Agreement on Trade Related Aspects of Intellectual Property Rights* – Part II, Section 8, Article 40 – “2. Nothing ... shall prevent Members from specifying in their legislation licensing practices ... that may in particular cases constitute an abuse of [IPR] ... having an adverse effect on competition” <[http://www.wto.org/english/tratop\\_e/tratop\\_e/t\\_agm3d\\_e.htm#8](http://www.wto.org/english/tratop_e/tratop_e/t_agm3d_e.htm#8)> (2 March 2008)

<sup>250</sup> European Commission, *Citizen's Guide to Competition Policy*, – *Antitrust and Cartels* at Note 11 ([http://europa.eu.int/comm/competition/citizen/index\\_en.html](http://europa.eu.int/comm/competition/citizen/index_en.html)) (26 October 2004)

<sup>251</sup> Ramsey I, *Consumer Law and Policy*, 2<sup>nd</sup> ed (Hart Publishing, Oxford and Portland, Oregon, 2007) 85.

<sup>252</sup> Corones S, *Competition law in Australia*, 3<sup>rd</sup> ed (Lawbook Co, Sydney, 2004) 14

<sup>253</sup> Fullerton L, *Competition Policy: Frequently Asked Questions*, 2000, U.S.-Vietnam Trade Council <http://www.usvtc.org/Documents/Vietnam%20Laws/FAQS%20on%20Competition%20Policy%20July%202000.pdf>

<sup>254</sup> Note 190, Cutler, 28

<sup>255</sup> For a consideration of 30 years of development in the computer industry [from the mid-1960s to 1990s] see – Bresnan T and S Greenstein, ‘Technological Competition and the Structure of the Computer Industry’ (1999) XLVII *The Journal of Industrial Economics*, 1

<sup>256</sup> Nakamura L, ‘Economics and the New Economy: The Invisible Hand Meets Creative Destruction’ (2000) July/August, *Federal Reserve Bank of Philadelphia Business Review*, 21 – “leapfrogging competition”

<sup>257</sup> Depypere S, ‘Why do we need a competition policy?’ Speech, *Europa* 14 February 1995 [http://europa.eu.int/comm/competition/speeches/text/sp1995\\_014\\_en.html](http://europa.eu.int/comm/competition/speeches/text/sp1995_014_en.html) (viewed 05/11/2004)

telecommunications market that is, by the cable and telecoms companies.<sup>258</sup> Second, it will help promote innovation by allowing everyone to be their own author and publisher.<sup>259</sup> Third, it ensures the free flow of information and prevents the evolution of a system where service providers stem or speed the transmission of data based on their best interest, rather than that of the end user or market.<sup>260</sup> However, unlike other jurisdictions, Australia does not currently legislate for network neutrality for any broadband services.<sup>261</sup>

#### 4. Neutrality in the user context

It is important to ensure that whatever high-speed broadband infrastructure is constructed, it is constructed in a sustainable manner so that it will meet society's needs now and will enable future needs to be met as they arise.<sup>262</sup> In any event, high-speed broadband needs to be available to all and not just those with the financial capacity and skills to be able to afford and use it.<sup>263</sup> Unfortunately, as the roll-out of high-speed broadband networks by a variety of providers

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<sup>258</sup> Balkin J, 'The Democratic Case for Network Neutrality', April 27, 2006 <http://balkin.blogspot.com/2006/04/democratic-case-for-network-neutrality.html> viewed 20/05/2010

<sup>259</sup> Note 258, Balkin

<sup>260</sup> 'Neutrality Vital to Health of Internet' editorial, September 23, 2009 *St. Petersburg Times*, <http://www.tampabay.com/opinion/editorials/article1038353.ece> (viewed 15/06/2010)

<sup>261</sup> Note 174, Benkler, 246 – "*Network non-discrimination has not been a major issue. The ACCC declined to impose a form of neutrality for backbone networks in 2004. Telstra argues that this results from competitive retail broadband and universal 'volumetric pricing' capped plans where usage above the monthly allowance is throttled or charged at a pre-determined rate. This practice is said to reduce any incentive for ISPs to block or throttle content unaffiliated to the ISP or generated by users, while creating an incentive for them to encourage extra use of content from any source and to upgrade facilities... The neutrality issue is playing out in a different way. Rather than negatively discriminating against particular content, some ISPs are positively discriminating by offering unmetered access to some content. The publicly-funded national broadcaster, the ABC, argues that the publicly-funded NBN should carry all its content unmetered.*" [references omitted] Legislating for network neutrality it is not however impossible as the Chilean Parliament shows. See – Stevens T, 'Chile becomes first country to guarantee net neutrality, we start thinking about moving', July 15, 2010 *Slashdot* <http://www.engadget.com/2010/07/15/chile-becomes-first-country-to-guarantee-net-neutrality-we-star/> (viewed 16/07/2010) and Camara de Diputados de Chile, Bills pending – Memorandum amending Law No. 18,168, General Telecommunications (Chile) [http://translate.google.com/translate?hl=en&ie=UTF-8&sl=es&tl=en&u=http://www.camara.cl/pley/pley\\_detalle.aspx%3FprmID%3D5300%26prmBL%3D4915-19&prev=\\_t&rurl=translate.google.com&twu=1](http://translate.google.com/translate?hl=en&ie=UTF-8&sl=es&tl=en&u=http://www.camara.cl/pley/pley_detalle.aspx%3FprmID%3D5300%26prmBL%3D4915-19&prev=_t&rurl=translate.google.com&twu=1) (viewed 26/10/2010)

<sup>262</sup> Ratcliffe J, M Stubbs and M Shepherd, *Urban Planning and Real Estate Development*, 2<sup>nd</sup> ed (Spon Press, London, 2001) 210 – referring to Mr Gro Harlem Brundtland, World Commission 1987 – "*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*"

<sup>263</sup> Note 44, Whitt, 441 – "*A key question then is whether broadband providers possess adequate economic incentives to invest in their networks when they cannot capture the full economic benefit. The policies that policymakers adopt, and in particular the types of institutions and projects employed, may depend to a large extent on an analysis of the ability of market forces to send the proper economic signals.*"

continues,<sup>264</sup> the infrastructure that constitutes Australia’s high-speed broadband network may have many owners.<sup>265</sup> The McKinsey Report discusses in detail the economic issues relevant for privatisation of the proposed network and government-owned corporation.<sup>266</sup> It also identifies some of the drawbacks to private investment. However, it appears not to fully appreciate the fact that in some circumstances there is a valid social argument for maintaining all of such unique infrastructure, and not just the backhaul components,<sup>267</sup> as truly public infrastructure. That is, in the sense of being owned by the federal government on behalf of the country. This is despite the fact that McKinsey Report clearly recognises the NBN will be “*a new monopoly passive access network for most of the country*”<sup>268</sup> with no foreseeable competitor.<sup>269</sup>

Despite the federal government’s publically stated intention to ultimately divest itself of its interest in the NBN, as the NBN arguably will be a natural monopoly<sup>270</sup> its ownership should always remain with government. If this is not

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<sup>264</sup> i.e. Optus and Iprimus just to name two. See – ‘Optus Network Coverage Maps’ <http://www.optus.com.au/aboutoptus/About+Optus/Network+Coverage?display=&network=> (viewed 13/11/2010); Iprimus ‘Fibre Optic Internet Australia’ <http://www.iprimus.com.au/PrimusWeb/HomeSolutions/FibretotheHome/Locations.htm> (viewed 13/11/2010)

<sup>265</sup> The Senate, ‘Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010 [Provisions]’, Environment, Communications and the Arts Legislation Committee, May 2010, 35 – “*The committee asked [DBCDE] ... to clarify who will own any fibre deployed in a project area (including backhaul), any fibre installed in it, and the fibre-ready infrastructure installed on constructed as part of the project.*” DBCDE advised – “*A range of ownership and management arrangements already exist when it comes to the operation of telecommunications infrastructure in new developments. The government has not seen any reason why these arrangements cannot be left to the market. The government is concerned to ensure, however, that quality facilities are installed in new development and are operated to provide quality services. To a large extent this will be achieved through the setting of appropriate technical specifications and competitive forces. As a further safeguard, [DBCDE] is working with stakeholders on the development of a process for accrediting fibre providers and certifying the infrastructure .... While legislation is not prescriptive as to who can own, manage or operate infrastructure...under section 47 of the Telecommunications Act 1997, a network unit (which would include fibre lines ...) must not be used without the owner having a carrier licence or a nominated carrier declaration.*” And 36 – “*Recommendation 3 – The committee recommends that [DBCDE] ... give consideration to the variety of ownership arrangements that exist, or might arise, and whether there are good reasons for the government to intervene in these arrangements.*” [http://www.aph.gov.au/Senate/committee/eca\\_ctte/fibre\\_deployment/report/report.pdf](http://www.aph.gov.au/Senate/committee/eca_ctte/fibre_deployment/report/report.pdf) (10/07/2010)

<sup>266</sup> Note 210, McKinsey Report, 41

<sup>267</sup> Note 210, McKinsey Report, 479, Recommendation 79 – “*That the independent review of competition prior to privatisation start with a rebuttable presumption that backhaul not be privatised.*”

<sup>268</sup> Note 210, McKinsey Report, 45

<sup>269</sup> Note 210, McKinsey Report, 48

<sup>270</sup> Cannadi J and B Dollery, ‘An Evaluation of Private Sector Provision of Public Infrastructure in Australian Local Government’ (2005) 64(3) *Australian Journal of Public Administration*, 112, 113 – “*Infrastructure services are typically natural monopolies, usually because the initial capital costs of*

to occur then appropriate planning is required to be undertaken now to ensure the NBN's ongoing appropriateness and viability for service delivery as an open, neutral network.

The federal government sought input as to whether the NBN should remain wholesale only into the future<sup>271</sup> although, as a last resort, it has established processes to enable NBN Co Limited to provide retail services where no retail provider exists. As part of that ongoing discussion, working to ensure network neutrality will play a key role for enabling access to the NBN. This will include neutrality issues for both wholesale and retail services. Broadband services and content network neutrality should be defined to include the requirement that the retail providers must not be able to use their access rights in a way that discriminates against competing content and services. In supporting the NBN the principal of network neutrality should be confirmed in legislation so that neither a wholesaler nor retailer can prevent or restrict users from dealing with another retailer or other service provider. Whether a wholesale-only network is practical during the transition phase only, or whether it is desirable, achievable or economically viable into the future, is debatable. Ensuring network neutrality is not.

## **F. The central concept: Introducing 'connectedness'**

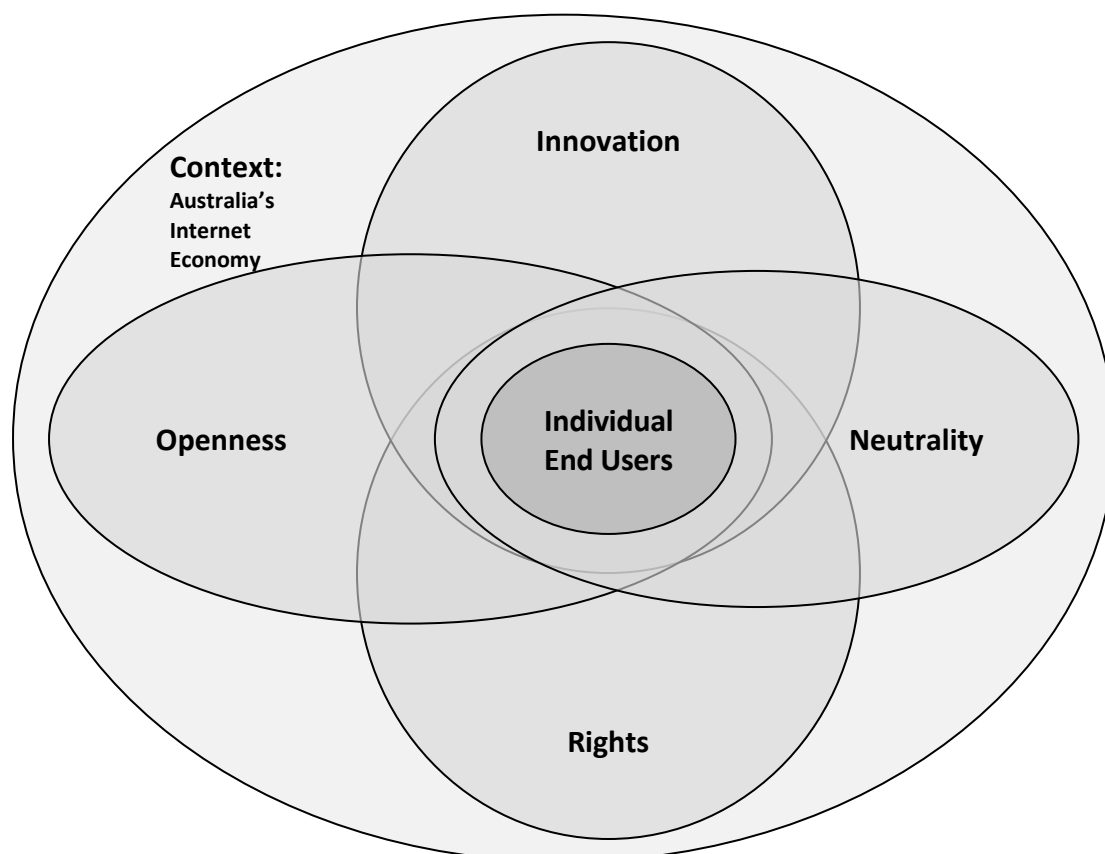
*Connectedness* refers to the level of interaction and engagement by individual Australians with each other, business and government required to ensure the future of Australia's internet economy. *Connectedness* is directly related to individual end users' level of access to and use of the internet. Individual end users need the underlying networks of the internet to be open. They also need the internet service providers to have open access to broadband networks to enable optimal service provision. In turn, individual end users need to be able to access the internet content

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*establishing the operation are prohibitive."*

<sup>271</sup> For example see DBCDE, 'National Broadband Network: Fibre-to-the-premises' consultation paper, 29 May 2009, Question 27 – "Should it be mandatory that new FTTP networks in greenfield estates after 1 July 2010 be wholesale-only networks? If introduced, should there be exceptions to this type of rule and if so how should they be administered?" [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0018/112554/Fibre\\_in\\_greenfields\\_consultation\\_paper.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0018/112554/Fibre_in_greenfields_consultation_paper.pdf) (viewed 22/05/2010) More recently it is noted that NBN Co Limited is consulting with industry as to how its contractual arrangements with its customers, primarily retail service providers, will work. See – NBN Co Limited, 'NBN Co Consultation Paper: Introducing NBN Co's Wholesale Broadband Agreement', October 2010 <http://www.nbnco.com.au/wps/wcm/connect/6d8dba00447c19f1a462adc72ea64545/NBN+Co+WBA+Consultation+Paper+October+2010.pdf?MOD=AJPERES> (viewed 02/12/2010)

and services of their choosing in a non-discriminatory fashion. Each of the theories and principles examined above are essential for the future of the internet economy as they underpin the operation of the internet. In the era of high-speed broadband, where these theories and principles overlap is in their application to and for individual end users. That overlap is depicted in Diagram 1 and is referred to by the thesis as *connectedness*.



**Diagram 1: *Connectedness* domain diagram**

The place of innovation in Australia’s future is not limited to its potential economic impact. Innovation has a role as a mechanism to ensure basic human rights.<sup>272</sup> User innovation in particular is shown to have a positive effect on social welfare.<sup>273</sup>

<sup>272</sup> Note 12, Commonwealth of Australia, 14 – for example, education

<sup>273</sup> Note 41, von Hippel, 110 – “*Henkel and I studied the welfare impact of adding users as a source of innovation to existing analyses of product diversity, innovation, and social welfare. Existing models uniformly contained the assumption that new products and services were supplied to the economy by manufacturers only. We found that the addition of innovation by users to these analyses largely avoids the welfare-reducing biases that had been identified. For example, consider ‘business stealing’ (Spence 1976). This term refers to the fact that commercial manufacturers benefit by diverting business from their competitors. Since they do not take this negative externality into account, their private gain from introducing new products exceeds society’s total gain, tilting the balance toward overprovision of variety. In contrast, a freely revealed user innovation may also reduce incumbents’ business, but not to the innovator’s benefit. Hence, innovation incentives are not socially excessive. Freely revealed innovations by users are also likely to reduce deadweight loss caused by pricing of*

Individual end users therefore must be encouraged to innovate. As von Hippel identified:

*“it will be important to review innovation-related public policies to identify and correct biases with respect to sources of innovation. On a level playing field, users will become a steadily more important source of innovation, and will increasingly substitute for or complement manufacturers’ innovation-related activities”.*<sup>274</sup>

A component of encouraging end users to innovate in the internet economy will be to provide them with the means to operate in the internet economy. This will require working to ensure they are empowered to access content, services and skills. In this regard it may be, as Dalum and others have stated that:

*“the most fundamental role of government in supporting learning through society ... [is] to make sure that the prevailing institutional set up reinforces trust and moral[e] and this will be easier to establish if there is a general feeling among all citizens of belonging to a just society. Equal rights and equal opportunity are elements in such a strategy, as well as the support of weak agents and the restrictions on their exploitation by the strong ones. Social justice is not just a good thing in itself; it might be one of the most important long-term prerequisites for a strong innovative capability in society.”*<sup>275</sup> [emphasis added]

This position is similar to that held by the Australian federal government. That is, in recognising that innovation today means more than just producing gadgets, the federal government has acknowledged that innovation can be a means of ensuring and enabling social justice.<sup>276</sup> The need to enable all end users with the potential to innovate without preference to any one group<sup>277</sup> is as important for the future of the

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*products above their marginal costs.”*

<sup>274</sup> Note 41, von Hippel, 112

<sup>275</sup> Note 87, Dalum *et al*, 14

<sup>276</sup> Note 12, Commonwealth of Australia, 14 – “*Social innovation takes many forms. Very often the answer to a problem lies not in introducing new technologies, but in developing smarter policies and more effective ways of meeting people’s needs. An effective innovation system can do more than churn out new gadgets; it can show us better ways to live.*”

<sup>277</sup> Note 41, von Hippel, 123 – “*the capability and the information needed to innovate in important ways are in fact widely distributed ... the traditional pattern of concentrating innovation ... on just a few pre-selected potential innovators is hugely inefficient. High-cost resources for innovation support cannot be allocated to ‘the right people’, because one does not know who they are until they develop*

internet economy as is innovation by itself. Access to the internet itself is a fundamental right in the internet economy.

By enabling faster and more efficient access to the internet, high-speed broadband networks enable better connection to social networks.<sup>278</sup> Therefore it is not just public places that need to be reinvented.<sup>279</sup> We also need to reinvent our perception of the need for broadband and its place in Australia's social and well as economic future. Access by itself will require that the high-speed broadband networks are open to all. Removing barriers to access will facilitate innovation by expanding the networks available to an end user.<sup>280</sup> In the context of high-speed broadband, legislating for network neutrality can provide incentives to the federal government to ensure openness. It would do this by enabling the government to recognise the importance of ensuring ease of access to internet services and content by non-discriminatory conduct of providers and network owners. Network neutrality aids in the promotion of competition and thus the economy.<sup>281</sup>

At the heart of the internet are the individual end users. Without them, programs are not written, services not desired and content not created. Users are more than mere consumers. They are innovators. Building on what exists they individually and collectively create something new. In order to innovate collaboratively, they need to be able to access each other.<sup>282</sup> Individual end users also have rights, which they need assistance to enforce if their ability to operate in the internet economy is to be assured. Of primary importance are the rights of access to information, to education and to participate in government. In particular, a lack of access to information, or an information deficiency, is identified as a contributor to "*poor innovative performance*".<sup>283</sup>

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*an important innovation. When the cost of high-quality resources for design and prototyping becomes very low ... these resources can be diffused widely, and the allocation problem then diminishes in significance. The net result is and will be to democratize the opportunity to create."*

<sup>278</sup> Note 155, Ewing and Thomas, 12 – "*We asked ... how home internet access had changed people's contact with various social groups ... people were much more likely to say that internet access had increased their contact with various groups rather than decreased it.*"

<sup>279</sup> Note 11, Mitchell, *Prologue*

<sup>280</sup> Note 83, Lakhani and Panetta, 107

<sup>281</sup> Note 192, Woroch, 221

<sup>282</sup> Note 73, Harty, 312

<sup>283</sup> Note 46, OECD, 41 – "*The lack of interaction between the actors in the system, mismatches between basic research in the public sector and more applied research in industry, malfunctioning of technology transfer institutions, and information and absorptive deficiencies on the part of enterprises*

Having been identified in this chapter, the concept of *connectedness* will be further explained and considered in Chapter 3. This will be undertaken in the context of Australia in the internet economy. Chapter 4 will clarify why high-speed broadband will be the future means of ensuring *connectedness*.

## **G. Conclusion**

As the Cutler report identified, there is “*a growing recognition of the need for users to be able to search and interact with data and content*”.<sup>284</sup> As such, supporting and ensuring ongoing access to the internet will be essential for ensuring the ongoing effectiveness of the internet economy. The internet has an ongoing and vital role to play in Australia’s future as it provides access to information and education services. It also can provide a means of access to business and government services irrespective of time or place. However, the internet’s ability to fulfil this role is dependant upon all Australians having the means and ability to have access to the internet whenever and wherever they wish. It is reliant upon the end user being able to have access in a cost-effective and efficient manner. It also is conditional on ensuring their ongoing financial capacity to access.

It is vital for Australia’s internet economy to overcome the barriers that will inhibit an appropriate level of access.<sup>285</sup> As will be considered in Chapter 4 and Chapter 5, this is why high-speed broadband access, as a means of accessing the internet will be so important. It will be fundamental, in order to enable *connectedness* in the future, that individual end users have an appropriate level of access to high-speed broadband and to the material that will ‘flow’ over it and to the skills to take advantage of this access. As will be discussed, the benefits that high-speed broadband can bring are far-reaching. These benefits extend beyond merely enabling, promoting or guaranteeing access for competitors or granting related protections to consumers. The benefits also include the socio-economic benefits that open access to services and data can bring to individuals and for Australia.

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*may all contribute to poor innovative performance in a country.”*

<sup>284</sup> Note 5, Cutler, 94

<sup>285</sup> Note 6, ACMA, 35 – “*Addressing ... barriers to participation becomes important for social inclusion and ensuring that all Australians can garner the benefits of online activities in the digital economy. Access to the internet, an understanding of how to effectively use the internet and managing online risk are all important to a wider engagement in internet use and enhancing its role in underpinning the digital economy.*”



The aim should be for the Australian high-speed broadband network to be one network. However, even if this is achieved, high-speed broadband will in fact be a network of networks in practice.<sup>286</sup> Some of the underlying networks will be physical, some will be ethereal and some will be personal. That is, in operation, high-speed broadband will include the physical networks to be constructed by means of a variety of cabling options. It will also include networks that are mobile connections and those created by satellite. Finally, and most importantly, it will include the personal networks created by individual end users as well as those of government and business. Any definition of the NBN should therefore be as inclusive as possible to capture, protect and promote all possible underlying networks. It is only if the high-speed broadband network is truly everywhere and accessed by everyone that it will promote *connectedness* and the internet economy.

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<sup>286</sup> Note 8, Kariyawasm, 19



## CHAPTER 3 – CONNECTEDNESS AND AUSTRALIA IN THE INTERNET ECONOMY

*“No man is an island, entire of itself; every man is a piece of the continent, a part of the main.”<sup>1</sup>*

### **A. Introduction**

Drawing together the underpinning theories and principles of innovation, rights, openness and neutrality, *connectedness* reinforces that, in the internet economy, individual end users need access to the infrastructure, services, facilities and information of the internet. In order for internet economies to thrive and develop, individuals must have reliable access to the internet for communications and to access available content, services and information for social and business purposes. A purpose of this chapter is to lay the foundation for the discussion in later chapters. To consider the impact that high-speed broadband will have for Australia’s internet economy, it is necessary to consider the impact of the internet on the Australian community.

The chapter clarifies what *connectedness* means. In order to consider the impact of high-speed broadband for the Australian internet economy, it also is necessary to recognize what Australia is in the internet economy. The chapter does this by clarifying what community means, before considering the impact of the internet on the meaning of community. The chapter concludes by considering the impact that *connectedness*, or the lack of it, has for Australia’s internet economy.

### **B. Clarifying *connectedness***

*Connectedness* in the context of the thesis must not be confused with issues relevant for connectivity as relevant in the competition context.<sup>2</sup> Nor must it be confused with “*connectedness*”<sup>3</sup> as referred to by Mackay in the sense of the need to

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<sup>1</sup> John Donne (1572 – 1631), ‘Meditation XVII’, *Devotions Upon Emergent Occasions*

<sup>2</sup> Benkler Y, ‘Next Generation Connectivity: A review of broadband Internet transitions and policy from around the world’, *The Berkman Center for Internet & Society at Harvard University*, February 2010, Report for FCC, 245 [http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/Berkman\\_Center\\_Broadband\\_Final\\_Report\\_15Feb2010.pdf](http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/Berkman_Center_Broadband_Final_Report_15Feb2010.pdf) (viewed 20/05/2010)

<sup>3</sup> Mackay H, *Turning point – Australians choosing their future* (Pan McMillan Australia, Sydney,

understand someone before you have an obligation to respond on their behalf. *Connectedness* for the purpose of the thesis refers to what is required to enable individual end users to be able to engage effectively in the Australian internet economy. The term *connectedness* as defined by the thesis means: the ability for Australians to connect with the content and the services offered via the internet; with each other; for and with businesses and related information; for and with education providers and related information; for and with health providers and related information; and for and with government, policy makers, related information and services. *Connectedness* is more easily explained by reference to what it enables. This includes enabling communities; access to content and services; learning and education; and participation in government process, with business and with others. Appropriate access to the internet facilitates individual end users' access to information to further their education levels. This in turn enables the end users, by use of the knowledge they have gained, to further participate in real-world and online community and business activities. When users can do these things they have achieved *connectedness*.

Even if a business or company does not fully operate online, essential information and research regarding many businesses and companies is more accessible and more easily obtained through their websites.<sup>4</sup> Likewise important health, consumer protection, teaching and government information is more readily available via the internet by means of internet-related technologies. For Australia's future however technology "*itself is not enough. We [still] have to [work to] build a good society – a society with good values*".<sup>5</sup> Part of being a society with good values will be to ensure that all Australians are able to access the education and other opportunities available by means of appropriate access to the internet. Developing and ensuring *connectedness* will take time, patience and means. The peculiarities of Australia's society, distances<sup>6</sup> and spaces<sup>7</sup> will impact upon this. Modern Australia still is

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1999) 256 – that is in the sense of requiring "*some insight into the circumstances of others, and some sense of connectedness with them, before we are likely to feel any obligation to respond to their needs or to enhance their welfare.*"

<sup>4</sup> For example, annual reports as well as the product list even of, for example, your local beautician who does not sell any product or services online. See – website for 'Bliss on Buderim Beauty' [http://www.blissonbuderim.com.au/index.php?/products\\_and\\_services](http://www.blissonbuderim.com.au/index.php?/products_and_services) (viewed 28/03/2011)

<sup>5</sup> Kirby M, 'Four Parables and a Reflection on Regulating the Net', *Speech delivered to the internet Industry Association, Annual Dinner, Sydney, Australia, 21 February 2008* (Edited Transcript) 21 [http://www.highcourt.gov.au/speeches/kirbyj/kirbyj\\_21feb08.pdf](http://www.highcourt.gov.au/speeches/kirbyj/kirbyj_21feb08.pdf) (viewed 26/02/2010)

<sup>6</sup> By this the author is referring both to distances within Australia and as compared to the rest of the

“*exceedingly distant*”<sup>8</sup> from the rest of the world, and internally at the same time “*both sparsely populated and very large*”.<sup>9</sup> Separately from concerns arising from the *digital divide*, the *physical divide* will impact significantly upon internet adoption and usage in rural and remote Australia. These divides, together with the *political divide*, are considered in detail in Chapter 5.

### C. Identifying Australia in the internet economy

As Quiggin observed, “*social capital is to do with my relationship with other people. It is not me. It is not them. It is in the relationships.*”<sup>10</sup> *Connectedness* with be essential for community in the internet economy. In order to determine why enabling *connectedness* is essential, it is necessary to identify the community formed by these relationships. One element of doing this will involve identifying the relevant community and where it is located.<sup>11</sup> Another will be identifying the members of the community. However, what a community is (i.e. social, local or economic) and how it is created may be more important than where (or if) the community and its members are located in a fixed place. This is because the “*interrelationships created by the internet exist outside conventional geographic boundaries*”.<sup>12</sup> The internet “*cut[s] across territorial borders, creating a new realm of human activity and [potentially] undermining the feasibility – and legitimacy – of laws based on geographic boundaries*”.<sup>13</sup>

Information technologies now pervade almost every aspect of everyday life.<sup>14</sup> Australians – with the physical disadvantages arising from their geographic

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world. As to the potential impact of distance for Australian productivity, see – Battersby B, ‘Does Distance Matter? The Effect of Geographic Isolation on Production Level’ (2006) (1) *OECD Economic Studies*, 205, 207 – “*this reinforces the importance of accounting for the ‘tyranny of distance’ (Blainey, 2003) that Australia faces both when comparing Australia internationally and defining appropriate policy solutions for Australia.*”

<sup>7</sup> Bradbrook A, S MacCallum and A Moore, *Australian Real Property Law* (Lawbook Co, 2007) 1

<sup>8</sup> Capling A and K Nossal, ‘Death of distance or tyranny of distance? The Internet, deterritorialization, and the anti-globalization movement in Australia’ (2001) 14 (3) *The Pacific Review*, 443, 448

<sup>9</sup> Note 6, Battersby, 209

<sup>10</sup> Quiggin J, ‘Internet and Innovation’, in B Fitzgerald, J Coates and S Lewis (Eds) *Open Content Licensing: Cultivating the Creative Commons* (Sydney University Press, Sydney, Australia, 2007) 153

<sup>11</sup> Ronell A, ‘A Disappearance of Community’, in D Trend (Ed) *Reading Digital Culture* (Blackwell Publishers Ltd, Oxford, 2001) 292

<sup>12</sup> *Dow Jones and Company Inc v Gutnick* [2002] HCA 56; 210 CLR 575; 194 ALR 433; 77 ALJR 255, per Kirby J [80] – “*The internet is accessible in virtually all places on Earth where access can be obtained either by wire connection or by wireless (including satellite) links.*”

<sup>13</sup> Johnson D and D Post, ‘Law and Borders – The Rise of Law in Cyberspace’ (1996) 48(5) *Stanford Law Review*, 1367, 1367

<sup>14</sup> Chin G, ‘Technological Change and the Australian Constitution’ [2000] *MULR* 25, 7

separation from other countries – are primary benefactors of the swift exchange of information that is now possible.<sup>15</sup> The benefits that the internet and its related services bring compensate for any potentially negative effects. However, the impact of the internet on community, and even the use of the term community itself, is not without controversy.<sup>16</sup>

## 1. Defining community

In the mid 1950s there were more than 94 distinct definitions of the term community.<sup>17</sup> As Jankowski considered, there still is not consensus amongst sociologists as to what the term community means.<sup>18</sup> Slevin noted that community has been defined to include both living with others in a village, and working collaboratively with colleagues who live on the other side of the world.<sup>19</sup> Collaboration by itself has been found to lead (unintentionally) to the creation of community.<sup>20</sup> As other authors have considered, all a community needs to exist are: members, a structure, interaction between the members and a collective identity.<sup>21</sup> Modern Australia's view of what is meant by the term community is influenced by the manner of its birth. As Pusey observed, being born modern *"Australians take a distinctively cool and modern view of community ... [rather than one based on a] deep soil layer of pre-modern, 'primordial', religiously infused, village and rural community that is such a feature of older societies ...*

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<http://www.austlii.edu.au/au/journals/MULR/2000/25.html> (viewed 15/06/2010); Ewing S and J Thomas, *CCI Digital Futures 2010: The Internet in Australia*, CCI, May 2010, 8 – *"Overall people are very positive about the effect of the internet on their lives. Approaching half of our respondents (43.5%) strongly agreed that the internet makes life easier while a further 29.4% agreed with this contention. Less than one in ten disagreed (4.2% strongly) while the remainder neither agreed nor disagreed (17.7%)."*

<http://cci.edu.au/sites/default/files/sewing/CCi%20Digital%20Futures%202010.pdf> (viewed 08/07/2010)

<sup>15</sup> Blainey G, *The tyranny of distance: how distance shaped Australia's history* (Macmillan, Sydney, 2001) 355

<sup>16</sup> Baym N, 'Interpersonal Life Online' in L Lievrouw and S Livingstone (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 71

<sup>17</sup> Hillery G, 'Definitions of community: areas of agreement', *Rural Sociology* (1955) 20, 111 referred to in Jankowski N, 'Creating Community with media: History, Theories and Scientific Investigations' in L Lievrouw and S Livingstone (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 37

<sup>18</sup> Jankowski N, 'Creating Community with media: History, Theories and Scientific Investigations' in L Lievrouw and S Livingstone (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 37

<sup>19</sup> Slevin J, *The Internet and Society* (Blackwell Publishers Ltd, Oxford, 2000) 92

<sup>20</sup> Poole M, 'Collaboration, integration, and transformation: Directions for research on communication and information technologies' (2009) 14(3) *Journal of Computer-Mediated Communication*, 758

<sup>21</sup> Van Dijk J, 'The reality of virtual communities' (1998) 1(1) *Trends in Communication*, 39 referred to in Note 18, Jankowski, 39

*that were formed before the Industrial Revolution.*"<sup>22</sup> Community in Australia therefore is perhaps better defined by reference to informal, rather than formal or longstanding, ties.<sup>23</sup>

In considering what the term community means for Australia it is noted that there has been a "*redirection of emphasis from geographic place to a feeling or sense of collectivity*".<sup>24</sup> Therefore, an appropriate definition of community may be one based on whether or not people interact with others; the quality, or lack thereof, of that interaction; and not on the how, when or at what time they interact.<sup>25</sup> There are four essential underlying characteristics required for a community to exist. These are "*members, a social organization, language and patterns of interaction, and a culture and common identity*".<sup>26</sup> When these elements exist there is a community. What a community is in the internet economy is impacted by the method of operation of the internet. In order to fully appreciate what the Australian community is, an examination is required of the impact of the internet on our understanding of how communities are created, exist and are maintained.

## **2. The impact of the internet**

Rheingold explained, when computer-mediated communications "*technology becomes available to people anywhere, they inevitably build virtual communities with it, just as microorganisms inevitably create colonies*".<sup>27</sup> In addition to the internet being an information source, the services and communications technologies available via the internet and the World Wide Web<sup>28</sup> can enable

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<sup>22</sup> Pusey M, *The Experience of Middle Australia: the Dark Side of Economic Reform* (Cambridge University Press, Cambridge, 2003) 113

<sup>23</sup> Hampton K, 'Networked sociability online, off-line' in M Castells (Ed) *The Network Society: a cross-cultural perspective* (Edward Elgar Publishing Limited, Cheltenham, UK, 2004) 218 – "*When communities are defined as informal ties of sociability, support, and identify, they are rarely neighborhood solidarities or even densely knit groups of kin and friends. Communities consist of far-flung kinship, workplace, interest group, and neighborhood ties that together form a network of aid, support, and social control.*"

<sup>24</sup> Note 18, Jankowski, 37

<sup>25</sup> Note 22, Pusey, 136 – In discussing Habermas the author observed that, as Habermas argued "*in these difficult conditions, it is the quality and level of communication that matters most for the democratic self-monitoring and self-regulation of society.*"

<sup>26</sup> Note 21, Van Dijk, 39

<sup>27</sup> Rheingold H, 'The Virtual Community', in D Trend (Ed) *Reading Digital Culture* (Blackwell Publishers Ltd, Oxford, 2001) 276 "*I suspect that one of the explanations for this phenomenon is the hunger for community that grows in the breasts of people around the world as more and more informal public spaces disappear from our real lives*"

<sup>28</sup> Some authors consider that the WWW is in decline due to 'closed' nature of many of the 'newer' sites and apps; as well as the methods of accessing i.e. mobile devices as opposed to PCs. See –

communication that is “*effectively and efficiently [equal to] face-to-face communications*”.<sup>29</sup> This expands the ability to make and maintain community beyond your current physical location.<sup>30</sup> Internet communities can be created, exist and end without their members ever meeting in the real-world. Howkins refers to these communities as eco-systems where “*ideas and knowledge go on forever*”.<sup>31</sup> Therefore to be considered a community potentially means that there no longer has to be “*solitary groups of densely knit neighbours [as community] could also exist as social networks of kin, friends, and workmates who do not necessarily live in the same neighborhood*”.<sup>32</sup>

A potentially anti-community aspect of the internet is that improving the capacity of individuals to “*do more for and by themselves*”<sup>33</sup> may lead to self-reliance at the expense of community. That is, the acquisition of self-reliance may come at the expense of individuals engaging, interacting, or connecting with others.<sup>34</sup> However, there is a fine line between self-sufficiency and not needing to rely on others – or to connect or communicate with them – and not wanting to. Just because a communication technology exists cannot make us either want to connect or communicate or not to. Technology can only provide additional means of connection or communication if we choose to communicate with others in the first place. Internet technology can assist users to create new connections that have the capacity to progress to relationships in the real-world.<sup>35</sup> It is debatable however as to whether technology or virtual communities by themselves can “*reclaim ‘lost’ community in society*”.<sup>36</sup> For real-world

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Anderson C and M Wolff, ‘The Web Is Dead. Long Live the Internet’ (2010) 8, *Wired*, August 17, 2010 [http://www.wired.com/magazine/2010/08/ff\\_webrip/all.1](http://www.wired.com/magazine/2010/08/ff_webrip/all.1) (viewed 04/09/2010)

<sup>29</sup> DBCDE, ‘Australia’s Digital Economy: Future Directions’, Final Report, 14 July 2009, 31 [http://www.bcde.gov.au/digital\\_economy/final\\_report](http://www.bcde.gov.au/digital_economy/final_report) (viewed 12/08/2009)

<sup>30</sup> Kollok P and M Smith, ‘Communities in cyberspace’ in M Smith and P Kollok (Eds) *Communities in Cyberspace* (Routledge, London, 1999) 17 – “*Community is now conceptualized not in terms of physical proximity but in terms of social networks. Telephone, automobiles, and airplanes have long meant that it was possible to establish and sustain important social relationships outside of one’s immediate physical neighbourhood.*”

<sup>31</sup> Howkins J, *Creative Ecologies: Where Thinking is a Proper Job* (University of Queensland Press, St Lucia, 2009) 87

<sup>32</sup> Wellman B and M Guila, ‘Virtual communities as communities: Net surfers don’t ride alone’ in M Smith and P Kollok *Communities in Cyberspace* (Routledge, London, 1999) 16

<sup>33</sup> Benkler Y, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (Yale University Press, New Haven and London, 2006) 8

<sup>34</sup> Note 33, Benkler, 15

<sup>35</sup> Note 16, Baym, 68

<sup>36</sup> Note 21, Van Dijk, 40



communities to regenerate it is necessary for the members of those communities to work out how they can reconnect, or continue to be connected, and then to do so essentially “*face-to-face, one-to-one*”.<sup>37</sup> As Florida points out, cities and other places remain important, as we still need somewhere to live.<sup>38</sup>

Kollock and Smith posit that so called online communities, by their very nature, operate differently from real-world “*face-to-face*”<sup>39</sup> communities. By purely relating to others in a detached way,<sup>40</sup> it is possible that no community will be formed. Instead, the interaction will be surreal only, due to the “*loss of personality that often accompanies the mediation of communication via computer*”.<sup>41</sup> Virtual interaction is seen by some authors as being clinical and clean<sup>42</sup> when real life is not like this.<sup>43</sup> The argument is raised that online “*groups do not constitute real communities*”<sup>44</sup> in that where personal interaction is virtual only, no true community may be formed. The societal changes wrought by technology can be drastic.<sup>45</sup> The digital technologies in particular have radically changed<sup>46</sup> how people interact and how they spend their free time.<sup>47</sup> The change is radical not merely because of what we are now able to do or that access to and use of computers and networks is now (almost) ubiquitous.<sup>48</sup> It is radical

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<sup>37</sup> Note 3, Mackay, 261

<sup>38</sup> Florida R, *Cities and the Creative Class* (Routledge, London, 2005) 28 – “*With the Internet and modern telecommunication and transportation systems, the thinking goes, it is no longer necessary for people who work together to be together, so they won’t be. But this end of geography theme has been with us since the turn of the nineteenth century, when experts predicted that technologies from telegraph and the telephone to the automobile and the airplane would essentially kill off the cities.*”

<sup>39</sup> Note 30, Kollock and Smith, 3

<sup>40</sup> Slater D, ‘Social Relationships and Identity Online and Offline’ in L Lievrouw and S Livingston (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 536. Also see 534 – it is noted that Slater asserts that this detachment “*is precisely what grounded the greatest claims for online sociality as both a vehicle for liberating social order and facilitating group effort.*”

<sup>41</sup> Jones S, ‘The internet and its Social Landscape’ in S Jones (Ed) *Virtual culture: identity and communication in cybersociety* (Sage Publications, London 1996) 7

<sup>42</sup> Although, users make attempts online to compensate for a lack of physical expression. See – Note 40, Slater, 541 – “*smilies and netiquette ... attempt to, respectively, compensate for absent physical cues and regulate interaction in situationally appropriate ways.*”

<sup>43</sup> For example see the discussion in – Note 11, Ronell

<sup>44</sup> Note 30, Kollock and Smith, 16

<sup>45</sup> Cooper R, G Madden and G Coble-Neal, ‘Measuring TFP for an Expanding Telecommunications Network’, in R Cooper and G Madden (Eds) ‘Frontiers of Broadband, Electronic and Mobile Commerce’ (Physcia-Verlag, Heidelberg, 2004) 112

<sup>46</sup> Note 33, Benkler, 1

<sup>47</sup> For example regarding the changes brought to gambling see – McMillen J and P Grabosky, ‘Internet Gambling’ (1998) 88 *Australian Institute of Criminology – trends & issues*, 1

<sup>48</sup> Note 33, Benkler, 6. I add ‘almost’ because cost of access, and ability to access remain as issues that must be addressed, particularly for less developed countries and regions.

in that, unlike the prior implementation and adoption of new technologies such as the telegraph and telephone,<sup>49</sup> the change that has occurred, in how people can and may interact,<sup>50</sup> has taken place in less than one generation.<sup>51</sup> It is radical also because, as technologies evolve, the change experienced is continual. As Mackay observed, “[t]he story of adoption of technology is as old as humankind itself. We invent something, we use it, we become accustomed to it”<sup>52</sup> and we move on.<sup>53</sup>

But even though we may have moved on, there has been no time to adjust or to become accustomed to the digital technologies.<sup>54</sup> The current technological change<sup>55</sup> has not slowed since the 1950s when IBM sold its first computer. It has continued through the 1970s with the sale of the first PC by Apple,<sup>56</sup> to now with the advent of the iPhone and access to wireless broadband applications in your pocket. And this change alters what is now understood by the term community and how people can interact with each other. It also changes how they participate with government and in the economy. Technology enables information to be more readily shared. Nonetheless, there is the concern that the digital technologies, while facilitating the exchange of information, have led, to a decline in existing communities.<sup>57</sup> Our forebears were concerned as to “*whether*

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<sup>49</sup> Note 32, Wellman and Guila, 170

<sup>50</sup> As Habermas identified, all possible applications of a new or potential technology may not be realised until after its creation. See – ‘*The Habermas Reader*’, W Outhwaite (Ed) 2<sup>nd</sup> ed (Policy Press, Cambridge UK, 2000) 59 – “*the modern sciences produce knowledge which through its form (and not through the subjective intention of scientists) is technically exploitable knowledge, although the possible applications generally are realized afterwards.*”

<sup>51</sup> Peña-López I, ‘Measuring digital development for policy-making: Models, stages, characteristics and causes’, PhD Thesis (2009) 44 – he speaks of the era of computers as being the “*Industrial Revolution v3.0*” [mimeo] [http://ictlogy.net/articles/20090908\\_ismael\\_pena-lopez\\_measuring\\_digital\\_development.pdf](http://ictlogy.net/articles/20090908_ismael_pena-lopez_measuring_digital_development.pdf) (viewed 15/01/2010)

<sup>52</sup> Note 3, Mackay, 238

<sup>53</sup> More cynically Anderson suggests that once a technology is widely used it then will be locked up for profit. See Note 28, Anderson and Wolff – “*A technology is invented, it spreads, a thousand flowers bloom, and then someone finds a way to own it, locking out others. It happens every time.*”

<sup>54</sup> Porter M, ‘The ‘Four Digital Doors’ – a CEDA Research perspective on digital competition’, in M Jones (Ed) *Australia’s Broadband Future: Four doors to greater competition*, CEDA (2008) Growth No. 60, 8-16, 11

<sup>55</sup> Crandall R, ‘The \$500 Billion Opportunity: The Potential Economic Benefit of Widespread Diffusion of Broadband internet Access’, *Criterion Economics, L.L.C.*, July 2001, 3 [http://www.att.com/public\\_affairs/broadband\\_policy/BrookingsStudy.pdf](http://www.att.com/public_affairs/broadband_policy/BrookingsStudy.pdf) (viewed 07/01/2010)

<sup>56</sup> Note 55, Crandall, 7

<sup>57</sup> ACMA, ‘Telecommunications Today – Report 6: Internet activity and content, September 2008, 25 – “*The internet has also led to changes in the social behaviour of household internet users. Roy Morgan Single Source found five per cent of internet users go out with friends less often since they began using the internet.*” [http://www.acma.gov.au/webwr/\\_assets/main/lib310210/report\\_6\\_telecommunications\\_today.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310210/report_6_telecommunications_today.pdf) (viewed 07/01/2010)

*community had been destroyed or transformed by the telephone ... or the automobile*".<sup>58</sup> That fear is now held about the internet, although the adoption of the prior technologies brought with them a panic that, as yet, has not been associated with the internet.<sup>59</sup>

Exacerbating this fear is the speed of adoption of the new technologies.<sup>60</sup> In comparison, changes occurring as a result of prior technologies appear less significant because there was more time to adapt to them. Authors are now concerned that digital technologies will cause the loss of social capital as people reduce their engagement with others in the real-world.<sup>61</sup> Measuring the loss of social capital in the real-world may be difficult. As Haythornthwaite noted, the distinction between the physical and virtual worlds is so blurred that it is often hard to distinguish between the two.<sup>62</sup> This is not a concern for all as many inhabitants however do not find it necessary to chose between their worlds.<sup>63</sup> For others, however, the concern remains that community in the internet economy will not be the same as what they are used to.

### **3. Community in the internet**

Some believe that, at best, the internet has changed what we understand by the term community.<sup>64</sup> Others argue that, at worst, the internet destroys community in the context that what constitutes a community on the internet is not a real community.<sup>65</sup> Another common complaint is that some people feel that the mobility of this technology, as opposed to being beneficial, is now intrusive.<sup>66</sup>

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<sup>58</sup> Note 32, Wellman and Guila, 170

<sup>59</sup> Note 23, Hampton, 217 – “Concerns about the decline of community are not confined to the network society. Since at least the 1800s, scholars have debated how societal change and technological innovation affects community.” Note 40, Slater, 533

<sup>60</sup> Note 27, Rheingold, 276

<sup>61</sup> Note 23, Hampton, 219 – As regards television, for example, this impact was more evident than had been witnessed previously regarding older technologies

<sup>62</sup> Haythornthwaite C, ‘Introduction: The Internet In Everyday Life’, *American Behavioral Scientist* (2001) 45, 363, 379 – “Explaining Internet behaviors entails understanding that the Internet is not a separate entity but instead a (potential) complement to ongoing activity. Its seemingly contradictory trends cannot be fully understood without considering a more integrative view of people’s lives.”

<sup>63</sup> Note 40, Slater, 540 – “relationships (e.g. amongst schoolchildren) were pursued seamlessly from offline to online and back again.”

<sup>64</sup> Note 41, Jones

<sup>65</sup> Note 30, Kollock and Smith

<sup>66</sup> ACMA, ‘Telecommunications Today – Report 5: Consumer choice and preference in adopting services’, April 2008, 13 – “20 percent feel the technology intrudes into their personal life and 11 percent view the constant calls and emails as problematic.” [http://www.acma.gov.au/webwr/\\_assets/main/lib310210/report\\_5-telecommunications\\_today.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310210/report_5-telecommunications_today.pdf)

There is ongoing debate therefore that the internet is harmful to community. Though, as Wellman and Guila advocate, this may merely be a continuation of “a century-old controversy about the nature of community, albeit with”<sup>67</sup> the internet replacing railroads and telephones as the topic. Mackay believes that our “most precious resort in coping with life in an unstable, discontinuous and revolutionary world is not information, but each other”.<sup>68</sup> Being part of a community is not the same as having the ability to share information with others. Likewise communication, as easy as it now may be, is not a substitute for being part of a community.<sup>69</sup> Although digital technologies may have altered how we can communicate, the essence of our relationships, both personal and professional, still rests in the fact of communication.<sup>70</sup> Thus the internet is but one way that “people [now] may interact”.<sup>71</sup>

The internet has not completely destroyed the desire or need for real-world communities. The ongoing “need for meeting and relationships”<sup>72</sup> is a key driver of the desire for the development of community. Even in the internet economy it remains an essential and intuitive human trait to be and to want to be part of a community.<sup>73</sup> For a community to exist, wherever it is found, ultimately requires an essential spirit.<sup>74</sup> That is, there is some form of rapport between the community members.<sup>75</sup> Mackay argued that the global village would be a “major threat to our [Australian] psychology and cultural health”.<sup>76</sup> However, as Wellman and Guila identified it may be more accurate to say that “the world is [not] a global village, but ... one’s ‘village’ could span the globe”.<sup>77</sup> With the ability for your community to span the globe it is clear that appropriate internet access is vital for enabling interaction with friends or colleagues, both of the real and virtual worlds, in order to engage in the internet economy.

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(viewed 07/01/2010)

<sup>67</sup> Note 32, Wellman and Guila, 167

<sup>68</sup> Note 3, Mackay, 106

<sup>69</sup> Foster D, ‘Community and Identity in the Electronic Village’ in D Porter (Ed) *Internet Culture* (New York: Routledge, 1996) 23, 24

<sup>70</sup> Note 33, Benkler, 370

<sup>71</sup> Note 32, Wellman and Guila, 170

<sup>72</sup> Mitchell W, *E-topia: Urban Life, Jim – But Not As We Know It* (Massachusetts University of Technology Press, Cambridge, Massachusetts, 1999) 3

<sup>73</sup> Note 3, Mackay, 259

<sup>74</sup> Note 69, Foster, 29

<sup>75</sup> Note 69, Foster, 25

<sup>76</sup> Note 3, Mackay, xxxii

<sup>77</sup> Note 32, Wellman and Guila, 16

The internet can both “*support and initiate*” community.<sup>78</sup> As Benkler observed, “*the internet revolution ... [and t]he change brought about by the networked information environment is deep*”.<sup>79</sup> The impact that the digital technologies and the internet has on community is both beneficial and unique. As discussed, the internet enables the creation of communities in ways not previously possible. Further, many existing communities are able to continue when previously, because of changed work or living arrangements of their members, the communities would have ended because of a lack of contact between members.<sup>80</sup> Community in the internet may be different but it is still community.

#### **4. Life in the internet economy**

Although not designed as a means of “*interpersonal interaction*”, in practice the technology of the internet is in fact “*fundamentally social*” in nature.<sup>81</sup> It facilitates the ability “*to connect people to people*”.<sup>82</sup> As an information source and a meeting place the internet can make possible increased involvement in local communities.<sup>83</sup> Younger Australians in particular view the internet as “*essential to their lives*”.<sup>84</sup> In many ways work and home have been greatly changed by modern communications technologies.<sup>85</sup> In addition to enabling communities, in a more environmentally conscious world, the internet can facilitate telecommuting for workers.<sup>86</sup> This benefits the individual end users, and

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<sup>78</sup> Schellong A, ‘Government 2.0: An exploratory study of social networking services in Japanese local government’ (2008) 2(2) *Transforming Government: People, Process and Policy*, 225, 225-242

<sup>79</sup> Note 33, Benkler, 1

<sup>80</sup> Note 30, Kollock and Smith, 4; Note 14, Ewing and Thomas, 12 – “*More than four in ten respondents felt that their contact with people who shared hobbies ... had increased ... most likely to have decreased was ‘people who share your political interests’ ... 14.5% of respondents feeling that they had decreased contact (and only 12.6% claiming an increase). Almost two thirds of respondents in 2009 felt ... the internet had increased their contact with family (65.1%), with 30.4% saying that levels ... had not changed. Seven in ten reported increased contact with friends (70.7%) ... when asked about time spent face-to-face, sizeable minorities felt that they spent less time with household members (27.7%) and friends (14.8%) since being connected to the internet.*”

<sup>81</sup> Note 16, Baym, 62

<sup>82</sup> Note 30, Kollock and Smith, 3

<sup>83</sup> Note 23, Hampton, 229 – “*The Internet can break down barriers to local involvement, coordinated public participation, and provide new opportunities for place-based interactions.*”

<sup>84</sup> ACMA, ‘Australia in the Digital Economy – Report 1: Trust and confidence’, March 2009, 40 [http://www.acma.gov.au/webwr/aba/about/recruitment/trust\\_and\\_confidence\\_aust\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/aba/about/recruitment/trust_and_confidence_aust_in_digital_economy.pdf) (viewed 07/01/2010)

<sup>85</sup> Farrar J, *Legal Reasoning* (Thomson Reuters, Sydney, 2010) 215 – “*We live in a time of rapid social and economic change. Some of this has been precipitated by the communications revolution and globalisation ... how should the law be changed to meet changing social goals and policies?*”

<sup>86</sup> Note 29, DBCDE, 31; although telecommuting is not without challenges, see – Perry M, K O’Hara, A Sellen, B Brown and R Harper, ‘Dealing with Mobility: Understanding Access Anytime, Anywhere’ (2001) 8(4) *ACM Transactions on Computer-Human Interaction*, 323, 324 – “*The greater*

their local community, as it leaves them with greater time to participate in their local community instead of spending that time travelling to work.

Although technology may provide easier means of remaining connected,<sup>87</sup> it has not completely replaced the need or desire for physical proximity with others. Nor does the internet enable all of our economic activities to be effected in the virtual world only. Although impacting upon our business habits, the internet has not entirely replaced our real-world activities. We may browse, choose, compare, select and purchase a pair of shoes online; however they still must be delivered to and worn by us (and seen by others) in the real-world.<sup>88</sup> A significant impact, however, of the internet is that it has changed how, and when, education occurs. This in turn impacts upon where we chose to live and work.

Many higher education institutions now facilitate distance education, a concept that started in the 1970s with the Open University in the United Kingdom.<sup>89</sup> What is new is that the internet, while not originally used as a teaching medium,<sup>90</sup> now is a significant means of course delivery and interaction.<sup>91</sup> For both those on campus and in remote areas<sup>92</sup> course material is now more easily and readily available as it is becoming common practice for “*study materials and even lecture videos* [to be made available for student access] *online*”.<sup>93</sup> E-learning, however, is more than just enabling where and how educational materials can be accessed. This is in part because the internet facilitates interactive communication both between the students themselves and between the lecturer and the student/s.<sup>94</sup>

E-learning is a different method of learning as the available technologies are both enabling and changing how students and teachers “*operate, learn and*

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*unpredictability ... within which ... work must take place means that mobile workers have less control over ... their environment, and therefore the way they manage their work.*” [references omitted]

<sup>87</sup> Note 23, Hampton, 229

<sup>88</sup> In comparison, for example, with the ability to pay bills online.

<sup>89</sup> Page K, ‘A preliminary study on the current state of e-learning in lifelong learning’ (2006) 123 *Cedefop Panaorama series*, 5

<sup>90</sup> Ellram L, ‘Purchasing Education on the Internet’ (1999) 35(1) *The Journal of Supply Chain Management*, 11

<sup>91</sup> Note 89, Page

<sup>92</sup> Groves J, ‘Online Education and Training for Australian Farmers’ (1999) 99(4) *Rural Industries Research and Development Corporation*, Project No BDL-3A

<sup>93</sup> Note 29, DBCDE, 2

<sup>94</sup> Note 90, Ellram

*interact*".<sup>95</sup> It therefore will require both a different method of delivery from traditional learning, and necessitates the acquiring of a new skill set by the deliverers.<sup>96</sup> As Sabry and Barker considered, a new skill set is required in order to ensure that lecturers/teachers can ensure they "*adequately prepare students for [the] volatile, continuously changing and dynamic era the world is now moving into*".<sup>97</sup> Although, the internet now allows students to study or pursue further studies without the need to move from where they reside, e-learning is not without its detractors.<sup>98</sup> The internet, however, means that people can study without the need to choose between pursuing (further) education and meeting family commitments.<sup>99</sup> The internet facilitates distance education, previously only deliverable by means of provided materials or static CD-ROMs, to be delivered in a more interactive and up-to-date manner.<sup>100</sup> The internet clearly is a tool to be used in the engagement of students. It can be of particular benefit to those in remote areas<sup>101</sup> or without the ability or means of otherwise attending classes.<sup>102</sup>

The importance of digital literacy is recognised by all levels of government, with the involvement of a variety of government and industry participants in a range of programmes aimed to "*promote, and increase levels of, digital media literacy*".<sup>103</sup> As well as formal learning, informal and unstructured learning are important aspects of life-long learning. This in turn is an important part of

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<sup>95</sup> DEEWR, 'DER Strategic Plan', 5 August 2008, 4 <http://www.deewr.gov.au/Schooling/DigitalEducationRevolution/Documents/DERStrategicPlan.pdf> (accessed 18/11/2009)

<sup>96</sup> Convergent Consulting, 'Impact on the multimedia and elearning industry of the sustainable national digital curriculum resource supply for schools agreement', 12 May 2009, *The Learning Federation*

[http://www.thelearningfederation.edu.au/verve/\\_resources/convergent\\_FinalReport\\_120509.pdf](http://www.thelearningfederation.edu.au/verve/_resources/convergent_FinalReport_120509.pdf) (viewed 07/11/2009)

<sup>97</sup> Sabry K and J Barker, 'Dynamic Interactive Learning Systems' (2009) 46(2) *Innovations in Education and Teaching International*, 185

<sup>98</sup> Kanuka H, 'Understanding E-Learning Technologies-In-Practice Through Philosophies-In-Practice' in T Anderson (Ed) *The Theory and Practice of Online Learning* (Athabasca University Press 2009)

<sup>99</sup> Legg T, D Adelman, D Mueller and C Levitt, 'Constructivist Strategies in Online Distance Education in Nursing' (2007) 48(2) *Journal of Nursing Education*, 64, 64-69

<sup>100</sup> Note 29, DBCDE; Note 99, Legg *et al*

<sup>101</sup> Note 92, Groves

<sup>102</sup> Bradley D, P Noonan, H Nugent and B Scales (2008), 'Review of Australian Higher Education – Final Report', December 2008, DEEWR ('Bradley Report') <http://www.deewr.gov.au/HigherEducation/Review/Pages/ReviewofAustralianHigherEducationReport.aspx> (viewed 20/10/2009)

<sup>103</sup> ACMA, 'Audit of Australian digital media literacy program', July 2009, 1 [http://www.acma.gov.au/webwr/\\_assets/main/lib310665/audit\\_of\\_aust\\_digital\\_media\\_literacy\\_programs.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310665/audit_of_aust_digital_media_literacy_programs.pdf) (viewed 07/01/2010)

developing and improving Australia's human capital.<sup>104</sup> Older Australians in particular are more likely to participate in informal learning.<sup>105</sup> Recent studies indicate that the internet is as important as a resource for learning (i.e. gaining knowledge) generally.<sup>106</sup> This is separate from its use in a formal learning (i.e. in a distance education or e-learning course). The internet also can assist with the delivery of information and services at amazingly reduced costs.<sup>107</sup>

As the Australian federal government itself has previously identified, access to education services online will depend on the availability of relevant technologies.<sup>108</sup> The type of connection available (i.e. dial-up, broadband etc) also will influence access choices.<sup>109</sup> Further, the skill capacity (i.e. education) of end users is likely to greatly influence access decisions. Despite otherwise being interested, only those end users with the necessary access skills are likely to try to access higher education services.<sup>110</sup> In order to live and work successfully in the internet economy, in addition to learning how to access the internet to access information the immigrants to the digital environment, unlike those who have grown up in it,<sup>111</sup> must learn how to communicate via the internet. Digital information, generally, is ubiquitous and thus easily accessible by all.<sup>112</sup>

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<sup>104</sup> ABS, *Adult Learning, Australia, 4229.0, 2006-07*, 21 December, 2007 [http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/C617A03C5C06B489CA2573B70011D427/\\$File/42290\\_2006-07.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/C617A03C5C06B489CA2573B70011D427/$File/42290_2006-07.pdf) (viewed 06/11/2009)

<sup>105</sup> Note 104, ABS

<sup>106</sup> Note 92, Groves; McIntyre J, 'Where do Australian Adults Learn?' (2003) August, *Adult Learning Australia*, [www.ala.asn.au](http://www.ala.asn.au) (viewed 20/10/2009)

<sup>107</sup> Note 92, Groves, 7

<sup>108</sup> ALP, 'A Digital Education Revolution', Election 2007 Policy document, 2007 [http://www.alp.org.au/download/now/labors\\_digital\\_education\\_revolution\\_campaign\\_launch.pdf](http://www.alp.org.au/download/now/labors_digital_education_revolution_campaign_launch.pdf) (accessed 07/11/2009)

<sup>109</sup> Note 57, ACMA, 17 – although the results indicate that there was little difference in February 2008 between dial-up and broadband connections, with dial-up being favoured, it is anticipated that as most respondees were aged 16+ the results are likely to be different for younger students as the percentage of actual use for education purposes was 35% or less. Conversely a recent US report shows that availability of broadband by itself will not guarantee adoption where the user perceives the cost of adoption to be too expensive (26%) or they have no or inadequate hardware (18%) or lack confidence or skill to use (3%). See – US Department of Commerce, 'Exploring the Digital Nation: Home Broadband Internet Adoption in the United States, November 2010, 17 <http://www.esa.doc.gov/DN/> (viewed 10/09/2010)

<sup>110</sup> Note 92, Groves

<sup>111</sup> As Anderson notes, there is now "[a]n entire generation [that] has grown up in front of a browser." See Note 28, Anderson and Wolff

<sup>112</sup> O'Meara M, *Strategy and Place Managing Corporate Real Estate and Facilities for Corporate Advantage* (The Free Press, New York 1999) [www.strategyinplace.com](http://www.strategyinplace.com) (viewed 16/08/2009)



Information provision and retrieval however is not the same as communication<sup>113</sup> as “communication is ... a socially binding ritual”.<sup>114</sup>

The impact of the *digital divide* is not limited to restrictions on access to education. The *digital divide* extends also to a person’s ability to be involved in the political process or not.<sup>115</sup> It may restrict or limit their ability to access to vital services, such as those provided by government. This is referred to by some authors as the *participation divide*.<sup>116</sup> As Chapter 5 considers in more detail, these divides must be overcome in order for there to be effective governance and participation in government services. In order to live in the internet economy the digital immigrant must learn how to read and contribute to blogs, how to send tweets, and how to visit virtual worlds.<sup>117</sup> They also must know how to use technology at work.<sup>118</sup> Finally the digital immigrants must learn how to create and read texts and emails in order to co-exist and communicate with the digital natives for whom this type of interaction are an integral part of everyday life.<sup>119</sup>

Access to the internet is vital for Australia’s future as a means of interaction and engagement; as a way to access vital services, facilities and information; for the creation and maintenance of communities; and for gaining an education. Although *connectedness* should be supported because enabling it is necessary for Australia’s future, the motivation that will ensure it is supported is economically based.

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<sup>113</sup> Cole R and R Lorch (Eds), *Buildings, Culture & Environment: Informing Local & Global Practices* (Blackwell Publishing Ltd, Oxford 2003) 18

<sup>114</sup> Crang M, ‘Public Space, Urban Space and Electronic Space: Would the Real City Please Stand Up?’ (2000) 37(2) *Urban Studies*, 301, 306

<sup>115</sup> Tang H, ‘The Networked Electorate: The Internet and the Quiet Democratic Revolution in Malaysia and Singapore’ (2009) 2 *Journal of Information, Law & Technology* [http://go.warwick.ac.uk/jilt/2009\\_2/tang](http://go.warwick.ac.uk/jilt/2009_2/tang) (viewed 06/01/2010)

<sup>116</sup> Goldfinch S, R Gauld and P Herbison, ‘The Participation Divide? Political Participation, Trust in Government, and E-government in Australia and New Zealand’ (2009) 68(3) *Australasian Journal of Public Administration*, 333, 335

<sup>117</sup> See – Fitzgerald B, A Fitzgerald, G Middleton, Y Lim and T Beale, *Internet and E-Commerce Law: Technology, Law and Policy* (Lawbook Co, Sydney, 2007) 17 for a discussion of “virtual worlds and virtual life”

<sup>118</sup> As regards the responsibility of government to ensure that their staff have appropriate knowledge of technologies and therefore have ‘technology literacy’ see – Strieb G and I Navarro ‘City Managers and E-Government Development’ Assessing Technology Literacy and Leadership Needs’ (2008) 4 *International Journal of Electronic Government Research*, 37, 41

<sup>119</sup> Note 62, Haythornthwaite, 379

#### **D. The impact of *connectedness* for Australia in the internet economy**

ICTs can positively impact the innovation process by providing new means of undertaking business.<sup>120</sup> The technology of the internet in particular can play a significant role in stimulating innovations and thus the economy.<sup>121</sup> It does this by engaging individual end users in novel ways.<sup>122</sup> The result being that user-generated content is as important, if not more so, than commercial content.<sup>123</sup> As Awa *et al* discuss, small business plays a vital role in the economy, as do the networks between the individual end users.<sup>124</sup> Individual end users are vital for the innovation process. However, in order for them to be able to innovate via the internet they must have appropriate access to the internet, to relevant skills and to education. Appropriate access to the internet will entail providing access to high-speed internet connections. However, international experience shows that high-speed internet access by itself does not guarantee adoption or use for education or skills acquisition.<sup>125</sup> Consumer demand is primarily for digital content and services.<sup>126</sup> In order to stimulate the demand for infrastructure connections, and thus the ability to innovate, what is required is a way to stimulate user demand for internet content and services.

Internet technologies generally have a positive effect on business operations as they enable businesses “*to undertake key business activities, to communicate, access information and industry knowledge, manage customer relations and perform essential tasks such as banking and marketing in a more efficient and timely*

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<sup>120</sup> Awazu Y, P Baloh, K Desouza, and C Wecht, ‘Information-Communication Technologies Open Up Innovation’ (2009) 52(1) *Research Technology Management*, 51, 55 “*ICTs create the potential for better R&D performance and new ways of creating value for customers.*”

<sup>121</sup> Bogers M, A Afuah and B Bastian, ‘Users as Innovators: A Review, Critique, and Future Research Directions’ (2010) 36(4) *Journal of Management*, 857, 865

<sup>122</sup> Piller F, and D Walcher, ‘Toolkits for idea competitions: A novel method to integrate users in new product development’ (2006) 36 *R&D Management*, 307-318; Sawhney M, G Verona and E Prandelli, ‘Collaborating to create: The Internet as a platform for customer engagement in product innovation’ (2005) 19(4) *Journal of Interactive Marketing*, 4-17

<sup>123</sup> Quiggin J and J Potts, ‘Economics of Non-market Innovation and Digital Literacy’ (2008) 128 *Media International Australia* incorporating *Culture & Policy*, 144, 146

<sup>124</sup> Awa H, B Nwibere and B Inyang, ‘The uptake of electronic commerce by SMES: A Meta Theoretical Framework expanding the determining constructs of TAM and TOE Frameworks’ (2010) 6(1) *Journal of Global Business and Technology*, 1, 6-7

<sup>125</sup> Also see Gans J, ‘Creating an efficient national broadband network’ in M Jones (Ed) *Australia’s Broadband Future: Four doors to greater competition*, Growth 60, September 2008, CEDA, 26, 30 – “*evidence from Japan and South Korea, where fast internet connections are available, suggest that where there is demand it is mainly for videos downloads and gaming.*”

<sup>126</sup> Lovelock P and J Ure, ‘The New Economy: Internet Telecommunications and Electronic Commerce?’ in L Lievrouw and S Livingstone (Eds), *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 359

*manner*".<sup>127</sup> Access to the internet by the use of mobile technologies provides workers with the ability to work from anywhere, anytime.<sup>128</sup> Meetings and relationships no longer occur only face-to-face. Business interaction now can be found equally in a letter (or email) relationship, in a telephone (or VoIP<sup>129</sup>) relationship, in a coffee shop (or virtual world) relationship. As interaction now can occur simultaneously around the corner from where you live and/or on the other side of the world,<sup>130</sup> interacting in the same time zone, or same place, as one another is no longer as important.<sup>131</sup> This will have a positive impact on businesses' operations because of the savings made through removing the need for travel.

*"Innovation is ... the building block of socio-economic development"*.<sup>132</sup> This presumes that innovation and the means necessary to undertake it are supported by all. Experience shows that ignoring the potential of new technologies, by disregarding them as unnecessary or unwanted, can adversely impact on market share.<sup>133</sup> A failure to support *connectedness* also may adversely impact on a business' market share as well as Australia's economic future. What infrastructure is delivered for future internet access, how it is delivered, as well as what content and other services are provided and available, will play key roles in the future of

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<sup>127</sup> ACMA, 'Convergence and Communications – Report 2: Take-up and use of voice communications services by small and medium enterprises', March 2009, 23-29 [http://www.acma.gov.au/webwr/\\_assets/main/lib100068/convergence\\_comms\\_rep-2\\_small\\_medium\\_enterprises.pdf](http://www.acma.gov.au/webwr/_assets/main/lib100068/convergence_comms_rep-2_small_medium_enterprises.pdf) (viewed 07/01/2010)

<sup>128</sup> Although not without some limitations see – Note 86, Perry *et al*, 342 – *"Information 'access' is not simply about having the capability to pull the appropriate document across a network. From the perspective of the mobile worker, the notion of access needs to be extended to include how the document is used and whether it is in the appropriate form for viewing and interaction. As an illustrative example, connected laptops allow 'access' to documents, in that they allow the mobile worker to pull documents over a network. However, for certain tasks, such as reading and understanding long documents, the laptop may be an inappropriate medium. Here access to the document is inappropriate in that it fails to support the same kinds of interaction or 'getting to grips' with a document as paper does"*.

<sup>129</sup> Note 113, Cole and Lorch, 19; Note 40, Slater, 535 – *"The most obvious feature of computer-mediated communications is that it allows communications between people who are spatially dispersed."*

<sup>130</sup> Note 33, Benkler, 9

<sup>131</sup> Note 16, Baym, 64

<sup>132</sup> Note 124, Awa *et al*, 16

<sup>133</sup> Braganza A, Y Awazu and K Desouza, 'Sustaining Innovation is Challenge for Incumbents (2009) 52 (4) *Research Technology Management*, 46, 47 – *"Today's organizations are also faced with the astonishing speed of technological development. For the originators, disruptive technologies provide great gains, but for incumbents they create major disruptions in the business environment that require them to respond quickly. However, many established organizations fail to recognize innovations that compete for their target markets and are caught unawares when innovations change market or environmental factors. Telecom companies, for example, overlooked the rise of voice-over-Internet-protocols (VOIP) technologies. Many simply didn't want to notice because they could see their core revenues being reduced significantly, if not wiped out."*

Australia's internet economy. It also will play a key role in ensuring appropriate access to the digital information, content and services by means of creating better access to those services. This should create a desire for adoption of infrastructure and relevant hardware and software by users. The economic impacts of high-speed broadband access are discussed in Chapter 4.

## E. Conclusion

The internet has an ongoing and vital role to play in Australia's future. The benefits of appropriate internet access are not limited to that of improving education levels. The internet is also a means of nurturing and ensuring continuity of community, of providing access to information, and providing a means of access to business and government services irrespective of time or place. It enables innovations and creates and supports an essential part of the economy. However, the internet's ability to fulfil this role is dependent upon Australians having the means and ability to access the internet whenever and wherever they choose. It also is dependent upon them being to have access in a cost-effective and efficient manner. Financial capacity – even for services and content provided at more economical rates than currently available – and appropriate means of access will impact upon the end user's ability to access all services. Ensuring *connectedness* requires that all Australians have the ability to, and do, access the internet, and its information and services, quickly and easily.

Overcoming the barriers raised by the divides is vital for ensuring *connectedness* and Australia's internet economy.<sup>134</sup> While individual end users can gain access to the internet by means of the existing public switched telephone network,<sup>135</sup> an important feature for *connectedness* is that access to the internet through the use of high-speed broadband is more immediate.<sup>136</sup> As Chapter 4 considers, it also enables different

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<sup>134</sup> ACMA, 'Australia in the Digital Economy – Report 2: Online Participation', May 2009, 35–  
“Addressing ... barriers to participation becomes important for social inclusion and ensuring that all  
Australians can garner the benefits of online activities in the digital economy. Access to the internet,  
an understanding of how to effectively use the internet and managing online risk are all important to a  
wider engagement in internet use and enhancing its role in underpinning the digital economy.”  
[http://www.acma.gov.au/webwr/aba/about/recruitment/online\\_participation\\_aust\\_in\\_digital\\_economy.  
pdf](http://www.acma.gov.au/webwr/aba/about/recruitment/online_participation_aust_in_digital_economy.pdf) (viewed 07/01/2010)

<sup>135</sup> *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7 per Gleeson CJ, Gummow, Kirby,  
Hayne, Heydon, Creenan and Kiefel JJ [5] – “The telephone service could once be used only for  
transmitting sounds. Now, the PSTN and the local loops as part of that network can be used to carry  
not only telephone communications but also data communications including internet access services.”

<sup>136</sup> Spurge V and C Roberts, 'Broadband Technology: An Appraisal Of The Availability And Use By  
Small And Medium Sized Enterprises', *Proceedings of the 11<sup>th</sup> Annual Conference of the Pacific Rim*

products, services and means of innovating. Ensuring access to the internet for all will require that various issues of convergence are appropriately addressed. For example, this will require addressing issues of technological convergence. That is, issues arising from the “*merging of previously distinct technological platforms over which voice, data and content has been communicated*”.<sup>137</sup> It also will require addressing issues of structural convergence. That is, issues arising as a consequence of effecting “*the transition between two structural models for service delivery*”.<sup>138</sup> In this case dial-up internet access and slow-speed broadband on the one hand; and the high-speed broadband on the other. Finally it will require addressing issues of regulatory convergence.<sup>139</sup> That is, matters arising as regulators act to deal with technological and structural convergence issues.<sup>140</sup>

Addressing issues of convergence will ensure ease of access to the relevant networks. It also will enable access to services by all in the manner expected now by both the end users and the businesses that supply them. A failure by government to address such issues will result in inconsistent service delivery. Inconsistent service

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*Real Estate Society*, 23-27 January 2005, Melbourne University, Australia [http://www.pres.net/Papers/Spurge\\_Broadband\\_Technology\\_An\\_Appraisal\\_Of\\_The\\_Availability.Pdf](http://www.pres.net/Papers/Spurge_Broadband_Technology_An_Appraisal_Of_The_Availability.Pdf) (viewed 29/08/2009)

<sup>137</sup> ACMA, ‘Communications Report 2008-09’, 10 November 2009, 13 [http://acma.gov.au/webwr/\\_assets/main/lib311252/08-09\\_comms\\_report.pdf](http://acma.gov.au/webwr/_assets/main/lib311252/08-09_comms_report.pdf) (viewed 17/01/2010)

<sup>138</sup> DCITA, Report on Digital Television Reviews, 2000, Volume 3, 10 May 2000, 3 – “*Structural convergence affects all of the knowledge and transaction-intensive services industries, including telecommunications, finance, broadcasting, education, health, and retail. Convergence began decades ago in some industries, but has barely begun in others. It is eroding traditional economies of scale and scope, leading to a corresponding shift in industry structure and business strategy.*” These observations, although in respect of television, are equally applicable to broadband service delivery. [http://www.dbcde.gov.au/television/digital\\_television\\_switchover/digital\\_broadcasting\\_policy\\_review\\_s/reports\\_on\\_digital\\_television\\_reviews\\_-\\_index\\_page](http://www.dbcde.gov.au/television/digital_television_switchover/digital_broadcasting_policy_review_s/reports_on_digital_television_reviews_-_index_page) (viewed 07/05/2010)

<sup>139</sup> Note 29, DBCDE, 20 – “*The nature of the digital economy is such that certain regulatory frameworks presently face greater pressure than others. [For example] ... convergence – where devices and platforms which originally had distinct functionalities converge or overlap and, as result, put pressure to legislative schemes that were originally designed to deal with distinct devices and platforms.*” This also will include addressing the political issues of *quid pro quos* that tend to arise in respect of media interests in Australia, see – Thomas J, ‘Digital Television and its Discontents: Competition Policy and Broadcasting in Australia’ (2000-01) *International Journal of Communications Law and Policy*, 3 [http://www.ijclp.net/files/ijclp\\_web-doc\\_12-6-2001.pdf](http://www.ijclp.net/files/ijclp_web-doc_12-6-2001.pdf) (viewed 19/06/2010).

<sup>140</sup> ACMA, ‘ACMA Corporate Plan 2009-11’, 7-9. The ACMA identify 9 challenges being – regulation for the citizen; regulation for the consumer; voice regulation; content regulation; co- and self-regulation; regulation for industry; online content regulation; resource regulation; and ACMA institutional arrangements. [http://www.acma.gov.au/webwr/\\_assets/main/lib100845/acma\\_corporate\\_plan\\_2009-11.doc](http://www.acma.gov.au/webwr/_assets/main/lib100845/acma_corporate_plan_2009-11.doc) (viewed 19/01/2010)

delivery will not instill a desire in individuals to engage in the internet economy<sup>141</sup> and a lack of engagement in the internet economy by all may have a negative impact on Australia's growth. Ensuring *connectedness* on the other hand will have a positive impact as all will be engage and enable to innovate and participate.

Public policy is a means of promoting societal and economic benefits.<sup>142</sup> A failure to address issues relevant for the internet economy, in particular a failure to ensure adequate internet access for all, would be a failure of the policy process. However, as later chapters will consider, it is not just an issue of concern for government. Part of addressing these issues will involve ensuring that retail service prices are affordable and not dependent upon where a person may live. It is therefore a concern for ISPs to ensure that, for all Australians, internet access is consistent and costs of access are reasonable and affordable for all. It is in the context of both the economic and social benefit for Australia that Chapter 4 will consider the importance of high-speed broadband generally, and the NBN specifically for promoting *connectedness* and the future of Australia's internet economy. An important aspect of overcoming the *digital divide* and ensuring ongoing open access to a high-speed broadband network is to ensure that network neutrality applies to both the wholesale and retail levels of any high-speed broadband network.<sup>143</sup> This level of neutrality is relevant because "*broadband is not [just] the internet*"<sup>144</sup> it is much more.

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<sup>141</sup> McKinsey & Company/KPMG, *National Broadband Network Implementation Study*, 6 May 2010, 109 – "Currently, the accessibility and affordability of broadband varies significantly across the country. The impact of this is that the quality of broadband offers and hence broadband penetration is lower in more remote areas of Australia." <http://data.dbcde.gov.au/nbn/NBN-Implementation-Study-complete-report.pdf> (accessed 08/05/2010)

<sup>142</sup> ACMA, 'ACMA Communications Report 2006-07', 14 February 2008, 191 – "[t]he ability of individuals to adopt and benefit from the internet and associated ... ICT ... has major social and economic benefits, influencing participation in the online economy, education and learning, access to services, political participation and social inclusion." [http://www.acma.gov.au/webwr/\\_assets/main/lib310631/0607commreport\\_complete.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310631/0607commreport_complete.pdf) (viewed 17/01/2010) Also see Papandrea F, 'Digital Television Study: A Squandered Opportunity' (2001) 8(1) *Agenda*, 65, 65 – "efficient public policy interventions should endeavour to maximise social welfare."

<sup>143</sup> For a brief consideration of the history of Net Neutrality, and one opinion on its relevance to Australia, see – Endres J, 'Net neutrality – How relevant is it to Australia?' (2009) 59(2) *Telecommunications Journal of Australia*, 22.1-22.10

<sup>144</sup> Whitt R, 'Evolving Broadband Policy: Taking Adaptive Stances to Foster Optimal Internet Platform' (2009) 17 *CommLaw Conspectus*, 417, 429

## CHAPTER 4 – A BROADBAND NETWORK

*“Nations that seek to remain economically competitive and to provide high living standards for their citizens will race to embark on their National Information Infrastructure projects as, in the past, they have invested in their ports and shipping fleets, railroad networks, and highway systems.”<sup>1</sup>*

### A. Introduction

In the internet economy the federal government has indicated that it sees its role as that of an enabler. That is, it sees it has a role in “*enabling individuals, households and businesses to take up the opportunities the digital economy offers*”.<sup>2</sup> This should include enabling all individuals to learn how to educate themselves by accessing the services of the internet.<sup>3</sup> However, although Australia’s population exceeds 22 million,<sup>4</sup> there remains a portion of the population without the necessary hardware, resources, skills or inclination to participate in the internet economy.<sup>5</sup>

Australia’s future now is inextricably linked with the future of its internet economy. As Chapter 1 identified, the internet economy includes a variety of “*eservices, content and applications*”.<sup>6</sup> Appropriate access to the internet is essential as a means for enabling access to these services. Of considerable importance for Australia’s

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<sup>1</sup> Mitchell W, *City of Bits: Space, Place and the Infoban*, 5<sup>th</sup> ed (Massachusetts University of Technology Press, Cambridge, Massachusetts, 1995) 168

<sup>2</sup> DBCDE, ‘Australia’s Digital Economy: Future Directions’, Final Report, 14 July 2009, 7 [http://www.bcde.gov.au/digital\\_economy/final\\_report](http://www.bcde.gov.au/digital_economy/final_report) (viewed 12/08/2009)

<sup>3</sup> Howkins J, *Creative Ecologies: Where Thinking is a Proper Job* (University of Queensland Press, St Lucia, 2009) 121

<sup>4</sup> ABS, *Australian Demographic Statistics, 3101.0 March 2010*, released 11.30 am 29 September, 2010

<http://abs.gov.au/AUSSTATS/abs@.nsf/productsbyCatalogue/FBAC8C9AFBC52291CA25765100098272?OpenDocument> (viewed 24/11/2010). This is an increase from 21 779.4 million at the end of March 2009. See – ABS, *Australian Demographic Statistics, 3101.0 March 2009*, released 11.30 am 22 September, 2009

[http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/E9C44D06EE44222BCA257638001BC59A/\\$File/31010\\_mar%202009.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/E9C44D06EE44222BCA257638001BC59A/$File/31010_mar%202009.pdf) (viewed 03/06/2010)

<sup>5</sup> Kellerman A, ‘Internet access and penetration: An international urban comparison’ (2004) 11(3) *Journal of Urban Technology*, 63, 64 – as Kellerman considered, access relates to both the means of connecting to the internet and “*the willingness to use the Internet ... the ability to access the Internet in a technical sense ... the differential cost ... and the connection quality in terms of dial-up versus broadband access.*” This is similar to the situation facing the US where there is a noticeably disparity in adoption between rural and urban areas, as well as between different ethnic groups, see – US Department of Commerce, ‘Exploring the Digital Nation: Home Broadband Internet Adoption in the United States, November 2010, 42 <http://www.esa.doc.gov/DN/> (viewed 10/11/2010)

<sup>6</sup> Lovelock P and J Ure, ‘The New Economy: Internet Telecommunications and Electronic Commerce?’ in L Lievrouw and S Livingstone (Eds), *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 359

future, as part of its “*all-encompassing digital system*”,<sup>7</sup> will be its ‘next-generation internet’.<sup>8</sup> Accessing this next-generation internet will require a fast and reliable network. In this regard, high-speed broadband access to the internet is essential for the future of the internet economy.<sup>9</sup> Appropriate access should increase desire for those services and in turn this desire will be a key driver for high-speed broadband’s deployment.<sup>10</sup> However, although the number of internet users has increased this does not equate to increased access at home.<sup>11</sup>

The distinction between business use and home access will impact upon the NBN and its adoption by consumers. As Metcalfe’s law provides, “*the value of a network grows with the square of the number of members*”.<sup>12</sup> The number of high-speed broadband subscribers, as opposed to those using other networks or means (i.e. dial-up) to access the internet, will impact upon the services offered to consumers generally. As will be considered, the number of subscribers in any one area also may impact upon the viability of the network for the network provider. Fewer people engaged in the internet economy may negatively impact Australia’s future. Many Australians may consider that they already have an acceptable level or means of internet access. In order for those Australians to have the incentive to adopt high-speed broadband access at home it will be necessary to educate them as to the different range of services that high-speed broadband access can provide and the benefits that home access will bring.<sup>13</sup> It is important to understand the interrelationship and differences between high-speed broadband and the internet.

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<sup>7</sup> Mitchell W, *E-topia: Urban Life, Jim – But Not As We Know It* (Massachusetts University of Technology Press, Cambridge, Massachusetts, 1999) 19

<sup>8</sup> Foster I, C Kesselman, and S Tuecke, ‘The anatomy of the grid: Enabling scalable virtual organizations’ *International Journal of High Performance Computing Applications* (2001) 15(3)

<sup>9</sup> OECD, ‘The Seoul Declaration for the Future of the internet Economy’ OECD Ministerial Meeting on the Future of the internet Economy, Seoul, Korea, 17-18 June 2008, 6 <http://www.oecd.org/dataoecd/49/28/40839436.pdf> (viewed 16/01/2010)

<sup>10</sup> Bouras C, E Giannaka, and T Tsiatsos, ‘Identifying best practices for supporting broadband growth: Methodology and analysis’ (2009) 32 *Journal of Network and Computer Applications*, 795, 795

<sup>11</sup> Note 5, Kellerman, 65 – ‘access at home’ is referred to by Kellerman as “*penetration*”. For a comparison of penetration and use levels in Australian cities refer to Table 3 on p71

<sup>12</sup> As discussed in Murdoch S and R Anderson, ‘Shifting Borders’ (2007) 36(4) *Index on Censorship*, 156, 159 <http://ezproxy.usc.edu.au:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ulh&AN=27777748&site=ehost-live> (accessed 22/08/2009)

<sup>13</sup> De Santis M, ‘Is Broadband Basic Service?’ July 2010, Report for the *Public Interest Advocacy Centre*, 37 – “*The relevance to some consumers of receiving broadband service in one’s home is another issue that is impeding its widespread adoption ... [some] non-adopters say they do not believe*



As will be considered, broadband itself is not merely “*a means of rapidly surfing the internet*”.<sup>14</sup> By extension, just as telecommunications has played a key role in the global economy to date,<sup>15</sup> high-speed broadband will have a significant role to play in the future of the internet economy. High-speed broadband will facilitate health and education delivery, as well as being a means of undertaking business and to support various business activities. It will also play a key role in our future social activities. This chapter clarifies what the term broadband means and explains why high-speed broadband is more than just the internet. The chapter identifies what the proposed NBN is. It then provides an overview of economic, social and innovation issues relevant for the adoption of high-speed broadband. The chapter concludes by identifying the type of network and level of government involvement required in order to successfully deliver high-speed broadband to Australia.

## **B. What is broadband?**

The term ‘broadband’ can be “*used simply as shorthand for high speed Internet access*”.<sup>16</sup> It is in this context that the federal government uses the term.<sup>17</sup> However, in attempting to define broadband the thesis faces a dilemma.<sup>18</sup> That is, there is not one accepted definition, or a standard or speed, by which broadband may be defined.<sup>19</sup> Although most existing attempts at definitions tend to be speed-dependent,

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*that digital content delivered [via] broadband networks is a compelling enough reason to justify purchasing the service.*” [http://www.piac.ca/telecom/is\\_broadband\\_basic\\_service/](http://www.piac.ca/telecom/is_broadband_basic_service/) (accessed 01/10/2010)

<sup>14</sup> Axia NetMedia Corporation, submission to the ‘Call for submissions on broadband solutions for remote area’, June 30, 2008

<sup>15</sup> Economides N, ‘Public Policy in Network Industries’, Year 2006, *NYU School of L*, Paper 78 <http://lsr.nellco.org/nyu/lewp/papers/78> (viewed 14/12/2007)

<sup>16</sup> OECD, ‘The Development of Broadband Access in OECD Countries’ 29 October 2001 Working Party on Telecommunication and Information Services Policies, Directorate for Science, Technology and Industry Committee for Information, Computer and Communications Policy, <http://www.oecd.org/dataoecd/48/33/2475737.pdf> (viewed 29/08/2009)

<sup>17</sup> DBCDE ‘Welcome to Broadband for Consumers’ – “*Broadband is a term used to describe fast, ‘always-on’ access to the Internet. This means having faster access to better multimedia services and applications, bigger data files and new communication services such as Voice over Internet Protocol (VOIP).*” [http://www.dbcde.gov.au/broadband/broadband\\_for\\_consumers](http://www.dbcde.gov.au/broadband/broadband_for_consumers) (viewed 17/06/2010) Although in one linked page the government expands – see DBCDE, ‘Common broadband terms’ – “*Broadband comes from the words ‘broad bandwidth’. It is used to describe a high capacity, two way link between end users and access network suppliers. It is capable of supporting a variety of voice and data applications like pay TV, voice telephony, Internet access and multimedia services.*” [http://www.dbcde.gov.au/broadband/broadband\\_for\\_consumers/common\\_broadband\\_terms](http://www.dbcde.gov.au/broadband/broadband_for_consumers/common_broadband_terms) (viewed 17/06/2010)

<sup>18</sup> For a more detailed consideration of the dilemma this lack of consistent definition causes see – Kelso R, *Open Access to Next Generation Broadband*, PhD Thesis (2009) *Institute for Creative Industries and Innovation, QUT*, 33 <http://eprints.qut.edu.au/12663/> (viewed 11/02/2010)

<sup>19</sup> Note 10, Bouras *et al*, 795–807

they lack precision or consistency.<sup>20</sup> They are also potentially restrictive of future developments. For example, in 2001 the OECD<sup>21</sup> stated that to be considered to be ‘broadband’ the service provided must be of a speed, as relates to downstream access and delivery, of at least 256 kbps.<sup>22</sup> Seven years later, although technology had progressed in the meantime, the Australian Bureau of Statistics defined the term broadband in the same manner.<sup>23</sup>

The term broadband also has received some judicial consideration. In *Bayside City Council v Telstra Corp Ltd*,<sup>24</sup> the High Court identified a “broadband cable network” is one that:

*“uses a wider frequency band than is necessary to transfer speech telephonically. It comprises links between exchanges, between exchanges and a customer’s tap-off point, and between a customer’s tap-off point and equipment at a customer’s premises. It permits a flow of information for a number of purposes, including internet services and cable television.”*<sup>25</sup>

This explanation is perhaps closer to a definition that is of relevance for this thesis as it focuses not on the speed of delivery for the services provided but on the network infrastructure itself. However, a truly holistic definition of broadband is one that encompasses both availability and speed of connection and availability and access to infrastructure. It is the latter that is the focus of the thesis but, as other authors identified, physical infrastructure is not provided in isolation as it is always provided for a purpose.<sup>26</sup> Whitt described broadband as “*communication, transportation, information and interactivity infrastructure*”.<sup>27</sup> It encompasses also a variety of

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<sup>20</sup> OECD, ‘Universal Service Obligations and Broadband’, 22 January 2003, Working Party on Telecommunication and Information Services Policies, Directorate for Science, Technology and Industry Committee for Information, Computer and Communications Policy, <http://www.oecd.org/dataoecd/4/23/2496799.pdf> (viewed 29/08/2009)

<sup>21</sup> It is noted that not all countries are members of the OECD. See Note 3, Howkins, 109 who referred to the OECD as “*the rich countries’ research organisation*”

<sup>22</sup> OECD, ‘National Innovation Systems’, 1997, 41 <http://www.oecd.org/dataoecd/35/56/2101733.pdf> (viewed 08/04/2010)

<sup>23</sup> ABS, 8153.0 – *Internet Activity, Australia, December 2008*, released 11.30 am 06/04/2009 – broadband is “*an ‘always on’ internet connection with an access speed equal to or greater than 256kbps*” <http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/CF7797B9875B9A98CA25762E0017BE71?opendocument> (viewed 07/06/2009)

<sup>24</sup> *Bayside City Council v Telstra Corp Ltd* [2004] HCA 19

<sup>25</sup> *Bayside City Council v Telstra Corp Ltd* [2004] HCA 19 [3] per the majority

<sup>26</sup> Note 6, Lovelock and Ure, 359

<sup>27</sup> Whitt R, ‘Evolving Broadband Policy: Taking Adaptive Stances to Foster Optimal Internet Platform’ (2009) 17 *CommLaw Conspectus*, 417, 427-429

managed services. These include essentially closed services chosen by the broadband supplier as opposed to the open but unmanaged services available over the internet.<sup>28</sup> Therefore to consider a definition by reference to infrastructure alone may not be sufficient. However, although a holistic definition may be desirable, it is not practical. For the purpose of the thesis there are two uses of ‘broadband’ that are relevant. To clarify, from this point where the term broadband is used it will be in the context of the services delivered over the relevant network/s (i.e. content, social networking sites, television, telephone and other communications services). The term broadband network or high-speed broadband network refers to the infrastructure<sup>29</sup> being the cabling, satellites,<sup>30</sup> wireless and other technologies,<sup>31</sup> and ducts etc via which services are provided.

### **C. Why a broadband network is important for the internet economy**

There are many benefits arising from having high-speed broadband internet access.<sup>32</sup> These range from the increased ease of the individual’s ability to make and share information,<sup>33</sup> through to maintaining contact with friends overseas, whether by easy access to email, or through social networking sites and blogs.<sup>34</sup> Broadband networks can assist with providing intelligent transportation networks,<sup>35</sup> housing systems,<sup>36</sup>

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<sup>28</sup> Barr T, ‘Broadband: towards understanding users’ *Proceedings Communications Policy and Research Forum 2007*, 24-25 September 2007, University of Technology Sydney, 210, 212 <http://cci.edu.au/publications/broadband-towards-understanding-users> (viewed 07/04/2010)

<sup>29</sup> Appreciating that broadband in any event is primarily infrastructure. See Note 27, Whitt, 432

<sup>30</sup> McKinsey & Company/KPMG, *National Broadband Network Implementation Study*, 6 May 2010 (‘McKinsey Report’) 290 – “Satellite has a critical role to play in ensuring nationwide availability of affordable, high-speed broadband beyond the fibre footprint.” <http://data.dbcde.gov.au/nbn/NBN-Implementation-Study-complete-report.pdf> (accessed 08/05/2010)

<sup>31</sup> Note 30, McKinsey Report, 304 – “Wireless technologies have a substantial role to play in delivering broadband services to the final 10 percent” Delivery is not without problems “due to ... [the] high cost of backhaul ... low number of subscribers and ... low overall revenue” Ayre R, K Hinton, B Gathercole and K Cornick, ‘A Guide to Broadband Technologies’ (2010) 43 (2) *The Australian Economic Review*, 200-8

<sup>32</sup> Note 27, Whitt, 431 – “Just as broadband facilitates Internet access, it also facilitates delivering various forms of content such as streaming video. Broadband infrastructure also allows for the provision of better health care at reduced cost, helps institutions streamline operations, and improves the quality and diversity of teaching methods at schools and other educational facilities. Over time, broadband also is expected to facilitate access to new online technologies like pervasive computing, smart houses, and cloud computing.” [references omitted]

<sup>33</sup> Slevin J, *The Internet and Society* (Blackwell Publishers Ltd, Oxford, 2000)

<sup>34</sup> Quiggin J and J Potts, ‘Economics of Non-market Innovation and Digital Literacy’ (2008) 128 *Media International Australia incorporating Culture & Policy*, 144

<sup>35</sup> OECD, ‘Network Developments in Support of Innovation and User Needs’, Working Party of Communication Infrastructures and Services Policy, Directorate for Science, Technology and Industry, Committee for Information, Computer and Communications Policy, 9 December 2009, DSTI/ICCP/CISP(2009)2/FINAL, 29 – “In addition, aerial poles and fibre backhaul lines commonly

and can ensure ease of access for individuals to information for government<sup>37</sup> and education purposes.<sup>38</sup> Although the internet itself already enables the successful provision of some health services online,<sup>39</sup> high-speed broadband access will facilitate provision of a greater range of services than that currently available.<sup>40</sup> For businesses the benefits include greater ease of access to, and by, potential customers and to consumers generally.<sup>41</sup> High-speed broadband internet access can speed innovations as it assists in achieving economies of scale, and thus access to services not previously available.<sup>42</sup> Broadband access aids in the narrowing of the *digital divide*.<sup>43</sup> In other nations it is recognised that access to high-speed broadband is a

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*run alongside roads and could be tapped to provide needed transmission capacity. Even ITS rollouts which focus on car-to-car communications will need to feed information back to control centres for overall traffic monitoring. These transmissions would likely flow over both wireless and wired broadband networks.”*

<sup>36</sup> ACMA, ‘Technology developments in the digital economy’, August 2010, 19 and 18 – it also can assist with smart energy systems [http://www.acma.gov.au/webwr/\\_assets/main/lib311925/technology\\_developments\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/_assets/main/lib311925/technology_developments_in_digital_economy.pdf) (accessed 09/10/2010)

<sup>37</sup> Note 30, McKinsey Report, 166

<sup>38</sup> Kollock P and M Smith, ‘Communities in cyberspace’ in M Smith and P Kollock (Eds) *Communities in Cyberspace* (Routledge, London, 1999); Note 35, OECD, 23 – “*Two specific areas where broadband will likely have a significant impact in e-health are increasing the efficiency of health monitoring and reducing the costs on the system via remote consultation and intervention.*”

<sup>39</sup> For example in the delivery of cognitive behaviour therapy purely online without the need for face to face (either real world or online) interaction with health practitioners. See – Andrews G and N Titov, ‘Treating people you never see: internet-based treatment of the internalising mental disorders’ (2010) 34 (2) *Australian Health Review*, 144, 145 – “*Clinician-guided CBT programs have outcomes comparable to face-to-face CBT, are as acceptable to patients, and appear more cost-effective.*”

<sup>40</sup> Note 35, OECD, 22 – “*Health systems are facing tremendous pressure to improve health quality, accessibility and outcomes, and to do so in a cost-effective manner. Broadband supporting information and communication technologies in health offers great potential to address these challenges.*”

<sup>41</sup> ACIL Tasman, ‘Consumers Benefits Resulting from Australia’s Telecommunications Sector, 3 November 2005 (amended 6 December 2005) 56 [http://www.acma.gov.au/webwr/\\_assets/main/lib100097/cbr%20-%20complete.pdf](http://www.acma.gov.au/webwr/_assets/main/lib100097/cbr%20-%20complete.pdf) (viewed 07/01/2010)

<sup>42</sup> West D, *An International Look at High Speed Broadband* (2010) Governance Studies at Brookings, 3 – “*For example, high-speed broadband allows physicians to share digital images with colleagues in other geographic areas. Schools are able to extend distance learning to under-served populations. Smart electric grids produce greater efficiency in monitoring energy consumption and contribute to more environment-friendly policies. Video conferencing facilities save government and businesses large amounts of money on their travel budgets. New digital platforms across a variety of policy domains spur utilization and innovation, and bring additional people, businesses, and services into the digital revolution.*” [http://www.brookings.edu/~media/Files/rc/reports/2010/0223\\_broadband\\_west/0223\\_broadband\\_west.pdf](http://www.brookings.edu/~media/Files/rc/reports/2010/0223_broadband_west/0223_broadband_west.pdf) (viewed 07/10/2010)

<sup>43</sup> ACMA, ‘Communications Report 2006-07’, 14 Feb 2008, 193 – “*According to the OECD, there has been a decline across OECD countries in the digital access divide and narrowing of the adoption curve for ICT diffusion*” albeit that this comes at the cost of “*an increase in the digital use or knowledge divide.*” Access capacity, meaning having the necessary knowledge and skills to use the physical access available still remains an issue to be addressed. [http://www.acma.gov.au/webwr/\\_assets/main/lib310631/0607commreport\\_complete.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310631/0607commreport_complete.pdf) (viewed 17/01/2010)

basic right.<sup>44</sup> In the internet economy, a broadband network makes “*the Internet and World Wide Web run faster and jump higher for you and your computer*”.<sup>45</sup>

The internet economy is not constituted merely by the services and content that is available. The other half of the equation is the consumers who access the content and use the services.<sup>46</sup> Faster and more reliable internet access by means of the use of broadband networks<sup>47</sup> enables consumers to undertake a variety of tasks not previously possible due to a lack to reliability and/or speed.<sup>48</sup> It is not just the end users who want the reliable and faster internet access speeds.<sup>49</sup> Software suppliers also want end users to have better access as it is easier for them to send the end users updates.<sup>50</sup> The potential benefits of a broadband network include the economic benefits to businesses of greater ease of access to potential customers, and their ease of access to business.<sup>51</sup> Broadband networks will further enable the internet economy by stimulating internet use as one of the services offered as part of a package. These packages will include television, telephone, video and other services.<sup>52</sup> The variety of services available also includes public services,<sup>53</sup> health services<sup>54</sup> and online shopping.<sup>55</sup> How effectively and safely these services may be accessed will affect consumer confidence in the site and the consumers’ desire to use them again.<sup>56</sup>

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<sup>44</sup> Note 42, West, 4; Reuters, ‘Spain Codifies *The Right to Broadband*’, PCMAG.COM, 17 November 2009 <http://www.pcmag.com/article2/0,2817,2356014,00.asp> (viewed 10/10/2010)

<sup>45</sup> Gaskin J, *The Broadband Bible* (John Wiley & Sons, Inc, 2004) 3

<sup>46</sup> Note 5, Kellerman, 64 – “Access, penetration, and use comprise the consumption side of the Internet economy.”

<sup>47</sup> Note 27, Whitt, 429

<sup>48</sup> Cole R and R Lorch (Eds), *Buildings, Culture & Environment: Informing Local & Global Practices* (Blackwell Publishing Ltd, Oxford 2003) 18

<sup>49</sup> Note 27, Whitt, 430 – “Internet access is the actual capability of reaching the Internet ... broadband is the physical connective pathway that allows consumers to access the Internet.”

<sup>50</sup> Note 45, Gaskin, 5 – “With broadband ... downloads arrive in a fraction of the time that they do with dial-up connection. What used to be a 3-minute distraction is now a 30-second annoyance.”

<sup>51</sup> Middleton C, ‘Understanding the Benefits of Broadband: Insights for a Broadband Enabled Ontario’, paper prepared for the Ministry of Government Services, Ontario, July 2007, 20 [http://www.broadbandresearch.ca/ourresearch/middleton\\_BB\\_benefits.pdf](http://www.broadbandresearch.ca/ourresearch/middleton_BB_benefits.pdf) (viewed 29/08/2009)

<sup>52</sup> For a recent international consideration of Australia’s broadband development see – Benkler Y, ‘Next Generation Connectivity: A review of broadband Internet transitions and policy from around the world’, *The Berkman Center for Internet & Society at Harvard University*, February 2010, Report for FCC, 241-242 [http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/Berkman\\_Center\\_Broadband\\_Final\\_Report\\_15Feb2010.pdf](http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/Berkman_Center_Broadband_Final_Report_15Feb2010.pdf) (viewed 20/05/2010)

<sup>53</sup> Barr T, ‘A Broadband Services Typology’ (2010) 43(2) *The Australian Economic Review*, 187

<sup>54</sup> Note 39, Andrews and Titov, 144

<sup>55</sup> Roman S, ‘Relational Consequences of Perceived Deception in Online Shopping: The Moderating Roles of Type of Product, Consumer’s Attitude Toward the Internet and Consumer’s Demographics’ (2010) 95 *Journal of Business Ethics*, 373

<sup>56</sup> Shelly M and M Jackson, ‘Doing Business with Consumers Online: Privacy, Security and the Law’

Australians have been shown to be early adopters of new technologies where that technology “offers something substantially different and additional to what the old technology provides”.<sup>57</sup> Broadband access is seen by consumers not as a complementary service but as a replacement for existing dial-up internet access.<sup>58</sup> More than 60 per cent of telecommunications users worldwide have broadband connections.<sup>59</sup> By extension, high-speed broadband access is a replacement for ordinary broadband connections as it enables services that are not deliverable across existing broadband networks.<sup>60</sup> Research shows that the “*type of internet connection has a significant effect on the level of online participation*” in that broadband users are more likely to participate, and are more participative, than those with older methods of connection.<sup>61</sup> Many users however will require an incentive to adopt high-speed broadband.<sup>62</sup> Although high-speed broadband networks will enable more than just access to the internet, initially it is likely to be the faster internet speeds and the availability and ease of access to existing services and networks that will encourage their transition. As Barr explained:

“[while] *the global platform of the Internet has facilitated an extraordinary increase in user access and content diversity as a result of this plethora on new user-centred web sites. However growth of the contemporary social networking phenomena – user led innovation – can hardly be explained just*

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(2008) 17(2) *International Journal of Law and Information Technology*, 180; Note 55, Roman, 374 – “*compared to the brick and mortar world, the Internet lowers the entry and set up costs for new sellers ... making it relatively easy for a deceptive online retailer to set up a storefront on the Internet that is as genuine looking as its legitimate counterpart.*”

<sup>57</sup> Papandrea F, ‘Digital Three-Card Trick’ (2000) *Review* 12, 13

<sup>58</sup> ACMA, ‘Telecommunications Today – Report 5: Consumer choice and preference in adopting services’, April 2008, 11– “*Consumers believe that the benefits of broadband make it a superior service.*”

[http://www.acma.gov.au/webwr/\\_assets/main/lib310210/report\\_5-telecommunications\\_today.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310210/report_5-telecommunications_today.pdf) (viewed 07/01/2010); ITU, ‘Measuring the Information Society’ (2009) Telecommunication Development Bureau, 1 [http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009\\_w5.pdf](http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009_w5.pdf) (viewed 07/10/2010)

<sup>59</sup> Note 58, ITU, 4

<sup>60</sup> Note 42, West, 16 – “*High-speed broadband facilitates the adoption of remote wireless health monitors, GIS mapping, social media, distance learning, smart energy grids, file-sharing, and video conferencing. A number of public agencies around the world have developed interactive software that allows citizens to map data for their neighborhoods and make innovative uses of videos or multi-media to engage people in civic debates. These applications require faster speeds than currently available in many places.*”

<sup>61</sup> Note 43, ACMA, 22

<sup>62</sup> IIA, ‘Principles for a Digital Economy’, 27 July 2010, *Internet Industry Association*, 25 – “*Early adopters will need no incentive ... Video and enhanced service offerings will encourage more users to join. Superfast broadband will improve many of the things we do today and will raise the potential for hundreds of applications we cannot now imagine. But what of the mainstream? What will spur them to embrace this new delivery platform?*” <http://iia.net.au/images/resources/pdf/manifestor-2010.pdf> (accessed 09/10/2010)

*in terms of wider technological access to new web sites. Collectively My Space and You Tube, and their multiple new counterparts, provide not merely new platforms for showing videos and photos, but rather they facilitate a deeper set of processes of social networking ... this extraordinary new social networking movement is another force driving demand for higher speed broadband.*<sup>63</sup>

Finally, high-speed broadband access enables greater engagement in the political process by citizens and can positively impacts upon public service delivery.<sup>64</sup> High-speed broadband access is recognised internationally as being beneficial to all peoples for economic, societal and environmental reasons. It was for this reason that the Broadband Commission recently called for all world leaders to support and implement policies to achieve “*broadband inclusion for all*”.<sup>65</sup>

#### **D. What is (to be) the NBN?**

In late 2007, after having assumed power for the first time in more than a decade, the new federal Labor government announced its intention to develop a national broadband network<sup>66</sup> and appoint a panel of experts to evaluate industry proposals for its creation.<sup>67</sup> On 11 April, 2008, the federal government issued a Request for

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<sup>63</sup> Note 28, Barr, 214

<sup>64</sup> Note 42, West, 11 to 13 – this positive impact ranges from enabling citizens to follow politics and government in new ways to enabling faster, safer and more efficient access to online services and transactions, including online voting.

<sup>65</sup> Broadband Commission, ‘A 2010 Leadership Imperative: The Future Built on Broadband’, *Report for ITU and UNESCO*, September 19, 2010, 5 – A 2010 Declaration of Broadband Inclusion for All – “We, the members of the Broadband Commission for Digital Development, address this Declaration to the world leaders attending the 2010 MDG Summit at United Nations Headquarters. We call upon you to embrace a common leadership vision that has profound implications for the accelerated achievement of the Millennium Development Goals (MDGs) by the internationally-agreed deadline of 2015. That common vision is broadband inclusion for all. It is a vision that embodies effective and sustainable solutions to the great global challenges of the 21st Century in poverty, health, education, gender equality, climate change and the seismic demographic shifts in youth and ageing populations. We believe that the Internet and other information and communication technologies (ICTs) should be used for the benefit of all mankind. Beyond any physical or virtual infrastructure that has preceded it in the industrial revolution or information age, and as a catalyst and critical enabler for recovery in the wake of the recent economic slowdown, broadband will be the basis for digital invention and innovation and the foundation for digital and other investments that lie at the very heart of our shared knowledge economy and society.” <http://www.broadbandcommission.org/report1.pdf> (accessed 10/10/2010)

<sup>66</sup> Conroy, Hon. S, ‘Government committed to FTTN national network’, Media Release, 7 December 2007  
[http://www.minister.dbcde.gov.au/media/media\\_releases/2007/government\\_committed\\_to\\_fttn\\_national\\_network](http://www.minister.dbcde.gov.au/media/media_releases/2007/government_committed_to_fttn_national_network) (viewed 24/09/2009)

<sup>67</sup> Conroy, Hon. S, ‘Government announces Panel of Experts to assess National Broadband Network proposals’ Media Release, 11 March 2008

Proposals<sup>68</sup> to “*establish a national broadband network*”<sup>69</sup> with construction (then) anticipated to commence by the end of 2008.<sup>70</sup> The government’s intended the NBN would:

- deliver speeds of at least 12 megabits per second;
- use fibre-to-the-node or fibre-to-the-premises architecture;
- be available to 98 per cent of Australian homes and businesses;
- have uniform wholesale pricing that offers ... real value for money; and
- provide open access on pro-competitive terms and conditions.<sup>71</sup>

Six proposals were received on 26 November, 2008,<sup>72</sup> and were assessed by the Panel of Experts appointed by Senator Conroy in March 2008.<sup>73</sup> The panels’ Evaluation Report<sup>74</sup> identified *inter alia* the need for:

- a “*wholesale-only*”<sup>75</sup> *provider of any bottleneck infrastructure*”;
- true competition and not just reliance on technology;
- “*improved regulation in the telecommunications industry*”; and
- avoiding “*excessive overbuild protections*”.

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[http://www.minister.dbcde.gov.au/media/media\\_releases/2008/016](http://www.minister.dbcde.gov.au/media/media_releases/2008/016) (viewed 27/09/2009)

<sup>68</sup> DBCDE, ‘Request for Proposals to roll-out and operate a National Broadband Network for Australia’, Request for Proposals number: DCON/08/18, 11 April 2008 (RFP1) [http://www.archive.dbcde.gov.au/2009/april/national\\_broadband\\_network/request\\_for\\_proposals](http://www.archive.dbcde.gov.au/2009/april/national_broadband_network/request_for_proposals) (viewed 22/05/2010). Also see Clarifications numbered 1 – 13. [http://www.archive.dbcde.gov.au/2009/april/national\\_broadband\\_network/consultation](http://www.archive.dbcde.gov.au/2009/april/national_broadband_network/consultation) (accessed 17/05/2009)

<sup>69</sup> Note 68, DBCDE, 1.3.1 – details of the full objectives for the first version of the NBN.

<sup>70</sup> Note 67, Conroy

<sup>71</sup> Note 68, DBCDE, 7

<sup>72</sup> The proposals were from – Acacia Australia Pty Ltd; Axia NetMedia Corporation; Optus Network Investments Pty Ltd; the Crown in the Right of Tasmania; Telstra Corporation Ltd; and TransACT Capital Communications Pty Ltd. See – Scott P, J Wylie, T Shaw, K Henry, T Mitchell, R Coutts and R Tucker, ‘Extract from the Evaluation Report for the Request for Proposals to Roll-out and Operate a National Broadband Network for Australia’, 20 January 2009 (‘Evaluation Report Extract’) [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0007/110014/Summary\\_observations\\_for\\_website.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0007/110014/Summary_observations_for_website.pdf) (viewed 25/09/2009) It is noted that Telstra failed to submit a compliant bid see – Note 31 Ayre *et al*, 202

<sup>73</sup> The Panel of Experts was – Ms Patricia Scott, Secretary of the Department of Broadband, Communications and the Digital Economy (Chairman); Mr John Wylie, CEO Lazard Carnegie Wylie; Mr Tony Mitchell, Chairman Allphones; Laureate Professor Rod Tucker, University of Melbourne; Professor Emeritus of Communications, Reg Coutts, University of Adelaide; Mr Tony Shaw, former Chairman Australian Communications Authority; and Dr Ken Henry AC, Treasury Secretary. See – Note 67, Conroy

<sup>74</sup> Note 72, Evaluation Report Extract, Observation 9

<sup>75</sup> Although this now appears doubtful. Refer to discussion in Chapter 5. For NBN Co Limited’s proposed whole agreement see – <http://www.nbnco.com.au/wps/wcm/connect/6d8dba00447c19f1a462adc72ea64545/NBN+Co+WBA+Consultation+Paper+October+2010.pdf?MOD=AJPERES> (viewed 02/12/2010)



Because of the commercially sensitive nature of the process, the full Panel of Experts' report was not made available to the public.<sup>76</sup> However, the information available made it clear that no submission supported a roll-out in five years as the federal government had intended, that is to 98 per cent of homes and business for a government contribution of \$4.7 billion only.<sup>77</sup> Additionally, the Report noted the negative impact of the GFC on the ability of the proposers to raise the necessary capital for construction purposes.<sup>78</sup> There was not any one proposer capable of individually delivering what the federal government was seeking.<sup>79</sup> The federal government's original network proposal subsequently was cancelled and on 7 April, 2009, a new proposal was announced.<sup>80</sup>

The 2009 proposal<sup>81</sup> was that:

- the government would establish a new company, to be *“jointly owned by the government and the private sector”* to build and operate the NBN, with the government retaining its interest only for the first five years of full operation;
- the NBN will be *“built in partnership with private sector”* over eight years;
- the government will invest \$43 billion for construction of the NBN; and
- the NBN will:
  - *“Connect 90 percent of all Australian homes, schools and workplaces with broadband services with speeds up to 100 megabits per second 100 times faster than those currently used by many households and businesses*

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<sup>76</sup> Conroy Hon S, 'Expert Panel Submits Report on National Broadband Network Submissions', Ministerial media releases, 22 January 2009 [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/001](http://www.minister.dbcde.gov.au/media/media_releases/2009/001) (accessed 17/05/2009). Also see – Note 72, Evaluation Report Extract, 1.2 Observations, 10

<sup>77</sup> Note 72, Evaluation Report Extract, Observation 3

<sup>78</sup> Note 72, Evaluation Report Extract, Observations 1 and 2

<sup>79</sup> Note 72, Evaluation Report Extract, Observation 4

<sup>80</sup> The RFO has subsequently been subject to (opposition instigated) audit by the Australian National Audit Office. The process associated with the first iteration of the NBN is considered in the audit report. See – The Auditor-General, 'The National Broadband Network Request for Proposal Process', The National Audit Office, Audit Report No.20 2009-10, Performance Audit [http://www.anao.gov.au/uploads/documents/2009-10\\_Audit\\_Report\\_20.PDF](http://www.anao.gov.au/uploads/documents/2009-10_Audit_Report_20.PDF) (viewed 05/02/2010)

<sup>81</sup> Rudd, Hon K, Hon W Swan, Hon L Tanner and Hon S Conroy 'New National Broadband Network', Joint media release, 7 April 2009 [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/022](http://www.minister.dbcde.gov.au/media/media_releases/2009/022) (viewed 11/05/2009) More recently see the NBN's indicative fibre serving area detailed, that is Attachment A to the ACCC *Discussion paper on points of interconnect to the National Broadband Network*, October 2010, <http://www.accc.gov.au/content/item.phtml?itemId=952788&nodeId=ba62b7d9c49edbd240976a8d8753fb01&fn=ACCC%20discussion%20paper%20on%20NBN%20POIs.pdf> (viewed 02/12/2010)

- *Connect all other premises in Australia with next generation wireless and satellite technologies that will deliver broadband speeds of 12 megabits per second*
- *Directly support up to 25,000 local jobs every year, on average, over the 8 year life of the project.*<sup>82</sup>

On 9 April, 2009, the federal government established the NBN Co Limited ACN 136 533 741. In August 2009 roll-out of the NBN began in Tasmania.<sup>83</sup> To facilitate this roll out on 13 August, 2009, the federal government registered Tasmania NBN Co Limited ACN 138 338 271 (its name was changed to NBN Tasmania Limited on 1 September, 2009) as a wholly owned subsidiary of NBN Co Limited. In July 2010 roll-out began in select sites throughout mainland Australia.<sup>84</sup> The four C's of the proposed NBN design are stated to be – *“coverage, competition, cost effective, and customer care”*.<sup>85</sup> Care however appeared focussed only to delivery of network reliability and applications, not issues of adoption and/or migration. As NBN Co Limited is not (generally) to provide retail services<sup>86</sup> and this should not be a concern for it, it is however an issue the federal government needs to address.

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<sup>82</sup> More recently however, at the launch of the cable rollout at Midway Point, Tasmania, Prime Minister Gillard and Senator Conroy announced that *“the NBN is capable of access speeds of up to 1 Gbps – 10 times faster than originally planned.”* See – Gedda R, ‘New 1Gbps NBN opens for business in Tassie’, *TechWorld*, 12 August, 2010 [http://www.techworld.com.au/article/356733/new\\_1gbps\\_nbn\\_opens\\_business\\_tassie/](http://www.techworld.com.au/article/356733/new_1gbps_nbn_opens_business_tassie/) (accessed 06/11/2010) Also see background discussion in ACCC *Discussion paper on points of interconnect to the National Broadband Network*, October 2010, 8 <http://www.accc.gov.au/content/item.phtml?itemId=952788&nodeId=ba62b7d9c49edbd240976a8d8753fb01&fn=ACCC%20discussion%20paper%20on%20NBN%20POIs.pdf> (viewed 02/12/2010)

<sup>83</sup> Conroy, Hon. S, ‘Tasmania NBN Co Limited established’, Joint Media Release, 13 August 2009 [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/075](http://www.minister.dbcde.gov.au/media/media_releases/2009/075) (viewed 26/09/2009); NBN Company Limited, ‘NBN Co. Business Case Summary’, 24 November 2010, 11-13 <http://www.nbnco.com.au/wps/wcm/connect/5b05280044cfe6e9803289c72ea64545/NBN+Co+Business+Case+Summary.PDF?MOD=AJPERES&CACHEID=5b05280044cfe6e9803289c72ea64545> (accessed 02/12/2010)

<sup>84</sup> Australian Government, ‘Geographical rollout’, *National Broadband Network*, <http://www.nbn.gov.au/content/geographical-rollout> (accessed 09/10/2010); more recently see NBN Co Limited, ‘Annual Report 2009-2010, 29 October 2010, 11-13 for first and second release sites and anticipated coverage for fibre, wireless and satellite [http://www.nbnco.com.au/wps/wcm/connect/a69fc5804479c76aa31fab72ea64545/NBNCo\\_AnnualReport\\_2010.pdf?MOD=AJPERES&CACHEID=a69fc5804479c76aa31fab72ea64545](http://www.nbnco.com.au/wps/wcm/connect/a69fc5804479c76aa31fab72ea64545/NBNCo_AnnualReport_2010.pdf?MOD=AJPERES&CACHEID=a69fc5804479c76aa31fab72ea64545) (accessed 22/11/2010)

<sup>85</sup> Lobb M, ‘NBN Co Network & Operations Information Session’, PowerPoint, 23 April 2010, slide 3 – *“Deliver appropriate reliability, resilience and security. Allow secure simultaneous delivery of multiple applications with predictable levels of quality.”* [http://www.nbnco.com.au/content/upload/files/Network\\_and\\_Operations\\_Information\\_Session\\_Presentation.pdf](http://www.nbnco.com.au/content/upload/files/Network_and_Operations_Information_Session_Presentation.pdf)

<sup>86</sup> Note 84, NBN Co Limited, 3 – *“To facilitate the development of a competitive telecommunication*

Mid-2010 the federal government announced policy changes regarding the proposed roll-out.<sup>87</sup> The first occurred prior to the 2010 federal election after an agreement (to agree) had been reached between NBN Co Limited and Telstra<sup>88</sup> regarding the use and access of Telstra's network as part of the NBN implementation.<sup>89</sup> However, the agreement reached is not yet binding and is subject to final shareholder approval, with final agreement not expected before mid-2011 at the earliest.<sup>90</sup> The second change occurred in the wake of the 2010 federal election in order to gain the support necessary to form a minority Labor government. The roll-out proposal was adjusted

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*market we are operating a wholesale-only, open-access network, and making our wholesale services available to retail service providers on non-discriminatory terms.*" Although it is now proposed that there is flexibility for the NBN Company to offer, in very limited circumstances retail services, as well. See the discussion in Chapter 5. For the proposed method of operation of the NBN by NBN Co Limited, and its dealings with providers, see – NBN Co Limited, 'NBN Co Consultation Paper: Introducing NBN Co's Wholesale Broadband Agreement', October 2010. <http://www.nbnco.com.au/wps/wcm/connect/6d8dba00447c19f1a462adc72ea64545/NBN+Co+WBA+Consultation+Paper+October+2010.pdf?MOD=AJPERES> (viewed 09/12/2010) Consultation only closed on 26 November 2010 and as yet the results have not been made public.

<sup>87</sup> Australian Government, 'Policy Statements', DBCDE, 20 June 2010 [http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/policy\\_statements](http://www.dbcde.gov.au/broadband/national_broadband_network/policy_statements) (viewed 22/06/2010)

<sup>88</sup> Note 84, NBN Co Limited, 23; Also see – Rudd Hon, K, 'Agreement between NBN Co and Telstra on the rollout of the National Broadband Network, Joint Media Release, 20 June 2010 – *"The Agreement between NBN Co and Telstra, worth an expected value of \$9 billion, provides for:*

- *The reuse of suitable Telstra infrastructure, including pits, ducts and backhaul fibre, by NBN Co as it starts to rollout its new network avoiding unnecessary infrastructure duplication; and*
- *The progressive migration of customers from Telstra's copper and pay-TV cable networks to the new wholesale-only fibre network to be built and operated by NBN Co.*" ... and ...

*"The Agreement means that:*

- *Taxpayers benefit because it reduces the overall cost of building the network and will result in higher take-up rates and revenue for NBN Co.*
- *A greater proportion of the NBN rollout will be underground, with less overhead cabling.*"

[http://www.minister.dbcde.gov.au/media/media\\_releases/2010/06](http://www.minister.dbcde.gov.au/media/media_releases/2010/06) (viewed 22/06/2010)

<sup>89</sup> NBN Co Limited, 'NBN Co and Telstra reach heads of agreement', Media Release, 20 June 2010 – *"Heads of Agreement signed leading to negotiations of contract in coming months."* [http://www.nbnco.com.au/content/upload/files/Press\\_Releases/NBNCo\\_MediaRelease\\_20.06.2010-TelstraHeadsOfAgreement.pdf](http://www.nbnco.com.au/content/upload/files/Press_Releases/NBNCo_MediaRelease_20.06.2010-TelstraHeadsOfAgreement.pdf) (viewed 22/06/2010)

<sup>90</sup> Telstra, 'Telstra signs Financial Heads of Agreement on NBN', Announcement, 20 June 2010 – *"The Heads of Agreement provides the framework for definitive agreements to be negotiated over the coming months. Should those agreements be finalised Telstra expects they would be put to shareholders in the first half of calendar 2011. Shareholders and investors would receive comprehensive detail in relation to the definitive agreements and an independent expert's report on the transaction well before the shareholder vote."* <http://www.telstra.com.au/abouttelstra/media-centre/announcements/telstra-signs-financial-heads-of-agreement-on-nbn-1.xml> (viewed 23/06/2010) Also, Note 84, NBN Co Limited, 23 – *"The FHOA provides the framework for definitive agreements to be negotiated over the coming months. Should these agreements be finalised, NBN Co expects they would be put to Telstra shareholders in the first half of the 2011 calendar year."* There are no guarantees that a final agreement will be signed – Lee T and M Bingemann, 'ISPs, telcos may file NBN compo claims', *The Australian*, December 08, 2010 – *"Telstra has signed a heads of agreement with NBN Co that will see it paid \$13 billion but it is not expected to go ahead with the contract if the proposal for 14 POIs is pushed through."* <http://www.theaustralian.com.au/news/nation/isps-telcos-may-file-compo-claims/story-e6frg6nf-1225967249352> (viewed 08/12/2010)

to take into account the needs of “broadband-deprived rural areas”<sup>91</sup> by fast-tracking satellite and mobile delivery to those areas.

The changes proposed by the expected agreement with Telstra do not affect the overall roll-out of the NBN. This is, first, because the policy announcement is specific to the interaction between Telstra and its existing networks. Second, while the agreement is designed to facilitate the implementation of the NBN as previously proposed, the federal government has stated the NBN will proceed in any event irrespective of an agreement being finalised.<sup>92</sup> For the purposes of this chapter therefore, in identifying what is to be the NBN, the recent announcements and policy changes while significant<sup>93</sup> have little impact. However, if an agreement is not ultimately reached with Telstra the policy may need further adjustment and, subject to the then current status of the roll-out, this may impact upon implementation time frames.<sup>94</sup> These and other proposed policies will be identified and considered as relevant in respect of the current access regimes discussed in Chapter 5.

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<sup>91</sup> Bingemann M, ‘Redrawn NBN rollout to put rural users first’, *The Australian*, September 09, 2010 – “the task of completing the eight-year build will now take on new direction, as the concessions required to secure the support of the key rural independents Rob Oakeshott and Tony Windsor mean broadband-deprived rural areas will be the first to be connected ... One big change expected in the NBN schedule, however, will be the acceleration of plans to roll out wireless and satellite services to deliver the hardest-to-reach 7 per cent of the nation with broadband services capable of minimum 12Mbps download speeds.” <http://www.theaustralian.com.au/business/redrawn-nbn-rollout-to-put-rural-users-first/story-e6frg8zx-1225916099298> (accessed 09/09/2010)

<sup>92</sup> Note 88, Rudd – “While today’s announcement is a significant step in the rollout of the NBN, as confirmed by the NBN Implementation Study, this project would still be financially viable even without the participation of Telstra. The NBN is critical to securing Australia’s international competitiveness. It is central to Australia’s economic future because it will deliver universal superfast broadband to all Australian households and businesses no matter where they live or do business.”

<sup>93</sup> Note 91, Bingemann, “More crucially, the NBN is faced with three other hurdles in the next 12 months: the passage of enabling legislation to set up the NBN Co’s operating conditions; the passage of regulatory reform laws to right the rickety state of telco competition; and the approval by Telstra’s shareholders of its \$11bn peace treaty to play in the NBN world. Industry experts have warned that the passage of the telecoms reform legislation – which aims to grant new powers to the competition watchdog and address Telstra’s vertically integrated domination of the sector – will underpin the success of the NBN. The government has failed on numerous occasions to pass this legislation, and that situation is unlikely to change until the Greens take the balance of power in the senate next July.”

<sup>94</sup> As overseas projects show financial concerns appear to be paramount for non-government investors and a lack of potential return will lead to them withdrawing from projects. See – Wakefield J, ‘BT to roll out fibre broadband across Cornwall’, *BBC News, Technology*, 30 September 2010 – “The BBC has learned that an ambitious plan to provide cities throughout the UK with fibre via the seers has hit the buffers. Wessex Water has pulled out of pilot project in Bournemouth, saying the financial reward is not good enough for them. The project, to provide over 80,000 homes with fibre, will not go ahead via the more traditional route of laying cables, with all the associated disruption of digging up roads.” <http://www.bbc.co.uk/news/technologoy-11435640> (accessed 01/10/2010)

## E. Why do we need the NBN?

To paraphrase Churchill – this is not the end of the internet but it is perhaps the end of its beginning.<sup>95</sup> High-speed broadband is so much more than just the internet and it is the additional services and content that a high-speed broadband network can enable that will be vital for the future.<sup>96</sup> Once the NBN is constructed it is expected that all connected premises will have access to a variety of retail service providers, and services, at the same time.<sup>97</sup> A high-speed broadband network also is essential for enabling “*the full potential of the internet*”.<sup>98</sup> The desire for greater bandwidth<sup>99</sup> and faster internet connection speeds<sup>100</sup> are primary incentives for high-speed broadband adoption.<sup>101</sup> In order to encourage adoption reliability of access and

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<sup>95</sup> Sir Winston Churchill (British politician, 1874-1965), ‘*Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.*’ Speech in November 1942

<sup>96</sup> ITU, ‘Hyderabad Declaration’, *World Telecommunications Development Conference (WTDC-10)* Hyderabad, India 24 May – 5 June 2010, 2 – “*Broad access to telecommunications/ICTs is essential for the world’s collective economic, social and cultural development, and the building of a global information society. This access brings new opportunities for interaction amongst people, for sharing of the world’s knowledge resources and expertise, for transforming people’s lives and for contributing to the global development agenda ... Broadband access and usage, supported by strong national backbones, are increasingly considered as essential services that need to be universally available to all citizens in order to develop networked economies and information societies.*” <http://www.itu.int/ITU-D/conferences/wtdc/2010/pdf/HyderabadDeclaration.pdf> (07/10/2010)

<sup>97</sup> Communications Alliance, ‘National Broadband Network End User Premises Handbook’, Release 2, June 2010, 4 – “*An [NBN End User Premises] ... in the context of Australia’s National Broadband Network (NBN) includes any home, business or service site that may be connected to an NBN via FTTP or a fixed wireless/satellite service. Once connected to an NBN, an EUP will be able to access services provided by RSPs that are delivered over the NBN infrastructure. It is expected that each EUP will be able to access one or more Service Providers, for different or similar service types, simultaneously.*” [http://www.commsalliance.com.au/\\_data/assets/pdf\\_file/0008/23957/NBN-End-User-Premises-Handbook---Release-2-Jun10.pdf](http://www.commsalliance.com.au/_data/assets/pdf_file/0008/23957/NBN-End-User-Premises-Handbook---Release-2-Jun10.pdf) (accessed 08/09/2010)

<sup>98</sup> Note 13, De Santis, 8 – “*A great deal of the internet’s rapid rise to prominence is thanks to high bandwidth or broadband connections. These connections allow data and content to travel swiftly internet users and providers. Indeed, many of the internet applications we take for granted today such online video services, streaming music and radio programming and multiplayer online gaming would not be possible without a broadband connection. Broadband is an essential component to realizing the full potential of the internet.*” And 45 – “*The internet has quickly evolved from an academic curiosity to an unstoppable force on the earth’s economic, political and social landscape. A critical component to the internet’s success has been the rise of broadband and the ever increasing speeds it offers. High bandwidth web applications such as streaming audio and video, teleconferencing and telepresence and voice over IP telephone service would be impossible but for broadband internet.*”

<sup>99</sup> Note 30, McKinsey Report, 31

<sup>100</sup> Note 30, McKinsey Report, 239 – “*Many other countries are currently rolling out fibre to meet the growing demands for speed and content.*”

<sup>101</sup> Note 13, De Santis, 10 – “*Broadband offered a much more compelling internet experience for the consumer in a number of ways. Most obvious was the exponential increase in speed possible over a broadband connection. Downloading large files or consuming bandwidth hungry content such as music or video was now a pleasant experience, unlike over dial-up where the process could take hours or even longer. Even simple browsing on the internet could be a slow, tedious experience over a dial-up connection. Furthermore, broadband allowed consumers to have an ‘always-on’ internet connection, as opposed to dial-up when users had to manually connect and disconnect each time they wished to go online. The always-on quality of broadband also allowed consumers to unwire their internet and experience it in different ways. The proliferation and near ubiquity of wireless routers*

security for the end users and their communications<sup>102</sup> must be addressed. Likewise, the position and status of users, research, and researchers, within this new network requires consideration. For this reason the benefits of NBN access are considered within the separate areas (although acknowledging that there is inevitably some overlap) of the economy, innovation and broader societal issues.

## 1. Economic considerations

A consideration of economic issues can assist in determining both the most efficient means of implementing policy and the “*effects [of] legal rules ... on society*”.<sup>103</sup> High-speed broadband has been shown to be a stimulator of the economy and economic development generally.<sup>104</sup> It can assist firms to improve productivity; speed the innovation process and thus the resulting economic benefit and enable employment.<sup>105</sup> If Australia is to have a prosperous internet economy then the government must work to enable all aspects of that economy and its related services.<sup>106</sup> This requires more than merely empowering the

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*allows many devices such as laptops, personal digital assistants, streaming audio and video players and some televisions to connect to the internet easily and rapidly. This revolution in the way consumers connect to the internet to work, learn and play would have been impossible without the advent of broadband services delivered to the home.”*

<sup>102</sup> Note 9, OECD, 4

<sup>103</sup> Johnstone R, ‘Economic and sociological approaches to law,’ in R Hunter, R Ingleby and R Johnstone (Eds) (Allen & Unwin, Sydney, 1995) 63

<sup>104</sup> Note 42, West, 9 – “*A study of 120 nations between 1980 and 2006 undertaken by Qiang ... estimates that each 10 percentage point increase in broadband penetration adds 1.2 percent to a country’s gross domestic product of high income countries and 1.21 percent in low to middle-income nations. This suggest that growth comes not just in direct forms, as estimated by other authors, but arises because broadband generates new applications for businesses and consumers.*”; LECG Ltd, ‘Economic Impact of Broadband: An Empirical Study’, February 22<sup>nd</sup>, 2009, 9 – “*The results from our study show that broadband ... can have significant payoffs in terms of increasing productivity and economic growth. In countries like the United States, the melding of the telephone and the computer has had a wide-spread economic impact, so much so that it accounts for a significant portion (in excess of 10%) of recent productivity growth.*” And at 26 – “*Our sample consists of ... 14 European Countries, and the United States, covering the years 1980-2007.*” [http://www.connectivityscorecard.org/images/uploads/media/Report\\_BroadbandStudy\\_LECG\\_March\\_6.pdf](http://www.connectivityscorecard.org/images/uploads/media/Report_BroadbandStudy_LECG_March_6.pdf) (accessed 09/10/2010)

<sup>105</sup> Katz R, S Vaterlaus, P Zenhäusern and S Suter, ‘The Impact of Broadband on Jobs and the German Economy’ (2010) 1 *Intereconomics*, 1, 3 – “*Once deployed, the broadband infrastructure yields three types of economic impact. First, business firms might improve their productivity as a result of the adoption of more efficient business processes enabled by broadband services. Secondly, broadband deployment yields an acceleration of innovation resulting from the introduction of new broadband-enabled applications and services. Thirdly, broadband can have an impact on the composition and deployment of industry value chains. In other words, broadband can facilitate the transfer of employment from other regions and countries as a result of the ability to process information and provide services remotely.*”

<sup>106</sup> West J, ‘More than a gift from the gods’ (2010) 28 *Griffith Review*, 95, 107 – “*A vital part of government economic policy must be to consider which forms of comparative advantage the nation wants to build and sustain, and to help construct them; for that will shape the future.*” [http://www.griffithreview.com/images/stories/edition\\_articles/ed28\\_pdfs/west\\_ed28.pdf](http://www.griffithreview.com/images/stories/edition_articles/ed28_pdfs/west_ed28.pdf) (viewed

transition of services from existing networks to the NBN.<sup>107</sup> It will require engaging with the individual end users. Part of government's role will be in selling the benefits of high-speed broadband access to the Australian business community and greater Australian society and assisting in enabling access where required. As Press identified, without "*sufficient demand to justify investment in connectivity infrastructure, it will not occur even if there are many, privately owned, competing service providers and a strong, independent regulator*".<sup>108</sup> Economic considerations are divided between those for Australia in general and those for individual consumers specifically.

### a. Australia in general

Worldwide telecommunications are generally no longer government-owned industries.<sup>109</sup> However, these privately owned industries remain central to the world economy<sup>110</sup> as without the economic benefits that these advances in technology bring many of the developments in most Western societies would not have eventuated.<sup>111</sup> Fundamentally for future investment in the NBN is that economically, despite global downturns, the telecommunications industry has maintained its position of importance.<sup>112</sup>

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09/10/2010)

<sup>107</sup> Communications Alliance, 'National Broadband Network End User Migration Reference Model', Draft for comment, June 2010, 3 – "*The purpose of this document is to identify from an industry participant's perspective the processes and interactions required to facilitate the Migration of an End User's existing telephony and data services onto the National Broadband Network. It is expected that the contents will provide guidance to all who prepare detailed operational procedures and high level IT specifications for NBN Migration participant interaction ... This document is not intended to serve as a guide to End Users.*" [http://www.commsalliance.com.au/\\_\\_data/assets/pdf\\_file/0017/23822/Draft\\_NBN\\_End\\_User\\_Migration\\_Reference\\_Model\\_Jun2010.pdf](http://www.commsalliance.com.au/__data/assets/pdf_file/0017/23822/Draft_NBN_End_User_Migration_Reference_Model_Jun2010.pdf) (accessed 10/10/2010)

<sup>108</sup> Press L, 'Broadband policy: Beyond privatization, competition and independent regulation' (2009) 12(4) *First Monday*, 10 <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2374/2159> (viewed 07/01/2010)

<sup>109</sup> Note 108, Press

<sup>110</sup> Nadiri M and B Nandi, 'Dynamic Aspects of US Telecommunications Productivity Measurement' in R Cooper and G Madden (Eds) *Frontiers of Broadband, Electronic and Mobile Commerce* (Physcia-Verlag, Heidelberg, 2004); Note 15, Economides, 4

<sup>111</sup> Nakamura L, 'Economics and the New Economy: The Invisible Hand Meets Creative Destruction' (2000) July/August, *Federal Reserve Bank of Philadelphia Business Review*, 21; Stiglitz J, D McFadden and S Peltzmann, 'Technological Change, Sunk Costs and Competition' [1987] 3 *Brookings Papers on Economic Activity*, 883, 883-947

<sup>112</sup> For a consideration of the ongoing importance of the telecommunications industry as "*an important source of productivity growth*" see – Cooper R and G Madden, 'Rational Explanations of ICT Investment', in R Cooper and G Madden (Eds) *Frontiers of Broadband, Electronic and Mobile Commerce* (Physcia-Verlag, Heidelberg, 2004) 267

ICTs generally also have had a positive economic impact.<sup>113</sup> Overseas studies clearly show that investment in broadband networks positively impacts upon employment<sup>114</sup> as well as on economic growth.<sup>115</sup> Additionally, as the OECD identified, the NBN is likely to have significant, positive spill over effects into other sectors.<sup>116</sup>

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<sup>113</sup> For a more detailed consideration of the economic impact of ICTs see – Peña-López I, ‘Measuring digital development for policy-making: Models, stages, characteristics and causes’, PhD Thesis (2009) [mimeo] [http://ictlogy.net/articles/20090908\\_ismael\\_pena-lopez\\_measuring\\_digital\\_development.pdf](http://ictlogy.net/articles/20090908_ismael_pena-lopez_measuring_digital_development.pdf) (viewed 15/01/2010)

<sup>114</sup> Crandall R, W Lehr and R Litan, ‘the Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of U.S. Data’ (2007) 6, *Issues in Economic Policy*, The Brookings Institution, 1, 12 – “The effect of broadband is most significant in explaining employment growth in education, health care, and financial services, but it is also significant in the 2003-05 growth of manufacturing employment. The latter result is somewhat surprising, as is the lack of an effect on employment growth in real estate.” Note 105, Katz et al, 1 – “In times of economic crisis, national governments look for policy actions that can rapidly deal with rising unemployment and declining output. Infrastructure investments have been identified as key tools in the fight against the current crisis because of the direct and indirect short-term labour effects in the construction industries and the substantial spillovers, in terms of improving efficiencies and stimulating innovation, into the production sector of the economy. As a result, several governments (including those of Germany, the United States, Australia, Portugal, Singapore, New Zealand and Ireland) have recently decided to actively promote telecommunications investment.” And at page 8 – “Regarding the impact on employment, following the same methodology, the creation of a total of 162,000 annual jobs over three years is expected, whereby the highly penetrated areas would contribute 132,000 and the poorly penetrated regions 30,000.” [references omitted]

<sup>115</sup> Frontier Economics, ‘The impact of broadband in Eastern and Southeast Europe’, May 2010, Report for Telekom Austria Group, 49 – referring to the latest studies by Qiang (2009) and Koutroumpis (2009) note that these and other earlier studies “show an unambiguous positive effect of investment [in broadband] on both economic growth and employment” with a discernable increase in GDP as a consequence. For an overview of the results of the earlier studies refer to Table 5 on pages 54-55 of the report. In the Swiss project (2009-2035) this benefit is reflected in an anticipated increase of 114,000 jobs. (Katz et al. (2008)) <http://www.telekomaustralia.com/presse/news/2010/broadband-study.pdf> (accessed 10/10/2010)

<sup>116</sup> Note 35, OECD, 20 – “Given the impact of electricity on the economy it is important for policy makers, electric companies and telecommunication firms to find ways to work together to achieve common goals and reduce costs. In the United Kingdom, the Broadband Stakeholders Group found that building a national fibre-to-the-home network could be less expensive if undertaken by a utility company (capitalising on existing infrastructure) than if installed by one of the large telecommunication operators (UK BSG, 2008). In Switzerland, the key telecommunication providers have partnered with electric companies to install multiple fibres to each residence throughout the country. The rationale is that by mutualising the civil works across carriers the cost for each operator is significantly less than if they each installed their own single line ... In the Swiss model, each provider who is building a new network lays one fibre optic cable containing multiple fibres inside. The unused fibres are then offered to interested operators for sale or exchange, such as for dedicated use by the electric company. In this sense, once a building is wired by one operator there are available fibres for the other market participants. Partnerships between electricity companies and telecommunication operators could be beneficial for a number of reasons. First, electricity providers are reluctant to use existing consumer broadband networks to manage critical smart grid services because they would rather remain in full control of the communication. To this end many are beginning to invest in developing their own stand-alone wireless/fixed networks to carry the traffic securely. However, as the Swiss model implies, the cost of building two parallel networks (without co-operation) is significantly more expensive than if all market participants mutualise the digging and installation of multiple fibres to each home. The incremental cost of laying the second, third and fourth fibres to a home is negligible as long as they are installed at the same time. Under such as



Used for business purposes, the NBN as an enabler of telecommuting provides many indirect benefits.<sup>117</sup> Telecommuting as a means of business operation, and thus of greater engagement by Australia's dispersed population in the economy, is not new. However, through use of a high-speed broadband network it will be more accessible and easier to facilitate.<sup>118</sup> As a consequence, the NBN's indirect impacts for the economy as a whole should be broader and greater.<sup>119</sup> Rural areas feel the lack of appropriate communications technology more keenly than urban areas.<sup>120</sup> The NBN would "*make it easier for people [in rural areas] to share resources and to socialise*"<sup>121</sup> and to spend extra time and money locally.

In considering economic issues it also is necessary to take into account the costs to businesses of their connection to the NBN. From a business perspective, implementation, migration to<sup>122</sup> or adoption of NBN access, and ongoing costs are issues that need to be addressed if all Australians are to receive the benefits of high-speed broadband.<sup>123</sup> These are costs that

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*scenario the electric company could manage its own secure data network to all households, not just those subscribing to broadband while broadband providers would have their own lines to offer consumer and business data services.*" [references omitted] As even the federal opposition acknowledges the economic benefits extend beyond the anticipated profits for the NBN Co Limited. See – Turnbull M, 'First Reading Speech – National Broadband Network Financial Transparency Bill 2010', House of Representatives Hansard, 25 October 2010, 2 – "*the economic costs and benefits of the NBN will extend beyond the revenues, expenses and rate of return for the NBN Co*" [http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/2010-10-25/0009/hansard\\_frag.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/2010-10-25/0009/hansard_frag.pdf;fileType=application%2Fpdf) (viewed 09/11/2010)

<sup>117</sup> Note 115, Frontier Economics, 10 – "*Broadband connections allow people to work from home ... which reduces commuting and thereby the external effects of travel.*"

<sup>118</sup> Crandall R, 'The \$500 Billion Opportunity: The Potential Economic Benefit of Widespread Diffusion of Broadband internet Access', *Criterion Economics, L.L.C.*, July 2001, 32 [http://www.att.com/public\\_affairs/broadband\\_policy/BrookingsStudy.pdf](http://www.att.com/public_affairs/broadband_policy/BrookingsStudy.pdf) (viewed 07/01/2010)

<sup>119</sup> Tucker R, 'Broadband facts, fiction and urban myths' (2010) 60(3) *Telecommunications Journal of Australia*, 43.1, 43.8 – "*We have calculated the greenhouse gas reductions that could be achieved if 50% of business air travel on the Melbourne to Sydney route were to be replaced by teleconferencing. This calculation shows that this reduction in business travel would save Australia an additional 2 million tonnes of CO2 per year.*" <http://publications.epress.monash.edu/doi/pdf/10.2104/tja10043> (viewed 13/10/2010)

<sup>120</sup> Note 96, Hyderabad Declaration, Annexure C, Appendix 1, 45 – "*Rural areas of countries continue to be sparsely covered and are not considered as a viable business case by telecommunication operators. Recent growth of teledensity in urban areas, fuelled by mobile technology, has meant that the digital gap between rural and urban areas has widened. Rural populations will need to be provided with mobile telephony and wireless broadband access, by connecting remote areas to the broadband core networks. Choosing efficient, cost-effective and fast-deployment technologies – whether wired or wireless networks – will improve accessibility.*"

<sup>121</sup> Note 38, Kollock and Smith, 21

<sup>122</sup> Note 30, McKinsey Report, 221 – The two major components of migration costs for the NBN are rewiring of premises and provisioning an installation of customer premises equipment.

<sup>123</sup> Note 27, Whitt, 433 – "*Broadband is characterised most centrally by the requirement for*

many consumers may not be able to afford by themselves and that many businesses may not be prepared to absorb. The issue is whether these costs will aid or hinder demand for high-speed broadband generally.<sup>124</sup> It is vital for the NBN's future to ensure a smooth transition from existing systems including utilising "*existing equipment ... where possible to avoid customer retraining and the extra cost of equipment replacement*".<sup>125</sup> Reuse of equipment, of course, may not always be possible. From a business self-help perspective, transitioning to and implementation of new systems can be facilitated by the business having an appropriate strategic ICT plan in place. Regrettably, and separately to issues relevant to the NBN's implementation, appropriate forward planning appears to be a skill many Australian businesses lack.<sup>126</sup> The government may need to provide assistance to businesses to enable them to acquire these skills.

As Florida identified, there are several key factors that are essential for the economy.<sup>127</sup> From a business perspective this includes a business' human capital (i.e. their employees).<sup>128</sup> The future of Australia's internet economy will depend on how well, and how safely, Australians can use and share the digital information being created by them and others.<sup>129</sup> As compared to other countries, the Australian population is small. In order to ensure similar returns to that seen in countries with larger populations, there is a need for greater engagement in the internet economy by the available population.<sup>130</sup>

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*exceedingly high up-front fixed capital investments.*" [references omitted]

<sup>124</sup> For a consideration of the affects of 'switching costs' on consumer behaviour see – Ramsey I, *Consumer Law and Policy*, 2<sup>nd</sup> ed (Hart Publishing, Oxford and Portland, Oregon, 2007) 7

<sup>125</sup> Note 30, McKinsey Report, 113

<sup>126</sup> Kerr D and K Bryant, 'A Survey of Current E-Business (E-government) Development Practices in Australia' (2009) 15(2) *Australasian Journal of Information Systems*, 109, 125

<sup>127</sup> Florida R, *Who's Your City? How the Creative Economy is making where to live the most important decision of your life* (Basic Books, New York, 2008)

<sup>128</sup> Referred to by Florida *et al* as talent – Florida R, C Mellander and K Stolarick, 'Inside the black box of regional development – human capital, the creative class and tolerance' (2008) 8 *Journal of Economic Geography*, 615, 615 – "*what some call talent and what economists and social scientists frequently refer to as human capital.*"

<sup>129</sup> ACMA, 'Australia in the Digital Economy – Report 2: Online Participation', May 2009, 35 [http://www.acma.gov.au/webwr/aba/about/recruitment/online\\_participation\\_aust\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/aba/about/recruitment/online_participation_aust_in_digital_economy.pdf) (viewed 07/01/2010). As Ewing and Thomas observe – "*The internet is a fast and efficient means to gain information: There was almost unanimous agreement with this statement. Nearly six in ten 'agreed strongly' (57.9%) and overall 92% 'agreed' or 'strongly agreed'. Very few disagreed – 2.7% in total.*" See – Note 14, Ewing and Thomas, 9

<sup>130</sup> Malone P, 'SME Interaction in Supply Chains', in R Cooper and G Madden (Eds) *Frontiers of*

## b. Individual end users

Individual end users are important components/influencers of the internet economy separate from their role as employees. If members of a network also belong to other networks, the value of the first network will increase even further.<sup>131</sup> Therefore, in order for the true value of the NBN to be realised, it is important that the federal government appreciate the network effect<sup>132</sup> of ensuring maximum participation by Australians in their adoption of, and/or migration to, the NBN. This will include ensuring that all individuals have the capacity to meet the direct and indirect costs of migrating to the NBN. Overseas studies show that a low level of home computer ownership can adversely impact upon broadband adoption.<sup>133</sup> Without specific financial assistance it may be that the financial benefits to consumers of high-speed broadband access<sup>134</sup> are outweighed by the costs of migration to the NBN.

The cost of migration to the NBN will include investment in the hardware necessary to move from either dial-up connections, or from ordinary (slow-speed) broadband to the NBN access.<sup>135</sup> These costs also include transaction

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*Broadband, Electronic and Mobile Commerce* (Physcia-Verlag, Heidelberg, 2004) 63

<sup>131</sup> Note 3, Howkins, 85 – “The value of a many-to-many network like a telephone network or an email network, as Robert Metcalfe showed, is twenty times twenty, or 400. The value of a network whose members are also members of other networks is exponentially larger. David Reed, who realised what he called the law of the pack in 2001, says it is tow to the power of twenty (less twenty, less one, to be precise).”

<sup>132</sup> For a discussion of how to measure the network effect of telecommunications systems see – Cooper R, G Madden and G Coble-Neal, ‘Measuring TFP for an Expanding Telecommunications Network’, in R Cooper and G Madden (Eds) ‘Frontiers of Broadband, Electronic and Mobile Commerce’ (Physcia-Verlag, Heidelberg, 2004)

<sup>133</sup> Note 104, LECG, 42 – “The countries with the lowest PC penetration rates offered the least favourable general environment for broadband diffusion. Not only has broadband generally diffused more slowly in these environments, but the broadband diffusion that has occurred does not seem to have impacted on productivity”.

<sup>134</sup> Note 115, Frontier Economics, 10 – “indirect benefits ... include ... cost savings to end-users” and 58 – “Economic theory assumes that the benefit a consumer derives from using a particular service or product is reflected in the customer’s willingness to pay for that service. However, the estimation of a customer’s willingness to pay is a complex and data-intensive task. This is particularly the case in the context of broadband services.” and footnote 56 – “A broadband connection per se has not value to customers. Rather, the value to customers of broadband access arises from the applications for which it is used. The net economic benefit is the difference between the total benefit that subscribers receive from these applications and the amount they pay for them. In practice, it is difficult to evaluate this economic benefit directly since there is very limited information on the price and quantity of individual applications that are provided over broadband. This makes estimating the benefits for these services difficult, especially as subscribers do not pay additional charges for a number of applications.”

<sup>135</sup> It is acknowledged that not all recent adopters of broadband previously had any form of internet

cost, that is, the consumer's time in considering options prior to making the decision to adopt the technology, and hidden post-transition costs. These hidden costs may include the cost of educating consumers, businesses and their employees in the use of new systems, acquisition of compatible software and hardware and in dealing with other non-capital issues.<sup>136</sup> These post-acquisition costs may be classed as indirect costs, as they may not involve the outlay of funds to the supplier.<sup>137</sup> It is not unusual for post-acquisition costs to greatly exceed the acquisition cost and thus factor against the migration to a new system. That is, some consumers are reluctant to migrate to a new system because they have expended substantial funds in their existing system, without realising how soon it would be outdated. This now makes it uneconomic for them to change systems without assistance. This concern regarding the true cost of new technologies and services are relevant to access for both businesses and consumers. Although it is more likely to have a greater negative impact on consumers with the availability of tax breaks to business to offset any capital investment.

As overseas studies show, high-speed broadband access has direct and indirect benefits for nations as well as for their citizens.<sup>138</sup> These benefits include direct and indirect benefits ranging from ease of access to government services and increased employment, to the environmental benefits of telecommuting instead of travelling for work and meetings. The innovations the NBN will enable also will provide economic benefit.<sup>139</sup>

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connection.

<sup>136</sup> It is further acknowledge that post-acquisition costs feasibly include education specific to issues relevant to privacy and data protection. These issues however are outside the scope of the thesis.

<sup>137</sup> This also can be referred to as "*implicit costs*". See – Smith V, 'The Economics of Technology', *Monograph Series of the Liberal Arts Program*, Research Foundation of the State University of New York, 1990, 3 <http://www.math.dartmouth.edu/~mqed/NLA/EconomTech/EconomTech.phtml> (16 March 2008)

<sup>138</sup> Note 115, *Frontier Economics*, 61

<sup>139</sup> Note 104, *LECG*, 7 – "*Innovative use of new technology like broadband is an important source of comparative economic advantage*"

## 2. Innovation considerations

In the mid-20<sup>th</sup> Century, Schumpeter developed a theory that, simplistically, innovation is a principal influencer in a modern economy and that profits realised are an essential aspect that fuels creativity.<sup>140</sup> This recognises that, in a capitalistic environment, rewards allow those who create new products and processes to recapture some of the sunk costs of their initial investment. Sunk costs include both capital investment<sup>141</sup> and time.<sup>142</sup> Typically these are protected by means of short-term monopolies<sup>143</sup> (i.e. copyright<sup>144</sup> or patents). In the digital economy, a monopoly also may be effected by means of the strategic use of ICT. This is evidenced in particular in the optimisation of strategic alliances<sup>145</sup> by means of the bundling of goods and services<sup>146</sup> and licensing of products.<sup>147</sup> This enables corporations to take advantage of both existing and potential markets.<sup>148</sup> ICT also may be used to better manage supply chains and service delivery.<sup>149</sup> The internet subsequently has made the trade in digital technology and services at once both easier and at the same time more complex.<sup>150</sup> It is noted that many service providers are moving to a bundled

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<sup>140</sup> Schumpeter J, *Capitalism, Socialism and Democracy* (Harper, New York, 1942); also see Note 3, Howkins, 107 – Howkins asserts that Schumpeter’s theory remains relevant as “Schumpeter[’s] ... intellectuals are today’s creative class with mass scope and scale, and found as often inside business as outsiders.”

<sup>141</sup> Hausman J, ‘Cellular 3G Broadband an WiFi’ in R Cooper and G Madden (Eds) *Frontiers of Broadband, Electronic and Mobile Commerce* (Physcia-Verlag, Heidelberg, 2004) 17

<sup>142</sup> Rheingold H, ‘The Virtual Community’, in D Trend (Ed) *Reading Digital Culture* (Blackwell Publishers Ltd, Oxford, 2001) 275

<sup>143</sup> See also Note 111, Stiglitz *et al*, 884

<sup>144</sup> Although, with an average term for copyright being the life of the author plus 70 years, copyright arguably is no longer a ‘short term’ monopoly!

<sup>145</sup> Jorde T and D Teece, ‘Innovation, Dynamic Competition, and Antitrust Policy’ (1990) 13(3) *Regulation*, 35, 6 (<http://www.cato.org/pubs/regulation/regv13n3/reg13n3-jorde.html>) (3 January 2006)

<sup>146</sup> Nalebuff B, ‘Bundling as a Way to Leverage Monopoly’ (2004) Yale SOM Working Paper No. ES-36 (<http://ssrn.com/abstract=586648>) (viewed 22 May 2008)

<sup>147</sup> US Department of Justice and US Federal Trade Commission, ‘Antitrust Guidelines for the Licensing of Intellectual Property’, April 1995, 5

<sup>148</sup> Anderson suggests that online monopolies are even more likely to occur as the markets are “highly networked” and monopolists take advantage of this fact. See – Anderson C and M Wolff, ‘The Web Is Dead. Long Live the Internet’ (2010) 8, *Wired*, August 17, 2010 [http://www.wired.com/magazine/2010/08/ff\\_webrip/all.1](http://www.wired.com/magazine/2010/08/ff_webrip/all.1) (viewed 04/09/2010)

<sup>149</sup> ACMA, ‘Convergence and Communications – Report 3: Australian consumer satisfaction with communications services’, June 2009, 21 [http://www.acma.gov.au/webwr/\\_assets/main/lib100068/report\\_3\\_convergence\\_and\\_communications\\_series.pdf](http://www.acma.gov.au/webwr/_assets/main/lib100068/report_3_convergence_and_communications_series.pdf) (viewed 07/01/2010)

<sup>150</sup> Kariyawasm R, *International Economic Law and the Digital Divide: A New Silk Road* (Edward Elgar Publishing Limited, Cheltenham, 2007) 94 – “The internet has made the new environment for the trade in digital services much more complex, as protocols are stacked one on top of the other. As such, regulators need to take account of the arrangements of telecommunications operators with their

method of service delivery rather than provision of single stand-alone services.<sup>151</sup> This provision relies on high-speed broadband for its delivery.

High-speed broadband will be essential for enabling innovation for R&D, health and other services.<sup>152</sup> It also will be relevant for enabling smart cities and smart grids.<sup>153</sup> For pure research purposes high-speed broadband networks will be essential as an enabler of research activities as part of Australia's EI. It is necessary to identify what EI is in order to understand why the NBN will be important for EI as part of Australia's innovation future.

The term EI is Australian-specific that that elsewhere the terms used are cyberinfrastructure or e-infrastructure.<sup>154</sup> In 2003, the term cyberinfrastructure was used to describe an “*infrastructure based upon distributed computer, information, and communication technology*”.<sup>155</sup> It could be said therefore that

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*competitors at layers above that of the physical connection of devices and examine the competition implications of the software by which the application that run over telecommunications networks operate.”*

<sup>151</sup> Note 36, ACMA, 14 – “*communications and media companies are adopting new strategies to retain customers and diversity revenue sources ... The shift to service bundling is most evident in the ... market where ISPs are increasingly offering a range of voice and content services to customers in addition to traditional internet access.*” And see 25-28

<sup>152</sup> Note 58, ITU, 16

<sup>153</sup> Budde P, ‘Global – Fast Broadband and Trans-sector Policies’, *Paul Budde Communication Pty Ltd*, June 2010, 2 – “*we now call this the Trans-sector concept, and we now also recognise that a Trans-sector policy must underpin all new infrastructure projects so as to create an economic multiplier effect.*” <http://www.budde.com.au/Research/Global-Fast-broadband-and-Trans-sector-policies.html> (accessed 10/10/2010)

<sup>154</sup> Similarly termed in Europe (Eccles K, R Schroeder, E Meyer, Z Kertcher, F Barjak, and T Huesing, ‘The future of e-research infrastructures’, presented at the 5th International Conference on e-Social Science (Proceedings) (2009, 24-26 June) Cologne, Germany; Jankowski N, *E-Research: Transformation in Scholarly Practice* (New York, NY: Routledge, 2009); Schroeder R, ‘e-Research infrastructures and open science: Towards a new system of knowledge production?’ (2007) 25(1) *Prometheus*, 1) but referred to in the US as ‘cyberinfrastructure’ (Atkins D, K Droegemeier, S Feldman, H Garcia-Molina, M Klein and P Messina, ‘Revolutionizing science and engineering through cyberinfrastructure’ January 2003, Report of the National Science Foundation blue-ribbon advisory panel on cyberinfrastructure, Washington, DC: National Science Foundation [http://www.communitytechnology.org/nsf\\_ci\\_report/](http://www.communitytechnology.org/nsf_ci_report/) (viewed 20/05/2010); Seidel E, J Muñoz, S Meacham and C Whitson, A vision for cyberinfrastructure’(2009) 42(1) *Computer*, 40 ; Stewart C, ‘Indiana University cyberinfrastructure newsletter’ April 2007 <http://pti.iu.edu/ci/cyberinfrastructure-news?d=200704> (viewed 22/05/2010)) and in the UK as ‘e-infrastructure’ (Meyer E and W Dutton, ‘Top-down e-infrastructure meets bottom-up research innovation: The social shaping of e-research’ (2009) 27(3) *Prometheus*, 239; Meyer E, R Schroeder R and W Dutton, ‘The role of e-infrastructure in the transformation of research practices and outcomes’ paper presented at the *iConference* 28 February-1 March 2008, UCLA, Los Angeles, CA)

<sup>155</sup> Note 154, Atkins *et al*, 5 – “*The base technologies underlying [EI] are the integrated electro-optical components of computation, storage, and communication that continue to advance in raw capacity at exponential rates. Above the [EI] layer are software programs, services, instruments, data, information, knowledge, and social practices applicable to specific projects, disciplines, and communities of practice. Between these two ... is the [EI] layer of enabling hardware, algorithms, software, communications, institutions, and personnel. This layer should provide an effective and*

EI is a collection of interconnected computers, information and communication technologies and interactions between individuals and institutions. EI also empowers these institutions and individuals to innovate and can revolutionise research and education in science and engineering.<sup>156</sup> EI also has been referred to by the sum of its parts. Namely the “*computing systems, data storage systems, advanced instruments and data repositories, visualization environments, and people, all linked together by software and high performance networks to improve research productivity and enable breakthroughs not otherwise possible*”.<sup>157</sup> This definition confirms the place of data storage systems/repositories, advanced instruments, visualisation environments, and high-performance networks as part of EI. Australia’s high-performance networks will include the NBN. A concern with the above definitions is that they focus on the niche and specialised area of high-performance computing applications and supercomputers. This software and hardware is not commonly accessible to the general public as they are restricted to use by researchers with distributed, large-scale and data-intensive scientific projects.

Other authors however have defined EI to also include email communications, net meetings, personal and organisational web pages with information and data, online digital libraries, and common search engines such as Google.<sup>158</sup> This is more inclusive of individuals as it includes the general information and communication technologies the public has access to and researchers use concurrently with their non-scientific work. It also recognises that the network among entities and actors is not limited to the grid networks used for high-speed and high-volume processing but includes the World Wide Web and the internet. The US National Science Foundation’s Cyberinfrastructure Council identified EI as integrating “*hardware for computing, data and networks, digitally-enabled sensors, observatories and experimental facilities, and an interoperable suite of*

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*efficient platform for the empowerment of specific communities of researchers to innovate and eventually revolutionize what they do, how they do it, and who participates.*”

<sup>156</sup> Kee K, L Cradduck, B Blodgett and R Olwin, ‘Cyberinfrastructure Inside Out: Definition and Influences Shaping Its Emergence, Development, and Implementation in the Early 21<sup>st</sup> Century’, in D Araya, Y Breindl and T Houghton (Eds) *Nexus: New Intersections in Internet Research* (Peter Lang, New York, 2011)

<sup>157</sup> Note 154, Stewart, [3]

<sup>158</sup> Hai Z, ‘China’s e-science knowledge grid environment’ (2004) 19(1) *Intelligent Systems, IEEE*, 13

*software and middleware services and tools*".<sup>159</sup> Software and services also are key components of EI. If EI works every component should be interoperable and easily transferrable so that a seamless virtual environment is created. Friedlander supports this position and also recognises the importance of individuals.<sup>160</sup> More recently it was considered that EI also refers to multidimensional network linkages where nodes include individuals<sup>161</sup> and such items as documents, datasets, analytic tools, and concepts or keywords.<sup>162</sup> In this definition, the notion of network is not simply a grid network, or internet network, but includes relationships and ties as understood in traditional network literature, as well as dimensions such as second-order growth.<sup>163</sup>

While a universally accepted definition of EI may be lacking,<sup>164</sup> it is clear that the Australia's EI is more than the sum of its parts. Each part, however, has a key role to play in ensuring the whole functions. The NBN thus has a key role in the future of Australia's EI. EI is more than just tubes and wires. It remains incumbent on the policy makers and infrastructure providers to remember

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<sup>159</sup> NSFCC, 'Cyberinfrastructure Vision for 21st Century Discovery', *National Science Foundation*, March 2007, 5 <http://www.nsf.gov/pubs/2007/nsf0728/nsf0728.pdf> (viewed 19/06/2010)

<sup>160</sup> Friedlander A, 'The triple helix: Cyberinfrastructure, scholarly communication, and trust' *The Journal of Electronic Publishing* (2008) 11(1) [3] – He maintains that EI "is composed of three principal layers: the two layers of the network (a physical layer and a logical layer), and the shared facilities, resources, and services that broadly enable research and with which the end user eventually interacts ... [and a]ll three [are] ... intertwined".

<sup>161</sup> Note 156, Kee *et al*

<sup>162</sup> Contractor N, 'The emergence of multidimensional networks' (2009) 14(3) *Journal of Computer-Mediated Communication*, 743, 744

<sup>163</sup> For example see Poole M, 'Collaboration, integration, and transformation: Directions for research on communication and information technologies' (2009) 14(3) *Journal of Computer-Mediated Communication*, 758, 762 who, in discussing Virtual Research Environments identifies that it "would have CI such as a portal, analytical tools, datasets, and community-building tools such as blogs to encourage collaborative research across disciplines and fields ... for instance, a set of data on group interaction consisting of videos, transcriptions, and acoustic and other nonverbal data, along with questionnaire data ... Scholars could apply their own analytical techniques to this data and their analyses – codings, qualitative observations, statistical results, network data – would be added back .... Over time layers of second-order analytic data would accumulate, enabling new discoveries by cross-referencing multiple scholarly lines of work." Also see ACLS, 'Our Cultural Commonwealth: The Report of the American Council of Learned Societies Commission on Cyberinfrastructure for the Humanities and Social Sciences', 2006, 6 – "One characteristic of infrastructure is that it is deeply embedded in the way we do our work. When it works efficiently, it is invisible: we use it without really thinking about it. When we drive a car, we rely on an infrastructure that includes physical systems of minor and major roads; societal and governmental systems for licensing drivers, setting speed limits, and codifying driver conduct; and economic systems of license fees and gasoline taxes to maintain and expand the roads. The technical and societal systems that make up cyberinfrastructure will need to support the entire range of research goals, legal requirements, and objects of attention for the natural sciences, social sciences, and humanities." [http://www.acls.org/uploadedFiles/Publications/Programs/Our\\_Cultural\\_Commonwealth.pdf](http://www.acls.org/uploadedFiles/Publications/Programs/Our_Cultural_Commonwealth.pdf) (viewed 19/06/2010)

<sup>164</sup> Although authors have identified all relevant components see – Note 156, Kee *et al*



without the content and services provided across it, and the users who demand that content and services,<sup>165</sup> a high-speed broadband network is merely collection of cables and pipes.<sup>166</sup>

The federal government therefore needs to keep in mind all potential users and uses of the NBN as it develops relevant policy and legislation. The NBN as part of Australia's EI of the future will be of particular importance. This is because its faster speeds will facilitate grid computing<sup>167</sup> and internet-based cloud computing.<sup>168</sup> Internationally, the smooth implementation of EI and its related policies face a variety of challenges. The functionality (i.e. speed and data carrying capacity) of networks can vary greatly from one nation to another, even those with a mutual border;<sup>169</sup> as can the availability of equipment and software.<sup>170</sup> Implementation is further complicated by government requirements as to the software to be used.<sup>171</sup> One positive of Australia's unique distance<sup>172</sup> is that, unlike other nations, it does not have to contend with adjacent jurisdictions<sup>173</sup> as it works to roll-out the NBN and develop its EI.

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<sup>165</sup> See – Ribes D and T A Finholt 'The long now of technology infrastructure: Articulating tensions in development' (2009) 10(5) *Journal of the Association for Information Systems* 375, 380 who assert that "an infrastructure without users is not infrastructure at all".

<sup>166</sup> 'At SBC, It's All About Scale and Scope', *Bloomberg Businessweek Online*, November 7, 2005 [http://www.businessweek.com/magazine/content/05\\_45/b3958092.htm](http://www.businessweek.com/magazine/content/05_45/b3958092.htm) (viewed 22/05/2010)

<sup>167</sup> Note 8, Foster *et al*, 200

<sup>168</sup> Voas J and J Zhang, 'Cloud Computing: New Wine or Just a New Bottle?', *IT Professional* (2009) 11(2) 15; Note 36, ACMA, 23 – "Cloud computing can be thought of as a means of deploying applications that abstract computing, storage, network and application resources in order to provide uniform, on-demand scalability and reliability of application delivery ... it encompasses any subscription-based or pay-per-use service that, in real time over the internet, extends IT's existing capabilities ... This allows for faster processing time for applications such as searching, social networking and mobile commerce that underpin commercial and social communications in the digital economy." [references omitted]

<sup>169</sup> Olson J, M Ellisman, M James, J Grethe and M Puetz, 'A Theory of Remote Scientific Collaboration', in G Olson, A Zimmerman and N Bos *Scientific Collaboration on the Internet* (MIT Press, Cambridge MA, 2008) 221

<sup>170</sup> Cyberinfrastructure Research Taskforce, 'Final Report of the Indiana University Cyberinfrastructure Research Taskforce', *Indiana University*, May 2005 [http://rtinfo.indiana.edu/strategic\\_planning/docs/IU\\_CyberinfrastructureResearchTaskforce\\_FinalReport\\_2005.pdf](http://rtinfo.indiana.edu/strategic_planning/docs/IU_CyberinfrastructureResearchTaskforce_FinalReport_2005.pdf) (viewed 22/05/2010); Hofer E, S McKee, J Birnholtz and P Avery, 'High Energy Physics: The Large Hadron Collider Collaborations' in G Olson, A Zimmerman and N Bos (Eds) *Scientific Collaboration on the Internet* (MA, MIT Press, Cambridge, 2008) 143

<sup>171</sup> Maldonado E and A Tapia, 'Government-Mandated Open Source Development: The Case Study of Venezuela', paper presented at the *Telecommunication Policy Research Conference*, 28-30 September 2007, Washington, DC, US

<sup>172</sup> Battersby B, 'Does Distance Matter? The Effect of Geographic Isolation on Production Level' (2006) (1) *OECD Economic Studies*, 205, 207

<sup>173</sup> Whether Australia *should* be liaising with neighbours re broadband rollout is beyond the scope of the thesis.

An aspect of enabling innovation is ensuring that individuals have the capacity (i.e. the skills and learning) to innovate. Primary and secondary education remains the responsibility of the various State and Territory governments;<sup>174</sup> subject to the vagaries of federal funding<sup>175</sup> and thus federal control.<sup>176</sup> Through the accreditation of programmes, research funding,<sup>177</sup> and the provision of benefits to students,<sup>178</sup> the federal government also has primary oversight of higher education (i.e. TAFE and university). As such, implementation of education policy nationally is by way of government collaboration<sup>179</sup> and addressed through the Council of Australian Governments ('COAG').<sup>180</sup> The federal government has identified that access to education services online will depend on the availability of relevant technologies.<sup>181</sup>

As clearly demonstrated by the Big Sky Telegraph established by Frank Odasz in the late 1980s, computer networks have an important part to play both in connecting communities and in facilitating education.<sup>182</sup> This is because they improve access to information and each other for both students and teachers. However, the question remains as to how government can “*improve educational attainment without improving educational access through broadband adoption?*”<sup>183</sup> It may be that this will require ongoing government control of the NBN as a public infrastructure, as providing high-speed broadband throughout Australia may not be economical for encouraging private investment.<sup>184</sup> In order

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<sup>174</sup> Section 107 *Commonwealth of Australia Constitution Act 1900*

<sup>175</sup> See – Farrar J, *Legal Reasoning* (Thomson Reuters, Sydney, 2010) 29 for a discussion of the impact of Commonwealth grants to the States.

<sup>176</sup> Note 3, Howkins, 120 – “*A government controls education chiefly by controlling the annual budget and the curriculum.*”

<sup>177</sup> Craven G, ‘Commonwealth Power Over Higher Education: implications and realities’ (2006) 1(1) *Public Policy*, 1, 1-13

<sup>178</sup> Sec. 51(xxiiiA) *Commonwealth of Australia Constitution Act 1900*

<sup>179</sup> White G, ‘E-learning: Australia’s achievements in education and training’, *education.au limited* (2004) [www.educationau.edu.au](http://www.educationau.edu.au) (viewed 20/10/2009)

<sup>180</sup> For example see – COAG, ‘Council of Australian Governments’ Meeting’, 7 December 2009, *Communiqué*, “*Raising productivity is a key focus of COAG’s agenda, and education and training is critical to increasing the productivity of individual workers and the economy as a whole.*” [http://www.coag.gov.au/coag\\_meeting\\_outcomes/2009-12-07/index.cfm#voc\\_ed\\_train](http://www.coag.gov.au/coag_meeting_outcomes/2009-12-07/index.cfm#voc_ed_train) (viewed 15/06/2010)

<sup>181</sup> ALP, ‘A Digital Education Revolution’, Election 2007 Policy document, 2007 [http://www.alp.org.au/download/now/labors\\_digital\\_education\\_revolution\\_campaign\\_launch.pdf](http://www.alp.org.au/download/now/labors_digital_education_revolution_campaign_launch.pdf) (viewed 07/11/2009)

<sup>182</sup> Discussed in Note 38, Kollock and Smith, 21

<sup>183</sup> La Rose R, J Gregg, S Strover, J Straubhaur, and N Inagaki, ‘Closing the rural broadband gap: Promoting adoption of the Internet in rural America’ (2007) 31 *Telecommunications Policy*, 359, 361

<sup>184</sup> Note 115, Frontier Economics, 67 – “*Investments in broadband infrastructure are normally made*

to ensure maximum migration, it also will require that the financial capacity of individuals is addressed.

Businesses' adoption of broadband generally has been more rapid than that by individuals. Consequently the "*role of broadband internet in underpinning SME engagement with the digital economy is significant*".<sup>185</sup> Unfortunately it appears that, even if available, the adoption of broadband by individuals in Australia has been slow. This slowness in turn has negatively impacted upon its development and deployment.<sup>186</sup> As Lee *et al* observed, a region's ability to innovate is linked with its ability to attract human capital.<sup>187</sup> The availability, or lack thereof, of appropriate broadband networks will impact upon a region's engagement with and in the internet economy.<sup>188</sup>

### 3. Societal considerations

Since 2003 the number of Australian broadband adopters and users has increased as dial-up connections decreased.<sup>189</sup> Simultaneously the number of online activities increased.<sup>190</sup> As in most countries, however, high-speed broadband connections remain elusive.<sup>191</sup> Most Australians have been quick to adopt the

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*by the private sector meaning that the risks of the investments are borne by private firms. For public authorities to intervene in the market there must be reasons why the private sector would otherwise under-invest in broadband. Providing broadband access to part of the population may not be profitable for private firms. This is especially the case in areas w[h]ere the population density is low. In such areas, the cost per broadband connection will tend to be high because of a lack of 'economies of density'.*"

<sup>185</sup> Note 43, ACMA, 2

<sup>186</sup> Chang S, H Lee and C Middleton, 'The deployment of broadband Internet in Australia: Areas for Attention and Implications from Canada and Korea', *Proceedings of the ITS Asia-Australasian Regional Conference on Business, E-Commerce and the Impact of Broadband on Regional Development and Business Prospects* (2003) 2 <http://www.broadbandresearch.ca/ourresearch/Lee.pdf> (viewed 08/09/2009)

<sup>187</sup> Lee S, R Florida and G Gates, 'Innovations, Human Capital, and Creativity' (2010) 14(3) *International Review of Public Administration*, 13, 21 – "*The capacity to innovate is seen to be a function of a region's ability to attract human capital and to provide low barriers to entry for talented people of all backgrounds.*"

<sup>188</sup> Note 187, Lee *et al*, 14 – "*innovation is seen to be a function of human capital; or more precisely the regional distribution of innovation (measured as patent production) is related to a region's level of human capital.*"

<sup>189</sup> ACMA, 'Telecommunications Today – Report 6: Internet activity and content, September 2008, 5 [http://www.acma.gov.au/webwr/\\_assets/main/lib310210/report\\_6\\_telecommunications\\_today.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310210/report_6_telecommunications_today.pdf) (viewed 07/01/2010)

<sup>190</sup> Note 43, ACMA, 193 – "*Broadband has acted as an essential accelerator to the use of online activities such as playing or downloading music, games, images, videoconferencing and shopping.*"

<sup>191</sup> Note 58, ITU, 1 – "*High-speed (broadband) connections are rare and mobile broadband, while increasing steeply in high-income countries, is still insignificant in most developing countries.*" And see 3 – "*ITU estimates that the world had 1.3 billion fixed telephone lines – or 19 per 100 inhabitants – and that almost a quarter of the world's 6.7 billion people were using the Internet. However, fixed*

internet as a communications tool with a considerable portion becoming subscribers.<sup>192</sup> As at June 2009 there were 8.4 million people who were able to be categorised as ‘active internet subscribers’.<sup>193</sup> This figure had increased by the end of June 2010 but only to 9.6 million.<sup>194</sup> Even making allowances for the very young, very old and those with simply no interest in using the internet,<sup>195</sup> this disparity is indicative of the fact that there remains a section of the Australia population, whether because of lack of finances, skills, education or physical means, without the ability to access the internet. Unless appropriate action is taken now, we could see that those without appropriate and up-to-date access to information and services become marginalised.<sup>196</sup>

With appropriate access comes the ability to access linked data.<sup>197</sup> Unfortunately, the availability of broadband in rural areas generally occurs later than it does in urban areas. This affects the pace of take-up of broadband access

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*and mobile broadband penetration levels remained relatively low and stood at 6 and 5 per cent respectively.”*

<sup>192</sup> Note 126, Kerr and Bryant, 109

<sup>193</sup> ABS, 8153.0 – *Internet Activity, Australia, June 2009*, released 11.30 am 14/09/2009 – Explanatory Notes – “6. Active subscribers are defined as subscribers having accounts with ISPs who have accessed the internet or paid for access to the internet during the three months ending 30 June 2009. Counts of subscribers are not the same as counts of people/organisations with internet access, because subscribers may have accounts with more than one ISP. Conversely, there are single ISP subscriber accounts that provide internet access (or email addresses) for multiple people/organisations; e.g. universities.”  
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8153.0Jun%202009?OpenDocument>  
(viewed 06/11/2009)

<sup>194</sup> ABS, 8153.0 – *Internet Activity, Australia, June 2010*, released 11.30 am 20/09/2010  
<http://abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyCatalogue/6445F12663006B83CA256A150079564D?OpenDocument> (viewed 24/11/2010)

<sup>195</sup> Hard though it may be to imagine such people do exist – my mother is one! Also see the discussion of the Fujitsu hub, as to why some non-users are not using, in – Crump B and A McIlroy, ‘The digital divide: Why the “don’t-want-tos” won’t compute: Lessons from a New Zealand ICT Project’ (2003) 8(12) *First Monday* <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1106/1026> (viewed 07/01/2010). Ewing and Thomas, 5 – “The primary reasons that non-users do not access the internet is that they simply have ‘no interest’ (41.5%) and their ‘lack of skills’ (30.4%). For ex-users ‘no interest’ (20.3%) and ‘no time’ (18.6%) are the main impediments. For the majority of both non-users and ex-users of the internet, cost is not the primary reason for their decision not to use the internet.” Likewise not all consumers demand broadband see Note 27, Whitt, 432. More recently of all see – Note 5, US Department of Commerce, 18 – “Lack of need or interest was the most commonly cited reason for not using broadband Internet services at home ... 47% of households who did not use the Internet cited ‘don’t need it – not interested’ as their principal reason for not subscribing”

<sup>196</sup> Goldfinch S, R Gauld and P Herbison, ‘The Participation Divide? Political Participation, Trust in Government, and E-government in Australia and New Zealand’ (2009) 68(3) *Australasian Journal of Public Administration*, 333, 346

<sup>197</sup> Note 36, ACMA, 28 – “Linked data means that users – and semantic web applications – can find data sets of relevance in different places in the web, and aggregate them or parts of them in other locations to create a more personalised web experience.”

by the community as a whole<sup>198</sup> and may lead to a feeling of disconnectedness by rural populations. As Peña-López reflects, a broadband network is more than just a means to access the internet; it “*has become a discrete switch that either connects or disconnects someone from the network ... [t]he consequences of not being able to access this network will vary, but the result is the same: [irrespective of your wishes] the node has been switched off*”.<sup>199</sup>

While physical connection to others remains very important, internet interaction is not without emotion or “*emotional attachment*”.<sup>200</sup> “*The importance of the idea of community in modern social life is often demonstrated by referring to the idea of ‘nation-ness’.*”<sup>201</sup> The NBN is important for building and supporting Australian society and Australia as a nation as it will facilitate access to the internet economy. In view of the benefits that high-speed broadband can bring to everyday personal and business life<sup>202</sup> a lack of access, or where access is based on outdated, slower speed facilities with limited download capacity, has the potential to create an underclass of users. The federal government’s investment in the NBN is seen to be a recognition that high-speed broadband is important for Australia’s “*collective good*”.<sup>203</sup>

Separate from the economic benefits that high-speed broadband will bring, the NBN will support the creation and maintenance of community through the non-physical networks that it will enable.<sup>204</sup> A lack of appropriate access will be

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<sup>198</sup> Roberts C and V Spurge, ‘A Comparative Study Of Broadband Technology In Rural Areas: The Availability And Use By Small Office Occupiers And The Effectiveness Of Use For E-Commerce’, *Proceedings of the 12<sup>th</sup> Annual Conference of the Pacific Rim Real Estate Society*, 22-25 January 2006, University of Auckland Business School, Auckland, New Zealand [http://www.prrs.net/Papers/Roberts\\_Broadband\\_Technology\\_Rural\\_Areas.pdf](http://www.prrs.net/Papers/Roberts_Broadband_Technology_Rural_Areas.pdf) (viewed 29/08/2009)

<sup>199</sup> Note 113, Peña-López, 93

<sup>200</sup> Note 142, Rheingold, 27

<sup>201</sup> Note 33, Slevin, 93

<sup>202</sup> Spurge V and C Roberts, ‘Broadband Technology: An Appraisal Of The Availability And Use By Small And Medium Sized Enterprises’, *Proceedings of the 11<sup>th</sup> Annual Conference of the Pacific Rim Real Estate Society*, 23-27 January 2005, Melbourne University, Australia [http://www.prrs.net/Papers/Spurge\\_Broadband\\_Technology\\_An\\_Appraisal\\_Of\\_The\\_Availability.Pdf](http://www.prrs.net/Papers/Spurge_Broadband_Technology_An_Appraisal_Of_The_Availability.Pdf) (viewed 29/08/2009)

<sup>203</sup> Note 153, Budde, 1 – “*Australia has emerged as an interesting model to watch as the government plans to invest AU\$43 billion in a national FttH broadband network. This is a clear indication that it believes broadband infrastructure is important for the collective good.*”

<sup>204</sup> Benkler Y, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (Yale University Press, New Haven and London, 2006) 366 – “*What is emerging in the work of sociologists is a framework that sees the networked society or the networked individual as entailing an abundance of social connections and more effectively deployed attention. The concern with the decline of community conceives of a scarcity of forms of stable, nurturing, embedding relations, which*

disempowering and isolating.<sup>205</sup> Broadband networks can be used to strengthen and empower communities.<sup>206</sup> In the context of community as discussed, the NBN is just such a network. The internet can be a place where, as Barlow describes, “*hearts ... [can] remain*” and where “*roots ... [can]not be ripped out by forces of economic history*”.<sup>207</sup> A significant benefit of the NBN is that irrespective of where your work, family or schooling requires you to live, it will enable you to maintain your connection with others. It is the new “*relationships of people and information*”<sup>208</sup> and how to manage them that is likely to create the biggest challenge for NBN users and non-users, as opposed to whether you are able to create the relationships and information in the first place.

Finally, business location will have an impact on the broader Australian society. Where a business is located (i.e. urban as opposed to rural or regional) influences whether or not broadband is adopted.<sup>209</sup> This is despite the fact that the costs associated with both the adoption<sup>210</sup> and use<sup>211</sup> of this form of communication can be considerably less expensive when compared with that of the old technologies (i.e. the telephone).<sup>212</sup> The cost of use for working remotely

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*are mostly fixed over the life of an individual and depend on long-standing and interdependent relations in stable groups, often with hierarchical relations. What we now see emerging is a diversity of forms of attachment and an abundance of connections that enable individual to attain discreet components of the package of desiderata that ‘community’ has come to stand for in sociology.”*

<sup>205</sup> Wood D, ‘Communicating in virtual worlds through an Accessible Web 2.0 Solution’. (2010) 60 (2) *Telecommunications Journal of Australia*, 19.1 <http://publications.epress.monash.edu/doi/pdf/10.2104/tja10019> (viewed 13/10/2010)

<sup>206</sup> Note 38, Kollock and Smith, 4 – “*At their best, networks are said to renew community by strengthening the bonds that connect us to the wider social world while simultaneously increasing our power in that world.*”

<sup>207</sup> Barlow J, ‘Is there a Cyberspace?’ (1995) *Utne Reader* <http://www.buscalegis.ufsc.br/revistas/index.php/buscalegis/article/viewFile/3966/3537> (viewed 22/08/2009)

<sup>208</sup> Note 7, Mitchell, 14

<sup>209</sup> Note 43, ACMA, 18 – the report notes however that post the change from the now defunct CDMA network, the adoption in non-metropolitan areas was higher than in metropolitan areas. More metropolitan based businesses however accessed VoIP services than in non-metropolitan areas. [http://www.acma.gov.au/webwr/\\_assets/main/lib100068/convergence\\_comms\\_rep-2\\_small\\_medium\\_enterprises.pdf](http://www.acma.gov.au/webwr/_assets/main/lib100068/convergence_comms_rep-2_small_medium_enterprises.pdf) (viewed 07/01/2010)

<sup>210</sup> Baym N, ‘Interpersonal Life Online’ in L Lievrouw and S Livingstone (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 64 – “*In a real break from earlier technologies such as the telephone, CMC dramatically reduces the cost associated with communication across distance.*”

<sup>211</sup> Ypsilanti D and S Paltridge, ‘OECD Broadband Market Developments’, in ‘Frontiers of Broadband, Electronic and Mobile Commerce’, R Cooper and G Madden (Eds) (Physcia-Verlag, Heidelberg, 2004) 63

<sup>212</sup> Note 113, Peña-López 46 – “*The now was not so much on the technical ability to access knowledge, as happened in the Industrial Revolution, but in the reduced cost of doing it: in the falling costs of accessing, transmitting an storing information and the knowledge embedded within. In a*

is also much less expensive when compared with the cost of travel for work purposes. The impact of the innovations and advances in science and technology for communities and society are therefore felt both in the areas they are located and by the wider population.<sup>213</sup>

## F. What type of network is needed?

As Kariyawasm observed, “[r]egulators are always playing catch-up with technology ... [and] the question remains whether ... new framework[s] will ... be adequate to deal with the complex range of protocols, layers, and applications that constitute [the] new services.”<sup>214</sup> The refocussing of government resources to enable greater participation in ICT<sup>215</sup> is clearly a positive step. However, the type of access available directly influences the frequency and quality of engagement.<sup>216</sup> Broadband roll-out in rural areas appears to be faced with a ‘catch-22’ scenario. Without sufficient user demand private investors are not interested in broadband networks<sup>217</sup> but without the networks, services are not available to be demanded. Some rural and regional areas simply currently do not have the collective mass of residents to sustain or encourage private networks, nor are they likely to in the foreseeable future. As such the availability of broadband in rural areas therefore generally occurs later than it does in urban areas.<sup>218</sup> As well, in many areas, access may not occur because of the physical restrictions of the location rather than a lack of demand.<sup>219</sup>

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*digitized economy, the marginal costs of storing data tend towards zero”*

<sup>213</sup> Jones S, ‘The internet and its Social Landscape’ in S Jones (Ed) *Virtual culture: identity and communication in cybersociety* (Sage Publications, London 1996) 8 where, in relation to the introduction of the railways, he observed that they “*had sweeping consequences for social life even in areas that were not bisected by tracks*”.

<sup>214</sup> Note 150, Kariyawasm, 87

<sup>215</sup> ACMA, ‘Audit of Australian digital media literacy program’, July 2009, 3 – “*There has been a noticeable change in program focus, moving away from programs addressing digital divide issues and basic ICT skills towards programs developed around increasing participation and engagement in their target groups and incorporating skills development in new and emerging digital technologies.*” [http://www.acma.gov.au/webwr/\\_assets/main/lib310665/audit\\_of\\_aust\\_digital\\_media\\_literacy\\_programs.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310665/audit_of_aust_digital_media_literacy_programs.pdf) (viewed 07/01/2010)

<sup>216</sup> Pusey M, *The Experience of Middle Australia: the Dark Side of Economic Reform* (Cambridge University Press, Cambridge, 2003) 136

<sup>217</sup> Note 109, Press, 10 – as Press considered, “[i]f there is not sufficient demand to justify investment ... it will not occur even if there are many, privately owned, competing service providers and a strong independent regulator.”

<sup>218</sup> Note 198, Roberts and Spurge

<sup>219</sup> Note 30, McKinsey Report, 273

Societal gains from broadband connections generally outweigh the economic gains to the network investors.<sup>220</sup> While this is supportive of investment by government, it will impact upon private investment. This is particularly so in view of the high up-front costs involved in establishment of the broadband network and the cost will only increase in the future.<sup>221</sup> In the words of Noam “*it is difficult to do competitive telecommunications*”<sup>222</sup> and this affects its availability in some areas. With the increased use of wireless technology,<sup>223</sup> the incentive for private investment in physical infrastructure decreases. This is particularly so when the delivery of wireless technology in rural areas may be more cost-effective and where satellite can provide a more complete coverage.<sup>224</sup> To address this, a variety of backhaul options were proposed by the McKinsey Report, including wireless and satellite options.<sup>225</sup>

Additionally, there is no one solution as to what is the appropriate means of financing broadband provision and a variety of financial models have been adopted internationally.<sup>226</sup> Currently it would appear that it is not feasible for the NBN to be privately owned and operated from an economic perspective. The former telecommunications networks took more than a century and billions of dollars to be fully rolled out.<sup>227</sup> As considered by the Expert Panel, the costs of implementation of

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<sup>220</sup> Note 27, Whitt, 441 – “*Broadband is also characterized by what some call the ‘comedy of the commons,’ which describes how the overall social benefits of infrastructure exceed their social costs because of the increasing returns to use. In essence, there is a wedge between broadband providers’ private interests and the nation’s social interests.*” [references omitted]

<sup>221</sup> Note 62, IIA, 22 – “*We have no illusions about the high initial infrastructure costs attached to fibre rollout. The main costs are in civil works like ducting and trenching. The longer we leave this investment the more expensive it will become. Without public investment, Australia faces a two tier internet future. The ‘haves’ will live in populations areas where commercial investment in fibre is warranted and where good, infrastructure-based competition exists. The ‘have-nots’ will live in areas where there are high barriers to entry, not contestible market and little incentive to offer what we might call ‘metro grade’ access services.*”

<sup>222</sup> Noam E, ‘Entrepreneurship & government in Telecommunications’ – in D Hart (Ed) *The Emergence of Entrepreneurship Policy* (Cambridge: Cambridge Uni Press 2003) 214, 221

<sup>223</sup> Note 36, ACMA, 35

<sup>224</sup> Note 36, ACMA, 35 – “*Satellite broadband services provide 100 per cent coverage of Australia’s land area.*” An in-depth consideration of such issues however is beyond the scope of the thesis.

<sup>225</sup> Note 30, McKinsey Report, 290 and 304

<sup>226</sup> Note 42, West, 8 – “*Some countries view broadband investment as a public good to be financed either by the central government or in conjunction with phone companies. Public officials in these places have placed a high priority on high-speed broadband and provided direct resources or indirect incentives for those investments ... Most other nations have opted for a broadband system based mainly on private investment. The idea is that governments should not finance or compel commercial carriers to undertake broadband investment unless the latter see market conditions that are conducive to these kinds of investments. This allows companies to make relevant decisions based on their perceptions regarding return on investment.*”

<sup>227</sup> Note 142, Rheingold, 275



the NBN are substantial.<sup>228</sup> In the current financial climate the expected cost is counter-indicative to industry's ability to undertake the investment necessary to establish the network itself at a cost consumers are able to bear, whether by an individual company, group, or other consortium.<sup>229</sup> This reinforces the need for government expenditure to build the NBN.<sup>230</sup> The McKinsey Report confirms that private enterprises' expectations of returns are not supportive of such investment, as investors' expectations for profits are unlikely to be able to be met for some time.<sup>231</sup> A lack of incentive for private investment necessitates ongoing long-term government involvement.<sup>232</sup> A reason that the federal government changed from its original proposal to have industry itself build the NBN was because the changes to the global financial position had negatively impacted on the ability of participants in the telecommunications industry to raise the capital to construct the infrastructure.<sup>233</sup>

Conversely, the potential spill-over benefits from enabling utility providers to be actively involved in the NBN's construction may act as the impetus needed for private investment in the network.<sup>234</sup> However, recent UK experience shows that

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<sup>228</sup> Note 72, Evaluation Report Extract

<sup>229</sup> Note 72, Evaluation Report Extract – Observation 2 “*There has been a once-in-75-year deterioration in capital markets that has severely restricted access to debt and equity funding. As a result all national proponents have either found it very difficult to raise the capital necessary to fund an NBN roll-out without recourse to substantial support from the Commonwealth or have withheld going to the market until they have certainty that their Proposal is acceptable to the Commonwealth.*”

<sup>230</sup> Note 35, OECD, 38-43

<sup>231</sup> Note 30, McKinsey Report, 370 – “*returns required for early investments are particularly high due to the history of some telecommunications investments in Australia*”

<sup>232</sup> Note 30, McKinsey Report, 387

<sup>233</sup> Note 72, Evaluation Report Extract, Observations 1 and 2

<sup>234</sup> Note 35, OECD, 20 – “*Given the impact of electricity on the economy it is important for policy makers, electric companies and telecommunication firms to find ways to work together to achieve common goals and reduce costs. In the United Kingdom, the Broadband Stakeholders Group found that building a national fibre-to-the-home network could be less expensive if undertaken by a utility company (capitalising on existing infrastructure) than if installed by one of the large telecommunication operators (UK BSG, 2008). In Switzerland, the key telecommunication providers have partnered with electric companies to install multiple fibres to each residence throughout the country. The rationale is that by mutualising the civil works across carriers the cost for each operator is significantly less than if they each installed their own single line ... In the Swiss model, each provider who is building a new network lays one fibre optic cable containing multiple fibres inside. The unused fibres are then offered to interested operators for sale or exchange, such as for dedicated use by the electric company. In this sense, once a building is wired by one operator there are available fibres for the other market participants. Partnerships between electricity companies and telecommunication operators could be beneficial for a number of reasons. First, electricity providers are reluctant to use existing consumer broadband networks to manage critical smart grid services because they would rather remain in full control of the communication. To this end many are beginning to invest in developing their own stand-alone wireless/fixed networks to carry the traffic securely. However, as the Swiss model implies, the cost of building two parallel networks (without co-operation) is significantly more expensive than if all market participants mutualise the digging and installation of multiple fibres to each home. The incremental cost of laying the second, third and*

such investment cannot be guaranteed.<sup>235</sup> Specific private investment may be warranted. For example, a public-private partnership may be the solution to roll-out the last mile.<sup>236</sup> This could be structured in such a way that ongoing government involvement will ensure openness and neutrality of the network. Alternatively, policies to encourage investment in infrastructure could be introduced.<sup>237</sup> However, if the NBN is constructed using public money then it should remain a public asset.

Addressing establishment costs is essential, but simply ensuring physical access to the NBN will not be enough.<sup>238</sup> Making people want to access the NBN as well as ensuring they have the necessary skills to do so is equally important. Ensuring appropriate access will be vital to the NBN's ongoing successful operation and thus the future of Australia's internet economy. Enabling however means more than just oversight and regulation of services. It means acting to ensure that appropriate and needed services can be provided and accessed. This requires the federal government to guarantee the establishment and ongoing maintenance of appropriate infrastructure. It also requires the establishment and ongoing maintenance of the means of access to that infrastructure, as well as up-to-date hardware and software.

One solution to address ongoing access issues is to ensure ongoing public ownership of the wholesale service provider<sup>239</sup> and the network infrastructure. Another separate solution is to ensure that the services the NBN enables are provided to all on an open-access, neutral basis. This is as opposed to a privately owned and operated, and potentially closed or service-restricted, network. This is not to say that private contribution will not be required, rather that the end product should not be privately owned. Nor should it be operated in such a way that the services it delivers are restricted or inappropriately regulated.<sup>240</sup> The NBN should be open, neutral and

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*fourth fibres to a home is negligible as long as they are installed at the same time. Under such as scenario the electric company could manage its own secure data network to all households, not just those subscribing to broadband while broadband providers would have their own lines to offer consumer and business data services.*" [references omitted]

<sup>235</sup> Note 94, Wakefield

<sup>236</sup> This should address issues of a lack of interest in investment in these less populated and thus less viable areas. See – Gerrand P, 'Accelerating broadband rollout – initiatives in regional Spain' (2006) 56 (3&4) *Telecommunications Journal of Australia*, 84

<sup>237</sup> Note 115, Frontier Economics, 61

<sup>238</sup> Note 195, Crump and McIlroy

<sup>239</sup> Note 81, Rudd *et al*

<sup>240</sup> A consideration of issues relevant to appropriateness or otherwise of the private provision, i.e. construction, of public infrastructure however is outside the scope of the thesis. For a consideration of such issues see – Cannadi J and B Dollery, 'An Evaluation of Private Sector Provision of Public

accessible by all in order that individual end users may engage in the internet, innovations may be encouraged and thus the internet economy may flourish.

Having made the decision to adopt the NBN and to travel down this path, what opportunities will be missed and what will the cost of their loss be if it does not proceed? As Johnstone identified, “*the true cost of choosing to do something should be measured in terms [also] of the opportunities that are sacrificed to do it*”.<sup>241</sup> We have already seen one NBN proposal stopped and restarted, as well as the cancellation of previously proposed schemes. The cost, both financial and fundamental, of now changing from the NBN path may never be known. Then again, as Mackay identified, to properly implement new technology, it is necessary “*to think thoroughly about the real need for new technologies ... and also understand its negative consequences before we embrace it*”.<sup>242</sup> The federal government therefore needs to continue proceed quickly, however it must ensure that it is thorough in its policy development process to ensure that the NBN is properly supported. Any delay in implementing the NBN<sup>243</sup> and ensuring access for all Australians to online content will restrict consumers’ abilities, education levels and *digital literacy*. This in turn will impact on businesses’ capacity to engage and innovate in the internet economy.

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Infrastructure in Australian Local Government’ (2005) 64(3) *Australian Journal of Public Administration*, 112

<sup>241</sup> Note 103, Johnstone, 65

<sup>242</sup> Mackay H, *Turning point – Australians choosing their future* (Pan McMillan Australia, Sydney, 1999)

<sup>243</sup> Note 2, DBCDE, 35. For example, finalising the agreement with Telstra will cause delay in implementation, see – NBN Company Limited, ‘NBN Co. Business Case Summary’, 24 November 2010, 15 – “*The Plan assumes that the definitive and binding agreements [with Telstra] will be signed by end of 2010, with completion and satisfaction of all Conditions Precedent by 30 June 2011. Any delay will impact NBN Co’s ability to finalise its network design ... and the fore the Company’s ability to achieve the Plan deployment targets.*” <http://www.nbnco.com.au/wps/wcm/connect/5b05280044cfe6e9803289c72ea64545/NBN+Co+Business+Case+Summary.PDF?MOD=AJPERES&CACHEID=5b05280044cfe6e9803289c72ea64545> (accessed 02/12/2010)

## G. Conclusion

The benefits of broadband internet access are numerous. These range from enabling an individual's ability to educate oneself; through maintaining contact with friends overseas; to use for gaining information for health purposes. Faster internet access speeds draw the consumers to a particular broadband provider. Once the provider is chosen, the end user will seek to use other available services, as well as demanding yet better speeds for greater accessibility. The internet enables people to innovate and engage with others without the need to leave where they are<sup>244</sup> and high-speed broadband will enable ease of access to the internet. In order for this to occur, more than just the physical infrastructure is needed. It also requires users have the financial capacity to afford the access and the skills to use it.

As Peña-López considers, the *digital divide* has changed from the traditional form (if there is such a thing) to one of a "*participative-highly-skilled-broadband divide*".<sup>245</sup> Without the necessary means of access, and appropriate literacy and skills, a potential user is likely to fall into the divide. Slower broadband speeds have been shown to negatively impact upon the level of government service provision.<sup>246</sup> Ensuring digital literacy is something that may be able to be addressed through school and adult education programs; this will be considered further in Chapter 5. Ensuring openness and neutrality of the NBN however must be addressed by legislation and appropriate modes of operation. Maintaining the NBN as a publicly owned neutral access network is preferable. There are a variety of factors that are supportive of the NBN remaining as public infrastructure, not least of which are implementation costs and lack of population density in some areas.

Broadband has been identified as a "*means of promoting citizen access to information*"<sup>247</sup> and access to the government. The NBN is important in its own right as a commercial enterprise and as an integral part of Australia's future for societal, economic and research/innovation purposes. While the number of internet users is

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<sup>244</sup> Note 142, Rheingold, 274 – "*People in virtual communities do just about everything that people do in real life, but we leave our bodies behind.*"

<sup>245</sup> Note 113, Peña-López, 93

<sup>246</sup> Note 42, West, 14 – "*There are major variations around the world, and it is clear that areas with fast broadband were more likely to have online services ... in places where there is limited broadband, it is harder for governments to innovate and bring citizens the advantages of the digital revolution. [Conversely t]here were a number of innovative services and applications that have developed on government websites based on high-speed connections.*"

<sup>247</sup> Note 51, Middleton, 12

increasing, it remains that, currently, communication services in Australia is delivered by a variety of service providers over a variety of networks. A refusal by existing infrastructure owners or service providers to commit or participate in the NBN, as opposed to open adoption of or migration to the NBN, presents a risk to its successful roll-out.<sup>248</sup> Only time will tell how ubiquitous high-speed broadband in Australia is but, in light of the current issues facing the telecommunications industry, it is important that any outstanding issues are addressed now. Ultimately, and irrespective of what access regime is imposed, it may well be as Justice Kirby alluded to that “*we have to face the reality of the limitations of what we – a country like Australia – can actually do in controlling [or promoting] the use of ... technology – and specifically the use [or adoption] of the Internet*”.<sup>249</sup>

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<sup>248</sup> Wu T, ‘The Broadband Debate, A User’s Guide’ (2004) 3 *Journal on Telecommunications and High Technology Law*, 69, 79

<sup>249</sup> Kirby M, ‘Four Parables and a Reflection on Regulating the Net’, *Speech delivered to the internet Industry Association, Annual Dinner*, Sydney, Australia, 21 February 2008 (Edited Transcript) 11 [http://www.highcourt.gov.au/speeches/kirbyj/kirbyj\\_21feb08.pdf](http://www.highcourt.gov.au/speeches/kirbyj/kirbyj_21feb08.pdf) (viewed 26/02/2010)



## CHAPTER 5 – CHALLENGES

*“Nothing is more destructive of respect for the government and the law of the land than passing laws which cannot be enforced.”<sup>1</sup>*

### A. Introduction

The chapter identifies the challenges facing the implementation of high-speed broadband in Australia from the perspective of the end user. In order to do this it recognises the barriers to achieving *connectedness* – the *physical, digital* and *political divides* – and considers if the existing access regimes address these barriers.

The barriers that must be overcome to enable the Australian internet economy are both seen and unseen. These include issues arising from Australia’s unique topography, end user capacity, their desire for high-speed broadband services, and political agreement and will. In order to identify the challenges for enabling the internet economy and *connectedness*, it is necessary to undertake an audit to ensure existing laws are appropriate within this new economy.<sup>2</sup> This will involve providing an overview of the current land, infrastructure, facilities and service, and content access regimes. Where relevant, this will involve a consideration of policies and laws introduced specifically for the NBN environment. It must be noted that the discussion of the access regimes is not undertaken for the purpose of analysing or determining their effectiveness. Rather, they are considered for – and from – the perspective of identifying what they regulate access to, and whether they are focussed on enabling access by the individual end user.

Australia’s international obligations also will be discussed. In this context it is noted that the international human rights discussed in Chapter 2 have not yet been implemented in Australia.<sup>3</sup> Consideration will be given to statements of future

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<sup>1</sup> Albert Einstein (1879 – 1955) theoretical physicist

<sup>2</sup> Howkins J, *Creative Ecologies: Where Thinking is a Proper Job* (University of Queensland Press, St Lucia, 2009) 120 – or as Howkins states it is necessary to ensure that laws “fit”.

<sup>3</sup> Carver R, ‘A New Answer to an Old Question: National Human Rights Institutions and the Domestication of International Law’ (2010) 10(1) *Human Rights Law Review*, 1, 13 – “In Australia, which is strongly dualist, the Human Rights and Equal Opportunity Commission (HREOC) goes a step further. Its founding statute mandates the HREOC to promote and protect human rights contained in a schedule of human rights treaties, not all of which Australia has ratified and none of which is incorporated into municipal law. In its reporting of human rights complaints handled, the HREOC makes specific reference to the treaty provision that the alleged action is said to have

legislation and policy direction as relevant, subject to their being able to be adequately identified. Because of the calling of the 2010 federal election several pieces of legislation lapsed on the 19 July, 2010. Some of these have been reintroduced and it will be the newest version that is examined. Others have not been reintroduced as at 9 December 2010 and for those it will be the previous version that is examined as the most recent iteration of the government's legislative intent. The policy development process also is informed by community and industry consultation.<sup>4</sup> Submissions to NBN reviews will be considered where relevant however this chapter does not provide an in-depth analysis of those submissions. Readers are instead directed to the relevant review reports.

The provision of internet and broadband services falls within the governance of the Australian telecommunications regulatory regimes. The NBN, and the content and services delivered over it, will therefore be the newest part of the Australian telecommunications market. Of the various pieces of legislation relevant for telecommunications provision, the main regulatory framework is contained within the *Telecommunications Act 1997* and (currently) Part XIB and Part XIC of the *Trade Practices Act 1974* ('TPA').<sup>5</sup> Anti-competitive conduct, while having the

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*breached, rather than any equivalent provision of Australian municipal law.*" [references omitted]

<sup>4</sup> Edwards M, *Social Policy, Public Policy: From problem to practice* (Allen & Unwin, Crows Nest, 2001) 4; Bridgman P and G Davis, 'What Use is a Policy Cycle? Plenty, if the Aim is Clear' (2003) 62 (3) *Australian Journal of Public Administration*, 98, 101

<sup>5</sup> Section 3 *Telecommunications Act 1997* – Objects

- (1) *The main object of this Act, when read together with Parts XIB and XIC of the Trade Practices Act 1974, is to provide a regulatory framework that promotes:*
  - (a) *the long-term interests of end-users of carriage services or of services provided by means of carriage services; and*
  - (b) *the efficiency and international competitiveness of the Australian telecommunications industry.*
- (2) *The other objects of this Act, when read together with Parts XIB and XIC ...are as follows:*
  - (a) *to ensure that ... other carriage services of social importance are:*
    - (i) *reasonably accessible to all people in Australia on an equitable basis ...; and*
    - (ii) *are supplied as efficiently and economically as practicable; and*
    - (iii) *are supplied at performance standards that reasonably meet the social, industrial and commercial needs of the Australian community;*
  - (b) *to provide a framework under which a carriage service that provides digital data capability comparable to an ISDN channel is to become available to all...:*
    - (i) *by 1 January 2000; or*
    - (ii) *by another date having regard to the findings ... into ... availability of that service;*
  - (c) *to promote the supply of diverse and innovative carriage ... and content services;*
  - (d) *to promote the development of an Australian telecommunications industry that is efficient, competitive and responsive to the needs of the Australian community;*
  - (e) *to promote the effective participation by all sectors of the Australian telecommunications industry in markets (whether in Australia or elsewhere);*



potential to adversely impact upon broadband service provision and the telecommunications market,<sup>6</sup> is outside the scope of the thesis. Therefore, consideration will not be given to Part XIB TPA as this delivers the telecommunications competition regime. As discussed in Chapter 2, the ability of the individual end user to access the internet underpins internet economy and as such it is the ‘access’ regimes that are relevant for the thesis. Consideration will therefore be given to the telecommunications access regime in Part XIC TPA.<sup>7</sup> Enacted to benefit consumers, the Universal Service Obligation (‘USO’)<sup>8</sup> also will be examined to identify the services to which it applies and the benefit it can bring to consumers. Access to land, including potentially land of consumers, for construction purposes for related infrastructure will be relevant and so consideration will also be given to Schedule 3 of the *Telecommunications Act 1997*.<sup>9</sup>

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- ...
- (g) to promote the equitable distribution of benefits from improvements in the efficiency and effectiveness of:
    - (i) the provision of telecommunications networks and facilities; and
    - (ii) the supply of carriage services;
  - (h) to provide appropriate community safeguards ... and to regulate adequately participants in sections of the Australian telecommunications industry;
  - (i) to promote the placement of lines underground, taking into account economic and technical issues, where placing such lines ... is supported by the affected community”.

It is noted that as from 1 January 2010 the TPA will be renamed the *Competition and Consumer Act 2010* and the most recently proposed NBN legislation refers to it as such. Section 2(1) Item 3 and Schedule 6 *Trade Practices Amendment (Australian Consumer Law) Act (No. 2) 2010*. However, as the thesis considers the law as at 9 December 2010, the TPA will continue to be referred to as TPA. It also is noted that Section 3(1) has been amended – this is discussed later in the chapter.

<sup>6</sup> Middleton C and S Chang ‘The Adoption of Broadband Internet in Australia and Canada’, in Y Dwivedi, A Papazafeiropoulou and J Choudrie (Eds) *Handbook of Research on Global Diffusion of Broadband Data Transmission* (Harrisburg, PA: Idea Group Publishing, 2008) 821 – “Local loop unbundling requires that the incumbent ... provided all competitors access to its existing network infrastructure ... and it is frequently mandated by ... regulatory agencies. Unbundling allows competitor to offer broadband services over existing infrastructure. There is a mixed opinion ... [on] ... the impact of ... [it] ... on the supply of broadband”.

<sup>7</sup> See S152AA *Trade Practices Act 1974* for a simplified outline of Part XIC.

<sup>8</sup> *Telecommunications Universal Service Obligation (Eligible Revenue) Regulations 1998* – Reg 4; and *Telecommunications (Consumer Protection and Service Standards) Act 1999* – although this is of limited relevance as the former government accepted “the Regional Telecommunications Inquiry (RTI) finding 7.3 that the USO ‘is not an effective mechanism to provide broad consumer access to an increased range of services into the future.’” See – DCITA ‘Review of the operation of the Universal Service Obligation 2004 – Terms of Reference’, [http://www.archive.dcita.gov.au/2009/june/review\\_of\\_the\\_operation\\_of\\_the\\_universal\\_service\\_obligation\\_2004/review\\_of\\_the\\_operation\\_of\\_the\\_universal\\_service\\_obligation\\_-\\_terms\\_of\\_reference](http://www.archive.dcita.gov.au/2009/june/review_of_the_operation_of_the_universal_service_obligation_2004/review_of_the_operation_of_the_universal_service_obligation_-_terms_of_reference) (accessed 24/06/2009) The Australian Broadband Guarantee also will be examined. See – Australian Government, ‘Australian Broadband Guarantee: Program Guidelines 2010-11’, July 2010 [http://www.dbcde.gov.au/\\_data/assets/pdf\\_file/0017/128204/Australian-Broadband-Guarantee-2010-11-Guidelines-July-2010.pdf](http://www.dbcde.gov.au/_data/assets/pdf_file/0017/128204/Australian-Broadband-Guarantee-2010-11-Guidelines-July-2010.pdf) (accessed 08/12/2010)

<sup>9</sup> Section 484 *Telecommunications Act 1997* – “Schedule 3 has effect.”

As part of its contemplation of the future of Australia's digital economy, the federal government is "*considering wide ranging regulatory reform that will address longstanding problems in the Australian telecommunications sector which have deterred competition*".<sup>10</sup> However, not all problems are relevant to competition in the market. The barriers considered by the chapter include the *physical divide*, which will act as an impediment to the roll-out of fibre optic cables throughout Australia.

Unlike the regulation of telecommunications, the Commonwealth Constitution does not grant responsibility for real property (i.e. land<sup>11</sup>) regulation to the federal government.<sup>12</sup> Access to land however will be a crucial aspect of the fibre roll-out. Therefore to a large extent, existing region-specific planning laws and other regulations will influence how and what is required. An analysis of all such State laws and policies is beyond the scope of the thesis and therefore the discussion will be directed to federal laws and policy. It is noted, however, that the federal government proposes the implementation of standard NBN specific land planning regulations across Australia.<sup>13</sup> The implementation of such laws will require the agreement and assistance of State/Territory and local government authorities ('LGA') and relevant issues will be considered in Chapter 6 as they may impact upon individual end users.

Following on from the signing of the Telstra-NBN Co Limited Heads of Agreement,<sup>14</sup> the federal government more recently announced a policy<sup>15</sup> to further

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<sup>10</sup> DBCDE, 'Australia's Digital Economy: Future Directions', Final Report, 14 July 2009, 9

<sup>11</sup> Section 22(c) *Acts Interpretation Act 1954* (Cth) – "*Land shall include messuages tenements and hereditaments, corporeal and incorporeal, of any tenure or description, and whatever may be the estate or interest therein*".

<sup>12</sup> Other than, for example, as to the requirement in Section 51(xxxi) that any Commonwealth laws in relation to the 'compulsory acquisition' of property must provide that the acquisition is "*on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws*"; and in Section 52(1) as to "*all places acquired by the Commonwealth for public purposes*".

<sup>13</sup> Conroy, Hon. S, 'Superfast broadband for new developments', Media Release, 18 March 2010, [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/023](http://www.minister.dbcde.gov.au/media/media_releases/2010/023) (viewed 07/05/2010); DBCDE, 'National Broadband Network: Fibre-to-the-premises in greenfield estates, Consultation Paper', May 2009

[http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0018/112554/Fibre\\_in\\_greenfields\\_consultation\\_paper.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0018/112554/Fibre_in_greenfields_consultation_paper.pdf) (viewed 12/08/2009)

<sup>14</sup> NBN Co Limited, 'NBN Co and Telstra reach heads of agreement', Media Release, 20 June 2010 [http://www.nbnco.com.au/content/upload/files/Press\\_Releases/NBNCo\\_MediaRelease\\_20.06.2010-TelstraHeadsOfAgreement.pdf](http://www.nbnco.com.au/content/upload/files/Press_Releases/NBNCo_MediaRelease_20.06.2010-TelstraHeadsOfAgreement.pdf) (viewed 22/06/2010)

<sup>15</sup> Australian Government, 'Policy Statements', DBCDE, 20 June 2010 [http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/policy\\_statements](http://www.dbcde.gov.au/broadband/national_broadband_network/policy_statements) (viewed 22/06/2010)

facilitate the roll-out of the NBN.<sup>16</sup> At this stage, the new policy proposes a modification of processes regarding roll-out of fibre provision in greenfield estates. The proposed changes regarding the USO delivery, which is to commence from 1 July, 2012, are more significant. The impact of this recent policy, as relevant for the identified access regimes, will be considered as relevant in Part B. Most importantly for the internet economy, it is vital to ensure all Australians have the capacity (i.e. skills, equipment and desire) to ensure that they have the same level of access and engagement as each other. This issue will be considered below as part of the *digital divide* and in respect of solutions to be proffered in Chapter 6. Finally, the barrier of the *political divide* will be identified. Overcoming this final barrier is beyond the scope of the thesis as it requires a change of position by political parties.

## **B. Overview of relevant access regimes**

The regimes will be reviewed from the prospective of high-speed broadband in general, the NBN specifically, and the internet where appropriate. The access regimes to be considered are those relevant for telecommunications purposes as currently enacted or recently proposed. Some non-telecommunications regimes also are identified as relevant for roll-out of high-speed broadband. Although implementation of the NBN by itself is a formidable task, ensuring its ongoing operation and maintenance is no less daunting. The regimes reviewed are those for land, facilities, services and content. Access to infrastructure and service is managed through declarations<sup>17</sup> made by the ACCC under Part XIC TPA.

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<sup>16</sup> Rudd Hon, K, 'Agreement between NBN Co and Telstra on the rollout of the National Broadband Network, Joint Media Release, 20 June 2010 [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/060](http://www.minister.dbcde.gov.au/media/media_releases/2010/060) (viewed 22/06/2010)

<sup>17</sup> The existing declarations were extended in July 2009 to 31 July 2014. See – ACCC, 'Fixed Services Review Declaration Inquiry for the ULLS, LSS, PSTN OA, PSTN TA, LCS and WLR: Draft Decision', June 2009, 113 "A five year declaration for each service takes into account the need for regulatory certainty during the transition period from fixed-line competition, which currently occurs primarily over Telstra's CAN. This transition period is likely to extend for several years, due to the time required to roll out the new FTTP and wireless/satellite network and the time required for downstream providers and customers to transition to the new network. The ACCC noted in the draft decision that one of the most important issues for this declaration inquiry is to ensure that telecommunications providers are able to operate in an environment of maximum regulatory certainty while significant structural and competitive changes occur in the industry. The extent of industry change that will likely occur during the transition period is unprecedented since the implementation of the open competition telecommunications regime in 1997 ... The ACCC considers that the provisions of Part XIC of the TPA allow it to ensure regulation remains responsive to changing technological and competitive environments within the telecommunications sector. In addition, the ACCC further notes that in the event that the NBN weakens the need for regulation of existing services, this is likely to manifest itself in diminished demand for regulatory intervention to determine terms and conditions

Issues for land and facilities require consideration as both are important for ensuring the entire regime functions effectively. Appropriate access is relevant for infrastructure owners, property developers, content and service providers and consumers. This relates to access to the land for construction and installation purposes, access to existing facilities for service provision and access to services and to content provided. An overarching comment is that the regimes are complicated and not end-user specific. Where NBN-specific legislation has been introduced, the new provisions amend existing laws rather than implementing a new regime.

As a reaction to current methods of operation, the federal government has enacted legislation to enable it to force Telstra to structurally separate if it wishes to be involved in the NBN.<sup>18</sup> Following on from Telstra's negotiations with NBN Co Limited<sup>19</sup> this may not be necessary. However, if a final agreement is not reached, forced separation is likely. More likely is that a lack of agreement would result in a delay in the roll-out of the NBN. However, this issue, its potential impact, and how it should be addressed by the federal government is beyond the scope of the thesis.

## 1. Access to land

While English in origin, land law and regulation in Australia now is "*peculiarly Australian ... [and responsive] to the vast spaces and [a] less structured social system*".<sup>20</sup> As a consequence of the system of land grants prior to federation, the

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*of access. As such, the impact of declaration will diminish. The ACCC ... concludes that all fixed-line services declarations under review should be extended for a five year period until 31 July 2014.*" [http://www.accc.gov.au/content/item.phtml?itemId=882454&nodeId=c85a32b46aa23d506e6b67498c115562&fn=Fixed%20Services%20Review%20Declaration%20Inquiry%20final%20decision%20\(July%202009\).pdf](http://www.accc.gov.au/content/item.phtml?itemId=882454&nodeId=c85a32b46aa23d506e6b67498c115562&fn=Fixed%20Services%20Review%20Declaration%20Inquiry%20final%20decision%20(July%202009).pdf) (viewed 04/11/2010); and ACCC, 'Fixed Services Review Declaration Inquiry for the ULLS, LSS, PSTN OA, PSTN TA, LCS and WLR: Draft Decision', June 2009 <http://www.accc.gov.au/content/index/phtml/itemId/719844> (accessed 04/11/2010)

<sup>18</sup> Part 1, Schedule 1, *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – Amendments relating to Telstra, in particular new Section 577GA. Although see Item 30 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* proposed Part 33, Section 577 – "*Simplified outline ... the Minister may exempt Telstra from the requirement to have an undertaking about hybrid fibre-coaxial networks or subscription television broadcasting licences if the Minister is satisfied that Telstra's undertaking about structural separation is sufficient to address concerns about the degree of Telstra's power in telecommunications markets.*"

<sup>19</sup> Telstra, 'Telstra support prompt passage of NBN Legislation', 20 October 2010 – "*We believe the interests of Telstra shareholders would be best served by the Bill being passed this year so that a definitive agreement on our involvement in the NBN can be reached quickly.*' Telstra is confident the Bill now provides the mechanisms needed to secure agreements with the Government and NBN Co regarding Telstra's participation in the NBN and provides much greater certainty on access to fourth generation wireless spectrum. Telstra has consistently made clear that its shareholders will have the final approval on these agreements." <http://www.telstra.com.au/abouttelstra/media-centre/announcements/telstra-supports-prompt-passage-of-nbn-legislation.xml> (viewed 08/12/2010)

<sup>20</sup> Bradbrook A, S MacCallum and A Moore, *Australian Real Property Law* (Lawbook Co, 2007) 1

granting of land title<sup>21</sup> and the regulation of land ownership and use rests primarily with the individual States, with responsibility for Commonwealth land only remaining with the federal government. Regulation of real property development issues (i.e. town planning) remains within the purview of the respective State and territory governments.<sup>22</sup> Oversight of planning schemes generally is delegated to LGAs.<sup>23</sup> This results in a variety of property and land-use laws and schemes within both the States themselves and Australia as a whole, as a mix of common law rules and legislation is applied. Other issues arise in relation to Crown Leasehold where, as in Queensland for example, use is subject to the specific legislation and permissions granted by the relevant Minister.<sup>24</sup>

Although the NBN access system will be federally regulated, the division of Constitutional power between the federal and State/Territory governments<sup>25</sup> could lead to conflict for implementation. This is because the current idiosyncrasies of the various property and planning laws and regulations. These are State and region-based laws, and may impact on the adoption of the NBN as they may affect procedures for the laying of the fibre optic cables to all homes and businesses. This is because the proposed changes regarding the development of greenfield estates, and the construction of new apartments, will not generally impose obligations on carriers.<sup>26</sup> Nor will it impose those obligations on the LGAs. Rather the obligation to ensure that fibre optic cables are installed in greenfield estates will fall primarily on developers.<sup>27</sup> It was only recently

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<sup>21</sup> For example the various State Torrens Title registration systems and their associated laws.

<sup>22</sup> See Section 108; also see, regarding the overlap with the telecommunications power – *Commercial Radio Coffs Harbour Ltd v Fuller* (1986) 61 CLR 47, 56-7 – the (then) *Broadcasting and Television Act 1942* dealt with “the technical efficiency and quality of broadcasting services ... [with other] laws, ... State and Commonwealth, dealing with other matters relevant to the operation of such services.” In the particulars of the case environmental and planning matters were at issue.

<sup>23</sup> For example see – Chapter 3 *Sustainable Planning Act 2009* – Local Planning Instruments

<sup>24</sup> Section 15(2) *Land Act 1994*

<sup>25</sup> Davis G, ‘Carving out policy space for State government in a federation: The role or coordination’ (1998) 28(4) *Publius*, 147, 148 – “The boundaries established by the ... Constitution ... have proved to be arenas for contest rather than a settled division of responsibilities between state and Commonwealth governments.”

<sup>26</sup> Section 7 *Telecommunications Act 1997* – ‘carrier’ means the holder of a licence granted under Section 56

<sup>27</sup> Although the policy provides NBN Co Limited will be the wholesale provider of last resort, developers remain responsible for the ducts and trenches. See below. As most recently announced, the NBN’s last resort obligations are now to be phased in. See – DBCDE, ‘Statement by the Minister for Broadband, Communications and the Digital Economy, Senator the Hon Stephen Conroy: Fibre in New Development’, 9 December 2010 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0008/131678/Policy\\_Statement\\_-](http://www.dbcde.gov.au/__data/assets/pdf_file/0008/131678/Policy_Statement_-)

proposed that, when this private provision is not possible, the NBN Co Limited will step in as the wholesale provider of last resort for greenfield developments. The following discussion will identify land access regimes in general, for telecommunications and then for greenfield estates. The regimes and policy announcements considered are those current at 9 December, 2010.

**a. For a 'public purpose'**

If the inspection and/or prospective acquisition of land is to be by a Commonwealth department or authority, the access regime in Part III of the *Lands Acquisition Act 1989* is utilised.<sup>28</sup> Prior to the acquisition, the *Lands Acquisition Act 1989* grants the right to access the land for inspection purposes. That right is subject to the requirement in Section 9 to provide written notice at least seven days prior to the exercise of the right to access.<sup>29</sup> Section 10<sup>30</sup> then facilitates access to the land, and any adjoining land, by an

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Fibre\_in\_New\_Developments\_-\_9\_December\_2010.pdf (accessed 09/12/2010)

<sup>28</sup> While the Act does not specify any objects, it was implemented to address deficiencies in the then existing system of acquisition of land by the Commonwealth. Fife W, 'Lands Acquisition Bill 1988 – Second Reading', 20 October 1988, *House of Representatives Hansard*, 2044 "Following extensive deliberation, the report of the Law Reform Commission was tabled in Parliament in April 1980. The Commission was critical of a number of aspects of the existing ... [Act] and recommended new legislation covering both land acquisition and injurious affection" [http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;db=;group=;holdingType=;id=;orderBy=customrank;page=0;query=Context\\_Phrase%3Abill%3F%20Database%3Achamber%20lands%20acquisition%20Content%3Alands%20Content%3Aacquisition%20Content%3Aact%20Content%3A%22second%20reading%3F%22%20Date%3A01%2F07%2F1988%20%3E%3E%2009%2F07%2F1990%20Dataset%3Aweb%20week,hansardr,noticer,webthisweek,dailyp,votes,voteshistorical,practcer,webhothr,ordersr,members,billslst,billsPrevParl,billsCurBef,billsCurNotBef,tariffs,billsdgs,webdisinsts,webdisinstr;querytype=;rec=1;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;db=;group=;holdingType=;id=;orderBy=customrank;page=0;query=Context_Phrase%3Abill%3F%20Database%3Achamber%20lands%20acquisition%20Content%3Alands%20Content%3Aacquisition%20Content%3Aact%20Content%3A%22second%20reading%3F%22%20Date%3A01%2F07%2F1988%20%3E%3E%2009%2F07%2F1990%20Dataset%3Aweb%20week,hansardr,noticer,webthisweek,dailyp,votes,voteshistorical,practcer,webhothr,ordersr,members,billslst,billsPrevParl,billsCurBef,billsCurNotBef,tariffs,billsdgs,webdisinsts,webdisinstr;querytype=;rec=1;resCount=Default) (viewed 09/07/2010)

<sup>29</sup> Section 9 *Lands Acquisition Act 1989*

- (1) A person shall not exercise a power conferred by this Part in relation to particular land unless:
  - (a) the person has given written notice of his or her intention to exercise the power to each person whom the person believes, after diligent inquiry, to have an interest in the land, other than an interest under a mortgage, charge or other similar security; and
  - (b) at least 7 days have elapsed since the requirements of paragraph (a) were satisfied.
- (2) A notice shall:
  - (a) set out particulars of the intended exercise of the power in relation to the land;
  - (b) give reasons for the exercise of the power; and
  - (c) include a statement to the effect that a person to whom the notice is given may, because of the exercise of the power, be entitled to compensation in accordance with Part VIII.

<sup>30</sup> Section 10 *Lands Acquisition Act 1989*– Power to enter on, and examine, land

"An authorised person may, for the purpose of ascertaining whether land is suitable for a public purpose or of obtaining information in relation to land that, in the opinion of the authorised person, is, or may be, suitable for a public purpose:

- (a) enter upon the land, or upon adjoining land, with such persons, vehicles and things as are reasonably necessary for the purpose; and
- (b) make surveys, take levels, dig or bore into the land, examine the soil and do, in relation to the land, any other thing reasonably necessary for the purpose."

‘authorised person’<sup>31</sup> for the purpose of determining whether the land is suitable for a public purpose.<sup>32</sup>

Section 22(2) provides that if land is to be declared for acquisition, the public purposes for the acquisition must be clearly specified on the declaration. As the Court considered in *Re Leppington Pastoral Co Pty Limited v Department of Administrative Services*<sup>33</sup> “specification of a public purpose within the legislative competence of the Parliament, is a constitutional pre-requisite to the compulsory acquisition of land by the Commonwealth”. In the case of the NBN this would be in reliance upon the telecommunications power in Section 51(v) of the Constitution. Once a declaration is made, it is conclusive evidence as to the public purpose,<sup>34</sup> provided it is not defective.<sup>35</sup> That purpose “although expressed in the singular, might well be multi-faceted”<sup>36</sup> and may therefore encompass a variety of needs in the context of a scheme.

What land is suitable for NBN purposes would require a policy determination by the federal government. As the Full Court considered in *South Australia v Honourable Peter Slipper MP*,<sup>37</sup> a decision to acquire land must take into account potentially broad policy issues, which are separate from a consideration of issues of the compensation payable, and “the resolution of those broad policy issues may dictate what land should be acquired. [However i]t is no longer the case that such considerations exclude the obligation to provide natural justice”.<sup>38</sup> If a determination is made that land

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<sup>31</sup> Section 7 *Lands Acquisition Act 1989* – Meaning of *authorised person*

“A person is an authorised person for the purposes of a provision of this Act if:

(a) the Minister has, by writing, authorised the person to act under the provision; or

(b) the Minister has, by writing, authorised the holder or occupier of a particular office or position to act under the provision and the person holds or occupies, or is performing the duties of, the office or position.”

<sup>32</sup> Section 6 *Lands Acquisition Act 1989* – Definitions

“public purpose means a purpose in respect of which the Parliament has power to make laws and includes, in relation to land in a Territory, any purpose in relation to the Territory.”

<sup>33</sup> *Re Leppington Pastoral Co Pty Limited v Department of Administrative Services* [1990] FCA 206; 23 FCR 148/20 ALD 607 per Lockhart, Wilcox and Hill JJ [17]

<sup>34</sup> *W H Blakeley & Co Pty Ltd v Commonwealth* (1953) 87 CLR 501

<sup>35</sup> *Jones v The Commonwealth (No.1)* [1963] HCA 43; 109 CLR 475 – re failure to be clear as to the public purpose will render the declaration defective; and *Jones v The Commonwealth (No.2)* [1965] HCA 6; 112 CLR 206 – defect can be remedied by reference to specific legislation

<sup>36</sup> *Sydney Harbour Foreshore Authority v Walker Corporation Pty Ltd* [2005] NSWCA 251 per Basten JA (Beazley JA and Stein AJA agreeing) [39]

<sup>37</sup> *South Australia v Honourable Peter Slipper MP* [2003] FCA 1414

<sup>38</sup> *South Australia v Honourable Peter Slipper MP* [2003] FCA 1414 per Selway J [23]

will be acquired, the procedures in Part VI must be followed. This will include the requirement for payment of compensation on “*just terms*”<sup>39</sup> to affected interested parties.<sup>40</sup>

Access to adjoining land, including temporary occupancy of said land, is permitted for the purpose of undertaking construction and maintenance works to the acquired land.<sup>41</sup> This temporary occupation must cause as little disruption or damage as possible to the adjoining land.<sup>42</sup> It does not however constitute an acquisition for compensation purposes and thus is not a trigger for the payment of compensation to any related party.<sup>43</sup> If the proposed acquisition is to be by the NBN Co Limited, rather than by the government, the *Lands Acquisition Act 1989* access regime would not apply. This is because as NBN Co Limited is a public company and thus specifically excluded from the access regime of the *Land Acquisition Act 1989*.<sup>44</sup>

**b. For telecommunications purposes**

Schedule 3 of the *Telecommunications Act 1997*<sup>45</sup> grants a carrier,<sup>46</sup> being the holder of a ‘carrier licence’,<sup>47</sup> the power “*for the purposes of determining whether any land is suitable for its purposes*” to “*enter on, and inspect, the land; and ... do anything on the land that is necessary or desirable for that purpose*”.<sup>48</sup> Access also may be granted for the purpose of installing or maintaining a facility.<sup>49</sup> The power is subject to the obligations to take

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<sup>39</sup> Section 93 *Lands Acquisition Act 1989*

<sup>40</sup> Section 52 *Lands Acquisition Act 1989*

<sup>41</sup> Sections 11 – 14 *Lands Acquisition Act 1989*

<sup>42</sup> Section 13 *Lands Acquisition Act 1989*

<sup>43</sup> Section 15 *Lands Acquisition Act 1989*;

<sup>44</sup> Section 6 *Lands Acquisition Act 1989* – Definitions –

“‘Commonwealth authority’ means an authority:

(a) that is incorporated by or under a law of the Commonwealth” however

“‘authority’ does not include: ...

(c) an incorporated company”

<sup>45</sup> Section 484 *Telecommunications Act 1997* – “Schedule 3 has effect.”

<sup>46</sup> Section 7 *Telecommunications Act 1997* – being the holder of a licence granted under Section 56. Notification of a granted licence must be published in the Commonwealth *Gazette*. It is noted that ‘carrier licences’ were granted to NBN Co Limited on 18 March 2010 and NBN Tasmania Limited on 27 January 2010 – ACMA, ‘Communications Report 2009-10’, 30 September 2010, 178 [http://acma.gov.au/WEB/STANDARD/pc=PC\\_312295](http://acma.gov.au/WEB/STANDARD/pc=PC_312295) (viewed 09/12/2010)

<sup>47</sup> Section 7 and Section 56 *Telecommunications Act 1997*

<sup>48</sup> Division 2, 5 Schedule 3 *Telecommunications Act 1997* – *Inspection of land*

<sup>49</sup> Division 3, 6 Schedule 3 *Telecommunications Act 1997* – *Installation of facilities*; Division 4, 7 Schedule 3 *Telecommunications Act 1997* – *Maintenance of facilities*; as an incentive for enabling access for installation “\$50.00 credit with a retrial service provider offering services over NBN



necessary steps to minimise inconvenience and damage<sup>50</sup> and to restore the land once access is no longer required.<sup>51</sup> Exercising the access power is subject to compliance with the notice requirement provisions<sup>52</sup> and subject to the payment of compensation for any “*financial loss or damage because of anything down by a carrier*”.<sup>53</sup> Of note is fact that, if a facility is designated as a low impact facility,<sup>54</sup> State planning regimes do not apply.<sup>55</sup>

As NBN Co Limited is the holder of a ‘carrier’s licence’ the provisions of Schedule 3 will apply. Further, as part of the new legislative package, if land is required to be acquired as a consequence of the new telecommunications access regime, to be considered below, then Section 152ELD of the TPA<sup>56</sup> reinforces the requirement that the acquisition must be on just terms. It provides for the commencement of proceedings where there is a dispute as to the amount of compensation payable. It does not specify the acquiring party but provides that it is the “*Commonwealth [that] is liable to pay ... compensation*”.<sup>57</sup>

### ***c. Proposed law for NBN purposes***

An integral part of the NBN implementation will be the roll-out of fibre optic cables and related infrastructure. For greenfield sites, this obligation primarily is to be imposed on the developer.<sup>58</sup> In respect of new developments, the previously proposed *Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010*<sup>59</sup> was to introduce a new regime for all new

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*Tasmanian Ltd’s network*” was to be provided to enable access over adjoining land – NBN Tasmania, ‘Way Leave Consent Form – Sample Only’, <http://www.nbntasmania.com.au/assets/270/NBNT2750%20Way%20Leave%20Form%20and%20Voucher%20Example.pdf> (accessed 06/11/2010)

<sup>50</sup> Section 8, Schedule 3 *Telecommunications Act 1997*

<sup>51</sup> Section 9, Schedule 3 *Telecommunications Act 1997*

<sup>52</sup> Sections 17, 18 and 19 Schedule 3 *Telecommunications Act 1997*

<sup>53</sup> Section 42 Schedule 3 *Telecommunications Act 1997*

<sup>54</sup> Clause 6(3), Schedule 3 *Telecommunications Act 1997*

<sup>55</sup> Clause 37, Schedule 3 *Telecommunications Act 1997*

<sup>56</sup> Item 195 *Telecommunications (Consumer Protection and Service Standards) Act 2010*

<sup>57</sup> Item 195 *Telecommunications (Consumer Protection and Service Standards) Act 2010*– Section 152ELD(1) *Trade Practices Act 1974*

<sup>58</sup> Item 10 of the proposed *Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010* was to insert a new *Part 20A – Deployment of optical Fibre* is inserted into the *Telecommunications Act 1997*

<sup>59</sup> The Bill lapsed on 19<sup>th</sup> July 2010 on the calling of the 2010 federal election. Prior to then it had been referred by the Senate on 18 March 2010 to the Senate Standing Committee on Environment, Communications and the Arts which reported on 12 May 2010. See – The provisions of the

developments.<sup>60</sup> Although the Bill lapsed on the calling of the 2010 federal election, and had not been reintroduced as at 9 December, 2010, it remains relevant as the most recent legislative proposal for implementation of the federal government's greenfield policy. As such it will be examined on the assumption that, similarly to other NBN legislation, the Bill will be reintroduced.

The Bill was to require the construction of fibre optic-ready homes for developments obtaining planning approval after 1 July, 2010.<sup>61</sup> It did this by giving the Minister the power to make instruments specifying areas or types of development for which optical fibre is mandated, as well as enabling the Minister to grant exemptions.<sup>62</sup> It is not clear, however, how a party will

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Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010  
[http://www.aph.gov.au/senate/committee/eca\\_ctte/fibre\\_deployment/info.htm](http://www.aph.gov.au/senate/committee/eca_ctte/fibre_deployment/info.htm) (viewed 20/03/2010)  
 also see The Senate, 'Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010 [Provisions]', Environment, Communications and the Arts Legislation Committee, May 201, 430  
[http://www.aph.gov.au/Senate/committee/eca\\_ctte/fibre\\_deployment/report/report.pdf](http://www.aph.gov.au/Senate/committee/eca_ctte/fibre_deployment/report/report.pdf) 10/07/2010)

<sup>60</sup> 'Telecommunications Legislation Amendment (Fibre Deployment) Bill', Explanatory Memorandum, 1 "Part 20A is intended to apply to all types of new developments, including greenfield (broadacre) estates, urban infill and urban renewal projects."  
[http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4331\\_ems\\_ff0babde-3169-4f7a-b344-3f986bd16ce6/upload\\_pdf/340600.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4331_ems_ff0babde-3169-4f7a-b344-3f986bd16ce6/upload_pdf/340600.pdf;fileType=application%2Fpdf) (viewed 12/07/2010)

<sup>61</sup> Clause 2 *Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010*. This is subject to the passage of the *Telecommunications Legislation (Competition and Consumer Safeguards) Bill 2010*. It is noted that the federal government sought submissions on the proposed policy approach of subordinate legislation and that implementation of the greenfield fibre requirement depends on that subordinate legislation. See – DBCDE, 'Proposed Subordinate Legislation to give effect to fibre in new developments', Position Paper, 16 April 2010 ('Position Paper') 3 – "The Government's long-stated intention is to have the legal framework for the provision of fibre in new developments, including necessary subordinate legislation, in place by 1 July 2010. However, when the fibre-ready and fibre requirements take practical effect will, as explained in this paper, be determined by the content of the subordinate legislation. In particular, the new requirements will affect only developments that have reached a particular point in the planning approval process on the date that the legislation commences. The specification, in the instrument, of that point in the planning process will have a material effect on the practical operation of legislation. The approach taken to this issue in this paper means that there will still be significant time for outstanding concerns about the practical implementation of the new requirements to be accommodated." And also see 8 – "the second issue is when the fibre connection and fibre-ready requirements under the subordinate legislation take practical effect on the ground. The question here is at what stage in the development process a development should be at by 1 July 2010 in order to be caught by these requirements. The key questions here are whether and how the concept of 'planning approval' is used in subordinate legislation." [emphasis omitted]  
[http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0005/127517/Proposed\\_subordinate\\_legislation\\_to\\_give\\_effect\\_to\\_fibre\\_in\\_new\\_developments.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0005/127517/Proposed_subordinate_legislation_to_give_effect_to_fibre_in_new_developments.pdf) (viewed 12/07/2010)

<sup>62</sup> Proposed Section 372A *Telecommunications Act 1997* contains the following simplified outline –

- If a real estate development project is specified in a legislative instrument made by the Minister, a person must not install a line in the project area unless the line is an optical fibre line.
- If a real estate development project is specified in a legislative instrument made by the Minister, a person must not install or construct a fixed-line facility in the project area unless

apply for an exemption.<sup>63</sup> The legislation was to capture new development irrespective of whether the resulting (freehold and leasehold) lots are sold or leased.<sup>64</sup> For existing sites, depending if they constitute a “*real estate development project*”<sup>65</sup> the responsibility was to fall to the NBN Co Limited to achieve. Redevelopment sites are not included in this responsibility. Proposed Part 20A will impose the same obligations for redevelopment of brown field and infill sites as it does for greenfield and will apply equally to unit developments as it does to land subdivisions.<sup>66</sup>

Obligations also were to be imposed on parties other than developers by extending the groups that are deemed to be a section of the telecommunications industry.<sup>67</sup> The groups were to be extended to include the

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*the facility is a fibre-ready facility*

- *This rule is subject to any exemptions specified in a legislative instrument made by the Minister.*

<sup>63</sup> Proposed Section 372B(5) *Telecommunications Act 1997*. Also see – Note 61, Position Paper, 7 – “*The subordinate legislation would contain exemptions for the following circumstances:*

- *To allow the installation of non-fibre lines and facilities on a one-off basis, where required, to support older types of customer premises equipment (e.g. some PABX equipment) providing fibre is also available.*
- *The use of copper for certain ‘special services’ such as metering, security, traffic lights providing fibre is also available.*
- *To enable a temporary building on the site of the new development to have a non-fibre fixed line service that will be removed when building is closed. If the office is in a display home or other premises that is subsequently sold or leased to an end user, the building must have fibre or fibre-ready facilities if other lots within the real estate development project have fibre or fibre-ready facilities installed.”*

<sup>64</sup> Proposed Sections 372D(1)(b)(i) *Telecommunications Act 1997* – which confirms that a ‘real estate development project’ includes one where lots are made available for lease as well as for sale; and proposed Section 372G – which clarifies that sale includes both transfer of freehold and leasehold interests.

<sup>65</sup> Item 5, Section 7 and proposed 372D(1) *Telecommunications Act 1997* “*a project is a real estate development project if –*

- (a) *the project involves the subdivision of one or more areas of land into lots ...; and*
- (b) *the project involves either or both of the following:*
  - (i) *the making available of one or more of those lots for sale or lease, where it would be reasonable to expect that one or more building units would be subsequently constructed on the lots;*
  - (ii) *the construction of one or more building units on any of the lots and the making available of any of those building units for sale or lease; and*
- (c) *the conditions (if any) specified in an instrument under subsection (4) are satisfied.”*

<sup>66</sup> Item 5, Section 7 and Proposed 372D(5) *Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010*

<sup>67</sup> Currently Section 110(2) of the *Telecommunications Act 1997* provides that the groups that are sections of the telecommunications industry are –

- (a) *carriers;*
- (b) *service providers;*
- (c) *carriage service providers;*
- (d) *carriage service providers who supply standard telephone services;*
- (e) *carriage service providers who supply public mobile telecommunications services;*

installers of optical fibre lines and/or the facilities to be used in conjunction with those lines.<sup>68</sup> The federal government expected that changes to State planning schemes would be required but the Bill does not make those changes. The federal government stated in any event the Bill was designed to operate without the changes to State regimes.<sup>69</sup>

The roll-out of the NBN may require that areas of land be acquired by either the Commonwealth, through one of its departments or authorities, and/or by NBN Co Limited directly in order for related infrastructure to be constructed. If land needs to be acquired, it will be necessary to determine what land is suitable for this purpose prior to its acquisition. This will require that land be inspected. Depending on how the infrastructure is constructed, a decision will need to be made as to whether land needs to be acquired for this purpose. An alternative may be for public utility easements to be registered, to enable the laying of cables under, or over land, rather than acquiring that land. Depending on which is more appropriate, this may present ongoing issues for accessing the land and adjacent land. Specific access rights may need to be obtained or prescribed under legislation, for inspection, construction and maintenance purposes. The creation of easements generally is effected under

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(f) content service providers;

(g) persons who perform cabling work (within the meaning of Division 9 of Part 21);

(h) persons who manufacture or import customer equipment or customer cabling;

(i) electronic messaging service providers.

<sup>68</sup> Item 8, Section 110(2)(j) *Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010*

<sup>69</sup> Exposure Draft 'Telecommunications Legislation Amendment (Fibre Deployment) Bill', Explanatory Memorandum, 23 December 2009, 2 "*While not addressed in the Bill, it is envisaged that this legislation will be complemented by changes to state, territory and local planning arrangements, which would further support the roll-out of fibre-to-the-premises, and where necessary, the installation of fibre-ready facilities, such as appropriate ducting.*" [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0011/124121/Exposure\\_draft-Telecommunications\\_Legislation\\_Amendment\\_Fibre\\_Deployment\\_Bill-Explanatory\\_Memorandum.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0011/124121/Exposure_draft-Telecommunications_Legislation_Amendment_Fibre_Deployment_Bill-Explanatory_Memorandum.pdf) (viewed 07/01/2010) This proposition changed little in the final Explanatory Memorandum although noting that State involvement in the rollout is not necessary. Note 60, Explanatory Memorandum, 2 – "*While not addressed in the Bill, it is envisaged, although not strictly necessary, that this legislation will be complemented by changes to state, territory and local planning arrangements, which would further support the roll-out of fibre-to-the-premises, and where necessary, the installation of fibre-ready facilities, which might include appropriate ducting in the case of an underground deployment. However, the Bill can operate even in the absence of complementary state and territory laws.*" Although it is noted that States are already looking to amend their regimes to facilitate rollout. For example see – Colley A, 'NSW govt gears up for NBN build', *The Australian*, May 24, 2010 <http://www.theaustralian.com.au/australian-it/nsw-govt-gears-up-for-nbn-build/story-e6frgakx-1225870571214> (accessed 26/05/2010)

State land legislation.<sup>70</sup> As such, appropriate terms for an NBN easement will need to be considered and included as part of the federal government's proposed subordinate legislation. In any event, end users as land owners/occupiers will be affected by the proposed legislation.

**d. Proposed policy for NBN purposes**

The implementation of the greenfield regime was originally proposed to commence from 1 July 2010 for all developments seeking planning approval. That is, the developer must provide the infrastructure for NBN access to those sites. The government policy announcement of 20 July, 2010, however, holds that *“high speed broadband should be seen as a critical utility service like water, electricity and gas”*.<sup>71</sup> That announcement extended the regime's commencement date to 1 January, 2011 with rollout being facilitated by the NBN Co Limited becoming the wholesale provider of last resort. Most recently, Senator Conroy announced, although NBN Co Limited still will be the provider of last resort, the practical date for this now is 1 April, 2011.<sup>72</sup> The role of NBN Co Limited also has been adjusted, so that it now only:

*“will be responsible for the installation of fibre at the development stage for all premises in NBN Co's fibre footprint in:*

- *all broadacre developments,*
- *all infill developments where it has fibre that is ready for service and capable of connection, and*
- *new approved infill developments of 100 or more premises.”*<sup>73</sup>

The costs of the trenching and ducting only are to be paid by the land owner or the developer. The other costs will be paid by NBN Co who will own the

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<sup>70</sup> Section 89(2)(a)(iii) *Land Title Act 1994* (Qld) and section 369(2)(c) *Land Act 1994* (Qld) – *“a public utility easement...may be registered only for ... [inter alia] ... the supply of ... telecommunications facilities or another public utility service”*

<sup>71</sup> Note 15, Australian Government

<sup>72</sup> Note 27, DBCDE, 2 – *“While NBN Co's responsibilities will commence from 1 January 2011, it will be in relation to developments which receive Stage 5 development approval (relating to civil works) after that date and for which three months' notice has been given (by the developer to NBN Co). That is, the earliest practical date of effect is 1 April 2011.”*

<sup>73</sup> Note 27, DBCDE; Previously this was just to be that NBN Co *“will act as wholesaler provider of last resort in new developments ... within, or adjacent to, NBN Co's long term fibre footprint”* see – Note 15, Australian Government. Also, Telstra will now continue to provide infill developments of less than 100 premises, which it will do generally by way of provision of copper infrastructure. See Note 27, DBCDE, 3

network.<sup>74</sup> Telstra will act as the retail provider of last resort in those areas for standard telephone services. The proposed policy however does not provide for a retail provider of last resort for broadband or internet services.

## **2. Access to facilities and services**

In addition to access to land, for service delivery, access may be required to the facilities or services of other providers. In this context, the current access provisions will be considered firstly in respect to telecommunications and then specifically for the NBN.

### **a. For telecommunications purposes**

The primary legislation regulating access to telecommunications services in Australia is *Schedule 1* of the *Telecommunications Act 1997* ('facilities access regime') and the *Telecommunications (Consumer Protection and Service Standards) Act 1999* ('CP Act'). The facilities access regime operates independently of the TPA and will be considered first. The purpose of the facilities access regime, however, is linked to the TPA. The objects of the facilities access regime, *inter alia*, are:

*"when read together with Parts XIB and XIC of the Trade Practices Act 1974 ... to provide a regulatory framework that promotes:*

- (a) the long-term interests of end-users of carriage services or of services provided by means of carriage services; and*
- (b) the efficiency and international competitiveness of the Australian telecommunications industry."*<sup>75</sup>

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<sup>74</sup> Note 27, DBCDE, 4– this continues to be the case although now if the developer does not provide the trenching etc, there is no obligation on NBN Co Limited to provide the services. For the previous statement see - Note 15, Australian Government – *"Developers and ... property owners will be required to cover the costs of trenching and ducting. NBN Co will cover the other costs of installing fibre infrastructure in the development, including backhaul. During the period that the NBN is being deployed, NBN Co may sub-contract the roll-out and operation of fibre networks in new developments, providing that the networks are built to meet the technical specifications of the NBN and operated on an open access basis. Ownership of these ... transfer to NBN Co and form part of NBN Co's open access wholesale only network ... NBN Co's role will apply regardless of whether the Fibre Deployment Bill ... is passed. The Government will ... continue to seek the passage of this legislation, amended as necessary to deliver in full the arrangements described above, to ensure all stakeholders have certainty as to their obligations to have fibre installed in new developments."* [http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/policy\\_statements](http://www.dbcde.gov.au/broadband/national_broadband_network/policy_statements) (viewed 22/06/2010) Also see – NBN Co Limited, 'New Development Policy – fact Sheet', 9 November 2010 <http://www.nbnco.com.au/wps/wcm/connect/8a1c7d0044f451699941db25726ed1b6/New+Developments+Policy+Fact+Sheet.pdf?MOD=AJPERES> (accessed 09/12/2010)

The facilities access regime requires that:

*Carriers must provide other carriers with access to facilities for the purpose of enabling the other carriers to:*

- (a) provide competitive facilities and competitive carriage services; or*
- (b) establish their own facilities.*<sup>76</sup>

Facility generally refers to the infrastructure and other parts of a telecommunications network.<sup>77</sup> For the purpose of the facilities access regime, the term facility extends to include “*land on which a facility ... is located; or ... a building or structure on land*”.<sup>78</sup> The regime also extends to require that access be provided to:

- (a) telecommunications transmission towers; and*
- (b) the sites of telecommunications transmission towers; and*
- (c) underground facilities that are designed to hold lines*<sup>79</sup>

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<sup>75</sup> Section 3 *Telecommunication Act 1997*; Section 3(1) was amended by the Senate so that the main object of the Act will now include – “(c) the availability of accessible and affordable carriage services that enhance the welfare of Australians.” See – The Senate, ‘Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010 – Schedule of the amendments made by the Senate’, November 2010 (2) [http://parlinfo.aph.gov.au/parlInfo/download/legislation/sched/r4479\\_sched\\_98df095b-80aa-4aed-8787-](http://parlinfo.aph.gov.au/parlInfo/download/legislation/sched/r4479_sched_98df095b-80aa-4aed-8787-9849390e6d07/upload_pdf/Telecommunications%20Legislation%20Amendment%20(Competition%20and%20Consumer%20Safeguards)%20Bill%202010.pdf;fileType=application%2Fpdf)

[9849390e6d07/upload\\_pdf/Telecommunications%20Legislation%20Amendment%20\(Competition%20and%20Consumer%20Safeguards\)%20Bill%202010.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/sched/r4479_sched_98df095b-80aa-4aed-8787-9849390e6d07/upload_pdf/Telecommunications%20Legislation%20Amendment%20(Competition%20and%20Consumer%20Safeguards)%20Bill%202010.pdf;fileType=application%2Fpdf) (viewed 02/12/2010) There is no specific provision in the Act as to how this object will be achieved in practice as industry and media focus has been on the achievement of the forced separation of Telstra. For example see – ‘NBN clears hurdle as Telstra bill passed,’ November 29, 2010 [theage.com.au http://www.theage.com.au/business/nbn-clears-hurdle-as-telstra-bill-passed-20101129-18dgn.html](http://www.theage.com.au/business/nbn-clears-hurdle-as-telstra-bill-passed-20101129-18dgn.html) (viewed 02/12/2010)

<sup>76</sup> Clause 16, Schedule 1 *Telecommunications Act 1997* – simplified outline

<sup>77</sup> Section 7, *Telecommunications Act 1997* –

“‘facility’ means:

- (a) any part of the infrastructure of a telecommunications network; or*
- (b) any line, equipment, apparatus, tower, mast, antenna, tunnel, duct, hole, pit, pole or other structure or thing used, or for use, in or in connection with a telecommunications network.”*

Also see – *Hutchinson 3G Australia Pty Ltd v City of Mitcham* [2006] HCA 12; 80 ALJR 711; 225 ALR 615 per Gleeson CJ, Gummow, Kirby, Hayne and Heydon JJ [88]-[92] – whether a facility is a ‘facility’ for the purposes of the Act depends on whether its primary function is that of being part of a ‘telecommunications network’ or whether this is a secondary function. This is relevant for determining whether, or not, State planning law apply.

<sup>78</sup> Clause 17(5), Schedule 1 *Telecommunications Act 1997*

<sup>79</sup> Clause 30, Schedule 1 *Telecommunications Act 1997* – simplified outline

As well, the facilities access regime promotes any-to-any connectivity by requiring that:

*“[i]f a carriage service provider's telecommunications network is interconnected with a carrier's telecommunications network, the carrier must obtain a designated interconnection service from the carriage service provider for the purpose of ensuring any-to-any connectivity.”*<sup>80</sup>

The facilities access regime is geared specifically to rights or obligations of carriers or carriage service providers. Similarly to the recent proposed changes to Part XIC of the TPA, the facilities access regime in Schedule 1 should be amended in a similar manner as well as being extended to cover *“infrastructure of non-telecommunications utilities”*<sup>81</sup> to facilitate roll-out.

The focus on competitors rather than end users continues regarding service provision. Despite the stated object of Part XIC,<sup>82</sup> in practice the focus is not on the end users. That is, Part XIC is geared to the affect to market participants<sup>83</sup> of the provision of access to declared services.<sup>84</sup> The requirement is that if a service is a declared service,<sup>85</sup> an access seeker<sup>86</sup> is

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<sup>80</sup> Clause 44A, Schedule 1 *Telecommunications Act 1997* – simplified outline

<sup>81</sup> McKinsey & Company/KPMG, *National Broadband Network Implementation Study*, 6 May 2010 (‘McKinsey Report’) 363 – the report notes that enabling access to electricity poles, sewers and gas pipelines would be both cost effective and assist in facilitating rollout. <http://data.dbcde.gov.au/nbn/NBN-Implementation-Study-complete-report.pdf> (accessed 08/05/2010)

<sup>82</sup> Section 152AB *Trade Practices Act 1974* – *“The object of this Part is to promote the long-term interests of end-users of carriage services or of services provided by means of carriage services.”* Whether something is in the long-term interests of end users is determined by regard to – promoting competition, achieving any-to-any connectivity for communications between end-users, economic efficiencies regarding infrastructure provisions, see Section 152AB(2).

<sup>83</sup> Section 152AF (1) *Trade Practices Act 1974* – *“A reference in this Part to access, in relation to a declared service, is a reference to access by a service provider”*

<sup>84</sup> Section 152 AL *Trade Practices Act 1974*. Even the NBN Co Limited is not yet considering specific issues of access for end users, instead pursuing high level consultations with its expected access seekers. See – NBN Co Limited, ‘NBN Co Consultation Paper: Connecting to the National Broadband Network (Fibre Network)’, October 2010, 2 <http://www.nbnco.com.au/wps/wcm/connect/9d43058044799af9a280abc72ea64545/Connecting+to+the+Fibre+Network.pdf?MOD=AJPERES&CACHEID=9d43058044799af9a280abc72ea64545> (viewed 02/12/2010)

<sup>85</sup> Section 152AQ *Trade Practices Act 1974* – for the details of the current (and previous) declarations see – *The Declared Services Register* – ‘Current Declarations’ (there are nine current declarations as at 19/06/2010) <http://www.accc.gov.au/content/index.phtml/itemId/777921> (viewed 14/11/2010) and ‘Declarations no longer in operation’ (there are 31 of these) <http://www.accc.gov.au/content/index.phtml/itemId/777922> (viewed 14/11/2010)

<sup>86</sup> Section 152AG *Trade Practices Act 1974*



required to be granted access<sup>87</sup> to those services on terms that are reasonable.<sup>88</sup> If the operations of Section 152AL(9) - (14) or Section 152ALA (10) - (13) result in an acquisition of property then the acquisition must be on just terms as discussed above.<sup>89</sup> Absent a declaration, as the ACCC noted, there is “*no general right of access to telecommunications services*”.<sup>90</sup> Unless an early revocation occurs<sup>91</sup> a service is declared for five years<sup>92</sup> and may be extended for a further period up to five years.<sup>93</sup>

The CP Act also places emphasis on competition principles. This can be seen in Section 3, which provides that the objects of the facilities access regime are to apply to the CP Act. The objects are fulfilled by means of the establishment of a universal service regime in order “*to ensure that all people in Australia, wherever they reside or carry on business, should have reasonable access, on an equitable basis, to:*

- (a) *standard telephone services; and*
- (b) *payphones; and*
- (c) *prescribed carriage services.*”<sup>94</sup>

A ‘standard telephone service’ includes those for voice telephony<sup>95</sup> and the carriage of data.<sup>96</sup> A provider may apply to the ACMA for exemption from the requirement to enter into the scheme.<sup>97</sup> The USO provider is currently Telstra.<sup>98</sup> It is noted however that the USO does not extend to ongoing

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<sup>87</sup> Section 152AR(3) *Trade Practices Act 1974*

<sup>88</sup> Section 152AH *Trade Practices Act 1974*

<sup>89</sup> Section 152AQC *Trade Practices Act 1974*

<sup>90</sup> ACCC, ‘About declaration’ <http://www.accc.gov.au/content/index.phtml/itemId/328389> (viewed 19/06/2010)

<sup>91</sup> Section 152 AO *Trade Practices Act 1974*

<sup>92</sup> Section 152 ALA(1) and (2) *Trade Practices Act 1974*

<sup>93</sup> Section 152 ALA(4) *Trade Practices Act 1974*

<sup>94</sup> Section 4 – this is referred to as the universal service obligation. Section 9 provides that the USO includes the right to be supplied with carriage services and standard telephone services on request.

<sup>95</sup> Section 6(1)(a) *Telecommunications (Consumer Protection and Service Standards) Act 1999*

<sup>96</sup> Section 6(1)(c) and (3)(a) *Telecommunications (Consumer Protection and Service Standards) Act 1999*

<sup>97</sup> Section 129(1) *Telecommunications (Consumer Protection and Service Standards) Act 1999*

<sup>98</sup> Section 11A, and Sections 12A, 12C and 12D *Telecommunications (Consumer Protection and Service Standards) Act 1999* and Section 3 *Telecommunication Act 1997*

provision of all services to a defaulting customer<sup>99</sup> nor does it extend to broadband services.

Irrespective of the issues arising from the development of the Australian telecommunications industry to date, a key driver of Australian broadband policy for the future should be the need to ensure that high-speed broadband services are available to all Australians irrespective of where they are located. Currently the USO and its associated funding, does not extend to all other services.<sup>100</sup> In particular, it currently does not extend to broadband services.<sup>101</sup> Although the proposed transition to the NBN will extend the services available to mobile and VoIP services,<sup>102</sup> there is no proposal to extend the USO so as to include internet and broadband services in the short term.<sup>103</sup>

Even though Section 9D of the *Telecommunication (Consumer Protection and Service Standards) Act 1999* enables ‘carriage services’ to be prescribed by regulation (i.e. thus making the USO applicable to them) none have been prescribed.<sup>104</sup> Perhaps now is the time for broadband and internet services to be prescribed as part of the means of facilitating the adoption, and thus roll-

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<sup>99</sup> *Atkinson v Telstra and Anor* [2005] NSWSC 655 per White J [15] “I see no basis for saying that Telstra is in breach of its universal service obligation in restricting the plaintiff to those services, following his failure fully to pay his accounts. It is not required to provide him with a full service, when he has chosen not to pay his bills, because he chooses to advance a misconceived argument about the GST legislation.”

<sup>100</sup> Darling P, ‘Towards a Broadband Policy’ (2007) 57 (2/3) *Telecommunications Journal of Australia*, 30.1, 30.5

<sup>101</sup> Explanatory Memorandum, ‘*Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009*’ 66

<sup>102</sup> Part 4, Schedule 1, *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – Universal Service regime. Item 216 proposes to amend Section 5(2) *Telecommunications (Consumer Protection and Service Standards) Act 1999* to include the definition “VOIP service means a ... service that enables a voice call to originate on customer equipment by means of the [IP]”

<sup>103</sup> Explanatory Memorandum, ‘*Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010*, 79 – preferred option for the USO is Option B – Retain the current scope of the arrangement but tighten regulation to ensure exiting safeguards are effective in the transition to the NBN. [http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4479\\_ems\\_414563d1-3fab-47c3-9885-735d52dd5c47/upload\\_pdf/348340.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4479_ems_414563d1-3fab-47c3-9885-735d52dd5c47/upload_pdf/348340.pdf;fileType%3Dapplication%2Fpdf) (viewed 13/11/2010)

<sup>104</sup> ACMA, ‘*Communications Report 2008-09*’, 10 November 2009, 120 [http://acma.gov.au/webwr/\\_assets/main/lib311252/08-09\\_comms\\_report.pdf](http://acma.gov.au/webwr/_assets/main/lib311252/08-09_comms_report.pdf) (viewed 09/12/2010); Note 46, ACMA, 130

out, of the NBN. The Australian Broadband Guarantee ('ABG')<sup>105</sup> assists in this regard however involvement by providers is voluntary not mandatory.<sup>106</sup>

Consumers concerned about their telecommunications service or in dispute with their provider about that service, have recourse to the TIO<sup>107</sup> to facilitate the resolution of their dispute.<sup>108</sup> However, in the words of the TIO itself, it is but an "*office of last resort*" and consumers must have tried to resolve their dispute with the ISP or telecommunications company. The power of the TIO includes the ability to investigate a failure by a carrier to provide the required notice of exercise of statutory rights.<sup>109</sup> It has no jurisdiction in relation to USO policy matters or in respect of a matter under consideration by the Australian Communications Authority, ACCC or any court or tribunal.<sup>110</sup> The TIO also has no power to investigate the content delivered.<sup>111</sup>

From a user perspective, access to facilities and services is also addressed and protected by the *Disability Discrimination Act 1992*. This is federal legislation governing disability access rights, the objects of which *inter alia* are "*to assist persons with disabilities to receive services necessary to enable them to work towards full participation as members of the community*".<sup>112</sup> Discrimination in the provision of services is prohibited by Section 24<sup>113</sup> for

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<sup>105</sup> Note 8, Australian Government

<sup>106</sup> Note 8, Australian Government, 24 – and subject to provision of performance bonds by providers

<sup>107</sup> Section 128(1) *Telecommunications (Consumer Protections and Service Standards) Act 1999* – "*Each carrier and each eligible carriage service provider must, in association with other carriers and other eligible carriage service providers, enter into a scheme providing for a Telecommunications Industry Ombudsman.*" Section 128(3) confirms that the scheme is that as operated by the Telecommunications Industry Ombudsman Limited (ABN 46 057 634 787)

<sup>108</sup> Section 128(4) *Telecommunications (Consumer Protections and Service Standards) Act 1999* and Clause 3.1 *Telecommunication Industry Ombudsman Constitution* (3 May 2010) ('TIO Constitution') <http://www.tio.com.au/LIBRARY/documents/TIO%20Constitution.pdf> (viewed 23/06/2010)

<sup>109</sup> Clause 4.2 TIO Constitution –

*"Also for guidance, the functions of the TIO in relation to complaints from owners or occupiers of land include, but are not limited to, investigating and facilitating the resolution of complaints as to the following:*

- *failure by a carrier to give notice of its intention to exercise its statutory rights;*
- *failure to take all reasonable steps to cause as little detriment, inconvenience and damage as reasonably practicable, in accordance with any applicable statutory or contractual requirement; and*
- *inadequate compensation where compensation is required by any applicable statute or contract"*

<sup>110</sup> Clause 4.3 TIO Constitution

<sup>111</sup> Section 128(6) *Telecommunications (Consumer Protections and Service Standards) Act 1999*

<sup>112</sup> Section 3 *Disability Services Act 1986* (Cth)

<sup>113</sup> Section 383(1) *Telecommunications Act 1997* – "*In determining whether a person has infringed section 24 of the Disability Discrimination Act 1992 in relation to the supply or provision of customer*

telecommunications regulated by the *Telecommunications Disability Standard (Requirements for Customer Equipment for use with the Standard Telephone Service – Features for special needs of persons with disabilities – AS/ACIF S040) 2002*.<sup>114</sup> Communications Alliance Ltd, the body responsible for developing codes for the telecommunications industry, has also developed the “*industry guideline on Access to Telecommunications for People with Disabilities (ACIF G586:2006)*”.<sup>115</sup>

**b. Recently introduced law for NBN purposes**

The recently reintroduced and enacted *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* (‘CCS’) introduces a new access regime for services. The CCS was enacted on 29 November, 2010 after it was reintroduced to the House on 20 October, 2010.<sup>116</sup> Its reintroduction was as a consequence of the 2009 version, which had become stalled in the Senate, lapsing on the calling of the 2010 federal election.<sup>117</sup> The purpose of the CCS *inter alia* is to “*streamlin[e] the access and anti-competitive conduct regimes*”<sup>118</sup> with a “*key objective ... to promote an open, competitive telecommunications market to provide Australian consumers with access to innovative and affordable services*”.<sup>119</sup> Ordinary

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*equipment, regard must be had to whether the customer equipment complies with a standard in force under section 380.”*

<sup>114</sup> Made under Section 380 *Telecommunications Act 1997*

<sup>115</sup> [http://www.acma.gov.au/WEB/STANDARD/pc=PC\\_2175](http://www.acma.gov.au/WEB/STANDARD/pc=PC_2175) (accessed 20/03/2010)

<sup>116</sup> *Telecommunications Legislation Amendment (Competition and Consumer Safeguards, Bill 2010* – Bill Home Page, current as at 29 November 2010 – [http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset\\_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio\\_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=3;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=3;resCount=Default) (viewed 05/12/2010)

<sup>117</sup> Explanatory Memorandum, ‘*Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010*’, 1 – “*The Bill reintroduces measures which were in the Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009 (the previous Bill). The previous Bill was introduced in the Parliament on 15 September 2009, but subsequently lapsed at the end of that Parliament. Some adjustments have been made to the measures reintroduced in this Bill.*” [http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4479\\_ems\\_414563d1-3fab-47c3-9885-735d52dd5c47/upload\\_pdf/348340.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4479_ems_414563d1-3fab-47c3-9885-735d52dd5c47/upload_pdf/348340.pdf;fileType%3Dapplication%2Fpdf) (viewed 13/11/2010)

<sup>118</sup> Explanatory Memorandum, ‘*Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010*’, 1 [http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4479\\_ems\\_414563d1-3fab-47c3-9885-735d52dd5c47/upload\\_pdf/348340.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4479_ems_414563d1-3fab-47c3-9885-735d52dd5c47/upload_pdf/348340.pdf;fileType%3Dapplication%2Fpdf) (viewed 13/11/2010) Item 74 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* introduces a new Section 69AA which enables the ACCC to make remedial directions regarding access if a carrier is in contravention of a condition of their licence regarding access.

<sup>119</sup> Explanatory Memorandum, ‘*Telecommunications Legislation Amendment (Competition and*

access undertakings no longer exist<sup>120</sup> and only special access undertakings will be part of the telecommunications access regimes.<sup>121</sup> Amended section 152AY<sup>122</sup> provides the hierarchy (subject to the requirements of Sections 152BCC,<sup>123</sup> 152CBIA,<sup>124</sup> 152CBIB<sup>125</sup> and 152 CBIC<sup>126</sup>) of dealing with the standard access obligations.

The hierarchy is that:

1. If there is an access agreement<sup>127</sup> that applies, the carrier<sup>128</sup> must

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*Consumer Safeguards) Bill 2010*, 3  
[http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4479\\_ems\\_414563d1-3fab-47c3-9885-735d52dd5c47/upload\\_pdf/348340.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4479_ems_414563d1-3fab-47c3-9885-735d52dd5c47/upload_pdf/348340.pdf;fileType%3Dapplication%2Fpdf) (viewed 13/11/2010)

<sup>120</sup> Item 161 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – repeals Division 5 Subdivision A of Part XIC – *Ordinary access undertakings*. Standard Access Obligations are provided for in Section 152AR, *Trade Practices Act 1974*. Also see ACCC *Discussion paper on points of interconnect to the National Broadband Network*, October 2010, 9 <http://www.accc.gov.au/content/item.phtml?itemId=952788&nodeId=ba62b7d9c49edbd240976a8d8753fb01&fn=ACCC%20discussion%20paper%20on%20NBN%20POIs.pdf> (viewed 02/12/2010)

<sup>121</sup> Item 114 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – amending Section 152AA. The new simplified outline provides that the ‘telecommunications access regime’ is –

- “• *The Commission may declare carriage services and related services to be declared services.*
- *Carriers and carriage service providers who provide declared services are required to comply with standard access obligations in relation to those services.*
- *The standard access obligations facilitate the provision of access to declared services by service providers in order that service providers can provide carriage services and/or content services.*
- *The terms and conditions on which carriers and carriage service providers are required to comply with the standard access obligations are subject to agreement.*
- *If agreement cannot be reached, no access undertaking is in operation, but the Commission has made binding rules of conduct, the terms and conditions are as specified in the binding rules of conduct.*
- *If agreement cannot be reached, no access undertaking is in operation, and no binding rules of conduct have been made, the terms and conditions are as specified in an access determination made by the Commission.*
- *A carrier, carriage service provider or related body must not prevent or hinder the fulfilment of a standard access obligation”*

<sup>122</sup> Item 156 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010*

<sup>123</sup> Item 160 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* “152BCC If an access determination is applicable to ... a carrier or carriage service provider ... an access seeker the access determination has no effect to the extent to which it is inconsistent with an access agreement that is applicable to those parties.”

<sup>124</sup> Item 174 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* “152CBIA – An access determination has no effect to the extent to which it is inconsistent with a special access undertaking that is in operation.”

<sup>125</sup> Item 174 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* “152CBIB – Binding rules of conduct have no effect to the extent to which they are inconsistent with a special access undertaking that is in operation.”

<sup>126</sup> Item 174 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* “152CBIC – A special access undertaking has no effect to the extent to which it is inconsistent with an access agreement.”

<sup>127</sup> Item 115 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* Section 152AC – “access agreement has the meaning given by section 152BE”

comply with its terms;<sup>129</sup>

2. If there is no access agreement but a special access undertaking<sup>130</sup> has been given, the carrier must comply with its terms;<sup>131</sup>
3. If there is no special access undertaking but there exists binding rules of conduct,<sup>132</sup> the carrier must comply with those rules;<sup>133</sup> or
4. If there is no binding rule of conduct but there is an access determination,<sup>134</sup> the carrier must comply with its terms.<sup>135</sup>

The CCS removes the ACCC's contentious arbitration role,<sup>136</sup> which will continue only for existing disputes<sup>137</sup> and only in specific circumstances.<sup>138</sup> The CCS replaces that role with an upfront power to set standardised terms and conditions of access in Division 4.<sup>139</sup> The terms and conditions will apply to all carriers or carriage service providers and are available for use by all 'access seekers'.<sup>140</sup> It is proposed that the provisions regarding declared services will apply to eligible services provided by an NBN corporation.<sup>141</sup>

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<sup>128</sup> Section 152AC *Trade Practices Act 1974* – “carrier has the same meaning as in the *Telecommunications Act 1997*” – Section 7 of the *Telecommunications Act 1997*– “carrier means the holder of a carrier licence” and “‘carrier licence’ means a licence granted under section 56”

<sup>129</sup> Item 156 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – Section 152AY(2)(a)

<sup>130</sup>Section 152AC *Trade Practices Act 1974* – “special access undertaking means an undertaking under Subdivision B of Division 5”

<sup>131</sup> Item 156 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – Section 152AY(2)(b)

<sup>132</sup> Item 118 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – Section 152AC – “binding rules of conduct means rules made under subsection 152BD(1)”

<sup>133</sup> Item 156 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – Section 152AY(2)(c)

<sup>134</sup> Item 116 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – Section 152AC – “access determination means a determination under section 152BC”

<sup>135</sup> Item 156 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* – Section 152AY(2)(d)

<sup>136</sup> Item 185 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010*

<sup>137</sup> For current access disputes – see ‘Access Disputes’, ACCC <http://www.accc.gov.au/content/index.phtml/itemId/635059> (viewed 05/12/2010)

<sup>138</sup> Item 160 and Item 207 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010*

<sup>139</sup> Item 160 *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010*

<sup>140</sup> Section 152AC *Trade Practices Act 1974* – “access seeker has the meaning given by section 152AG” and Section 152AG(2) – “A service provider is an access seeker in relation to a declared service if the provider makes, or proposes to make, a request in relation to that service under section 152AR”; and 152AG(3) if the service provider –

On 24 February, 2010, the federal government issued exposure drafts for the proposed *National Broadband Network Companies Bill 2010* ('NBN Co Bill') and the *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010* ('NBN Access Bill') and on 25 November 2010 subsequently introduced the Bills to the House.<sup>142</sup> The objects of the NBN Co Bill includes "to ensure that an NBN corporation provides open access to eligible services on a non-discriminatory basis".<sup>143</sup> Open access, or openness, is not defined although the NBN Co Bill enables NBN Co Limited to be made subject to the requirements of (the new) Section 152CJB<sup>144</sup> of the TPA.<sup>145</sup> Section 152CJB(2) imposes the obligation on an NBN company to formulate and publish on its website a "standard form

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"(a) ... wants access to the service; or  
 (b) ... wants to change some aspect of the provider's existing access to the service; or  
 (c) the supplier of the service wants to change some aspect of the ... existing access to the service."

<sup>141</sup> See Item 33, Schedule 1, *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010* – Proposed Section 152AL(8D) –

"(8D) If:

- (a) an eligible service is supplied, or is capable of being supplied, by an NBN corporation (whether to itself or to other persons); and
- (b) the NBN corporation is a carrier or a carriage service provider; and
- (c) the NBN corporation has formulated a standard form of access agreement that relates to access to the service; and
- (d) the standard form of access agreement is available on the NBN corporation's website;
- (e) the service, to the extent to which it is supplied, or is capable of being supplied, by the NBN corporation (whether to itself or to other persons) is a **declared service**; and
- (f) the declared service **relates to** the NBN corporation for the purposes of subsections 152AXB(2) and 152AXC(7)."

Sub-subparagraph (f) added subsequent to the Exposure draft.

<sup>142</sup> Tanner L and S Conroy, 'Draft Legislation Released for NBN Co Operations', Joint Media Release, 24 February, 2010 [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/011](http://www.minister.dbcde.gov.au/media/media_releases/2010/011) (viewed 10/03/2010) See – *National Broadband Network Companies Bill 2010*, home page [http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset\\_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio\\_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=0;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=0;resCount=Default) (viewed 01/12/2010) and *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010*, home page [http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset\\_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio\\_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=4;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=4;resCount=Default) (viewed 01/12/2010)

<sup>143</sup> Section 3(2)(h) *National Broadband Network Companies Bill 2010*

<sup>144</sup> As introduced by Item 79, Schedule 1, *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010* – Section 152CJB Mandatory NBN services

<sup>145</sup> Also see generally Schedule 1, *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010* – Section 62D "A carrier licence held by an NBN corporation is subject to the condition set out in section 152CJC"

*access agreement that relates to the access to*” an eligible service<sup>146</sup> within 90 days after a licence condition is effective, or provide the ACCC with a ‘special access undertaking’.<sup>147</sup> The NBN Access Bill’s amendments, are contingent upon the passage of the NBN Co Bill and the CCS Bill.<sup>148</sup> The most relevant amendments for the thesis are those that impose a specific access regime for an NBN company, which is a variation of the telecommunications access regime discussed above. The NBN Access Bill further amends the current references to declared services to clarify when a declared service applies to an NBN company.<sup>149</sup>

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<sup>146</sup> Section 152AL *Trade Practices Act 1974*; Explanatory Memorandum, ‘National Broadband Network Companies Bill 2010 and Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010, November 2010, 38 – the government rationale for imposing Part XIC TPA obligations on the NBN companies is that it –

- *avoids the confusion arising from different access regimes for carriage services*
- *and access to facilities;*
- *delivers equivalence and transparency across all NBN services, while preserving*
- *the ability for customers to negotiate away from standard terms; and*
- *best reflects the unique structure of the NBN company as a wholesale-only provider with a significant national access network”.*

[http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495\\_ems\\_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload\\_pdf/349799.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495_ems_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload_pdf/349799.pdf;fileType%3Dapplication%2Fpdf) (viewed 05/12/2010)

<sup>147</sup> Section 152AC *Trade Practices Act 1974* – “*means an undertaking under Subdivision B of Division 5.*” It is noted that NBN Co Limited does not propose lodging any special access undertaking to the ACCC for approval until all relevant legislation has been enacted. See – NBN Company Limited, ‘NBN Co. Business Case Summary’, 24 November 2010, 16 – “*NBN Co’s announced intention is to utilise a special access undertaking approved by the ACCC to determine pricing for NBN. The special access undertaking cannot be finalised and lodged with the ACCC until key policy matters such as the number and location of POIs and pricing of products and services are finalised. NBN Co considers that it would be preferable if it did not lodge its special access undertaking until the CCS Bill and NBN Companies and Access Arrangements Bills are passed. These Bills contain amendments which affect the way NBN Co would operate and the powers of the ACCC in relation to the special access undertaking. NBN Co is planning lodgement of the special access undertaking as soon as feasible after the Bills are passed.*” <http://www.nbnco.com.au/wps/wcm/connect/5b05280044cfe6e9803289c72ea64545/NBN+Co+Business+Case+Summary.PDF?MOD=AJPERES&CACHEID=5b05280044cfe6e9803289c72ea64545> (accessed 02/12/2010)

<sup>148</sup> Section 2 *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010* – the Schedule 1, Part 1 of the NBN Access Bill will commence immediately after the commencement of the NBN Co Bill

<sup>149</sup> Item 30, Schedule 1, *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010* – The simplified outline in Section 152AA is proposed to be –

“• *A carriage service, or a related service, supplied, or capable of being supplied, by a carrier (other than an NBN corporation) or a carriage service provider (other than an NBN corporation) is a declared service if:*

- (a) *the Commission has declared the service to be a declared service; or*
- (b) *the service is supplied by the carrier or carriage service provider, and a special access undertaking given by the carrier or carriage service provider is in operation in relation to the service.*

• *A carriage service, or a related service, supplied, or capable of being supplied, by an NBN corporation is a declared service if:*



Standard access obligations are to be known as ‘category A standard access obligations’.<sup>150</sup> ‘Category B’ is NBN company-specific obligations.<sup>151</sup> The obligation to provide wholesale-only services, despite statements by the federal government,<sup>152</sup> is no longer absolute. The NBN Co Bill provides that for most purposes an NBN company must only supply an eligible service to a carrier or service provider,<sup>153</sup> and that an NBN company “*must not supply a content service*”.<sup>154</sup> However, these restrictions must be read subject to the exemptions provisions. These exemptions mean that Section 9’s requirement regarding non-provision of eligible services does not extend to various stated transport authorities<sup>155</sup> or electricity, gas, water, sewerage, storm water service bodies, or road authorities thus enabling smart service provision in the future.<sup>156</sup> This is a tightening of the previous draft exemption provisions which proposed granting broad exemption powers to the Minister.<sup>157</sup>

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(a) the Commission has declared the service to be a declared service; or  
 (b) the NBN corporation has formulated a standard form of access agreement that relates to access to the service; or  
 (c) the service is supplied by the NBN corporation, and a special access undertaking given by the NBN corporation is in operation”

<sup>150</sup> Item 48, Schedule 1, *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010* – amending Section 152 AR(1)

<sup>151</sup> Item 50, Schedule 1, *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010* – inserting a new section 152AXB *Category B standard access obligations*

<sup>152</sup> Note 142, Tanner and Conroy, the Bills place “*a clear obligation on NBN Co, NBN Tasmania and any wholly-owned subsidiary corporations NBN Co might establish, to operate as a wholesale-only company. It also firmly establishes the Government’s commitment to sell its stake in the company five years after the NBN is built and operational, subject to market conditions and security considerations.*” Explanatory Memorandum, ‘National Broadband Network Companies Bill 2010 and Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010, November 2010, 1 – “*Together, the bills ensure that NBN Co will remain true to its wholesale-only mandate and deliver open and equivalent access to retail providers, thereby providing a platform for retail-level competition to flourish.*” [http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495\\_ems\\_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload\\_pdf/349799.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495_ems_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload_pdf/349799.pdf;fileType%3Dapplication%2Fpdf) (viewed 05/12/2010)

<sup>153</sup> Section 9 *National Broadband Network Companies Bill 2010*

<sup>154</sup> Section 17 *National Broadband Network Companies Bill 2010*

<sup>155</sup> Section 10 *National Broadband Network Companies Bill 2010*

<sup>156</sup> Sections 11 to 16 *National Broadband Network Companies Bill 2010*; Explanatory Memorandum, ‘National Broadband Network Companies Bill 2010 and Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010, November 2010, 3 [http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495\\_ems\\_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload\\_pdf/349799.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495_ems_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload_pdf/349799.pdf;fileType%3Dapplication%2Fpdf) (viewed 05/12/2010)

<sup>157</sup> Sections 10(2) Exposure draft *National Broadband Network Companies Bill 2010* – “*The Communications Minister may, by legislative instrument, exempt a specified service*”

The exposure draft of the Bill proposed that the Minister may permit an NBN company to provide retail services after consultation with the ACCC.<sup>158</sup> The government expected that the power would only be used in limited circumstances (e.g. a business is purchased from an existing provider who also has a retail arm).<sup>159</sup> The exposure draft did not state a time period within which an NBN company would need to divest itself of any so acquired retail interest. This is now addressed in the NBN Co Bill which deems the acquired company to be an NBN corporation for a maximum period of 12 months from the date an NBN Co exercises control over the retail company.<sup>160</sup>

**c. Proposed policy for NBN purposes**

A policy statement of 20 June, 2010, flagged the federal government's agreement in principle to implement changes to the "*institutional, regulatory and funding framework for the delivery of the USO ... [d]etails of which will be developed in consultation with key stakeholders, including industry and consumer groups*".<sup>161</sup>

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<sup>158</sup> Sections 9(4) and 10(4) Exposure draft *National Broadband Network Companies Bill 2010*

<sup>159</sup> Explanatory Memorandum, Exposure draft *National Broadband Network Companies Bill 2010*, 4 – "*The Government's clearly stated policy is that NBN Co is a wholesale-only company. However, the Government considers that NBN Co should not be prevented from purchasing telecommunications companies, even if they have retail businesses, if such an acquisition could support the early development and rollout plan of the NBN. Clearly, NBN Co would still be subject to the wholesale-only obligation in section 9 and would need to set in place clear transitional arrangements for divesting any retail operations involved in such acquisitions. NBN Co will need to notify the Commonwealth of any proposed acquisitions, including acquisition of a significant shareholding, as part of its reporting obligations under the CAC Act and under Part 4 of the NBN Companies Bill.*" [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0003/125895/Explanatory\\_notes-NBN\\_Companies\\_Bill\\_2010\\_and\\_Telecommunications\\_Legislation\\_Amendment\\_Bill\\_2010.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0003/125895/Explanatory_notes-NBN_Companies_Bill_2010_and_Telecommunications_Legislation_Amendment_Bill_2010.pdf) (accessed 13/03/2010)

<sup>160</sup> Schedule 1, Clause 1(3), *National Broadband Network Companies Bill 2010*; "*during which time it is expected that NBN Co and the other company would arrange for that company to make arrangements to ensure that that company complies with the provisions of the Companies Bill. The limit of 12 months ensures that this exception is properly constrained.*" Explanatory Memorandum, 'National Broadband Network Companies Bill 2010 and Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010, November 2010, 116 [http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495\\_ems\\_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload\\_pdf/349799.pdf;fileType%3DApplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495_ems_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload_pdf/349799.pdf;fileType%3DApplication%2Fpdf) (viewed 05/12/2010)

<sup>161</sup> Note 15, Australian Government; more recently see – Australian Government, 'Implementation of Universal Service Policy for the transition to the National Broadband Network environment – Discussion Paper', 22 October 2010, 3 – "*the Australian Government announced that it would progress public policy reforms to support the transition to the National Broadband Network. The reforms include establishing a new entity, USO Co, which will commence operations in July 2012 and will, over time, become the entity with the regulated responsibility for delivering the Government's public policy objectives in the telecommunications sector, including:*

- *ensuring all Australians have reasonable access to a standard telephone service (the*

The USO policy flags three main changes.<sup>162</sup> First, the federal government proposes the establishment of the USO Co. Second, it proposes the provision of increased funding of the USO obligations for the first two years of USO Co operations to facilitate the USO provision over both the existing networks (by Telstra under ongoing USO obligations until these are disconnected) and the NBN. Third, it proposes the USO Co provide itself or under subcontract voice telephony and payphone services both in and out of the NBN coverage area. It also proposed that Telstra have ongoing contractual obligations to USO Co. These include maintaining its current networks until 30 June, 2022. It also will include Telstra continuing to be the USO provider for two years after USO commences operations in those areas after which responsibility transfers to USO Co. What ultimately will be Telstra's responsibilities will depend on the agreement of Telstra's shareholders.<sup>163</sup> Interestingly, the new USO obligations are not to extend to the provision of broadband and/or internet services. The focus of USO Co will remain on the provision of voice and emergency services only.

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*Universal Service Obligation for voice telephony services)*

- *ensuring that payphones are reasonably accessible to all Australians (the Universal Service Obligation for payphones)*
- *emergency call handling (Triple Zero '000' and '112') and the National Relay Service*
- *migration of voice-only customers to a fibre-based service as Telstra's copper exchanges are decommissioned, and*
- *the development of technological solutions for continuity of public interest services (such as public alarm systems and traffic lights).*

*The Australian Government has also agreed to provide funding for USO Co of \$50 million per annum for the financial years 2012–13 and 2013–14, and then \$100 million per annum thereafter. The residual costs incurred by USO Co will be met through an industry levy scheme which will replace the current Universal Service Obligation and National Relay Service levy schemes. Consistent with the announcement of 20 June 2010 Telstra, NBN Co and the Australian Government are now in the process of negotiating detailed Definitive Agreements. When these negotiations are concluded the Definitive Agreements will be put to Telstra's shareholders and the Government, for final approval. The 'USO agreement' with Telstra will form part of these Definitive Agreements and it is the Government's expectation that the negotiation of this agreement will be concluded in a timely manner."*

[references omitted]  
[http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0018/130716/Implementation\\_of\\_Universal\\_Service\\_Policy\\_for\\_the\\_transition\\_to\\_the\\_National\\_Broadband\\_Network\\_environment\\_discussion\\_paper.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0018/130716/Implementation_of_Universal_Service_Policy_for_the_transition_to_the_National_Broadband_Network_environment_discussion_paper.pdf)  
 (accessed 30/10/2010)

<sup>162</sup> Note 15, Australian Government

<sup>163</sup> Telstra, 'Telstra signs Financial Heads of Agreement on NBN', Announcement, 20 June 2010 <http://www.telstra.com.au/abouttelstra/media-centre/announcements/telstra-signs-financial-heads-of-agreement-on-nbn-1.xml> (viewed 23/06/2010)

### 3. Access to content and information

Access to content and information is not addressed from a specific NBN perspective, nor is it proposed to be. Therefore the regimes to be identified for the thesis will be existing regimes only. The broader category of ‘content’ will be identified first before specific consideration is given to ‘information’. As with the other regimes, an overview only is provided to identify issues that the NBN policy makers must consider.

#### a. Content

The *National Classifications Code* (‘NC Code’) provides that classification of material is premised on the basis *inter alia* that “adults should be able to read, hear and see what they want”.<sup>164</sup> A corollary of the need to ensure openness is that in some cases, because of the nature of the content, there is a social rationale (separate from any potential security issue) for restricting or preventing access to that content by either a specific group, or the public. In others there is a political imperative based upon perceived best interest for society as a whole.<sup>165</sup> It is in this environment that various State and federal legislative instruments<sup>166</sup> seek to regulate content. The focus for the purpose of the thesis will be to identify how the federal government seeks to regulate content by means of classification of content<sup>167</sup> and then applications of prohibitions on publication or access.<sup>168</sup>

The objects of the *Broadcasting Services Act 1992* are to promote the availability of services and content, regulate that content, provide a mechanism for addressing complaints, and restrict access to certain

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<sup>164</sup> Section 1 *National Classification Code*

<sup>165</sup> Coroneos P, ‘Internet Content Policy and Regulation in Australia’, in B Fitzgerald, F Gao, D O’Brien and S Shi (Eds) *Copyright Law, Digital Content and the Internet in the Asia-Pacific* (Sydney University Press, Sydney, 2008) 49, 50 – ‘Politicians sometimes announce policy positions in response to what they anticipate are popular concerns. The results are the same – new laws, sometimes of questionable utility, but supported for their symbolic and political value. Regrettably, opposition to these policies which are advanced on ‘motherhood’ grounds is portrayed as a dereliction to duty to children. This tactic has been used to stifle debate and ensure greater cross party support than the problem actually justifies.’

<sup>166</sup> This is because State legislation is permitted. See – Section 100 *Classification (Publications, Films and Computer Games) Act 1995* – Concurrent operation of State and Territory laws. Queensland for example has – the *Classification of Computer Games and Images Act 1995*; the *Classification of Films Act 1991* and the *Classification of Publications Act 1991*

<sup>167</sup> Section 7 *Classification (Publications, Films and Computer Games) Act 1995*

<sup>168</sup> Sections 101 and 102 *Classification (Publications, Films and Computer Games) Act 1995*

content.<sup>169</sup> Schedules 5 and 7 of the *Broadcasting Services Act 1992* specifically regulate or prohibit content that is either illegal or offensive. Prohibited content<sup>170</sup> is that which is classified at RC, X 18+; or R 18+ and not part of a ‘restricted access system’.<sup>171</sup> In order to determine whether material ( i.e. publications,<sup>172</sup> films<sup>173</sup> or computer games) is prohibited it is classified in accordance with the NC Code. RC rated material is material that has been ‘Refused Classification’<sup>174</sup> and includes materials that “*offend against the standards of morality, decency and propriety generally accepted by reasonable adults*” or deal with a person who appears to be under 18 years of age in an offensive manner; or “*promote, incite or instruct in matters of crime or violence*”.<sup>175</sup> RC material also includes material advocating terrorist acts,<sup>176</sup> as defined in the *Criminal Code*.<sup>177</sup> X 18+ rated material is material which is classed as Restricted<sup>178</sup> and includes “*actual sexual activity*” or violence and is “*unsuitable for a minor to see*”.<sup>179</sup> R 18+ material also is material which is classed as Restricted<sup>180</sup> and includes “*actual sexual activity*” or violence and is “*unsuitable for a minor to see*”.<sup>181</sup>

The current regulatory system works on the basis of a complaints-based system<sup>182</sup> to regulate content delivered via mobile phones or the internet or in chat rooms and other like services. The complaints-based system is managed

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<sup>169</sup> Section 3, *Broadcasting Services Act 1992*

<sup>170</sup> Clause 20, Schedule 7 *Broadcasting Services Act 1992*

<sup>171</sup> Clause 14, Schedule 7 *Broadcasting Services Act 1992*

<sup>172</sup> Section 7 *Classification (Publications, Films and Computer Games) Act 1995*– “‘publication’ means any written or pictorial matter, but does not include:

(a) a film; or

(b) a computer game; or

(c) an advertisement for a publication, a film or a computer game.”

<sup>173</sup> Section 7 *Classification (Publications, Films and Computer Games) Act 1995*– “‘film’ includes a cinematograph film, a slide, video tape and video disc and any other form of recording from which a visual image, including a computer generated image, can be produced (together with its sound track), but does not include:

(a) a computer game; or

(b) an advertisement for a publication, a film or a computer game.”

<sup>174</sup> Section 7 *Classification (Publications, Films and Computer Games) Act 1995*

<sup>175</sup> Item 1, Section 2 – publications; Item 1, Section 3 – films; and Item 1, Section 4 – computer games *National Classification Code*

<sup>176</sup> Section 9A *Classification (Publications, Films and Computer Games) Act 1995*

<sup>177</sup> Item 2, Section 3 – films *National Classification Code*

<sup>178</sup> Section 7 *Classification (Publications, Films and Computer Games) Act 1995*

<sup>179</sup> Item 3, Section 3 – films *National Classification Code*

<sup>180</sup> Section 7 *Classification (Publications, Films and Computer Games) Act 1995*

<sup>181</sup> Item 4, Section 3 – films *National Classification Code*

<sup>182</sup> Part 3, Schedule 7, *Broadcasting Services Act 1992* – *Complaints to, and investigations by, the ACMA*

by the ACMA.<sup>183</sup> The ACMA both has the power to investigate complaints made to it about prohibited or potentially prohibited material<sup>184</sup> and to initiate its own investigations.<sup>185</sup> If content is found to be in breach of the Act, the AMCA will issue a notice to the ISP to remove or prevent access to it.<sup>186</sup> Depending on its nature, and where the site is located, the matter also may be referred to the Australian police for investigation and criminal prosecution.

Where an ISP is located overseas but has an Australian connection<sup>187</sup> the ACMA also has power to take action.<sup>188</sup> In regards to content available via the internet, the access restrictions apply irrespective of whether the content is freely accessible or only accessible subject to use of a password, by use of ‘push technology’, or ‘by way of a standing request’.<sup>189</sup> Internet content is also subject to a registered industry-specific code<sup>190</sup> being the *Internet Industry Code of Practice* (‘Code’) which *inter alia* clarifies what is meant by an ‘Australian connection’.<sup>191</sup> As stated, the current system operates on a complaints-based reporting basis and the process for internet content is specified in Part C of the Code.<sup>192</sup> This process is reliant upon the input of the consumers and then initial investigation and action by the ISP. However, there are changes proposed. These are expected to be introduced by 2011 and will remove the, albeit restricted, right of consenting adults to access certain

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<sup>183</sup> Section 5 and Division 2, Part 3, Schedule 7, *Broadcasting Services Act 1992 – Investigations by the ACMA*

<sup>184</sup> Clause 37, Schedule 7, *Broadcasting Services Act 1992*

<sup>185</sup> Clause 44, Schedule 7, *Broadcasting Services Act 1992*

<sup>186</sup> Section 47(1), Schedule 7, *Broadcasting Services Act 1992*

<sup>187</sup> Clause 3, Schedule 7, *Broadcasting Services Act 1992*

<sup>188</sup> Clause 19, Schedule 7, *Broadcasting Services Act 1992*

<sup>189</sup> Item 2, Schedule 7, *Broadcasting Services Act 1992*

<sup>190</sup> Part 4, Schedule 7, *Broadcasting Services Act 1992*

<sup>191</sup> Clause 4.2 *Internet Industry Code of Practice: Content Services Code For Industry Co-Regulation in the Area of Content Services*, 10 July 2008 (‘Internet Industry Code of Practice’) –

(1) A Content Service has an Australian Connection if, and only if:

(a) any of the Content provided by the Content Service is hosted in Australia; or

(b) in the case of a Live Content Service—the Live Content Service is provided from Australia.

(2) A Hosting Service has an Australian Connection if, and only if, any of the Content hosted by the Hosting Service is hosted in Australia.

<sup>192</sup> Clause 9.1 *Internet Industry Code of Practice* – “An End User may make a complaint to a Designated Content/Hosting Service Provider about Content in any format reasonably determined by the Designated Content/Hosting Service Provider. A complaint may be made in any format reasonably specified by the Designated Content/Hosting Service Provider. Formats for making of complaints should include electronic lodgement wherever it is reasonably practicable for a provider to deal with complaints lodged electronically.”

Restricted content and the current complaints-based investigation process. These will be replaced by a mandatory filtering regime to include:

1. *Introduction of mandatory ISP-level filtering of Refused Classification (RC) –rated content.*
2. *A grants program to encourage the introduction of optional filtering by Internet Service Providers, to block additional content as requested by households.*
3. *An expansion of the cyber-safety outreach program run by the Australian Communications and Media Authority and the Cyber-Safety Online Helpline – to improve education and awareness of online safety.*<sup>193</sup>

The proposed regime is potentially problematic<sup>194</sup> and not universally accepted because of the consequence to ISPs of failing to mandatorily remove inappropriate content proactively instead of after a complaint. Industry argues this will impose additional compliance costs as well as substantial penalties for content that is not removed.<sup>195</sup> Whether or not the proposed regime will promote or deter end user access remains to be seen.

#### **b. Information**

There is no current right of access to information in Australia. International human rights including the right to information, as identified in Chapter 2, are not part of the laws of Australia.<sup>196</sup> Although for example the *International Covenant on Civil and Political Rights* ('Covenant') is incorporated into

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<sup>193</sup> Conroy, Hon. S, 'Measures to improve safety of the internet for families', Media Releases, 15 December 2009, [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/115](http://www.minister.dbcde.gov.au/media/media_releases/2009/115) (viewed 19/03/2010) For details of the pilot project undertaken during 2009 see – Enex Pty Ltd, 'Internet Service Provider (ISP) Content Filtering Pilot Report', October 2010 [http://www.dbcde.gov.au/online\\_safety\\_and\\_security/cybersafety\\_plan/internet\\_service\\_provider\\_isp\\_filtering/isp\\_filtering\\_live\\_pilot](http://www.dbcde.gov.au/online_safety_and_security/cybersafety_plan/internet_service_provider_isp_filtering/isp_filtering_live_pilot) (viewed 27/11/2010)

<sup>194</sup> Lumby C, L Green and J Hartley, 'Untangling the Net: The Scope of Content Caught by Mandatory Internet Filtering', 15 December 2009 [http://www.ecu.edu.au/pr/downloads/Untangling\\_The\\_Net.pdf](http://www.ecu.edu.au/pr/downloads/Untangling_The_Net.pdf) (viewed 07/01/2010)

<sup>195</sup> IIA, 'The Government Proposal on Mandatory Filtering', open letter to industry members, 17 December 2009, "*We understand large penalties of up to \$27 500 per day for each day of non-compliance will apply. The new regime is scheduled to commence by 2011.*" <http://www.iaa.net.au/images/resources/pdf/circular-to=all-isp-and-iaa-members.pdf> (accessed 07/01/2010)

<sup>196</sup> Farrar J, *Legal Reasoning* (Thomson Reuters, Sydney, 2010) 235 and at 237 referring to Gibbs CJ in *Kiora v West* (1985) 159 CLR 550 at 570; *Minister of State for Immigration & Ethnic Affairs v Ah Hin Teoh* ('Teoh's case') [1995] HCA 20; (1995) 128 ALR 353; (1995) 69 ALJR 423; (1995) EOC 92-696 (extract); (1995) 183 CLR 273

Australian law by means of the *Australian Human Rights Commission Act 1986* ('HRC Act'),<sup>197</sup> Australia's international obligations are not yet fully implemented.<sup>198</sup> The Australian Human Rights Framework ('Framework') and the *Human Rights (Parliamentary Scrutiny) Bill 2010* ('HRPS Bill') will not change this position.

As identified in Chapter 2, the Framework specifically does not introduce or implement any new rights to Australia.<sup>199</sup> The HRPS Bill also does not introduce any new human rights.<sup>200</sup> If the HRPS Bill is implemented, it will require that all new proposed legislative instruments be accompanied by a compatibility statement.<sup>201</sup> This statement is required to assess whether the proposed instrument complies with 'human rights' or not.<sup>202</sup> However a failure to provide a compatibility statement, or any lack of compliance by the proposed legislative instrument with a human right, will not make the instrument void.<sup>203</sup>

Some rights are protected by legislation. Section 46 of the HRC Act enables a party to lodge a complaint regarding "*alleged unlawful discrimination*", defined by Section 3 to mean practices<sup>204</sup> or acts that if proven are unlawful under:

*"(aa) Part 4 of the Age Discrimination Act 2004;*<sup>205</sup> *or*

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<sup>197</sup> Section 3 *Australian Human Rights Commission Act 1986* "*'human rights' means the rights and freedoms recognised in the Covenant, declared by the Declarations or recognised or declared by any relevant international instrument.*"

<sup>198</sup> Human Rights Law Resource Centre Ltd, 'Submission to the *Inquiry into the future direction and role of the Scrutiny of Bills Committee*,' 2 March 2010, 2 – "*the Commonwealth has not established formal ... mechanisms to ensure comprehensive parliamentary scrutiny of human rights.*" [http://www.aph.gov.au/senate/committee/scrutiny/future\\_direction\\_2010/submissions/sub05.pdf](http://www.aph.gov.au/senate/committee/scrutiny/future_direction_2010/submissions/sub05.pdf) (accessed 18/03/2010)

<sup>199</sup> Australia's Human Rights Framework, April 2010, 1 <http://www.ag.gov.au/humanrightsframework> (viewed 01/12/2010)

<sup>200</sup> Section 3(1) *Human Rights (Parliamentary Scrutiny) Bill 2010*

<sup>201</sup> Section 9(1) *Human Rights (Parliamentary Scrutiny) Bill 2010*

<sup>202</sup> Section 9(2) *Human Rights (Parliamentary Scrutiny) Bill 2010*

<sup>203</sup> Section 9(4) *Human Rights (Parliamentary Scrutiny) Bill 2010* – "*A failure to comply with this section in relation to a legislative instrument does not affect the validity, operation or enforcement of the instrument or any other provision of a law of the Commonwealth.*"

<sup>204</sup> Section 3 *Australian Human Rights Commission Act 1986* "*'practice' means a practice engaged in:*

*(a) by or behalf of the Commonwealth or an authority of the Commonwealth"*

<sup>205</sup> Section 17 *Age Discrimination Act 2004* provides –

*"The following is a simplified outline of this Part:*

• *This Part makes it unlawful to discriminate against someone on the ground of age in respect of the following: ...*



- (a) *Part 2 of the Disability Discrimination Act 1992;*<sup>206</sup> or
  - (b) *Part II or IIA of the Racial Discrimination Act 1975;*<sup>207</sup> or
  - (c) *Part II of the Sex Discrimination Act 1984;*<sup>208</sup> ...
- and includes any conduct that is an offence under:
- (ca) *Division 2 of Part 5 of the Age Discrimination Act 2004 (other than section 52); or*
  - (d) *Division 4 of Part 2 of the Disability Discrimination Act 1992; or*
  - (e) *Subsection 27(2) of the Racial Discrimination Act 1975; or*
  - (f) *Section 94 of the Sex Discrimination Act 1984.*”

However, although Section 6 provides that the Act binds the Commonwealth, there are still no specific provisions relating to the protection of the rights identified in Chapter 2 in the context of *connectedness* as defined in the thesis. More recently, the Australian federal government has elected to work

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- (d) *provision of goods, services and facilities; ...*
  - (g) *administration of Commonwealth laws and programs”*

<sup>206</sup> Section 24 *Disability Discrimination Act 1992* provides –

“It is unlawful for a person who, whether for payment or not, provides goods or services, or makes facilities available, to discriminate against another person on the ground of the other person's disability:

- (a) *by refusing to provide the other person with those goods or services or to make those facilities available to the other person; or*
- (b) *in the terms or conditions on which the first-mentioned person provides the other person with those goods or services or makes those facilities available to the other person; or*
- (c) *in the manner in which the first-mentioned person provides the other person with those goods or services or makes those facilities available to the other person.”*

Section 4 defines ‘services’ to include “(d) *services relating to telecommunications*”

<sup>207</sup> Section 13 *Racial Discrimination Act 1975* provides –

“It is unlawful for a person who supplies goods or services to the public or to any section of the public:

- (a) *to refuse or fail on demand to supply those goods or services to another person; or*
- (b) *to refuse or fail on demand to supply those goods or services to another person except on less favourable terms or conditions than those upon or subject to which he or she would otherwise supply those goods or services;*

*by reason of the race, colour or national or ethnic origin of that other person or of any relative or associate of that other person.”*

<sup>208</sup> Section 22 *Sex Discrimination Act 1984* provides –

“(1) *It is unlawful for a person who, whether for payment or not, provides goods or services, or makes facilities available, to discriminate against another person on the ground of the other person's sex, marital status, pregnancy or potential pregnancy:*

- (a) *by refusing to provide the other person with those goods or services or to make those facilities available to the other person;*
- (b) *in the terms or conditions on which the first-mentioned person provides the other person with those goods or services or makes those facilities available to the other person; or*
- (c) *in the manner in which the first-mentioned person provides the other person with those goods or services or makes those facilities available to the other person.*

(2) *This section binds the Crown in right of a State.”*

to promote the future of the internet economy and broadband by becoming a signatory to various internet-specific declarations.<sup>209</sup> While stability is desired, the law “*cannot stand still*”.<sup>210</sup> As times change, so must the law. As Australia is a signatory to international obligations that recognises fundamental rights to access of services and information, it is incumbent upon the federal government to make sure these rights are accessible in Australia by ensuring implementation into law. To act in any other manner would not recognise Australia’s international treaty obligations to its citizens.

Human rights in Australia are the subject of much debate.<sup>211</sup> Human rights in Australia were the subject of a detailed review in 2009.<sup>212</sup> Commissioned in December 2008, the committee’s Terms of Reference included wide consultation with the Australian community and specifically to ask three questions:

- *“Which human rights (including corresponding responsibilities) should be protected and promoted?”*
- *“Are these human rights currently sufficiently protected and promoted?”*
- *“How could Australia better protect and promote human rights?”*<sup>213</sup>

Scrutiny of legislation in the absence of a specific Bill of Rights can be “*an important preventative measure that can reduce the risk of legislation infringing*

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<sup>209</sup> Note 196, Farrar, 246

<sup>210</sup> Note 196, Farrar, 35

<sup>211</sup> McClelland R, ‘The Protection and Promotion of Human Rights in Australia,’ Attorney General’s Department, October 2009  
[http://www.attorneygeneral.gov.au/www/ministers/RWPAttach.nsf/VAP/\(3273BD3F76A7A5DEDAE36942A54D7D90\)-091008\\_NHRC\\_Statement.pdf/\\$file/091008\\_NHRC\\_Statement.pdf](http://www.attorneygeneral.gov.au/www/ministers/RWPAttach.nsf/VAP/(3273BD3F76A7A5DEDAE36942A54D7D90)-091008_NHRC_Statement.pdf/$file/091008_NHRC_Statement.pdf) (viewed 21/01/2010)

<sup>212</sup> National Human Rights Consultation, Background Paper, 2008  
[http://www.humanrightsconsultation.gov.au/www/nhrcc/RWPAttach.nsf/VAP/\(4CA02151F94FFB778ADAEC2E6EA8653D\)-National+Human+Rights+Consultation+Background+Paper.pdf/\\$file/National+Human+Rights+Consultation+Background+Paper.pdf](http://www.humanrightsconsultation.gov.au/www/nhrcc/RWPAttach.nsf/VAP/(4CA02151F94FFB778ADAEC2E6EA8653D)-National+Human+Rights+Consultation+Background+Paper.pdf/$file/National+Human+Rights+Consultation+Background+Paper.pdf) (viewed 21/01/2010)

<sup>213</sup> National Human Rights Consultation Report, 30 September 2009 (‘Brennan Report’) 383 – *Appendix A: Terms of Reference* – Although outside the scope of the thesis it is suggested that the consultation was unduly restricted in that the Terms of reference specifically provided that – “*The options identified should preserve the sovereignty of the Parliament and not include a constitutionally entrenched bill of rights.*” In the circumstances an unfettered right to make whatever recommendations were appropriate would have been preferable.  
[http://www.humanrightsconsultation.gov.au/www/nhrcc/RWPAttach.nsf/VAP/\(4CA02151F94FFB778ADAEC2E6EA8653D\)-NHRC+Report+\(Appendix+A\).pdf/\\$file/NHRC+Report+\(Appendix+A\).pdf](http://www.humanrightsconsultation.gov.au/www/nhrcc/RWPAttach.nsf/VAP/(4CA02151F94FFB778ADAEC2E6EA8653D)-NHRC+Report+(Appendix+A).pdf/$file/NHRC+Report+(Appendix+A).pdf) (viewed 13/01/2010)

*human rights*”.<sup>214</sup> Australian laws however should be required to better address Australia’s international human rights obligations. This is evident in the findings of a recent Senatorial Inquiry by the Australian Parliament’s Senate Scrutiny of Bills Committee. The Scrutiny of Bills committee has the responsibility for reporting to Parliament as to whether proposed legislation “*trespass[es] unduly on personal rights and liberties*”.<sup>215</sup> The inquiry was due to report by 12 May 2010.<sup>216</sup> It called for submissions on the Committee’s future direction including as to “*what, if any, additional role the committee should undertake in relation to the human rights obligations applying to the Commonwealth*”.<sup>217</sup>

The submissions to the Inquiry (there were only 35)<sup>218</sup> generally appear to endorse an expansion of the Committee’s powers.<sup>219</sup> Professor Williams observed that in contrast to “*many other parliaments,*<sup>220</sup> *there are no current committee of the [Australian] federal Parliament that provides for scrutiny of*

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<sup>214</sup> Note 198, Human Rights Law Resource Centre Ltd, 4 – referring to Note 213, Brennan Report, 174 – “*If a federal Human Rights Act is enacted, each of these mechanisms – the statements of compatibility and the joint committee—could be used to assess compliance with the human rights expressed in the Act. If the government decides against enacting a Human Rights Act, the mechanisms should be used to assess the compliance of proposed legislation with all of Australia’s international human rights obligations or against a consolidated list of those obligations.*” [http://www.humanrightsconsultation.gov.au/www/nhrcc/RWPAttach.nsf/VAP/\(4CA02151F94FFB778ADAEC2E6EA8653D\)~NHRC+Report+\(Chapter+7\).pdf/\\$file/NHRC+Report+\(Chapter+7\).pdf](http://www.humanrightsconsultation.gov.au/www/nhrcc/RWPAttach.nsf/VAP/(4CA02151F94FFB778ADAEC2E6EA8653D)~NHRC+Report+(Chapter+7).pdf/$file/NHRC+Report+(Chapter+7).pdf) (viewed 18/03/2010)

<sup>215</sup> Standing Order 24, Chapter 5, Standing Orders of the Senate,

“(1) (a) *At the commencement of each Parliament, a Standing Committee for the Scrutiny of Bills shall be appointed to report, in respect of the clauses of bills introduced into the Senate, and in respect of Acts of the Parliament, whether such bills or Acts, by express words or otherwise:*

- (i) *trespass unduly on personal rights and liberties;*
- (ii) *make rights, liberties or obligations unduly dependent upon insufficiently defined administrative powers;*
- (iii) *make rights, liberties or obligations unduly dependent upon non-reviewable decisions;*
- (iv) *inappropriately delegate legislative powers; or*
- (v) *insufficiently subject the exercise of legislative power to parliamentary scrutiny.*”

[http://www.aph.gov.au/senate/pubs/standing\\_orders/b00.pdf](http://www.aph.gov.au/senate/pubs/standing_orders/b00.pdf) (viewed 18/03/2010)

<sup>216</sup> ‘Terms of Reference’, *Inquiry into the future direction and role of the Scrutiny of Bills Committee* [http://www.aph.gov.au/senate/committee/scrutiny/future\\_direction\\_2010/TOR.pdf](http://www.aph.gov.au/senate/committee/scrutiny/future_direction_2010/TOR.pdf) (accessed 18/03/2010)

<sup>217</sup> Note 216, Terms of Reference (1)(c)

<sup>218</sup> Parliament of Australia, Senate Standing Committee for the Scrutiny of Bills, ‘Inquiry into the Future Direction and Role of the Scrutiny of Bills Committee’, Interim Report, 12 May 2010 [http://www.aph.gov.au/senate/committee/scrutiny/future\\_direction\\_2010/interim\\_report/report.pdf](http://www.aph.gov.au/senate/committee/scrutiny/future_direction_2010/interim_report/report.pdf) (viewed 13/06/2010)

<sup>219</sup> Submissions to the *Inquiry into the future direction and role of the Scrutiny of Bills Committee* [http://www.aph.gov.au/senate/committee/scrutiny/future\\_direction\\_2010/submissions/sublist.htm](http://www.aph.gov.au/senate/committee/scrutiny/future_direction_2010/submissions/sublist.htm) (viewed 13/06/2010)

<sup>220</sup> Also see Note 198, Human Rights Law Resource Centre Ltd, 5-11

*proposed laws against explicit human rights standards*” and that the current power to report regarding trespasses is “*insufficient in that it fails to set out the ‘personal rights and liberties’ that proposed laws are to be assessed against*”.<sup>221</sup> This is exacerbated by the fact that, as Rev. Professor Michael Tate observed, once a Bill is law then the Committee’s work is over<sup>222</sup> and Australians must look to the Courts to protect their rights. This is made more difficult when those rights are not clearly articulated and protected in law.

The formation of a specific and separate parliamentary committee responsible for human rights oversight also received support.<sup>223</sup> However, the more recently proposed Parliamentary Joint Committee on Human Rights<sup>224</sup> has overtaken the review. The Committee will impact on the role of the Scrutiny of Bills Committee as it will be responsible for reviewing all proposed federal legislative instruments for compliance with human rights.<sup>225</sup> What impact this will in fact have is not clear as, although the date for providing the final report of the Scrutiny of Bills Committee was extended,<sup>226</sup> the inquiry has lapsed.<sup>227</sup>

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<sup>221</sup> Williams G, ‘Submission to the *Inquiry into the future direction and role of the Scrutiny of Bills Committee*,’ 5 March 2010, 1  
[http://www.aph.gov.au/senate/committee/scrutiny/future\\_direction\\_2010/submissions/sub04.pdf](http://www.aph.gov.au/senate/committee/scrutiny/future_direction_2010/submissions/sub04.pdf)  
(accessed 18/03/2010)

<sup>222</sup> Tate M, ‘Submission to the *Inquiry into the future direction and role of the Scrutiny of Bills Committee*,’ 2 March 2010, 4 – “*the Committee may work very well on the introduction of a Bill, but once it is passed into law, ‘the horse has bolted’.*” Although noting that the power of the Committee does, as stated above, extend both to Bills and Acts.  
[http://www.aph.gov.au/senate/committee/scrutiny/future\\_direction\\_2010/submissions/sub02.pdf](http://www.aph.gov.au/senate/committee/scrutiny/future_direction_2010/submissions/sub02.pdf)  
(accessed 18/03/25010)

<sup>223</sup> See – Australian Human Rights Commission, Submission to the *Inquiry into the future direction and role of the Senate Scrutiny of Bills Committee*, 19 March 2010, 4 – “*Recommendation 1: A parliamentary Human Rights Committee should be established to review the compatibility of proposed legislation with Australia’s human rights obligations, as set out in the international human rights treaties to which Australia is a party.*”  
[http://www.aph.gov.au/senate/committee/scrutiny/future\\_direction\\_2010/submissions/sub11.pdf](http://www.aph.gov.au/senate/committee/scrutiny/future_direction_2010/submissions/sub11.pdf)  
(viewed 13/06/2010); Law Council of Australia, Submission to the *Inquiry into the future direction and role of the Senate Scrutiny of Bills Committee*, 6 April 2010, 31 – “*The need for improved and comprehensive parliamentary scrutiny of human rights in Australia has been recognised by a number of international human rights bodies, a range of non-government organisations and the Federal Opposition.*” [references omitted]  
[http://www.aph.gov.au/senate/committee/scrutiny/future\\_direction\\_2010/submissions/sub19.pdf](http://www.aph.gov.au/senate/committee/scrutiny/future_direction_2010/submissions/sub19.pdf)  
(viewed 13/06/2010)

<sup>224</sup> Section 4 *Human Rights (Parliamentary Scrutiny) Bill 2010*

<sup>225</sup> Section 7 *Human Rights (Parliamentary Scrutiny) Bill 2010*

<sup>226</sup> Parliament of Australia, Senate Standing Committee for the Scrutiny of Bills, ‘*Inquiry into the Future Direction and Role of the Scrutiny of Bills Committee*’, Interim Report, 12 May 2010 –

“*Recommendation 1*

*That the time for the presentation of the committee's report on this inquiry be extended, with the reporting date to be determined after the introduction of legislation to establish the*

### C. Barriers to *connectedness*

While the ideal is that all will be able to access the content and services of the internet from anywhere, this will require that certain barriers are overcome. Appreciating that there may be many barriers, including the “*geographic, economic and technological constraints*”<sup>228</sup> identified in the McKinsey Report, the thesis considers three barriers that will need to be addressed. That is, Australia’s *digital divide*, its *physical divide* and its *political divide*.

#### 1. Digital divide

How the internet is used depends on who the user is and what their wants, needs and capabilities are.<sup>229</sup> Access to the internet is primarily dependant upon a user having the necessary hardware and ISP connection.<sup>230</sup> For many, the internet’s content and services are a tool, for others it is an integral part of life. Where a user lives will impact upon their level of use and level of integration with the internet. This differing level of integration is most obvious in rural areas. As Haythornthwaite considers, “*the Internet ... cannot be fully understood without considering a more integrative view of people’s lives*”.<sup>231</sup> An unexpected consequence of the privatisation of telecommunications is that in rural areas there is a difference between the commercial services received when compared to those of urban areas.<sup>232</sup> That is because the “*goal of private telephone and cable companies is to optimize*

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*proposed Parliamentary Joint Committee on Human Rights.*”

<sup>227</sup> [http://www.aph.gov.au/senate/committee/scrutiny/future\\_direction\\_2010/](http://www.aph.gov.au/senate/committee/scrutiny/future_direction_2010/) (viewed 13/11/2010)

<sup>228</sup> Note 81, McKinsey Report, 10

<sup>229</sup> Slater D, ‘Social Relationships and Identity Online and Offline’ in L Lievrouw and S Livingston (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 535 – The internet is a “*a diversity of software and hardware technologies which can be used differently and in different combinations*”

<sup>230</sup> *Dow Jones and Company Inc v Gutnick* [2002] HCA 56; 210 CLR 575; 194 ALR 433; 77 ALJR 255, per Kirby J [80] – “*only constraint on access ... is possession of the means of securing connection to a telecommunications system and possession of the basic hardware*”. This was most recently reinforced in the US where lack of a computer, or a computer that was not adequate, was cited as the second top reason (22%) for the non-adoption of broadband internet access at home by non-internet users. See – US Department of Commerce, ‘Exploring the Digital Nation: Home Broadband Internet Adoption in the United States, November 2010, 19 <http://www.esa.doc.gov/DN/> (viewed 10/09/2010)

<sup>231</sup> Haythornthwaite C, ‘Introduction: The Internet In Everyday Life’, *American Behavioral Scientist* (2001) 45, 363

<sup>232</sup> Press L, ‘Broadband policy: Beyond privatization, competition and independent regulation’ (2009) 12(4) *First Monday*, 6 <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2374/2159> (viewed 07/01/2010) Although in Australian some of these issues are addressed by means of the USO.

*shareholder value and return*".<sup>233</sup> Their goal is profit not social benefits or community development.

This difference in services is only one part of the *digital divide* as there are many "[d]ifferent manifestations of the digital divide".<sup>234</sup> These range from the economic divide to those relevant to the social context. As Gunkel considers, the term *digital divide* has been used in a variety of contexts and by various disciplines as well as by governments, the media and industry; to describe many different perceived gaps in relation to ICT and the internet.<sup>235</sup> These gaps include those between ICT supporters and detractors; those supportive, and those suspicious, of alleged engineering solutions; students with access to ICT resources for education and those without; and the gap arising from the lack of interoperability between existing and new technologies.<sup>236</sup> The *digital divide* also refers to the gap between those who are connected and the unconnected.<sup>237</sup>

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<sup>233</sup> Note 231, Press, 8 – This it is suggested is analogous to the situation in which Telstra finds itself regarding the government's desire for it to structurally separate weighed up against its obligations to the shareholders the government sold it to.

<sup>234</sup> Peña-López I, 'Measuring digital development for policy-making: Models, stages, characteristics and causes', PhD Thesis (2009) [mimeo], 88 – for a summary of the main trends arising from the current literature [http://ictlogy.net/articles/20090908\\_ismael\\_pena-lopez\\_measuring\\_digital\\_development.pdf](http://ictlogy.net/articles/20090908_ismael_pena-lopez_measuring_digital_development.pdf) (viewed 15/01/2010)

<sup>235</sup> Gunkel D, 'Second thoughts: toward a critique of the digital divide' (2003) 5(4) *New Media & Society*, 499

<sup>236</sup> This list is not exhaustive but merely indicative. See – Note 235, Gunkel, 501-505. The reference to the Benton Foundation's definition of the digital divide, which builds on NTIA's definition – those with access to information (and related technology) and those without, as being the 'gap between those who can effectively use new information and communication tools, such as the internet, and those who cannot' is noted as being of specific relevance to the thesis. Also see – NTIA (1999) *Falling through the Net: Defining the Digital Divide*. Washington, DC: US Department of Commerce, <http://www.ntia.doc.gov/ntiahome/fttn99/contents.html> viewed 19/01/2010. Also see Benton Foundation, 'Expanding and Accelerating the Adoption & Use of Broadband Throughout the Economy: Part 2 – Reaching Universal Adoption & Use – Closing the Digital Divide' – "Even with the strong growth in broadband adoption and use since the nascent years of the Internet in the late 1980s and early 1990s, there remains a persistent Digital Divide in America – that is, a gap between those who are enjoying effective use of information and communications technology (ICT) and those who are not." [http://www.benton.org/initiatives/broadband\\_benefits/adoption\\_and\\_use#section-2](http://www.benton.org/initiatives/broadband_benefits/adoption_and_use#section-2) (viewed 19/01/2010)

<sup>237</sup> Note 234, Peña-López, 42 – "this awareness of being connected also brought to light another fact, the fact of not being connected. Hence, the term Digital Divide was ... coined in the mid 1990s and highlighted by the President Clinton US Administration, its meaning changing and evolving since." [references omitted] or as the US recently considered it also exists between those with dial-up access and those with broadband access see – Note 227, US Department of Commerce, 27 – "dial-up users in 2009 were, on average, older, had lower levels of family income and education, and were more likely to reside in rural areas."

While research may have moved from conceptualising the *digital divide* from one of access to one of a use,<sup>238</sup> both are relevant. This is because access means more than just physical access, it also includes access capacity (i.e. skills and knowledge of how to use) as well as use by itself. In some respects, therefore, it may be more accurate to refer to *digital divides* rather than just *divide*.<sup>239</sup> For the purpose of the thesis, the term *digital divide*<sup>240</sup> is defined by reference to both user access desire and capacity, and access availability. The term *digital divide* will be used as a plural to represent the divides that exist between those with physical access and those without that physical access; and those with skills, desire and knowledge to fully use all services once physical access is attained and those without those skills.

The *digital divide* is perhaps more obvious between developed and developing countries but is relevant also for developed countries such as Australia.<sup>241</sup> The full impact on society of the lack of appropriate access for all to the internet cannot be considered in isolation from the Australian society itself. The corollary is that it is no longer possible to separate Australian society from the internet economy, whether all Australians make use of the content and services available via the internet or not. As not all Australians are connected to the internet, Australia as a whole is not fully engaged in the internet economy.<sup>242</sup> Despite the fact that many non-users

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<sup>238</sup> ACMA, 'ACMA Communications Report 2006-07', 14 February 2008, 191-194 [http://www.acma.gov.au/webwr/\\_assets/main/lib310631/0607commreport\\_complete.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310631/0607commreport_complete.pdf) (viewed 17/01/2010)

<sup>239</sup> Note 238, ACMA, 191 – “It is also described as a continuum within which there are a number of different divides, rather than a simple dichotomy between ‘haves’ and ‘have nots’.”

<sup>240</sup> The author acknowledges that there is not one accepted definition of the term ‘digital divide’ and that in many respects existing definitions are concerned with “its causes ... manifestations ... [or] consequences”. For a discussion of different definitions see – Hammond A, ‘The Digital Divide in the New Millennium’ (2002) 20 *Cardozo Arts & Ent. L.J.*, 135; and Note 235, Gunkel – These divides include those representing the inequality in educational opportunities; the differences of opinions regarding engineering solutions; and the level of access to new technologies and a person’s ability to use them.

<sup>241</sup> Kariyawasm R, *International Economic Law and the Digital Divide: A New Silk Road* (Edward Elgar Publishing Limited, Cheltenham, 2007) 24 – the digital divide “may exist within a developed country ... due to issues of universal service / universal access, geography and differing level of poverty”.

<sup>242</sup> ACMA, ‘Australia in the Digital Economy – Report 2: Online Participation’, May 2009, 34 – “results indicate that at a time when services are increasingly being delivered online and the relevance of the internet is increasing for most; those ... not using the internet are potentially missing out on the benefits of the digital economy.” [http://www.acma.gov.au/webwr/aba/about/recruitment/online\\_participation\\_aust\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/aba/about/recruitment/online_participation_aust_in_digital_economy.pdf) (viewed 07/01/2010)

recognise the importance of learning how to use the internet,<sup>243</sup> and the increase in the number of internet users, only two thirds of Australians are active internet users.<sup>244</sup>

A variety of factors have been found to affect internet take-up and online participation, including “*household income and family structure, work status, gender, location, profession and age*”.<sup>245</sup> The result, irrespective of the rationale, is that not all Australians have access to the variety of information and services available via the internet.<sup>246</sup> Overcoming the *digital divide* is something that governments, industry and interest groups must work towards together for the future of Australia’s internet economy.<sup>247</sup> It is not merely a matter of ensuring that a network such as the NBN is constructed. Overcoming the *digital divide* requires that all Australians become digitally literate.<sup>248</sup> Similarly to literacy in general, digital literacy is connected with the ownership and control of digital information.<sup>249</sup> Mackay’s expressed hope was that there would be “*a way of owning and enjoying all of this [digital] information without being addicted to it or overwhelmed by it*”.<sup>250</sup> This hope is no longer possible as digital information by itself now is a “*valuable*

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<sup>243</sup> Note 104, ACMA, 84 – “*These adults consider that learning how to use the internet is more important than learning how to use new features on their mobile phone in terms of enabling them to participate more effectively in society.*”

<sup>244</sup> ABS, 8153.0 – *Internet Activity, Australia, June 2009*, released 11.30 am 14/09/2009 <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8153.0Jun%202009?OpenDocument> (viewed 06/11/2009)

<sup>245</sup> Note 242, ACMA, 1 – the report also notes that “*Lack of interest or cost remain the most frequently reported reasons for not using the internet.*”

<sup>246</sup> Lovelock P and J Ure, ‘The New Economy: Internet Telecommunications and Electronic Commerce?’ in L Lievrouw and S Livingstone (Eds), *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002)

<sup>247</sup> McLaren J and G Zappala, ‘The New Economy Revisited: An Initial Analysis of the Digital Divide among Financially Disadvantaged Families’ (2002) *The Smith Family*, Background Paper No. 5, vi – “*The existence of unequal access and usage of ICT across the population – the ‘digital divide’ is compounding disadvantage for some, because having access to ICT is becoming so central to being able to fully participate in the economic, social, political and cultural spheres of society.*” [http://www.thesmithfamily.com.au/webdata/resources/files/Background\\_Paper\\_6.pdf](http://www.thesmithfamily.com.au/webdata/resources/files/Background_Paper_6.pdf) (viewed 19/1/10)

<sup>248</sup> Note 238, ACMA, 191 – “*Current literature conceptualises the digital divide in terms of knowledge, with particular emphasis on its links to digital literacy.*” At 192 referring to McLaren and Zappala’s 2002 research the report states “*They noted that the ... divide was not solely about physical access to ICT, but was also about ensuring that people have the resources and skills to use technology efficiently and effectively.*”

<sup>249</sup> Buckingham D, ‘Digital Media Literacies: rethinking media education in the age of the Internet’ (2007) 2(1) *Research in Comparative and International Education*, 45

<sup>250</sup> Mackay H, *Turning point – Australians choosing their future* (Pan McMillan Australia, Sydney, 1999)



*asset*”<sup>251</sup> for which there is consumer demand but only if users have access and knowledge of what services and information is available.

In order for the ‘digital immigrants’<sup>252</sup> to be able to live, work, play and study successfully in the 21<sup>st</sup> Century they must have a certain level of skill<sup>253</sup> as well as desire to access the internet. That is, they must learn, as well as want to learn, how to access the wealth of information available on the internet. However, the ability to access information by itself however is not the same as being literate. Being literate is being more than just able to read and write,<sup>254</sup> it involves the ability to communicate.<sup>255</sup> In order to be digitally literate, the ‘digital immigrant’ must be willing to learn how to study online, to read and contribute to blogs, send tweets, visit virtual worlds, and to create and read texts and emails. This is necessary in order for the immigrants to co-exist and communicate with the ‘digital natives’ for whom these means of interaction are an integral part of everyday life. They must want to participate. How to “*boost participation*”<sup>256</sup> by all members of society is a matter that the Australian federal government has not yet addressed successfully. Although there are a variety of projects in place, and even though vocational education has been allocated – “[AUD]\$81.9 million over 3 years to ... provide a high speed broadband network for the Australian training system”<sup>257</sup> – participant numbers are still low.

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<sup>251</sup> Stein L and N Sinha, ‘New Global Media and Communication Policy: the Role of the State in the Twenty-First Century’ in L Lievrouw and S Livingston (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 411

<sup>252</sup> Meaning “*those ... who were not born into the digital world but have ... become fascinated by and adopted many or most aspects of the new technology*” See – Prensky M, ‘Digital Natives, Digital Immigrants Part 1’ (2001) 9(5) *On the Horizon*, 1 <http://www.proquest.com/> (viewed 14/09/2009)

<sup>253</sup> ACMA, ‘Australia in the Digital Economy – Report 1: Trust and confidence’, March 2009, 34 – “*A strong relationship appears between perceived level of skill and frequency of use ... the more frequently an individual uses the internet, the greater the individuals’ perceived level of skill.*” [http://www.acma.gov.au/webwr/aba/about/recruitment/trust\\_and\\_confidence\\_aust\\_in\\_digital\\_economy.pdf](http://www.acma.gov.au/webwr/aba/about/recruitment/trust_and_confidence_aust_in_digital_economy.pdf) (viewed 07/01/2010)

<sup>254</sup> Note 249, Buckingham, 45

<sup>255</sup> R Cole and R Lorch (Eds), *Buildings, Culture & Environment: Informing Local & Global Practices* (Blackwell Publishing Ltd, Oxford 2003) 18

<sup>256</sup> Goldfinch S, R Gauld and P Herbison, ‘The Participation Divide? Political Participation, Trust in Government, and E-government in Australia and New Zealand’ (2009) 68(3) *Australasian Journal of Public Administration*, 333, 335; La Rose R, J Gregg, S Strover, J Straubhaur, and N Inagaki, ‘Closing the rural broadband gap: Promoting adoption of the Internet in rural America’ (2007) 31 *Telecommunications Policy*, 359

<sup>257</sup> DEEWR (2009) ‘Transforming Australia’s Higher Education System’ Australian Government <http://www.deewr.gov.au/HigherEducation/Documents/PDF/Additional%20Report%20->

Appropriate education is a key means of improving participation. However, before e-learning can occur, there must be a means of accessing the related services of the internet. Moreover, those that wish to access the services must be *digitally literate* and not just generically educated. Because of the widespread use of the internet for both private and public life,<sup>258</sup> appropriate access skills will be vital for future business activity, engagement with government<sup>259</sup> and communication with friends. This requires an increase in the number of Australians undertaking education at higher levels<sup>260</sup> as well as enabling students to “*learn how to learn*”.<sup>261</sup> It also will require educating consumers on the benefits that accessing high-speed broadband will bring.

Education is a means of beginning to bridge the *digital divide*. However, despite the existence of rural and regional university campuses, remote, indigenous and low socio-economic students overall are the least involved in higher education in Australia. Worse still, their levels of participation fell over the five to six-year period to the end of 2007.<sup>262</sup> Better access to high-speed broadband may improve these levels however, claims that “*education will improve exponentially*”<sup>263</sup> with the introduction of the internet have not been realised. These claims will not be realised until all are able to access the internet from anywhere. As part of its commitment to the future of education, the federal government is working towards full implementation of broadband for Australian schools.<sup>264</sup> However, as identified, in addition to school-based internet access, students also need to be able to access the internet at home.<sup>265</sup>

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[%20Transforming%20Aus%20Higher%20ED\\_webaw.pdf](#) (viewed 21/10/2009)

<sup>258</sup> Tapia A, B Blodgett and J Jang, ‘The Merging of Telecommunications Policy and Science Policy through Broadband Stimulus Funding’, *paper presented at The 37<sup>th</sup> TPRC Research Conference on Communication, Information and internet Policy*, 25-27 September, 2009, George Mason University School of Law, Arlington, VA.

<sup>259</sup> OECD (2008) ‘Making Life Easy for Citizens and Businesses in Portugal – Administrative Simplifications and e-Government’, *OECD*, 119

<sup>260</sup> Note 257, DEEWR

<sup>261</sup> Sabry K and J Barker, ‘Dynamic Interactive Learning Systems’ (2009) 46(2) *Innovations in Education and Teaching International*, 185

<sup>262</sup> Bradley D, P Noonan, H Nugent and B Scales (2008), ‘Review of Australian Higher Education – Final Report’, December 2008, DEEWR (‘Bradley Report’) <http://www.deewr.gov.au/HigherEducation/Review/Pages/ReviewofAustralianHigherEducationReport.aspx> (viewed 20/10/2009)

<sup>263</sup> Jankowski N, ‘Creating Community with media: History, Theories and Scientific Investigations’ in L Lievrouw and S Livingstone (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002)

<sup>264</sup> Digital Education Revolution Policy, June 2008

It is important to ensure all members of Australian society have the means of accessing the internet. In order to do so, they will need to have the skills to utilise the technology, a viable means of access, and have the information as to the benefits that access will bring. Communications in Australia are serviced by a variety of providers over a variety of networks, many based on those of the telephone network first established in the 1880s.<sup>266</sup> There are many far-flung, isolated communities where ease of access to the internet and its services is not guaranteed or consistent, and therefore not a ‘want’. In these areas, access may be by means of copper cables, satellite, fibre optic cables, a combination of services, or they may have no access at all.<sup>267</sup> A lack of jobs in rural areas<sup>268</sup> also impacts upon the ability of this sector of the population to afford necessary access to the internet. Thus addressing the *digital divide* will also require that economic issues, such as to the cost of and placement of the infrastructure and the ability of all consumers to gain access, be overcome to ensure all Australians can afford the necessary hardware and relevant services.<sup>269</sup> The potential to for a high-speed broadband divide in rural and regional areas is real<sup>270</sup> and must be addressed by regulators.

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<http://www.deewr.gov.au/Schooling/DigitalEducationRevolution/Pages/default.aspx> (viewed 22/05/2010); Note 289, DEEWR

<sup>265</sup> Macho S, *The Impact of Home Internet Access on Test Scores* (Cambria Press, New York, 2007)

<sup>266</sup> *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7 [1]

<sup>267</sup> Note 244, ABS

<sup>268</sup> Property Council of Australia and Council of Capital City Lord Mayors, ‘The Capital Cities and Australia’s Future’ (CCCLM & Property Council of Australia, Sydney, 2000) 16

<sup>269</sup> Note 249, Buckingham, 50; issues also may arise regarding the potential flow on affect to consumers of access pricing issues to providers, i.e. if pricing is too high this may make service provision to certain areas not viable, see ACCC *Discussion paper on points of interconnect to the National Broadband Network*, October 2010, 12 – “*The ACCC also considered the issue of POI location in its assessment of Proposals to the government’s 2008 Request for Proposals (RFP) to roll out and operate a National Broadband Network. In the ACCC’s report to the NBN Expert Panel, it reiterated that POIs which are commercially feasible for service providers and which support competition, including competition for backhaul services from the first point of aggregation, would be a minimum requirement. Such an approach to POI location would likely promote competition and investment in new services, be in the long-term interests of end-users, and meet the objectives of the Commonwealth’s RFP. The ACCC’s report also noted that interconnection as close as possible to existing backhaul/transmission investments is likely to facilitate a smooth migration to the NBN, as any relocation of POIs might raise access seekers’ costs to the point where they were not able to provide services.*” And 21 – “*The ACCC and NBN Co recognise the barriers to entry that high backhaul prices in non-metropolitan areas have posed for RSPs and the extent to which this has deterred entry into these markets. As outlined by the Study, costs of backhaul are particularly high in non-metropolitan areas due to a number of interrelated factors including monopoly and duopoly pricing, vertical integration, high build costs and regulation of prices.*” [references omitted] <http://www.accc.gov.au/content/item.phtml?itemId=952788&nodeId=ba62b7d9c49edbd240976a8d8753fb01&fn=ACCC%20discussion%20paper%20on%20NBN%20POIs.pdf> (viewed 02/12/2010)

<sup>270</sup> Ypsilanti D and S Paltridge, ‘OECD Broadband Market Developments’, in ‘Frontiers of

## 2. Physical divide

In the early years of Australian settlement by Europeans, the colonial approach to land use was based on the system with which they were familiar.<sup>271</sup> The European/English view of property was in conflict with the existing Aboriginal laws and custom.<sup>272</sup> This, however, did not prevent the settlers from imposing laws where they perceived that none existed. Formal rural land holdings of the mid-1800s therefore were based on the English feudal system of land ownership and use.<sup>273</sup> That system involved complicated rules and legal fictions based on long-dead social conditions which, in hindsight, were neither adapted to<sup>274</sup> nor suitable for either the Australian society or geography.<sup>275</sup> This, together with the gold rush of the 1850s,<sup>276</sup> and the topography of middle Australia, resulted in dispersed population bases,<sup>277</sup> particularly in rural areas. In addition, this created interesting and uniquely Australian land tenure issues.<sup>278</sup>

It was during the mid 1800s that Australia first gained a public telephone network.<sup>279</sup> This network was constructed over many decades, first in the major cities and then in most regional and some rural areas by means of use

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Broadband, Electronic and Mobile Commerce', R Cooper and G Madden (Eds) (Phyiscia-Verlag, Heidelberg, 2004) 303 – "*With broadband technology penetration increasing in urban areas, several OECD Member Country governments are addressing potential national broadband digital divide issues, viz., that national divides may develop should broadband service not be made readily available to rural and remotely located populations.*"

<sup>271</sup> Waterhouse R, 'Agrarian Ideals and Pastoral Realities: The Use and Misuse of Land in Rural Australia' in M Crotty and D Roberts (Eds) *The Great Mistakes of Australian History* (University of New South Wales Press Ltd, Sydney, 2003) 65 – "*governments were seemingly obsessed with introducing and implementing policies designed to create a society and an economy based on small-scale agricultural cultivation.*"

<sup>272</sup> Note 196, Farrar, 14

<sup>273</sup> Note 271, Waterhouse, 65

<sup>274</sup> As opposed to the indigenous laws and customs, see – Note 196, Farrar, 14 referring to Blackburn J in *Milirrpum v Nabalco Pty Ltd* (1971) 17 FLR 141 at 267 – those indigenous laws and customs were "*a subtle and elaborate system highly adapted to the country in which the people led their lives.*"

<sup>275</sup> Butt P, *Land Law*, 5<sup>th</sup> ed (Thomson Lawbook Co. 2006) 620

<sup>276</sup> Note 271, Waterhouse, 67

<sup>277</sup> While Australia's size is comparable to that of Europe, its population density is approximately 30 times smaller with 68% approximately of the population living in cities and only 2.3% approximately living in remote areas. See – Islam A, N Selvadurai and G Town, 'Wireless Broadband Technologies for Regional and Rural Australia: A last-mile perspective', 58 (2-3) *Telecommunications Journal of Australia* (2008) 28.1, 28.2

<sup>278</sup> See Price R and L Griggs, *Property Law in Principle*, 2<sup>nd</sup> ed (Lawbook Co, Sydney, 2008) 45; Hughes R, G Leane and A Clarke, *Australian Legal Institutions: Principles, Structure and Organisation*, 2<sup>nd</sup> Ed (Lawbook Co., Sydney, 2003) 100. Outside the scope of the thesis.

<sup>279</sup> *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7 per Gleeson CJ, Gummow, Kirby, Hayen, Heydon, Creenan and Kiefel JJ [1] – "*Since the 1880s Australia has had a ... [PSTN].*"

of ‘trunk’ lines constructed adjacent to railway tracks.<sup>280</sup> But expansion was slow and the network was not ubiquitous. Many Australians did not have access to this traditional form of telephone network, and many still do not, relying instead on short-wave radios<sup>281</sup> and, more recently, mobile telephones and satellite technology.<sup>282</sup>

In the 21<sup>st</sup> Century, Australia’s population remains dispersed. Australian society is decentralised with most population bases being coast-focussed<sup>283</sup> and with population bases in many remote areas substantially reduced.<sup>284</sup> While Australia’s size is comparable to that of Europe, its population density is not – as Australia’s population is 30 times smaller than Europe.<sup>285</sup> This results in a population density of approximately 2.8 people per square kilometre.<sup>286</sup> Currently, the percentage of the population choosing to live in cities – more than 78 per cent of the total Australian population – is increasing while rural and regional populations decline.<sup>287</sup> Australian cities therefore generally continue to be stable or to grow. Conversely rural and regional areas are more likely to decline.<sup>288</sup>

A decreasing population base is not the only difficulty that rural and regional areas must overcome. A report that considered Australia’s future in regards to job prospects, identified that during the 1998-2004 period “*the bottom 10 regions ... [were] all in rural areas, or in ‘producer zones’ based on*

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<sup>280</sup> Hurdeman A, *The Worldwide History of Telecommunications* (Johan Wiley & Sons, Inc., New Jersey, 2003) 234 – “*In Australia, long-distance telephony started between Melbourne and Sydney in 1907 via a 1000-km line along the railway. The line was ... extended by another 2200 km to Townsville. In 1950, the number of telephones had increased ... from 37,600 in 1904 to 1,110,000.*”

<sup>281</sup> The RTIRC, ‘Framework for the Future’, 5 September 2008 (‘Glasson Report’) 5 – Rev. Flynn said “*people [will] not move to the inland ... without access to adequate services. This motivated him to establish the Royal Flying Doctor Service ... telecommunications is a critical element in managing and delivering health services (just as the HF radio was at the start of the 20th century).*” [http://www.rtirc.gov.au/Report/RTIRC\\_Report.pdf](http://www.rtirc.gov.au/Report/RTIRC_Report.pdf) (viewed 04/02/2010)

<sup>282</sup> Note 104, ACMA, 49

<sup>283</sup> Note 81, McKinsey Report, 11

<sup>284</sup> Note 281, Glasson Report, 4

<sup>285</sup> Note 277, Islam *et al*, 28.2

<sup>286</sup> ABS, *3218.0 – Regional Population Growth, Australia, 2007-2008*, released 23 April, 2009 <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3218.0Main+Features12007-08?OpenDocument> (viewed 06/11/2009)

<sup>287</sup> Note 286, ABS

<sup>288</sup> Kooyman R and M Flehr, ‘Arresting the decline in the number of office users in the Adelaide Central Business District’, *Sixth Annual Pacific-Rim Real Estate Society Conference*, Sydney, New South Wales, 24-27 January, 2000, 5

*traditional industrial activities*”,<sup>289</sup> leading to a decreasing financial capacity in non-urban areas. However, the drivers for the adoption of new technologies in remote communities – email, banking, communication with family, and the needs of children – are consistent with those for urban areas.<sup>290</sup> Their remoteness makes rural areas’ need for these services greater than for those in urban areas. Remote communities that can see significant benefits from the introduction of services<sup>291</sup> are seriously disadvantaged by the lack of available telecommunications services. This appears to be particularly so for remote indigenous communities.<sup>292</sup> Therefore, while the drivers for new technologies may be the same throughout Australia, due to “*distances [that] are great, population density [which is] low and infrastructure deployment [that is] costly*”<sup>293</sup> the level of coverage all Australians receive is not.

Clearly, communities in rural and regional Australia are very different to communities in the cities; as is the available communications technologies.<sup>294</sup> There is less access to and availability of telecommunications/internet services in rural and regional areas;<sup>295</sup> as well as a higher cost for service provision.<sup>296</sup> Consequently, those living in remote areas are approximately 22 per cent less likely to have an internet connection than those in urban areas.<sup>297</sup> In addition, of those connected, rural users access the internet less than urban users.<sup>298</sup> It is a ‘catch 22’ situation. The smaller populations in these areas

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<sup>289</sup> Note 268, Property Council of Australia and Council of Capital City Lord Mayors, 16

<sup>290</sup> Molloy S, B Burgan and S Rao, ‘Creating new markets: broadband adoption and economic benefits on the Yorke Peninsula’, Systems Knowledge Concepts Report prepared for the Information Economy Directorate, Department of Further Education Employment Science and Technology, Government of South Australia, June 2008, 108 [http://www.acma.gov.au/webwr/\\_assets/main/lib310554/ypbb2%20final%2020080813.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310554/ypbb2%20final%2020080813.pdf) (viewed 07/01/2010)

<sup>291</sup> Note 290, Molloy *et al*, 10-11

<sup>292</sup> ACMA, ‘Telecommunications in Remote Indigenous Communities’, September 2008 [http://www.acma.gov.au/webwr/\\_assets/main/lib310210/telecommunications\\_in\\_rics\\_2008.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310210/telecommunications_in_rics_2008.pdf) (viewed 07/01/2010)

<sup>293</sup> Note 81, McKinsey Report, 271

<sup>294</sup> Note 277, Islam *et al*, 28.1

<sup>295</sup> For an overview of the expansion of the Australian telecommunications network see – Cooper R, G Madden and G Coble-Neal, ‘Measuring TFP for an Expanding Telecommunications Network’, in R Cooper and G Madden (Eds) ‘Frontiers of Broadband, Electronic and Mobile Commerce’ (Physica-Verlag, Heidelberg, 2004) 129-131

<sup>296</sup> Note 270, Ypsilanti and Paltridge, 304

<sup>297</sup> ACMA, ‘Telecommunications Today – Report 6: Internet activity and content’, September 2008, 7 [http://www.acma.gov.au/webwr/\\_assets/main/lib310210/report\\_6\\_telecommunications\\_today.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310210/report_6_telecommunications_today.pdf) (viewed 07/01/2010)

<sup>298</sup> Note 297, ACMA, 10 – “*during the quarter ending March 2007 metropolitan internet users had*

make it costly to deliver services.<sup>299</sup> A primary driver for the private deployment of services is the density of premises to be serviced by a network.<sup>300</sup> Smaller population bases can negatively impact upon the viability of the private provision of services. However, without using and being aware of the available services there is no demand for them and therefore a lack of take-up. A lack of take-up across the whole of the available population can make the cost greater to those end users who do sign up for services.

Virtual communities and places are predicted to become as important, if not more so, than physical ones.<sup>301</sup> In some respects physical location may even become irrelevant through use of the internet.<sup>302</sup> For this to occur there must be some means of accessing the internet, thus ensuring access for all to the content and services of the internet must be a priority.<sup>303</sup> But whether true ubiquity of service, as well as ubiquity of quality service, can be obtained remains to be seen.<sup>304</sup> Addressing the problem requires support from all. The ABG assists in addressing the issues of delivery of broadband services in remote areas, however, the July 2010 amendments to the ABG mean the area covered by the ABG is reduced<sup>305</sup> and thus the number of Australians assisted

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*on average five more internet session than non-metropolitan users and spent 3.16 hours longer online”.*

<sup>299</sup> Battersby B, ‘Does Distance Matter? The Effect of Geographic Isolation on Production Level’ (2006) (1) *OECD Economic Studies*, 205, 209. This is a fact that NBN Co Limited appears just to be realising. See - Barrett R and N Bitu, ‘NBN entrenching rural disconnect’, *The Australian*, 9 December, 2010 – “NBN Co ... said the NBN cable would not be hooked up to towns with fewer than 1000 premises, due to the high cost of connection.”

<sup>300</sup> Note 81, McKinsey Report, 10

<sup>301</sup> Crang M, ‘Public Space, Urban Space and Electronic Space: Would the Real City Please Stand Up?’ (2000) 37(2) *Urban Studies*, 301, 302

<sup>302</sup> Baym N, ‘Interpersonal Life Online’ in L Lievrouw and S Livingstone (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 64

<sup>303</sup> White G, ‘E-learning: Australia’s achievements in education and training’, *education.au limited* (2004) [www.educationau.edu.au](http://www.educationau.edu.au) (viewed 20/10/2009)

<sup>304</sup> IIA, ‘2010 National Broadband Targets: Maintaining Australia’s Competitiveness’, 31 July 2006, 8 – “91% of the continent [is] occupied by only about 8% of the people. This makes the provision of broadband of equal capacity to all Australians a major technical and economic challenge, and probably an insurmountable one under existing technologies.” [http://www.iaa.net.au/images/resources/pdf/iaa\\_broadband\\_targets\\_2010%for\\_release.pdf](http://www.iaa.net.au/images/resources/pdf/iaa_broadband_targets_2010%for_release.pdf) (viewed 07/01/2010)

<sup>305</sup> DBCDE, ‘Australian Broadband Guarantee’, 21 October 2010 – “Changes to the Australian Broadband Guarantee came into effect on 1 July 2010. Coverage of areas and premises eligible for assistance was revised to take into account developments in the commercial market that have resulted in greater availability of metro-comparable broadband services. Accordingly, premises that were eligible under the Australian Broadband Guarantee 200810 may not necessarily be eligible for assistance under the revised Australian Broadband Guarantee after 1 July 2010.” [http://www.dbcde.gov.au/broadband/australian\\_broadband\\_guarantee](http://www.dbcde.gov.au/broadband/australian_broadband_guarantee) (accessed 08/12/2010)

is reduced. As its criteria for eligibility relates to the availability of services,<sup>306</sup> rather than on the financial or skills capacity of the individual end user, it also does not assist in addressing the *digital divide*.

### 3. Political divide

The political divide in the context of the thesis refers to the general partisanship that is the hallmark of recent cost-focussed Australian telecommunications policy developments.<sup>307</sup> This is more clearly evidenced in the more recent behaviour of new governments of dropping the other side's existing programmes when coming to power. Despite the observation of Althaus *et al* that “[e]ach government must work from the legacy of its predecessors”<sup>308</sup> new governments now often dismiss or change existing policies and programmes, irrespective of their need or how well they may be working. Conversely, often when a hard decision has not been made by the former government, the new government remains equally reluctant to take action. As Edwards observed, the “*electoral cycle can play a large part in determining what items get on the agenda and whether they are pursued past a certain point*”.<sup>309</sup> A clear example of this, and the impact of a change of government has on policy, was seen in Australia after the 2007 federal election when significant aspects of the previous government's established broadband policy were abandoned.<sup>310</sup> It is not that the previous policy was without its flaws. The issue is that stopping and starting again resulted in a delay in the implementation of high-speed broadband throughout Australia.

Of relevance for the ongoing viability of the NBN will be the ability of it to interact with the existing networks, most of which is owned by Telstra.<sup>311</sup> In this respect the decision of past governments to only operationally separate the wholesale and retail divisions of the Telstra, rather than structurally

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<sup>306</sup> Note 8, Australian Government, 7

<sup>307</sup> Barr T, ‘A Broadband Services Typology’ (2010) 43(2) *The Australian Economic Review*, 187, 187

<sup>308</sup> Althaus C, P Bridgman and G Davis, *Australian Policy Handbook*, 4<sup>th</sup> ed (Allen & Unwin, Crows Nest, 2007) 7

<sup>309</sup> Note 4, Edwards, 10

<sup>310</sup> DBCDE, ‘Annual Report 07-08’, 13 October 2008, 32 [http://www.dbcde.gov.au/documents/DBCDE\\_AR0708\\_erratum.pdf](http://www.dbcde.gov.au/documents/DBCDE_AR0708_erratum.pdf) (viewed 23/06/2010)

<sup>311</sup> *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7 per Gleeson CJ, Gummow, Kirby, Hayen, Heydon, Creenan and Kiefel JJ [1] Also see – Note 29, Clear Advantage & Assocs, 56



separate it, may have an adverse impact on the smooth establishment of the NBN. This is so first, because, despite deregulation, Telstra remains the dominant market participant.<sup>312</sup> Second, because Telstra also is the primary owner of the majority of the current telecommunications infrastructure in Australia, including the cabling and exchanges.<sup>313</sup> Third because, in view of the investment of many ordinary Australians,<sup>314</sup> the impact of a proposal that adversely affects Telstra's operations, and profits, may have unpalatable political consequences and may influence decision-making processes.

While it is the decision of the federal government to implement legislation for the NBN, a large part of the implementation will involve appropriate handling of the legacy infrastructure and regimes of previous governments. This may involve adapting or changing stated policy to ensure that what is used can address current concerns and move the NBN forward. Whether such policy survives if there is a future change of government remains to be seen.<sup>315</sup> Separate from any shareholder concerns, the proposed legislative changes will affect the structuring and method of operation of Telstra,<sup>316</sup> this may have unexpected consequences for the telecommunications market. The delivery of high-speed broadband has become a political issue for all

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<sup>312</sup> The Senate, 'Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009 [Provisions], Report of the Environment, Communications, and the Arts Legislation Committee, October 2009, 7 – "Some noted that Telstra's market dominance has increased in recent years" [http://www.aph.gov.au/senate/committee/eca\\_ctte/tlaccs/report/report.pdf](http://www.aph.gov.au/senate/committee/eca_ctte/tlaccs/report/report.pdf) (accessed 17/01/2010)

<sup>313</sup> *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7 per Gleeson CJ, Gummow, Kirby, Hayen, Heydon, Creenan and Kiefel JJ [1] – "This proceeding ... focuses upon the twisted pairs of ... wires which run from an end-user's premises to a local exchange and are known as "local loops". There are about 10.1 local loops in operation ... Telstra ... installs, owns and maintains those local loops [and] ... owns about 5,120 local exchanges."

<sup>314</sup> Note 312, The Senate, 9 – Shareholders are concerned "separation will reduce Telstra's share value"

<sup>315</sup> Abbott T, 'Budget Reply Speech', 13 May 2010, *House of Representatives Hansard*, 81 <http://aph.gov.au/hansard/reps/dailys/dr130510.pdf> (viewed 03/06/2010). It is assumed that the coming to power of Prime Minister Gillard on 24<sup>th</sup> June 2010 will not add to the political divide.

<sup>316</sup> The newly proposed legislative process, which has been expanded from the 2009 proposal see – Items 30 and 31 *Telecommunications (Consumer Protection and Service Standards) Act 2010* and Items 21 and 22 *Telecommunications (Consumer Protection and Service Standards) Bill 2009* – shows that the amendments relating to Telstra now includes *inter alia* detailed migration plan principles and expanded provisions about the giving of undertakings. An analysis of either the effect of the additions on Telstra, or a comparison with the previously proposed provisions, is outside the scope of the thesis. It is noted however that the 2010 Act establishes the 'independent telecommunications adjudicator' for the purposes of the new Section 577A see – Item 67 *Telecommunications (Consumer Protection and Service Standards) Act 2010*

parties<sup>317</sup> when, as an essential service, it should be treated as any other utility service. The opposition also does not focus on enabling end users. Due to the cost of construction of the NBN, its policy<sup>318</sup> to date instead has focussed on delivery of the infrastructure rather than enabling those who must use it.

## D. Challenges

As Chapter 2 identified, for the future of the internet economy, consideration of issues of access to high-speed broadband must be undertaken from the end users' perspective. That is, access to the infrastructure of high-speed broadband, in order to enable access to the internet, is a right and essential for enabling innovation to occur. The challenge for the federal government is how to overcome the *digital divide*. To summarise, access to high-speed broadband is important for three reasons. First, such access is important for the economy as it is “*essential to creativity and innovation*”.<sup>319</sup> Second, such access is important for Australia's economic future and a natural right as “*a precondition to personal and national autonomy*”.<sup>320</sup> Third,

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<sup>317</sup> ‘Telstra break-up bill under threat’, AAP, March 17, 2010 12:53 pm “*The ... NBN ... strategy is in tatters after the Australian Greens indicated they may withdraw support for legislation that paves the way for the break-up of Telstra. The development comes after ... Minister ... Conroy today defied a senate deadline to release an implementation study into the viability of the \$43 billion network. Greens communications spokesman ... said it appeared Senator Conroy had no intention of releasing the \$25 million study, prepared by consultancy group KPMG and McKinsey. ‘I’ll wait and see whether the Government makes a statement that they do intend to table the implementation study, but until then we will have to consider all our options including voting against the legislation’ Senator Ludlam said*” More recently the opposition announced that it would introduce amendments to the *Telecommunications Legislation Amendment (Competition & Consumer Safeguards) Act 2010* to *inter alia* ensure competition law will apply to the NBN Co Limited/Telstra ‘deal’ and to permit Telstra separate to be able to participate in next-generation wireless spectrum without having to structurally separate. See – Turnbull M, ‘Telecommunications Legislation Amendments’, October 27, 2010 <http://www.malcolmturnbull.com.au/media/telecommunications-legislation-amendments/> (accessed 06/11/2010) The opposition was unsuccessful in their attempt.

<sup>318</sup> Coalition, ‘The Coalition’s plan for real action on Broadband and Telecommunications’, August 2010, 2 – 4; although the Coalition does support a review of the USO their focus appears to be on protecting consumers rather than promoting broadband services and enabling engagement, see at 3 – “*9. Conduct a major review of the Universal Service Obligation – The Coalition supports the need for enhanced consumer protections within the existing Universal Service Obligation Framework and will enact intermediate improvements to the USO framework. In addition the Coalition would task the NBC with examining the proposal of the Glasson Review for a new and broader framework to be known as the Communications Service Standard (CSS) as the rollout of the new infrastructure and the grants that will be provided in this policy are delivered, together with communications infrastructure that is being built by the private sector.*” <http://www.liberal.org.au/~media/Files/Policies%20and%20Media/Infrastructure/Broadband%20and%20Telecommunications%20Policy.ashx> (accessed 10/08/2010)

<sup>319</sup> Cutler T, ‘Chapter 3 – Innovation and Open Access to Public Sector Information’ [2008] *SydUPLawBk* 34 in B Fitzgerald *Legal Framework for e-Research: Realising the Potential* (2008) 24, 28 <http://www.austlii.edu.au/au/journals/SydUPLawBk/2008/34.txt> (viewed 23/02/2010)

<sup>320</sup> Parliament of Australia, ‘Australia as an Information Society: Grasping New Paradigms’, Report of the House of Representatives Standing Committee for Long Term Strategies, May 1991, 39 – 40

such access is a natural right for, as was recognised almost two decades ago, “[a]ccess to information for all citizens is essential to the achieving of social justice in a democracy”.<sup>321</sup> High-speed broadband is needed to facilitate connectedness. Appropriate access for all to the NBN, as the current proposal for ubiquitous high-speed broadband delivery, and to all information available by means of NBN access are rights and as such belong to those basic “[v]alues of fair dealing” that we must defend.<sup>322</sup> In the 21<sup>st</sup> Century, access to the NBN is both a fundamental human right and a right of citizenship.<sup>323</sup>

It could be argued that there are no gaps in the above regimes because they address the purpose/s for which they were introduced. From the perspective of the individual end user however they are found wanting in that they are:

1. industry specific;
2. infrastructure focussed;
3. competition focussed;
4. not broadband specific;
5. not internet economy focussed;
6. not directed to addressing the *digital divide*; and
7. not addressing transitional matters for, or enabling, end users.

In addressing the challenges raised by the *digital divide* it will be necessary to ensure that individual end users are digitally literate and financially enabled. The above regimes are not specifically enabling of individual end user access to the NBN and thus do not support or promote *connectedness*. To become digitally literate means users must obtain the necessary skills. Acquiring skills will include both appropriate government policies, education, experience and guidance as to what the NBN can enable and how it can be accessed.

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[http://www.aph.gov.au/house/committee/reports/1991/1991\\_PP145.pdf](http://www.aph.gov.au/house/committee/reports/1991/1991_PP145.pdf) (accessed 24/06/2009)

<sup>321</sup> Note 320, Parliament of Australia, 4

<sup>322</sup> Kirby M, ‘Four Parables and a Reflection on Regulating the Net’, *Speech delivered to the internet Industry Association, Annual Dinner*, Sydney, Australia, 21 February 2008 (Edited Transcript) 14 [http://www.highcourt.gov.au/speeches/kirbyj/kirbyj\\_21feb08.pdf](http://www.highcourt.gov.au/speeches/kirbyj/kirbyj_21feb08.pdf) (viewed 26/02/2010)

<sup>323</sup> Curtin D, ‘Citizens’ Fundamental Right of Access to EU Information: An Evolving Digital Passepartout?’ (2000) 37 *Common Market Law Review*, 7, 41 – “*Bovens ... squarely places the issues of (digital) access to information in the context of citizenship rights, namely a penumbra of fundamental rights enjoyed by citizens under the rule of law. This ... includes rights such as those pertaining to digital information, digital participation etc.*”

## E. Conclusion

In weighing up content providers' rights against those of consumers – with regards to access to services – policy makers should ensure the public is benefitted by what is proposed.<sup>324</sup> This means the NBN, as the current proposal for delivery of high-speed broadband, is supported by all parties and designed to operate on a neutral, open basis that enables and protects individual rights and promotes innovation. The federal government must be aware that technology will continue to develop. As such it is imperative that policy and legislation be subject to ongoing reviews to ensure that it meets future demands.<sup>325</sup> Despite cost and other issues,<sup>326</sup> extending the USO to broadband services, rather than relying on the voluntary involvement of providers in the ABG, may assist in the adoption of high-speed broadband throughout Australia.

Among the issues Chapter 6 will consider is whether, in light of the fact the existing access regimes were implemented for old form telecommunications provision, it would be more appropriate to develop and implement an NBN-specific regime. In this context it will be necessary to consider how the existing regimes “*fit into our lives and society as a whole*”<sup>327</sup> and whether that ‘fit’ is appropriate. Appreciating that there are many challenges facing the NBN the challenge the thesis will attempt to overcome is the *digital divide*. Chapter 6 will look to provide recommendations to the federal government as to how to address the challenges of ensuring demand by users, as well as ensuring users' educational capacity and financial capacity by means of appropriate policies to aid in the transition to the NBN by the greatest number of Australians.

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<sup>324</sup> *The Grain Pool of WA v The Commonwealth* [2000] HCA 14 (23 March 2000) 39, Footnote 218 – similarly to Kirby J's observation in respect of intellectual property rights “*the protection of intellectual property rights must be afforded in a constitutional setting which upholds other values of public good.*”

<sup>325</sup> Note 10, DBCDE, 20 – “*governments must continue to review regulatory structures as technology and markets evolve.*”

<sup>326</sup> Gans J, ‘Creating an efficient national broadband network’ in M Jones (Ed) *Australia's Broadband Future: Four doors to greater competition*, Growth 60, September 2008, CEDA, 26 – the author observes that such an extension would “*misplaced and likely to be costly in terms of reduced competition.*”

<sup>327</sup> Meyerson D, *Essential Jurisprudence* (Routledge-Cavendish, Coogee, NSW, Australia, 2006) 2

## CHAPTER 6 – ADDRESSING THE CHALLENGES

*“The greatest loss of time is delay and expectation, which depend upon the future. We let go the present, which we have in our power, and look forward to that which depends upon chance, and so relinquish a certainty for an uncertainty.”<sup>1</sup>*

### A. Introduction

The fundamental nature of the access regimes considered in Chapter 5 means they are focussed on use rather than on addressing the needs of the individual end users. The regimes do this by either seeking to ensure competition in the market, enabling access to land or facilities, or to restricting access to materials that are deemed inappropriate. In order to promote *connectedness*, an NBN-specific access policy is required. The chapter identifies matters an NBN-specific access policy should consider and the issues that must be addressed by the federal government in order to develop that policy. It concludes with recommendations to secure openness and neutrality, protect individual end users’ access rights, and assist the engagement in the internet of Australians lacking access capacity.

The current access regimes have not adapted to the change in community and business needs arising through the use of digital technologies.<sup>2</sup> In particular, they do not address the current desired levels and means of communicating and accessing information, which have changed dramatically from those of the past century. Individuals are now more important as they are relevant to both sides of the internet economy as innovators/employees and as consumers. However, individuals are not specifically protected, other than in restricting their access to materials, or enabled and their access is not facilitated by the existing regimes. The access regimes were tailored before the rise of the internet economy and attempts to modify them to fit the current environment do not address changed user needs. The federal government’s proposed policies also do not enable these changed needs as they seek to further control use and access by those already enabled.

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<sup>1</sup> Lucius Annaeus Seneca, Roman philosopher, statesman, orator, and tragedian (4 BC–AD 65)

<sup>2</sup> Benkler Y, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (Yale University Press, New Haven and London, 2006) 362

The needs of individual end users however must be addressed. This will require developing governing principles for openness, neutrality and access. Once this is done, clear regulatory objectives will need to be adopted<sup>3</sup> before legislation is introduced. However, policy development that informs appropriate regulation takes time. Appropriate policies cannot be created overnight as the development process must involve various parties to ensure that the developed policies are “*built upon consistent principles and underpinned by enduring values*”.<sup>4</sup> It will be important to ensure policy makers are aware an appropriate NBN-specific end user access policy will be an integral part of policies to ensure the future of innovation<sup>5</sup> and the internet economy. Many business operations are now concerned with digital information<sup>6</sup> and how that information is accessed and managed.<sup>7</sup> Mackay’s hope that we would not be addicted to this wealth of information<sup>8</sup> was futile as information by itself now is a “*valuable asset*”.<sup>9</sup> As Komito identified, our “*communications revolution ... [is driven by] ... inexpensive and widely available fast broadband access to remote sites.*”<sup>10</sup> In the 21<sup>st</sup> century the digital immigrant<sup>11</sup> must have access to high-speed broadband and learn how to access the wealth of information and services available via the internet.

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<sup>3</sup> This will require a clear statement of the goals that policy is to achieve. See – Burri-Nenova M, ‘Defining Regulatory Objectives for Contemporary Electronic Communications: Between a Rock and a Hard Place’ (2008) 12 *International Journal of Communications Law & Policy*, 274, 275 – “*Before answering the question of the appropriate regulatory model for communications, it is essential to figure out what goals are to be pursued in order to consider what kind of measures could bring about their attainment.*” And 278 – “*competition is not an end in itself. It is the means for achieving the ultimate goals of economic policy, including the one applicable to communications, which is, according to modern economic theory, consumer welfare.*” [references omitted]

<sup>4</sup> CEDA, ‘Reclaiming our Commonwealth: Policies for a Fair and Sustainable Future’, Common Sense Paper No 1, June 2006, ISSN 1835-0070 (<http://cpd.org.au>) (viewed 15 July 2008)

<sup>5</sup> Tapia A, B Blodgett and J Jang, ‘The Merging of Telecommunications Policy and Science Policy through Broadband Stimulus Funding’, *paper presented at The 37<sup>th</sup> TPRC Research Conference on Communication, Information and internet Policy*, 25-27 September, 2009, George Mason University School of Law, Arlington, VA.

<sup>6</sup> Komito L, ‘Information society policy’ in G Hearn and D Rooney (Eds) *Knowledge policy: challenges for the 21st century* (Edward Elgar, Cheltenham, 2008) 84 – or as Komito refers to it these “*new forms of information*”

<sup>7</sup> Fitzgerald B, A Fitzgerald, G Middleton, Y Lim and T Beale, *Internet and E-Commerce Law: Technology, Law and Policy* (Lawbook Co, Sydney, 2007) 13

<sup>8</sup> Mackay H, *Turning point – Australians choosing their future* (Pan McMillan Australia, Sydney, 1999) – Mackay expressed the hope that there would be “*a way of owning and enjoying all of this [digital] information without being addicted to it or overwhelmed by it.*”

<sup>9</sup> Stein L and N Sinha, ‘New Global Media and Communication Policy: the Role of the State in the Twenty-First Century’ in L Lievrouw and S Livingstone (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 411

<sup>10</sup> Note 6, Komito, 84

<sup>11</sup> Prensky M, ‘Digital Natives, Digital Immigrants Part 1’, *On the Horizon* (2001) 9(5) 1 – these are people who were born before PCs became commonplace, as opposed to the ‘natives’ who have grown up in the digital environment. <http://www.proquest.com/> (viewed 14/09/2009)

Previous chapters noted high-speed broadband as vital to the future of Australia's internet economy. Chapter 5 identified the challenges facing the implementation of the NBN and this chapter will make recommendations as to how the specific challenges rising from the *digital divide* may be addressed. Some digital immigrants may need assistance or encouragement before they are able to access the NBN. As it will be five to eight years at the earliest before the NBN is fully rolled out, primary concerns for the federal government in promoting the internet economy are not limited to how to implement the NBN. The chapter includes recommendations as to how to move all Australians from their existing access methods to the internet to access the internet, which in some cases is none, via the NBN. This transition must occur at the same time as ensuring continuity and certainty of use for business and consumers. Addressing the *digital divide* will require the federal government deal with issues arising from lack of real property ownership, lack of financial capacity, and lack of skills capacity. Issues for regional Australia, and Australians with a lack of capacity, will need specific policy consideration. The development of that policy will be a primary focus for all Australians.

## **B. How should policy be developed?**

In our society, conduct is regulated by reference to acceptable norms and standards, some of which are enacted into law.<sup>12</sup> Law is not developed in isolation from politics or society. Societal norms and standards vary over time<sup>13</sup> and this affects both the Courts<sup>14</sup> and the law. This is because the law generally develops in response to change.<sup>15</sup> In resolving any dispute, reliance is placed by the parties on the rules and principles provided by statutes and precedents.<sup>16</sup> Change usually arises from the need

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<sup>12</sup> Whitt R, 'Evolving Broadband Policy: Taking Adaptive Stances to Foster Optimal Internet Platform' (2009) 17 *Commlaw Conspectus*, 417, 506 – "*Social control often can be achieved through social norms — informal, decentralized systems of consensus and cooperation — rather than through law. Indeed, laws can inform norms, and vice versa. One scholar even argues that 'there is no sharp difference between social norms and law; rather, all rules begin as norms of some sort, and as complexity grows some norms become enforced as laws.'* Nonetheless, the very real difference between a norm and a rule is the presence of a formalized sanction enforced by the State: the 'or else' condition. The force of informal constraints is derived from the beliefs of the citizens of the State. Guilt and shame can become norm enforcement, and in turn leaders can use those emotions to enforce norms." [references omitted]

<sup>13</sup> Gibbs H, Sir, 'Oration Delivered at the Opening of the Supreme Court Library's Rare Books Room at the Supreme Court of Queensland', 2000 <http://Courts.qld.gov.au/publications/articles/speeches/givvs110200.htm> (viewed 14/07/2003)

<sup>14</sup> Cranston R, 'What Do Courts Do?', *Civil Justice Q*, 5 (1986)124

<sup>15</sup> Note 13, Gibbs

<sup>16</sup> Boule L, *Mediation: Principles, Process, Practice* (Butterworths, Sydney, 1996) 38

to address something that is missing (i.e. not addressed by current law) or a situation<sup>17</sup> that has arisen since existing laws were written or judgements delivered. The ultimate object of government policy is the specific creation of a norm by which societal behaviour is regulated. As Holland explained, the objects of “[l]aw are the creation and protection of legal rights”.<sup>18</sup> Legal rights being, essentially, the ability to control what others may do.<sup>19</sup> In order to implement any legal regime, it is necessary to determine what the goals of that regime should be;<sup>20</sup> that is, what rights are to be protected, promoted or prohibited.

As law is the ultimate implementation of developed policy into practice, policy development should be a holistic process that involves a variety of actors including “government ministers, and public servants, as well as experts such as academics and others in the community”.<sup>21</sup> This process will identify situations the law should address. The law, however, does not exist in a vacuum and, as such, any proper analysis requires that a law and its underlying policies be examined to determine why a law is necessary.<sup>22</sup> Further, as Whitt identified, there is a need “to define our ultimate goals before pursuing a rational public policy”.<sup>23</sup> The policy process therefore begins with an accurate identification of the issues to be addressed.<sup>24</sup> Governments also must be concerned with the enforceability of the laws they implement.<sup>25</sup> Without an effective means of enforcement, a law will be irrelevant, of no use to regulators, no comfort to consumers and no assistance for Australia’s future. A final concern is to ensure the ability of policy and law to develop as easily

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<sup>17</sup> Also referred to as a ‘mischief’ see – Heydon’s Case (1584) 3 Co Rep 7a at 7b; 76 ER 637

<sup>18</sup> Holland T, *The Element of Jurisprudence* (The Lawbook Exchange Ltd, New Jersey, 2006) 66

<sup>19</sup> Note 18, Holland, 68 – or as Holland explains “a capacity residing in one man of controlling with the assent and assistance of the State, the actions of others.”

<sup>20</sup> Stewart R, ‘U.S. Administrative Law: A Model for Global Administrative Law?’ (2005) 68 *L & Contemp Probs*, 63, 64

<sup>21</sup> Edwards M, *Social Policy, Public Policy: From problem to practice* (Allen & Unwin, Crows Nest, 2001) 1

<sup>22</sup> Murray A, *The Regulation of Cyberspace: Control in the Online Environment* (Routledge-Cavendish, Oxon, 2007) 30, 35

<sup>23</sup> Note 12, Whitt, 436

<sup>24</sup> Note 21, Edwards, 2

<sup>25</sup> Burmeister K, ‘Jurisdiction, Choice of Law, Copyright, and the internet: Protection Against Framing in an International Setting’ (1999) *Fordham Intell. Prop. Media & Ent. LJ*, 9, 625, 637, referring at footnote 36 to Henkin C, R C Pug, O Schachter and H Smit, *International Law: Cases and Materials*, 3<sup>rd</sup> ed (St. Paul, Minnesota: West Publishing Co, 1993) 10446; Coughlan S, R Currie, H Kindred and T Scassa, ‘Global Reach, Local Grasp: Constructing Extraterritorial Jurisdiction in the Age of Globalization’ Report to the Law Commission of Canada, 2006, 62 – those authors assert that enforceability of extraterritorial laws is the key criterion <<http://www.library.dal.ca/law/Guides/FacultyPubs/Joint/GlobalReachFinal.pdf>> (viewed 26/08/2006)



as society does.<sup>26</sup> For society in the 21<sup>st</sup> Century, this requires ensuring that any law is technology-neutral so as to encompass future technological developments. From the lessons of the past regarding media interests in Australia, the federal government will also need to work hard to ensure that future policy decisions are non-political.<sup>27</sup>

Policy development should involve a clearly defined process that is implemented rigorously and systematically.<sup>28</sup> Appreciating that the development of Australian federal legislation follows a regimented process,<sup>29</sup> the implementation of that process may benefit from an overhaul. A useful framework is one articulated by Edwards, adapted from the Bridgman and Davis policy cycle model.<sup>30</sup> Edward's *policy development framework*<sup>31</sup> utilises the following stages to develop policy:

- *Identify issues*
  - *Problem defined*
  - *Problem articulated*
- *Policy analysis*
  - *Collect relevant data and information*
  - *Clarify objectives and resolve key questions*
  - *Develop options and proposals*
- *Undertake consultation*
- *Move towards decisions*
- *Implement*
- *Evaluate*

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<sup>26</sup> White L, 'The Role of Competition Policy in the Promotion of Economic Growth', *New York University School of Law and Economics Working Papers*, Year 2008 Paper 132, New York University School of Law, 13 <http://lsr.nellco.org/nyu/lewp/papers/132> (viewed 25/07/2008)

<sup>27</sup> Thomas J, 'Digital Television and its Discontents: Competition Policy and Broadcasting in Australia' (2000-01) *International Journal of Communications Law and Policy*, 3 – "The long-standing practice of policy, as participants described it to the Commission, appeared to be an additive process of dispensing obligations and privileges in turn upon the various sectors of the industry. These obligations and privileges are the *quid pro quos*, as the [Productivity] Commission calls them, that justify otherwise anomalous provisions, including sweeping protection for incumbents. Over time the *quid pro quos* have become increasingly costly, discriminatory and complex." [http://www.ijclp.net/files/ijclp\\_web-doc\\_12-6-2001.pdf](http://www.ijclp.net/files/ijclp_web-doc_12-6-2001.pdf) (viewed 19/06/2010)

<sup>28</sup> Note 21, Edwards, 3

<sup>29</sup> See – Commonwealth of Australia, 'Legislation Handbook', May 2000, Department of the Premier and Cabinet

<sup>30</sup> Bridgman P and G Davis, *Australian Policy Handbook*, 2<sup>nd</sup> ed (Allen & Unwin, Sydney, 2000) 27

<sup>31</sup> Note 21, Edwards, 4

By its very nature, the process of policy and legislative implementation can be costly and time consuming.<sup>32</sup> It may also be necessary to revisit earlier stages in the framework before it is possible to move forward.<sup>33</sup> Importantly, it must be remembered policy development is a process. The framework used is, by itself, an aid only.<sup>34</sup> The content of the proposed policy is most important but is influenced by the process and the stakeholders involved.<sup>35</sup> The preferred method for policy and legislation development is to be proactive in dealing with an issue before it develops into a problem. More often than not, however, governments take a reactive approach, developing law in a manner some authors refer to as “*trial and error [by] confusing economic goals with political and social ones*”.<sup>36</sup> A reactive approach, unfortunately, may allow an issue to develop into a problem well after it was first identified.

Digital technology has changed how we interact<sup>37</sup> and spend our free time.<sup>38</sup> Policies for the internet economy therefore require a different form of thinking and broad consultation with community and industry. A starting point to developing appropriate policy is to ensure that policy makers are aware that an appropriate high-speed broadband policy will be an integral part of policies to ensure the future of the internet, the economy, research and innovation.<sup>39</sup> As Cutler identified,<sup>40</sup> an Australian-specific federal-government-led response is required “*to ensure that ... relevant applications ... are developed to leverage [the NBN] ... [including] applications in open democracy ... tools to facilitate education use of broadband ... and national collections of information and knowledge*”.<sup>41</sup>

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<sup>32</sup> Note 4, CEDA, 14

<sup>33</sup> Note 21, Edwards, 8

<sup>34</sup> Bridgman P and G Davis, ‘What Use is a Policy Cycle? Plenty, if the Aim is Clear’ (2003) 62 (3) *Australian Journal of Public Administration*, 98, 100

<sup>35</sup> Note 34, Bridgman and Davis, 101

<sup>36</sup> Beardsley S and D Farrell, ‘Regulation that’s good for competition’ (2005) (2) *The McKinsey Quarterly*

<sup>37</sup> Note 2, Benkler, 1 – “*It seems passé today to speak of ‘the Internet revolution.’ In some academic circles, it is positively naïve. But it should not be. The change brought about by the networked information environment is deep.*”

<sup>38</sup> For example regarding the changes brought to gambling see – McMillen J and P Grabosky, ‘Internet Gambling’, *Australian Institute of Criminology – trends & issues* (1998) 88, 1 <http://www.aic.gov.au/publications/tandi/tandi88.html> (viewed 13/07/2007)

<sup>39</sup> Note 5, Tapia *et al*

<sup>40</sup> Cutler T, ‘*Venturous Australia – building strength in innovation*’, Cutler & Company Pty Ltd, 29 August 2008, ISBN 978-0-646-50110-9 [http://www.innovation.gov.au/innovationreview/Documents/NIS\\_review\\_Web3.pdf](http://www.innovation.gov.au/innovationreview/Documents/NIS_review_Web3.pdf) (viewed 02/04/2010)

<sup>41</sup> Note 40, Cutler, 145

Bearing the current *political divide* in mind, it must be noted:

“[L]egislation is the act of making a collective decision when there are moral-political disagreements on the issues that we need collective decision making to resolve. Legislation is agonistic by nature. There are winners and losers in the battles of legislative politics. This is the case even when a compromise is achieved in a legislative process”.<sup>42</sup>

The policy development process should therefore be thorough, inclusive and comprehensive even though political consensus may not be achieved. This should ensure, even if there is a future change of government, there will not be a loss of policy or economic advantage as a consequence. Finally, following on from the policy framework identified above, review and revision of policy, referred to as ‘evaluate’ by Edwards, will be necessary in the future. As Howkins reinforced, “[s]uccessful policies can only grow out of collaboration between government and business to ensure that, when they are implemented, they are appropriate and that, as new situations arise, so new regulations are prepared.”<sup>43</sup> In anticipation of future changes,<sup>44</sup> the review process will require community and industry consultations.

### **C. NBN policy development considerations**

The changes we can expect during the transition to a ubiquitous high-speed broadband network have not been experienced since the opening of the telecommunications market in 1997.<sup>45</sup> In order for the internet economy to flourish, the internet must be truly ubiquitous. This requires there to be a means for all to access it and for individual end users to have appropriate infrastructure and technical capacity. The end users must also be digitally literate. Moving forward will involve more than just making the NBN available. It is also will be necessary to encourage and enable its use by means of appropriately developed policies.<sup>46</sup> The principles to

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<sup>42</sup> Inoue T, ‘The Rule of Law as the Law of Legislation’ in L Wintgens (Ed) *Legislation in Context: Essays in Legisprudence* (Ashgate Publishing, Ltd, 2007) 56

<sup>43</sup> Howkins J, *Creative Ecologies: Where Thinking is a Proper Job* (University of Queensland Press, St Lucia, 2009) 119

<sup>44</sup> Note 21, Edwards

<sup>45</sup> ACCC, Draft Declaration, June 2009, 109 – “*The extent of industry change that will likely occur during ... transition ... is unprecedented since the implementation of the open competition telecommunications regime*”.

<sup>46</sup> IIA, ‘Principles for a Digital Economy’, 27 July 2010, *Internet Industry Association*, 16 – “*Finding the most appropriate policy or technical solution requires careful evaluation of the balance of opportunities and threats.*” <http://iia.net.au/images/resources/pdf/manifestor-2010.pdf> (accessed

be followed during the NBN policy development process should be specific for the broadband environment.

As the Internet Industry Association proposes, the principles required for the adoption of appropriate high-speed broadband policy include: transparency and openness, proportionality and efficiency, global best practice, necessity, empowerment of individual choice, clarity and predictability with adaptability, and for evidenced-based policies.<sup>47</sup> The international recognition of human rights, as Chapter 2 considers, may only be a product of the 20<sup>th</sup> Century.<sup>48</sup> However, in regards to the right of NBN access, such recognition will be vital to enable innovation for the future of Australia's internet economy and Australia as a society. Acknowledging that there are flaws in the process, lessons can be learnt from the transition to digital television,<sup>49</sup> as regards the process that could be utilised for the transitioning of Australia to the NBN. This is because television is as ubiquitous as the internet, if not more so. Lessons also will be learnt from overseas examples.

The steps the federal government should take to improve public participation include technical solutions regarding transparency of decision-making processes,<sup>50</sup> and solutions to enable user capacity (empowerment)<sup>51</sup> building. The focus of an appropriate policy should not be limited to that of just improving education levels. Financial capacity – even for services and content provided at more economical rates than currently available – and appropriate means of easy access will impact upon the individual end user's ability to access all services. Consistent with this line of reasoning is the federal government's policy objective of providing broadband access for all at an affordable price. There also is recognition that ensuring adoption of NBN services should be a priority for NBN Co Limited.<sup>52</sup> However, government policy

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<sup>47</sup> Note 46, IIA, 16-17

<sup>48</sup> 'Universal Declaration of Human Rights', General Assembly Resolution 217A (III), 10 December 1948; Gardiner R, *International Law* (Pearson Education Limited, London, 2003) 271 – 282

<sup>49</sup> Papandrea F, 'Digital Television Study: A Squandered Opportunity' (2001) 8(1) *Agenda*, 65

<sup>50</sup> Citron D, 'Open Code Governance' [2008] *The University of Chicago Legal Forum*, 355, 358; Lundy, Hon. K, 'Public Sphere 2: Government 2.0 – Briefing Paper', July 28, 2009, 10 <http://www.katelundy.com.au/wp-content/uploads/Public-Sphere-2-Government-2.pdf> (viewed 18/11/2009)

<sup>51</sup> Note 50, Lundy, 8

<sup>52</sup> McKinsey & Company/KPMG, *National Broadband Network Implementation Study*, 6 May 2010, 32 <http://data.dbcde.gov.au/nbn/NBN-Implementation-Study-complete-report.pdf> (accessed 08/05/2010) ('McKinsey Report')

needs to be more pragmatic in recognising that the price is only part of the equation. As Morrison and Potts considered:

*“the growth of an economic system ... is a consequence of the growth of knowledge. For this reason, all policy that focuses on employment, industry development, competition and innovation is ultimately knowledge policy. There is, in other words, no such thing as a separate realm of knowledge policy beyond the realm of industry, employment, competition, education and innovation policy.”*<sup>53</sup>

To grow the internet economy will therefore require that individuals as employees have the skills necessary to engage. Skills come both from education and use. As such, an NBN policy must enable the acquisition of both. As identified by the McKinsey Report, which did not consider issues specifically relevant for end users without financial capacity, this is a job for the federal government.<sup>54</sup> To be of the greatest benefit to Australia’s future, e-learning should be directed to all levels of education, including primary and vocational learning.<sup>55</sup> It should not just be directed towards higher education. The federal government’s commitment to spend AUD\$2 billion across five years to increase the digital literacy of school children (Digital Education Revolution) is commendable but limited. As e-learning is a tool of lifelong learning,<sup>56</sup> however, the federal government’s attention and associated funding should not be restricted to a consideration of the impact for school-aged children. Encouragement should extend to include all levels of education and all ages.<sup>57</sup>

Recent studies show that the level of an end user’s education directly impacts their use of the internet.<sup>58</sup> The question to be answered is how can education levels be

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<sup>53</sup> Morrison K and J Potts, ‘Industry policy as innovation policy’ in G Hearn and D Rooney (Eds) *Knowledge policy : challenges for the 21st century* (Edward Elgar, Cheltenham, 2008) 171

<sup>54</sup> Note 52, McKinsey Report, 110

<sup>55</sup> Groves J, ‘Online Education and Training for Australian Farmers’ (1999) 99(4) *Rural Industries Research and Development Corporation*, Project No BDL-3A

<sup>56</sup> Page K, ‘A preliminary study on the current state of e-learning in lifelong learning’ (2006) 123 *Cedefop Panaorama series*, 12

<sup>57</sup> It is after all those of my mother’s generation, and not those of my godsons Ben and Luke’s, that are least likely currently to use the internet.

<sup>58</sup> ACMA, ‘Telecommunications Today – Report 6: Internet activity and content’, September 2008, 13 – referring to ABS statistics and the results of the Roy Morgan Single Source survey referred to in that report

[http://www.acma.gov.au/webwr/\\_assets/main/lib310210/report\\_6\\_telecommunications\\_today.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310210/report_6_telecommunications_today.pdf) (viewed 07/01/2010)

improved without appropriate access to the services?<sup>59</sup> Even with access to services, as Howkins observed, learning to do or use something is a personal process.<sup>60</sup> Education, like training, is a teaching process. Learning on the other hand comes from the experience of doing something.<sup>61</sup> Education levels may therefore impact upon internet use, however, in order to increase both it also is necessary to provide hands-on training and processes to enable e-learning.

Economic issues need to be addressed on a holistic basis. Economic issues may arise regarding the financial capacity of the end user to seek access, the service and content providers seeking to increase their profits by limiting their competitors' ability to sell their services to consumers<sup>62</sup> and the costs of implementation of the network in the first place. Policies benefitting "*the economy as a whole*",<sup>63</sup> rather than the benefits to any one supplier, ISP or consumer, must be considered and adopted. However, addressing consumer-specific issues will be relevant for ensuring maximum adoption. There is a risk that in changing from current networks to the NBN, users who are not able to afford to upgrade to new equipment or to receive relevant training will be left behind.<sup>64</sup>

Further, it will be vital for both businesses and consumers as a part of ensuring *connectedness*, to guarantee (ongoing) interoperability between existing, proposed and future systems until all are connected to the one system.<sup>65</sup> Accepting that Telstra

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<sup>59</sup> La Rose R, J Gregg, S Stover, J Straubhaur, and N Inagaki, 'Closing the rural broadband gap: Promoting adoption of the Internet in rural America', *Telecommunications Policy* (2007) 31, 359-373 asked of the US "how to improve educational attainment without improving educational access through broadband adoption?"

<sup>60</sup> Note 43, Howkins, 52

<sup>61</sup> Note 43, Howkins, 53-54 – "I want to clarify the difference between education, training and learning. Education is the government-led system for teaching children and young people up to college levels ... Training teaches specific skills, usually vocational and ranging from language to life-skills and professional qualifications ... And then there is learning. Ask people how they discovered how to do what they are good at and, apart from full-time academics, almost everyone says they learned from experience, from friends and colleagues, from reading and talking and doing. They were not taught they learned. Learning is personal, diverse and endless. It is self-motivated, self-managed and often self-financed. Education helps but only if it teaches us to learn."

<sup>62</sup> Speta J, 'A Sensible Next Step on Network Neutrality: The Market Power Question' (2009) 9(1) *Review of Network Economics*, 115 – "At the dawn of the broadband era, the issue was framed as whether independent ISPs would have 'open access' to sell the highspeed Internet services offered by cable companies." as referred to in Endres J, 'Net neutrality – How relevant is it to Australia?', *Telecommunications Journal of Australia* (2009) 59(2) 22.1-22.10

<sup>63</sup> Johnson K, 'The importance of net neutrality to the digital economy', *Telecommunications Journal of Australia* (2009) 59(2)19.1

<sup>64</sup> Kollock P and M Smith, 'Communities in cyberspace' in M Smith and P Kollock (Eds) *Communities in Cyberspace* (Routledge, London, 1999) 21

<sup>65</sup> Malone P, 'SME Interaction in Supply Chains', in R Cooper and G Madden (Eds) *Frontiers of*

and the NBN Co are in the middle of negotiations regarding Telstra's networks,<sup>66</sup> it is noted that these arrangements will take some months more to finalise and remain subject to shareholder approval.<sup>67</sup> If not concluded, the federal government's intention is to proceed without Telstra.<sup>68</sup> If this occurs, separate operation of the NBN from existing networks, means the NBN will not be ubiquitous for many years, if at all. If the other networks exist outside of the NBN, Australia may be divided because while "most of the country"<sup>69</sup> will be serviced by the NBN, not all will be. The further risk is service providers may choose to only provide their content and information over one network. As the Queensland government identified "separation of ... different forms of communication to different infrastructures is increasingly out of step with the rest of the world and will place Australia at a long term disadvantage ... all converged telecommunications services should be funded via a consistent approach".<sup>70</sup> This would lead to further broadband division.

The proposed legislation defines the NBN in restrictive terms. That is, the *National Broadband Network Companies Bill 2010* defines the NBN by reference to involvement of an NBN corporation.<sup>71</sup> In addition to the expected finalisation of the

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*Broadband, Electronic and Mobile Commerce* (Physcia-Verlag, Heidelberg, 2004) 65

<sup>66</sup> NBN Co Limited, 'NBN Co and Telstra reach heads of agreement', Media Release, 20 June 2010 – "The Heads of Agreement covers the migration of subscriber traffic and the decommissioning of Telstra's copper network and its cable broadband service ... 'While there is a considerable amount of negotiation and contractual work to go, we believe this agreement is a significant step forward to creating a more competitive telecommunications industry,' Mr Quigley said." [http://www.nbnco.com.au/content/upload/files/Press\\_Releases/NBNCo\\_MediaRelease\\_20.06.2010-TelstraHeadsOfAgreement.pdf](http://www.nbnco.com.au/content/upload/files/Press_Releases/NBNCo_MediaRelease_20.06.2010-TelstraHeadsOfAgreement.pdf) (viewed 22/06/2010)

<sup>67</sup> Rudd Hon, K, 'Agreement between NBN Co and Telstra on the rollout of the National Broadband Network, Joint Media Release, 20 June 2010 [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/060](http://www.minister.dbcde.gov.au/media/media_releases/2010/060) (viewed 22/06/2010); Telstra, 'Telstra signs Financial Heads of Agreement on NBN', Announcement, 20 June 2010 <http://www.telstra.com.au/abouttelstra/media-centre/announcements/telstra-signs-financial-heads-of-agreement-on-nbn-1.xml> (viewed 23/06/2010) NBN Co Limited, 'Annual Report 2009-2010, 29 October 2010, 23 [http://www.nbnco.com.au/wps/wcm/connect/a69fc5804479c76aa31fab72ea64545/NBNCo\\_AnnualReport\\_2010.pdf?MOD=AJPERES&CACHEID=a69fc5804479c76aa31fab72ea64545](http://www.nbnco.com.au/wps/wcm/connect/a69fc5804479c76aa31fab72ea64545/NBNCo_AnnualReport_2010.pdf?MOD=AJPERES&CACHEID=a69fc5804479c76aa31fab72ea64545) (accessed 22/11/2010)

<sup>68</sup> Note 67, Rudd

<sup>69</sup> Note 52, McKinsey Report, 45

<sup>70</sup> Queensland Government, 'Submission to the Australian Government on Policy and Funding Initiative to provide Enhanced Broadband to Rural and Remote Areas,' June 2008, 9 [http://www.qgcio.qld.gov.au/SiteCollectionDocuments/Resources/Publications/nbn\\_rural\\_remote\\_areas.pdf](http://www.qgcio.qld.gov.au/SiteCollectionDocuments/Resources/Publications/nbn_rural_remote_areas.pdf) (viewed 07/05/2010)

<sup>71</sup> Section 5, *National Broadband Network Companies Bill 2010* Definitions, – "national broadband network means a national telecommunications network for the high-speed carriage of communications, where an NBN corporation has been, is, or is to be, involved in the creation or development of the network." Although on reintroduction the definition was expanded to also include

agreement with Telstra, as previous federal government statements indicate, there may be a need to engage with and encourage private investment. Where the exact nature of such investment is not clear, such a proscriptive definition may be unduly narrow and thus restrictive. A better definition may be one that identifies the NBN by reference purely to the network irrespective of where the creative or economic input came from, or who built it. Additionally, to capture future possibilities as to how networks may be constructed, legislation should include the ability to extend the definition of the NBN to include networks specified by Ministerial designation.

Other issues influencing broadband adoption include perceptions about costs, confusion about available packages and suppliers, the age of the prospective user, and general scepticism.<sup>72</sup> To counter these influences, a proactive education programme may be required.<sup>73</sup> Neutrality and openness would be useful tools in both ensuring competition and enabling access by end users. Although mobile technology usage is becoming more common, Australia's topography and current facilities do not enable its access throughout Australia. Therefore physical laying of cables and land access issues remain relevant.<sup>74</sup> Addressing land-access issues will mean that both access and backhaul issues<sup>75</sup> must be addressed in order to lay the cables. This may involve installing a combination of FTTP cabling, wireless,<sup>76</sup> microwave and/or satellite<sup>77</sup> technologies. For both greenfield and existing sites, consideration needs to

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the clarification – “To avoid doubt, it is immaterial whether the creation or development of the network is, to any extent, attributable to:

- (a) the acquisition of assets that were used, or for use, in connection with another telecommunications network; or
- (b) the obtaining of access to assets that are also used, or for use, in connection with another telecommunications network.”

<sup>72</sup> DCITA, ‘Broadband in regional Australia: Making a difference’, April 2007, 44 [www.ag.gov.au/cca](http://www.ag.gov.au/cca) (viewed 17/05/2009)

<sup>73</sup> ‘NBN advertising approval pending’, *ABC News*, 1 June 2010 <http://www.abc.net.au/news/stories/2010/06/01/2915348.htm> (viewed 02/06/2010) It is noted that subsequently a NBN advertising campaign has started but has not as yet included specific education information – i.e. how to become *digitally literate* etc. See ‘View the TVC’ <http://www.nbn.gov.au/content/view-tvc> (viewed 13/07/2010)

<sup>74</sup> Note 52, McKinsey Report, 31

<sup>75</sup> As explained in the Airspan Networks Pty Ltd submission to the ‘Call for submissions on broadband solutions for remote area’, 3 – “Access is the method whereby an individual customer connects to the nearest provider infrastructure ... Backhaul is the system that carries those services from the providers’ local radio-tower, exchange etc back to a national network.”

<sup>76</sup> ANU, submission to the ‘Call for submissions on broadband solutions for remote area’ 27 June 2008; For a consideration of the wireless technologies see – Parliament of Australia, ‘Australia as an Information Society: Grasping New Paradigms’, Report of the House of Representatives Standing Committee for Long Term Strategies, May 1991, 17-40 [http://www.aph.gov.au/house/committee/reports/1991/1991\\_PP145.pdf](http://www.aph.gov.au/house/committee/reports/1991/1991_PP145.pdf) (viewed 24/06/2009)

<sup>77</sup> Australian Private Networks, submission to the ‘Call for submissions on broadband solutions for



be given not just to issues of enabling access to infrastructure but also to internal access and interaction within these communities.<sup>78</sup> If accessing services within a local area comes at an additional price, however small, it might be one that some are not able to afford. For land access, the fact that many of the premises are rented may impact upon what connection is made available to the tenants. It may be therefore that occupants of many of the projected 12 million premises<sup>79</sup> will not be able to access the NBN as easily as others.

The greenfield estate policy and proposed legislation may address some of these issues. However, it does not do so currently for existing properties without any broadband access, or with only limited available services.<sup>80</sup> It also does not obligate or enable landlords to ensure the connection exists. The landlords themselves, however, may be disadvantaged if they were required to enable such connections. This is particularly so where “*the cost and method of installation can vary substantially based on the age and layout of the building*”.<sup>81</sup> Similar concerns may arise in respect to community titles and unit complexes.<sup>82</sup> The federal government estimated that the cost of installing FTTP would be approximately \$3000 per housing block, that FTTP would increase the land value and that a lack of FTTP would decrease the value.<sup>83</sup>

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remote area’ 30 June 2008; NewSat Limited, submission to the ‘Call for submissions on broadband solutions for remote area’ 30 June 2008; Optus submission to the ‘Call for submissions on broadband solutions for remote area’, 27 June 2008, 5; Clear Advantage & Assocs, ‘Broadband Technology Rollout Costing Study’, November 2003, Report for DCITA 125 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0018/20439/Broadband\\_Technology\\_Rollout\\_Costing\\_Study.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0018/20439/Broadband_Technology_Rollout_Costing_Study.pdf) (accessed 24/06/2009)

<sup>78</sup> Horan T, *Digital Places: Building Our City of Bits* (Washington, D.C. ULI – the Urban Land Institute, 2000) 72-78

<sup>79</sup> Note 52, McKinsey Report, 19 – “*By 2018, Australia will have approximately 12 million premises, growing from 10.7 million today.*”

<sup>80</sup> For example, and from personal experience, the Buderim exchange has only recently enabled ADSL-2 for some ISPs.

<sup>81</sup> Note 52, McKinsey Report, 21

<sup>82</sup> Note 52, McKinsey Report, 79

<sup>83</sup> DBCDE, ‘Proposed Subordinate Legislation to give effect to fibre in new developments’, Position Paper, 16 April 2010, 6 – “*Building on the fibre-ready requirement, the subordinate legislation would provide that in those developments captured by the fibre-ready requirement as explained above, the installation of fibre would also be required where:*

- *the development over its life was to be equal to or greater than 200 building lots and/or units (the size threshold), and*
- *fibre could be installed at a price of \$3000 (including GST) or less, which includes the price of backhaul (the price threshold).*”

[http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0005/127517/Proposed\\_subordinate\\_legislation\\_to\\_give\\_effect\\_to\\_fibre\\_in\\_new\\_developments.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0005/127517/Proposed_subordinate_legislation_to_give_effect_to_fibre_in_new_developments.pdf) (viewed 12/07/2010). Also see Explanatory Memorandum, ‘Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010, 5 – “*For the purposes of this Regulation Impact Statement, key provisioning scenarios and the estimated total cost per premises of each scenario are:*

- *providing copper connections, with broadband capability, at around \$1,000;*

That estimate of installation cost is more than the cost of copper cable<sup>84</sup> but yet may be unrealistically low.<sup>85</sup> The McKinsey Report provides an indicative cost for the Optical Network Termination to be \$500 per premises without any “*lead-in installation*”.<sup>86</sup> The actual cost of connection therefore is not clear. In particular industry participants considered the government’s view of costs to be unrealistic.<sup>87</sup> Some responses to the greenfield estate review indicate that industry does not consider the federal government’s proposal is economically viable except for large estates with hundreds of lots.<sup>88</sup> Others indicated that competition in so small a market would make many suppliers unviable.<sup>89</sup> Yet others believe that the installation of FTTP should be treated similarly to the installation of other utilities.<sup>90</sup>

- 
- connecting FTTP to new premises, at around \$2,500 per lot;
  - retrofitting premises that are connected with copper with FTTP where fibre-ready infrastructure is installed, at around \$3,000 per lot (i.e. \$1,000 for copper and fibre-ready infrastructure plus \$2,000 for retrofitting FTTP); and
  - retrofitting premises that are connected with copper with FTTP where no fibre-ready infrastructure has been installed, at around \$4,000 per lot (\$1,000 for initial copper installation plus \$3,000 for retrofitting FTTP).”

[http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4331\\_ems\\_ff0babde-3169-4f7a-b344-3f986bd16ce6/upload\\_pdf/340600.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4331_ems_ff0babde-3169-4f7a-b344-3f986bd16ce6/upload_pdf/340600.pdf;fileType=application%2Fpdf) (viewed 12/07/2010) In 2009 this was estimated at \$2,500 see – DBCDE, ‘National Broadband Network: Fibre-to-the-premises in greenfield estates, Consultation Paper’, May 2009 [http://www.dbcde.gov.au/\\_data/assets/pdf\\_file/0018/112554/Fibre\\_in\\_greenfields\\_consultation\\_paper.pdf](http://www.dbcde.gov.au/_data/assets/pdf_file/0018/112554/Fibre_in_greenfields_consultation_paper.pdf) (viewed 12/08/2009)

<sup>84</sup> Master Builders Association Queensland, Submission to the ‘National Broadband Network: Fibre-to-the-premises in greenfield estates, Consultation Paper’, Department of Broadband, Communications and the Digital Economy, May 2009, [http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/fibre\\_in\\_greenfield\\_estates/fibre\\_to\\_the\\_premises\\_in\\_greenfield\\_estatessubmissions2?118413\\_result\\_page=A](http://www.dbcde.gov.au/broadband/national_broadband_network/fibre_in_greenfield_estates/fibre_to_the_premises_in_greenfield_estatessubmissions2?118413_result_page=A) (viewed 24/09/2009)

<sup>85</sup> Note 84, MBA; property industry concerns regarding the cost of NBN implementation continues. See – Carter B, ‘Property sector demands clarity on NBN costs’, The Australia, December 02, 2010 – “one source close to the NBN rollout suggested that concerns were mounting over the possibility that developers may be required to build in extra capacity for future network extensions. But one source close to the NBN rollout suggested that concerns were mounting over the possibility that developers may be required to build in extra capacity for future network extensions ... But one source close to the NBN rollout suggested that concerns were mounting over the possibility that developers may be required to build in extra capacity for future network extensions.” <http://www.theaustralian.com.au/business/property/property-sector-demands-clarity-on-nbn-costs/story-e6frg9gx-1225964149333> (viewed 02/12/2010)

<sup>86</sup> Note 52, McKinsey Report, 220

<sup>87</sup> Craddock L, ‘Concerns about the rollout of broadband: A legal consideration of Australia’s NBN Greenfield Policy’, *Pacific Rim Property Research Journal* [forthcoming March 2011]

<sup>88</sup> Calero F, Submission to the ‘National Broadband Network: Fibre-to-the-premises in greenfield estates, Consultation Paper’, Department of Broadband, Communications and the Digital Economy, May 2009, [http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/fibre\\_in\\_greenfield\\_estates/fibre\\_to\\_the\\_premises\\_in\\_greenfield\\_estatessubmissions2?118413\\_result\\_page=A](http://www.dbcde.gov.au/broadband/national_broadband_network/fibre_in_greenfield_estates/fibre_to_the_premises_in_greenfield_estatessubmissions2?118413_result_page=A) (viewed 24/09/2009). It would appear however that industry is more supportive of the most recent policy announcement. See – Conroy, Hon. S, ‘Provision of Fibre in New Developments’, 9 November 2010 - [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/114](http://www.minister.dbcde.gov.au/media/media_releases/2010/114) (accessed 09/12/2010)

<sup>89</sup> Cox , Submission to the ‘National Broadband Network: Fibre-to-the-premises in greenfield estates,

For roll-out purposes, further consideration needs to be given to the appropriate level of funding contributions from all parties including consumers, property investors/developers and the three levels of government. In this regard, the Queensland government's concerns, that previous funding was more directed to "*the more populated and more profitable locations, resulting in areas with real need being neglected*",<sup>91</sup> must be addressed. Funding paid to providers<sup>92</sup> as opposed to assistance being given directly to the individuals with the need, in order to enable them to have maximum choice of provider, may no longer be appropriate. The availability of construction funding remains an issue. A primary reason the federal government changed its original proposal – that industry build the NBN – was because the GFC had negatively impacted on the ability of the participants to raise the capital necessary for construction purposes.<sup>93</sup> These costs are now to be borne by the first-home buyers of greenfield estate lots. Industry warns that the current proposal is inequitable in that it requires:

*“new home purchasers in Greenfield Estates to pay upfront for infrastructure that will be provided free of charge to residents in existing urban areas. Moreover new home purchasers will presumably also pay the same ongoing access fees as those as those users who have made no upfront contribution to the cost of the rollout”.*<sup>94</sup>

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Consultation Paper', Department of Broadband, Communications and the Digital Economy, May 2009,

[http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/fibre\\_in\\_greenfield\\_estates/fibre\\_to\\_the\\_premises\\_in\\_greenfield\\_estates/submissions2?118413\\_result\\_page=A](http://www.dbcde.gov.au/broadband/national_broadband_network/fibre_in_greenfield_estates/fibre_to_the_premises_in_greenfield_estates/submissions2?118413_result_page=A) (viewed 24/09/2009)

<sup>90</sup> Central Western Queensland Remote Area Planning and Development Board, Submission to the 'National Broadband Network: Fibre-to-the-premises in greenfield estates, Consultation Paper', Department of Broadband, Communications and the Digital Economy, May 2009; Land Development Agency, Submission to the 'National Broadband Network: Fibre-to-the-premises in greenfield estates, Consultation Paper', Department of Broadband, Communications and the Digital Economy, May 2009,

[http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/fibre\\_in\\_greenfield\\_estates/fibre\\_to\\_the\\_premises\\_in\\_greenfield\\_estates/submissions2?118413\\_result\\_page=A](http://www.dbcde.gov.au/broadband/national_broadband_network/fibre_in_greenfield_estates/fibre_to_the_premises_in_greenfield_estates/submissions2?118413_result_page=A) (viewed 24/09/2009)

<sup>91</sup> Note 70, Queensland Government

<sup>92</sup> i.e. the Incentive Payments under the Australian Broadband Guarantee. See – Australian Government, 'Australian Broadband Guarantee: Program Guidelines 2010-11', July 2010, 3 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0017/128204/Australian-Broadband-Guarantee-2010-11-Guidelines-July-2010.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0017/128204/Australian-Broadband-Guarantee-2010-11-Guidelines-July-2010.pdf) (accessed 08/12/2010)

<sup>93</sup> Scott P, J Wylie, T Shaw, K Henry, T Mitchell, R Coutts and R Tucker, 'Extract from the Evaluation Report for the Request for Proposals to Roll-out and Operate a National Broadband Network for Australia' 20 January 2009, Observations 1 and 2 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0007/110014/Summary\\_observations\\_for\\_website.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0007/110014/Summary_observations_for_website.pdf) (viewed 25/09/2009)

<sup>94</sup> Housing Industry Association, 'Submission to the National Broadband Network: Fibre-to-the-

It may be that Australia needs one Minister, not many,<sup>95</sup> to deal with all NBN- and broadband-related issues. This would include those of up-skilling, educating, protecting, and informing the public about broadband to ensure that there is consistency of government service delivery, with the relevant Minister working with other Ministers as required. The thesis presumes, as a high-speed broadband network is essential for the future of Australia's internet economy, one must be constructed. In this respect the issues which require specific attention as part of the NBN's implementation are how to:

1. ensure all Australian households are able to connect to the infrastructure of the NBN (i.e. to enable connections into existing homes and units);
2. enable all Australian households to acquire the necessary computer equipment and internal infrastructures (i.e. appropriate PC plus an internal mobile hub, so that all people in a residence have the access to NBN); and
3. enable all Australians to have the necessary skills, digital literacy and user awareness safety skills to engage proactively and safely with others and with the information and resources available via the NBN.

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premises in greenfield estates Consultation Paper', 12 June 2009, 4 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0008/118646/Housing\\_Industry\\_Association\\_HIA.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0008/118646/Housing_Industry_Association_HIA.pdf) (viewed 24/09/2009) The most recent policy announcement may have gone some way to address these concerns, however specifics about actual costs were not provided. See - Conroy, Hon. S, 'Provision of Fibre in New Developments', 9 November 2010 [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/114](http://www.minister.dbcde.gov.au/media/media_releases/2010/114) (accessed 09/12/2010)

<sup>95</sup> The issue of splitting of Ministerial responsibility is not a new one. See Note 76, Parliament of Australia, 16 – "1.50 Under our federal system, no single Minister has responsibility for information policy or for setting the rules of the road about the questions of access to information. Information related subjects have a divided responsibility. For example, following the departmental division of responsibility outlined above:

- the information technology industry is the responsibility of the Minister for Industry, Technology and Commerce;
- the provision of telecommunications services is the responsibility of the Minister for Transport and Communications;
- the provision of educational services is the divided responsibility of the Minister for Employment, Education and Training and the relevant state Ministers; and
- the National Library is part of the responsibility of the Minister for Arts, Sport, the Environment, Tourism and Territories, but she has no responsibility for libraries and library standards generally; but
- no Minister takes general responsibility for a conceptual or policy framework in information issues."

[http://www.aph.gov.au/house/committee/reports/1991/1991\\_PP145.pdf](http://www.aph.gov.au/house/committee/reports/1991/1991_PP145.pdf) (viewed 24/06/2009)

## D. Recommendations

Appreciating that the federal government has many policy priorities, the thesis submits the policies specifically relevant for enabling and engaging individuals in the internet economy should be addressed as its primary concern. Ensuring coverage for service provision is a worry, as is activation,<sup>96</sup> and both should be of concern for the federal government. If the challenges presented by the *digital divide* are not addressed, the individual end users may not have impetus to become active users. The recommendations presented below are premised on the need for high-speed broadband itself and the need for users to actively and innovatively engage with it. Although Australia's policy may change regarding the method of delivery of high-speed broadband, that premise will still be relevant. The recommendations also are founded on the assumption that the most appropriate method of addressing the implementation of high-speed broadband is to take this opportunity to "*change the game*"<sup>97</sup> rather than trying to force existing laws to apply in the internet economy.

The recommendations to the federal government are first, that it legislates to ensure openness and neutrality of the NBN. Openness and network neutrality are fundamental principles for the 21<sup>st</sup> Century, because they are essential for the development, maintenance of, and participation in, the internet communities and the internet economy.<sup>98</sup> Second, that it legislates to provide access to high-speed broadband is a right of all citizens. Human rights will be fundamental in assisting to build the regulation to will underpin the internet economy. It would be prudent for the federal government to take heed of the views of many Australians as, although the concept of rights is not one necessarily that sits comfortably in Australia, the recognition of rights is becoming more widely accepted regarding the internet. This is evidenced by the fact that many individuals now consider that access to the internet and its services and content is "*a fundamental right of all people*".<sup>99</sup> Third, it

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<sup>96</sup> Note 52, McKinsey Report, 19 – Differentiates between coverage and activation in that activation occurs when services are delivered via a retailer.

<sup>97</sup> Note 27, Thomas, 10 – an opportunity not taken regarding digital television.

<sup>98</sup> Dods D, P Brisby, R Hubbard, K Ollerenshaw and B Ingram, 'Reform of European electronic communications law: a special briefing on the radical changes of 2009' (2010) 16(4) *Computer and Telecommunications Law Review*, 102, 106 – "*openness has been fundamental to the success of the internet. This is particularly true in e-commerce. It does not distinguish between a small enterprise – or even an entrepreneur – and a blue chip company employing thousands. Indeed many of the web's biggest names such as Google and Yahoo have grown from such humble beginning thanks to the openness of the internet.*"

<sup>99</sup> Internet access is 'a fundamental right', 8 March 2010, *BBC News*, referring to GlobeScan, 'Four in

develop an NBN transition assistance policy for eligible persons. In addition to holding that access to the internet is a right, it also is the view of many Australians that public funds should be allocated to ensure access to the internet is easily available to all citizens.<sup>100</sup>

## 1. Legislate for openness and neutrality of the NBN

As the Bermuda Principles show,<sup>101</sup> openness is essential for enabling future innovations and research and for promoting related social benefits. Similarly, openness as an underlying principle of high-speed broadband will be essential for researchers and EI as well as for service providers and individual end users. As the recent Hyderabad Declaration recognises, access to “*telecommunications/ICTs is essential for the world’s collective economic, social and cultural developments, and the building of a global information society*”.<sup>102</sup> Therefore, openness of and open access to the NBN as the proposed method of delivery of high-speed broadband will be essential for Australians as it will enable access by all to the internet.

However, openness cannot be considered in isolation, for what is the use of a network that can be easily accessed by consumers if the desired content available over it cannot be accessed because of filtering by ISPs? Although originally dismissed as an American-centric problem, the issue of a lack of network neutrality is now recognised as affecting all jurisdictions.<sup>103</sup> Without network

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Five Regard internet Access as a Fundamental Right: Global Poll’, Survey for the BBC, 10 – “*Australian respondents are among the most firmly convinced that internet access should be a fundamental right, with 85 per cent agreeing that this is the case. While still regarding the internet’s role as a source of information as its most valuable aspect, they are more likely than average to value the ability to communicate and interact with other people.*” see 17 for the country by country results. 19 – The interviews were conducted 30/11/2009 – 07/02/2010. [http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/08\\_03\\_10\\_BBC\\_internet\\_poll.pdf](http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/08_03_10_BBC_internet_poll.pdf) (accessed 09/03/2010)

<sup>100</sup> Ewing S and J Thomas, *CCI Digital Futures 2010: The Internet in Australia*, CCI, May 2010, 42 – “*The Australian government should allocate funds to enable all Australians to have access to internet services – A clear majority of Australians agree with this contention (57.9%). Slightly more than a quarter disagree (26.1%) and of these less than one in ten (7.8%) disagree strongly.*” <http://cci.edu.au/sites/default/files/sewing/CCI%20Digital%20Futures%202010.pdf> (viewed 08/07/2010)

<sup>101</sup> The Wellcome Trust, ‘Summary of the Report of the Second International Strategy Meeting on Human Genome Sequencing’, Bermuda, 27<sup>th</sup> February – 2<sup>nd</sup> March 1997 <http://www.genome.gov/EdKit/pdfs/1997a.pdf> (viewed 31/10/2010)

<sup>102</sup> ITU, ‘Hyderabad Declaration’, *World Telecommunications Development Conference (WTDC-10)* Hyderabad, India 24 May – 5 June 2010, 2 <http://www.itu.int/ITU-D/conferences/wtdc/2010/pdf/HyderabadDeclaration.pdf> (07/10/2010)

<sup>103</sup> Marsden, C, ‘European Law and Regulation of Mobile Net Neutrality’ (2010) 1(2) *European Journal of Law and Technology*, 1, 5 – “*In the period since [the phrase was first coined by Tim Wu]*

neutrality being enshrined in legislation (and thus having the consequences of legislative sanctions for any breaches) service providers may act in ways that can stifle the openness of a network and/or the content and services available via the NBN.<sup>104</sup> Lessons can be learnt from international practices as to how network neutrality can be achieved.<sup>105</sup>

The need for ensuring network neutrality is now widely recognised in Europe by both the European Commission and the Council of Europe<sup>106</sup> (where it is seen by the latter to be a requirement for the promotion of human rights).<sup>107</sup> As part of the modernisation of the EU Common Regulatory Framework new reforms were introduced in November 2009 to address a variety of matters<sup>108</sup> including the

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*the debate [about net neutrality] was dismissed as 'a solution in search of a problem' or 'an American problem due to abandonment of network unbundling' by various interests close to incumbent ISPs. However, the increasing evidence that the maturation of technology and copyright business models meant that the Internet could become a full-definition video distribution mechanism meant that the 'problem' has continued to grow.*" <http://ejlt.org/article/view/32/53> (viewed 26/10/2010)

<sup>104</sup> For examples of the practices used by ISP to restrict openness, i.e. by blocking access to websites, 'throttling' peer to peer traffic and charging for access to public materials see – McNamee, J, 'Response of Bits of Freedom and EDRi to the public consultation of the European Commission on the open internet and net neutrality in Europe', 30 September, 2010, 5-7 <http://www.edri.org/docs/netneutralityreaction300910.pdf> (viewed 26/10/2010)

<sup>105</sup> As the IIA recommends, the federal government should "*commit to a process of benchmarking our regulations and initiatives against other Western democracies in recognition of the fact the digital economy is borderless and skills and capital are increasingly mobile.*" Note 46, IIA, 20

<sup>106</sup> Council of Europe, 'Declaration of the Committee of Ministers on network neutrality', *Committee of Ministers*, 29 September 2010, –

*"4. Users should have the greatest possible access to Internet-based content, applications and services of their choice, whether or not they are offered free of charge, using suitable devices of their choice. Such a general principle, commonly referred to as network neutrality, should apply irrespective of the infrastructure or the network used for Internet connectivity. Access to infrastructure is a prerequisite for the realisation of this objective."*

<https://wcd.coe.int/ViewDoc.jsp?id=1678287> (viewed 26/10/2010)

<sup>107</sup> Note 106, Council of Europe –

*"1. The member states of the Council of Europe have repeatedly expressed their commitment to the protection and promotion of human rights on the Internet ...*

*3. Electronic communication networks have become basic tools for the free exchange of ideas and information. They help to ensure freedom of expression and access to information, pluralism and diversity and contribute to the enjoyment of a range of fundamental rights. A competitive and dynamic environment may encourage innovation, increasing network availability and performance and lowering costs, and can promote the free circulation of a wide range of content and services on the Internet. However, users' right to access and distribute information online and the development of new tools and services might be adversely affected by non-transparent traffic management, content and services' discrimination or impeding connectivity of devices."*

<sup>108</sup> Europa, 'EU Telecoms Reform: 12 reforms to pave way for stronger consumer rights, an open internet, a single European telecoms market and high-speed internet connections for all citizens', 20 November 2009 MEMO/09/513– "*the 12 most prominent reforms in the new package of rules for Europe's telecoms networks and services, as proposed by the European Commission in November 2007 (IP/07/1677 ), and politically agreed between the negotiators of the European Parliament, the Council of Telecoms Ministers and the Commission on 5 November (MEMO/09/491)*" include the right of European consumers to change, in 1 working day, fixed or mobile operator while keeping

requirement for Member States to legislate for network neutrality.<sup>109</sup> Member States have until July, 2011, to implement the necessary changes to their national laws and their progress with implementation will be monitored by the Commission. Leading the way in the implementation of national laws is Chile. On 13 July, 2010, Chile completed a three-year process to amend its Telecommunications Act and enshrine network neutrality in its laws.<sup>110</sup>

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their existing number; introducing a new internet freedom provision; new guarantees for an open and more 'neutral' net; consumer protection against personal data breaches and spam; the creation of a new telecommunications authority; accelerating broadband access for all Europeans; and encouraging competition and investment in next generation access networks. <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/513&format=HTML&aged=0&language=EN&guiLanguage=en> (viewed 28/10/2010) For a consideration of the reforms to the CRF see – Note 98, Dods *et al*, 104

<sup>109</sup> European Commission, 25 November 2009, Directive 2009/140/EC of the European Parliament and of the Council (2009) 337 *Official Journal of the European Union*, 37, 69 'Declaration on Net Neutrality' – *"The Commission attaches high importance to preserving the open and neutral character of the Internet, taking full account of the will of the co-legislators now to enshrine net neutrality as a policy objective and regulatory principle to be promoted by national regulatory authorities, alongside the strengthening of related transparency requirements and the creation of safeguard powers for national regulatory authorities to prevent the degradation of services and the hindering or slowing down of traffic over public networks. The Commission will monitor closely the implementation of these provisions in the Member States, introducing a particular focus on how the 'net freedoms' of European citizens are being safeguarded in its annual Progress Report to the European Parliament and the Council. In the meantime, the Commission will monitor the impact of market and technological developments on 'net freedoms' reporting to the European Parliament and Council before the end of 2010 on whether additional guidance is required, and will invoke its existing competition law powers to deal with any anti-competitive practices that may emerge."* [references omitted] <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0037:0069:EN:PDF> (viewed 26/10/2010)

<sup>110</sup> Memorandum No. 8874, July 13, 2010, amending Law No. 18,168, General Telecommunications (Chile) – Article 24 H.a) ISPs *"May not arbitrarily block, interfere with, discriminate against, hinder or restrict the right of anyone on the Internet to use, send, receive or provide any content, application or service through Internet legal and any other activity or use made legal across the network. In this sense, each user must provide a service for Internet access or connectivity to the Internet access provider, as appropriate, that does not distinguish arbitrarily content, applications or services based on the source or their property, taking account of the different configurations of the connection to the Internet as the current contract with users. However, dealers of telecommunications service and Internet access providers may take the measures or actions needed for traffic management and network management in the exclusive sphere of activity that has been authorized, provided that this not designed to perform actions that affect or could affect competition. The dealers and suppliers will seek to preserve user privacy, virus protection and network security. They may also block access to certain content, applications or services only at the request of the user, and at his expense. In any case, this block can arbitrarily affect service providers and applications providers on the Internet"* And Article 24 I. – *"For the protection of the rights of Internet users, the Ministry, through the Secretary, shall punish infringements of the legal of regulatory obligations associated with the implementation, operation and performance of network neutrality to prevent, impede or otherwise threaten their development or the legitimate exercise of the rights deriving therefrom, incurred in both public service licensees to provide telecommunications service to Internet service providers as well as the latter, according to provisions of the procedure under Articles 28 bis of Law No. 18,168, General Telecommunications."* [http://translate.googleusercontent.com/translate\\_c?hl=en&ie=UTF-8&sl=es&tl=en&u=http://www.camara.cl/pley/pdfpley.aspx%3FprmID%3D15199%26prmTIPO%3D OFICIOPLEY&prev=\\_t&rurl=translate.google.com&twu=1&usg=ALkJrhBBk6Qvfoqv6W6YIB10Zr-qHqNw](http://translate.googleusercontent.com/translate_c?hl=en&ie=UTF-8&sl=es&tl=en&u=http://www.camara.cl/pley/pdfpley.aspx%3FprmID%3D15199%26prmTIPO%3D OFICIOPLEY&prev=_t&rurl=translate.google.com&twu=1&usg=ALkJrhBBk6Qvfoqv6W6YIB10Zr-qHqNw) (viewed 26/10/2010); Stevens T, 'Chile becomes first country to guarantee net neutrality,



Conversely, despite presidential encouragement<sup>111</sup> and principles announced by the Federal Communications Commission<sup>112</sup> the US has not reached the position of passing legislation ensuring network neutrality.<sup>113</sup> This is because, despite prior statements to the contrary, the adoption of network neutrality appears to have neither the regulatory<sup>114</sup> nor legislative support seen in Europe.<sup>115</sup> In this respect Australia is much better positioned than either the EU or US as there is clear regulatory power and publically expressed governmental will to make high-speed broadband a reality. For example, although implementation of network neutrality

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we start thinking about moving?, July 15, 2010 *Slashdot* <http://www.engadget.com/2010/07/15/chile-becomes-first-country-to-guarantee-net-neutrality-we-star/> (viewed 16/07/2010)

<sup>111</sup> ‘President Obama Supports Net Neutrality’, *Save the Internet* <http://www.savetheinternet.com/obama> (viewed 27/10/2010)

<sup>112</sup> FCC, ‘Connecting America: The National Broadband Plan’, 16 March 2010 <http://download.broadband.gov/plan/national-broadband-plan.pdf> (viewed 27/10/2010); Note 98, Dods *et al*, 106 – “In September 2009 the US Federal Communications Commission announced a major plan to protect a free and open internet following a election pledge by President Barack Obama to protect net neutrality. The new principles outlined by the FCC concentrate on prohibiting discrimination of content or applications and ensuring that network management practices are transparent.”

<sup>113</sup> Proposed Sections 12(a)(2), (5) and (6); and 12(b) of the Communications Act of 1934 (47 22 U.S.C. 151 *et seq*) introduced by H.R. 3458 *Internet Freedom Preservation Act of 2009*. However, although introduced to the US House of Representatives on 31 July 2010 the Bill remains with House Energy and Commerce Committee <http://www.opencongress.org/bill/111-h3458/show> (viewed 28/10/2010) and is unlikely to become law; Stanley J, ‘Network Neutrality 101 – Why The Government Must Act to Preserve The Free And Open Internet’, October 2010, ACLU [http://www.aclu.org/files/assets/netneutrality\\_report\\_20101021.pdf](http://www.aclu.org/files/assets/netneutrality_report_20101021.pdf) (viewed 26/10/2010) for Obama <http://www.ucimc.org/content/net-neutrality-ready-action-fcc>

<sup>114</sup> *Comcast Corporation v FCC and USA* 600 F.3d 642 (D.C. Cir. 2010); also see – Note 98, Dods *et al*, 107 referring to a statement by Commissioner Reding – “In general, consumers and service providers in Europe seem to be in a relatively good position overall with regard to net neutrality, compared to the situation in the US where the debate is just really starting now. This is because European consumers generally have, thanks to pro-competitive EU regulation, a greater choice of competing broadband service providers available to them than US consumers under the strongly deregulated US telecoms market” The author then noted that “the issue of net neutrality is not merely a technical one and is closely bound up with consumer protection”.

<sup>115</sup> Jerome S, ‘Waxman backs FCC reclassification of broadband’, *Hillicon Valley*, September 29, 2010 – quoting Congressman Waxman “Under this proposal, both sides would emerge as winners. Consumers would win protections that preserve the openness of the Internet, while the Internet service providers would receive relief from their fears of reclassification. This legislative initiative was predicated on going forward only if we had full bipartisan support in our Committee. We included the Republican staff in our deliberations and made clear that we were prepared to introduce our compromise legislation if we received the backing of Ranking Member Barton and Ranking Member Stearns. With great regret, I must report that Ranking Member Barton has informed me that support for this legislation will not be forthcoming at this time. This development is a loss for consumers and a gain only for the extremes. We need to break the deadlock on net neutrality so that we can focus on building the most open and robust Internet possible. I do not close the door on moving legislation this Congress. Cooler heads may prevail after the elections. But I want my position to be clear: my goal is the best outcome for consumers. If our efforts to find bipartisan consensus fail, the FCC should move forward under Title II. The bottom line is that we must protect the open Internet. If Congress can’t act, the FCC must.” <http://thehill.com/blogs/hillicon-valley/technology/121681-waxman-backs-fcc-reclassification-of-broadband> (viewed 27/10/2010)

throughout the EU may take time to achieve,<sup>116</sup> enforcement remains in the hands of the individual Member States.<sup>117</sup> In Australia, as we have only one telecommunications regulatory system, it can be achieved by introducing one law.

Nevertheless, there are lessons for Australian legislators from the approaches of the EU and US that will facilitate high-speed broadband delivery in Australia. Europeans recognise the need to extend broadband networks for economic purposes.<sup>118</sup> Although openness and network neutrality will facilitate economic development, as the EU position reflects, some traffic management by ISPs will need to be enabled to ensure the smooth flow of information.<sup>119</sup> However, unlike the US, commercial interests must not be permitted to take control of the debate on what is the appropriate level of protection and regulation.<sup>120</sup> Recent behaviour in the US indicates that the Australian federal government needs to adopt a policy position to ensure openness and network neutrality for both the NBN itself *and* for the content and services to be delivered across it.<sup>121</sup> It then will need to work to

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<sup>116</sup> Note 98, Dods *et al*, 106

<sup>117</sup> Note 103, 6 – “*The reality is that this declaration, helpful though it is in clarifying the legal situation, will rely heavily on the implementation at national level and proactive monitoring by the Commission itself. Nevertheless, it lays out the principle of openness and net neutrality.*”

<sup>118</sup> Council of Europe, ‘Key Issues Paper 2009’, *Council (Competitiveness) 5 and 6 March 2009*, Outcome of Proceedings, 7232/09, Annex, 11 [23] “*Work with a view to extending broadband networks should be promoted both a Member State and at European Union level with the aim of providing access to poorly serviced and high-cost areas where the market cannot deliver, the common indicative goal being a 100% coverage of broadband internet between 2010 and 2013.*” <http://register.consilium.europa.eu/pdf/en/09/st07/st07232.en09.pdf> (accessed 28/10/2010)

<sup>119</sup> Council of Europe, ‘Declaration of the Committee of Ministers on network neutrality’, *Committee of Ministers*, 29 September 2010 –

“*6. In so far as it is necessary ... traffic management should not be seen as a departure from the principle of network neutrality. However, exceptions to this principle should be considered with great circumspection and need to be justified by overriding public interests.*”

<https://wcd.coe.int/ViewDoc.jsp?id=1678287> (viewed 26/10/2010)

<sup>120</sup> Karr T, ‘Net Neutrality Is Ready for Action. Is the FCC?’ October 7, 2010, *Urbana-Champaign Independent Media Center* – “*Genachowski now simply needs to buck up. His next step would seem a no brainer to anyone viewing the issue from beyond the Beltway: reclassify broadband under Title II so the FCC can protect Internet users against corporate censors. Sadly, the view from the eighth floor of the FCC – which has been circled by industry lobbyists for months – is not so apparent.*” <http://www.ucimc.org/content/net-neutrality-ready-action-fcc> (viewed 27/10/2010)

<sup>121</sup> As commentators recently noted in the US, merely ensuring network neutrality by itself may not be enough when content makers/providers can act in the same manner towards the content and services of other providers. See – Gaitonde R, ‘Content Makers Seek Protection but Waver When It Comes to Network Neutrality’, *BroadbandBreakfast.com* October 28<sup>th</sup>, 2010 – “*The recent blocking of Fox Broadcasting programs on the online video site Hulu for Cablevision customers has raised network neutrality questions. After a flurry of criticism from legislators and regulators, Fox restored the service but the blocking of content has raised key questions. A number of content makers also have announced that they will block access to their content from the new Google TV device the Logitech Reveu. The device is a set-top box that integrates the web with the television-watching experience. The Reveu includes online video viewing apps along with a web browser which allows users to surf the web. While it is clear the blocking of content by Fox was anti-consumer, it did not actually violate*

implement complementary legislation. In the context of the Australian legislation system, reviewing the previously proposed US *Internet Freedom Preservation 2009* would be an appropriate starting point. However, attempts to force the existing access regimes and other telecommunication related legislation to fit the internet economy is not a workable long-term solution. Lessons from the development of the internet show that a targeted, holistic regime that is at the same time flexible enough to capture further technological changes is required.

To facilitate legislating for openness and network neutrality there needs to be better coordination of issues relevant to enabling access to the NBN. This could be facilitated by empowering the *National Broadband Development Group* ('NBDG'),<sup>122</sup> to report to the Minister as to the optimal NBN-specific policy. In so doing, the federal government should require that the NBDG and the department follow the policy development process outlined above to ensure there is full consideration of all relevant issues and community and business concerns. Finally, legislating to provide a clear, technology neutral and inclusive definition of the NBN, with the ability for the Minister to extend the definition to include future technologies and networks by Ministerial designation, should assist in ensuring an open and neutral NBN.

## **2. Legislate to provide access to high-speed broadband is a right of all citizens**

Competition may be necessary for any functioning economy, particularly newer ones, such as the internet economy, where competitive markets can assist in fostering innovations.<sup>123</sup> Nevertheless, policy makers should not just focus on competition issues as they develop NBN-specific policies. Employees' ability to

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*network neutrality principles. However, it does however raise the issue of whether content makers should be held to the same neutrality requirements as network providers. While there is no official set of regulations or rules defining network neutrality, generally it deals with the blocking or slowing down of content or services by network operators. In this case, content maker Fox is blocking the content ... the blocking by Fox does not violate the [commissions 2005 broadband] internet policy statement, which only applies to network providers and not the content makers ... The internet thrives when users are able to connect to their choice of services via their choice of connection method. The FCC has yet to rule on the issue of network neutrality but has been given strong support by congressional leaders who have also condemned Fox for its blocking of access."* [http://broadbandbreakfast.com/2010/10/content-makers-seek-protection-but-waver-when-it-comes-to-network-neutrality/?utm\\_source=BroadbandCensus.com&utm\\_campaign=a4e687befe-News\\_102810\\_29\\_2010&utm\\_medium=email](http://broadbandbreakfast.com/2010/10/content-makers-seek-protection-but-waver-when-it-comes-to-network-neutrality/?utm_source=BroadbandCensus.com&utm_campaign=a4e687befe-News_102810_29_2010&utm_medium=email) (viewed 30/10/2010)

<sup>122</sup> A working group of the *Online and Communications Council* – <http://www.occ.gov.au/nbdg>

<sup>123</sup> Soros G, *Open Society: reforming global capitalism* (Public Affairs, 2000) 293

innovate in the internet economy relies on their rights of access to the internet. In the part-real part-virtual world of the 21<sup>st</sup> Century<sup>124</sup> rights are not restricted to matters that impact upon us physically.

Europe and the US can again provide direction for Australian regulators as to what should be the aim of Australian regulation. Another significant change introduced by the amendments to the EU's Common Regulatory Framework was the introduction of the new Internet Freedom Provision<sup>125</sup> as well as the extension of the EU's universal service obligation to internet connections.<sup>126</sup> This establishes the ongoing right to access to the internet as a fundamental human right.<sup>127</sup> Recent examples from European jurisdictions show that national

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<sup>124</sup> Slater D, 'Social Relationships and Identity Online and Offline' in L Lievrouw and S Livingston (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 540

<sup>125</sup> European Commission, 25 November 2009, Directive 2009/136/EC of the European Parliament and of the Council (2009) 337 *Official Journal of the European Union*, 11, 46 – Amendments to Directive 2002/21/EC (Framework Directive), new Article 1(3)a –

*“Measures taken by Member States regarding end-users’ access to or use of services and applications through electronic communications networks shall respect the fundamental rights and freedoms of natural persons, as guaranteed by the European Convention for the Protection of Human Rights and Fundamental Freedoms and general principles of Community law. Any of these measures regarding end-users’ access to or use of services and applications through electronic communications networks liable to restrict those fundamental rights or freedoms may only be imposed if they are appropriate, proportionate and necessary within a democratic society, and their implementation shall be subject to adequate procedural safeguards in conformity with the European Convention for the Protection of Human Rights and Fundamental Freedoms and general principles of Community law, including effective judicial protection and due process. Accordingly, these measures may only be taken with due respect for the principle of presumption of innocence and the right to privacy. A prior fair and impartial procedure shall be guaranteed, including the right to be heard of the person or persons concerned, subject to the need for appropriate conditions and procedural arrangements in duly substantiated cases of urgency in conformity with the European Convention for the Protection of Human Rights and Fundamental Freedom . The right to an effective and timely judicial review shall be guaranteed.”*

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0037:0069:EN:PDF> (viewed 28/10/2010)

<sup>126</sup> Note 125, European Commission, 22 – Amendments to Directive 2002/222/EC (Universal Service Directive), new Article 1(2) –

*“This Directive establishes the rights of end-users and the corresponding obligations of undertakings providing publicly available electronic communications networks and services. With regard to ensuring provision of universal service within an environment of open and competitive markets, this Directive defines the minimum set of services of specified quality to which all end-users have access, at an affordable price in the light of specific national conditions, without distorting competition. This Directive also sets out obligations with regard to the provision of certain mandatory services.”*

For an overview of the history of the EU Universal Service Directive see – de Santis M, 'Is Broadband Basic Service?', *The Public Interest Advocacy Centre*, July 2010, 15 <http://www.egov.vic.gov.au/trends-and-issues/broadband.html> (accessed 01/10/2010)

<sup>127</sup> Note 98, Dods *et al*, 104 – *“the Internet Freedom establishes that continued access to the internet is effectively to be treatment as a fundamental right under European law, it may only be withdrawn in specific circumstances [however] the Internet Freedom does not of itself create a right of end-users to*

regulators are viewing Article 1(3)a in this manner as they are taking the initiative in amending their domestic laws. Finland leads the way with its universal service obligation being extended from 1 July, 2010, to high-speed broadband.<sup>128</sup> Spanish citizens will have a similar right from 2011.<sup>129</sup> Similarly the US appears to recognise that internet access is a right<sup>130</sup> despite the fact that their proposed *Internet Freedoms Act 2009* is unlikely to become law.

As Farrar identified the “*law [also] communicates and reinforces social values*”,<sup>131</sup> as such NBN policies must also address issues of access to content and services from the basis of social values. Appropriate access to the NBN is essential for the future of Australian society as a whole and not just for the future of its internet economy. In Australia the right to internet access would be reinforced by extending the USO to the provision of high-speed broadband services rather than just extending it merely in relation to voice- or telephony-related services;<sup>132</sup> or relying on voluntary provision pursuant to the ABG for

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*have internet access in the first place across the European Union.*” This is left to national regulation.

<sup>128</sup> West D, *An International Look at High Speed Broadband* (2010) Governance Studies at Brookings, 4 – “Finland made history ... its citizens have a ‘legal right’ to broadband. It passed a law requiring ... providers ... provide all Finnish residents with broadband lines that can run at speeds of at least 1 megabit per second by July 2010 ... the legislation affects the four percent who currently are unconnected ... plans to bring 100 Mbps Internet speed to all residents by 2016. France has not declared broadband access a legal right, but its courts have said it is a ‘basic human right’. In 2009 ... officials ruled that people need broadband in order to participate in civic affairs and that the country should ensure that all its people had access” [references omitted]

<sup>129</sup> Reuters, ‘Spain Codifies ‘The Right to Broadband’’, PCMAG.COM, 17 November 2009 – “Spanish citizens will have a legal right from 2011 to be able to buy broadband internet of at least one megabyte per second at a regulated price wherever they live ... The telecoms operator holding the so-called ‘universal service’ contract would have to guarantee it could offer ‘reasonably’ priced broadband throughout Spain ... Until now, the ‘universal service’ has only guaranteed internet via telephone line, fixed telephone, directory service and telephone booths.” <http://www.pcmag.com/article2/0,2817,2356014,00.asp> (viewed 10/10/2010)

<sup>130</sup> Proposed Section 12(a)(1) of the Communications Act of 1934 (47 22 U.S.C. 151 et seq) introduced by H.R. 3458 *Internet Freedom Preservation Act of 2009* – “(1) to protect the right of consumers to access lawful content, run lawful applications, and use lawful services of their choice on the Internet”.

<sup>131</sup> Farrar J, *Legal Reasoning* (Thomson Reuters, Sydney, 2010) 7

<sup>132</sup> This would be consistent with previous statements by the Labor Party as to the importance of broadband for Australia. See – Curtin J, ‘A Digital Divide in Rural and Regional Australia?’, Economics, Commerce and Industrial Relations Group, 7 August 2001 – referring to the ALP’s ‘An Agenda For The Knowledge Nation’, where the author states “*In its Knowledge Nation recommendations, the Opposition views universal access for households and businesses to digital broadband as an urgent national priority. It outlines a range of strategies to achieve this including improving the current regulatory arrangements and maintaining majority government ownership of Telstra, providing incentives, including investing in broadband networks, for the take up of broadband technology and ensuring that all Australians, particularly those in regional areas, have the opportunity to access fixed price untimed calls nationwide, for both voice telephony and data services.*” [references omitted] <http://www.aph.gov.au/library/pubs/cib/2001-02/02cib01.htm> (viewed 10/11/2010)

remote areas. As a corollary to extending the USO to broadband, if an opt-out policy for NBN connection was adopted<sup>133</sup> then this must be accompanied by clear statements as well as proactive education as to what this means for consumers in practice. A failure to do so may breach other fundamental rights.

An additional concern is that the focus of the greenfield legislation is on new developments or infill sites. The expected subordinate legislation also is restricted as it is expected to apply only in areas where existing utilities exist.<sup>134</sup> The obligation to ensure maximum access to the NBN has been placed on the developers of those sites. This has the potential to leave a number of existing dwellings and businesses without high-speed broadband access or capability. A lack of roll-out to brown field sites has the potential to adversely impact upon the full utilisation of the NBN. There are several strategies that could be adopted to assist in roll-out of the NBN and in meeting legislated obligations of an extension of the USO to high-speed broadband. These include authorising the NBDG to work with States, Territories and LGAs to develop consistent NBN planning legislation that requires property investors to provide access to the NBN at their expense but ensure the cost cannot be passed onto the tenants/lessees. However, many consumers live in apartments or other community title arrangements (i.e. in retirement villages). It also would assist to legislate that all community title style schemes are required to provide access to the NBN to all lots in the scheme at the expense of the body corporate. It would be appropriate for this expense to be passed onto lot owners through body corporate levies, but not to tenants. For other dwellings/premises, legislation must require that all individual owners/occupiers, as part of any renovation work,<sup>135</sup> ensure NBN access to their premises.

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<sup>133</sup> Ramli D, 'Tasmania to legislate an opt-out NBN', 6 October 2010 ARN – "*The Tasmanian Government is preparing to make joining the National Broadband Network an opt-out rather than opt-in process. It is aiming to become the first state in Australia to do so. According to a statement released by Tasmanian Premier, David Bartlett, the State Government has gotten legal advice that it can legislate to allow NBN Co to enter businesses and homes unless actively asked not to do so. If successful, the move will lead to all households and businesses in the NBN-connected parts of Tasmania being automatically connected unless the property owners fill in a form to refuse.*" [http://www.arnnet.com.au/article/363425/tasmania\\_legislate\\_an\\_opt-out\\_nbn/](http://www.arnnet.com.au/article/363425/tasmania_legislate_an_opt-out_nbn/) (viewed 30/10/2010)

<sup>134</sup> Note 83, DBCDE, 4 – "*it is proposed that the subordinate legislation apply in areas ... where an urban utility such as reticulated water, sewerage or mains electricity is installed. ... It would still be open to developers, builders or carriers to supply fibre voluntarily outside this footprint.*"

<sup>135</sup> What constitutes 'renovation works' would need to be clearly articulated in legislation.

To assist in the development of consistent NBN planning legislation this issue could be brought before the Online Communications Council<sup>136</sup> and COAG for the development of a specific arrangement to facilitate the NBN roll-out to all premises and not just for greenfield estates.<sup>137</sup> In developing consistent NBN planning legislation, and in implementing its anticipated greenfield estate subordinate legislation,<sup>138</sup> the federal government should ensure it follows the policy development process outlined above.

### **3. Develop an NBN transition assistance policy for all eligible Australians**

Having access to, and learning how to use, the internet is vital for ensuring ongoing involvement in the internet economy and everyday life. A lack of access capacity – both of physical access and skills – can restrict innovation and thus can be detrimental to the internet economy. Enabling access by end users will require more than simply working to “*facilitate the migration of ... telephony and data services*”<sup>139</sup> or merely teaching generic ICT skills.<sup>140</sup> Similarly to the issues faced by the Big Sky Telegraph as a consequence of the availability of the internet, there is a risk that changing from current networks to the NBN, and the necessity for hardware and/or software upgrades, will leave “*behind those users with outdated equipment*”.<sup>141</sup> This in turn will impact upon transition and access creating new issues. Therefore, separate from economic considerations it is vital that all Australians transition to the NBN.

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<sup>136</sup> COAG, ‘Commonwealth-State Ministerial Councils: A Compendium’, July 2010, 68 – “*Priority areas for the Council currently include:- ... broadband access and use.*” [http://www.coag.gov.au/ministerial\\_councils/docs/compendium.pdf](http://www.coag.gov.au/ministerial_councils/docs/compendium.pdf) (viewed 05/12/2010)

<sup>137</sup> COAG, ‘Council of Australian Governments’ Meeting’, Darwin 2 July 2009, *Communiqué*, “*COAG agreed ... [to] cooperate in facilitating the speedy roll-out of the National Broadband Network, including in relation to greenfield developments.*” [http://www.coag.gov.au/coag\\_meeting\\_outcomes/2009-07-02/docs/20090702\\_communique.pdf](http://www.coag.gov.au/coag_meeting_outcomes/2009-07-02/docs/20090702_communique.pdf) (viewed 01/06/2010)

<sup>138</sup> Note 105, Position Paper

<sup>139</sup> Communications Alliance, ‘National Broadband Network End User Migration Reference Model’, Draft for comment, June 2010, 3 [http://www.commsalliance.com.au/\\_\\_data/assets/pdf\\_file/0017/23822/Draft\\_NBN\\_End\\_User\\_Migration\\_Reference\\_Model\\_Jun2010.pdf](http://www.commsalliance.com.au/__data/assets/pdf_file/0017/23822/Draft_NBN_End_User_Migration_Reference_Model_Jun2010.pdf) (accessed 10/10/10)

<sup>140</sup> Shapiro H, ‘Final Report: topic report 4 – Conclusions and recommendations based on reviews and findings’, *Danish technological Institute*, April 2009, 6 – “*The case studies suggest that public policy interventions concerning digital literacy are likely to be successful if they have a broader purpose than simply teaching the sue of ICT.*” [http://ec.europa.eu/information\\_society/europe/i2010/docs/benchmarking/dl\\_topic\\_report\\_4.pdf](http://ec.europa.eu/information_society/europe/i2010/docs/benchmarking/dl_topic_report_4.pdf) (accessed 29/10/2010)

<sup>141</sup> Note 64, Kollock and Smith, 21

The federal government may need to implement a variety of strategies to ensure full access to the NBN by the greatest number of Australians. Overseas models are available for guidance however they have numerous issues to be resolved.<sup>142</sup>

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<sup>142</sup> Note 140, Shapiro, 18 – “*Practically all European countries now have comprehensive information strategies in place.*”; European Council, ‘Regulation on Rural Development on the use of 1.020 Million Euro in the Recovery Plan to bring broadband in rural area’, Council Regulation (EC) No 473/2009, Official Journal of the European Union, 144/3 – “(2) ... EUR 1 020 million should be made available to all Member States ... with a view to developing broadband Internet in rural areas and to strengthening the operations related to the priorities laid down in points (a) to (f) of Articles 16a(1) of Council Regulations (EC ) No 1698/2005”; For example, Dublin’s ‘Digital Community Project’ which is “*an initiative of Dublin Institute of Technology (DIT) and Hewlett Packard – was established three years ago and is a novel education Programme designed to help Dublin’s Inner-City Communities fulfill their aspirations for participation in the digital age. Based in areas across Dublin’s inner-city where access to computers is severely limited, the Project’s objective is to develop local residents’ digital literacy and computer skills by putting in place state of the art computer resource centres within the communities. The Digital Community Centres consist of one to two dedicated flats within each complex, fitted out with a full computer room. Each room has computers, printers, scanners, access to high speed DSL lines and free internet connection. There is also a full time manager funded by Hewlett Packard, employed to work with these communities to upskill and train the residents.*” <http://www.dit.ie/news/archive2005/digital-divide/> (viewed 11/10/2010); “*The Digital Community Programme trains residents in basic computer courses and gives them the skills, through our train the trainer course, to pass their new learning on to their neighbours and friends.*” <http://www.communitylinks.ie/the-digital-community/> (viewed 11/10/2010) Also see – European Commission, ‘A Digital Agenda for Europe’, *Communications from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, 26 August 2010, 26 – “*The Commission will:*

- *Key Action 10: Propose digital literacy and competences as a priority for the European Social Fund regulation (2014-2020);*
- *Key Action 11: By 2012, develop tools to identify and recognise the competences of ICT practitioners and users, linked to the European Qualifications Framework<sup>49</sup> and to EUROPASS<sup>50</sup> and develop a European Framework for ICT Professionalism to increase the competences and the mobility of ICT practitioners across Europe;*
- *Other actions:*
  - *Make digital literacy and skills a priority of the ‘New skills for new jobs’ Flagship to be launched in 2010, including the launch of a multi-stakeholder sectoral council for ICT skills and employment to address demand and supply aspects;*
  - *Promote a higher participation of young women and women returners in the ICT workforce through support for web-based training resources, game based eLearning and social networking;*
  - *Develop in 2011 an online consumer education tool on new media technologies (e.g. consumer rights on the internet, eCommerce, data protection, media literacy, social networks etc.). This tool will provide customised information and education materials for consumers, teachers and other multipliers in the 27 Member States;*
  - *Propose by 2013 EU-wide indicators of digital competences and media literacy;*
  - *Systematically evaluate accessibility in revisions of legislation undertaken under the Digital Agenda, e.g. eCommerce, eIdentity & eSignature, following the UN Convention on the Rights of Persons with Disabilities;*
  - *Based on a review of options, make proposals by 2011 that will make sure that public sector websites (and websites providing basic services to citizens) are fully accessible by 2015;*
  - *Facilitate by 2012, in cooperation with Member States and relevant stakeholders, a Memorandum of Understanding on Digital Access for persons with disabilities in compliance with the UN Convention.*

*Member States should:*

- *Implement by 2011 long-term e-skills and digital literacy policies and promote relevant incentives for SMEs and disadvantaged groups;*
- *Implement by 2011 the provisions on disability in the Telecoms Framework and the*



While overseas models may be useful for identifying the matters that regulators should be addressing, guidance is also available from a closer-to-home model on the more immediate steps the federal government should be taking. As a recent technological change affecting the whole of Australia, lessons can be learnt from the transitioning the Australian population from analogy to digital television. Similarly to the projected roll-out of the NBN, the transition to digital television is taking many years to achieve. The idea of digital television was first mooted in Australia late last century. In 1999, the then federal government determined that broadcasters would be required to continue transmitting in standard format for several years so that “*people [will] ... have the choice to buy SDTV equipment to ensure that digital television will be as affordable as possible for ordinary*”<sup>143</sup> Australians. The final roll-out of digital signals and turning off of analogue will not occur until 2013.<sup>144</sup> There is therefore both the need to ensure Australians acquire appropriate hardware and access skills during the switchover period.

The procedure for switchover to digital television is contained in Schedule 4 of the *Broadcasting Services Act 1992*.<sup>145</sup> Responsibility for the switchover rests with the *Digital Switchover Taskforce* located within the Department of Broadband, Communications and the Digital Economy. There are various assistance packages available to ensure full transition to digital television.<sup>146</sup>

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*Audiovisual Media Services Directive;*

- *Mainstream eLearning in national policies for the modernisation of education and training, including in curricula, assessment of learning outcomes and the professional development of teachers and trainers.*” [references omitted]

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF> (viewed 30/10/2010)

<sup>143</sup> DCITA, Report on Digital Television Reviews, 2000, Volume 1, 10 May 2000, 60 [http://www.dbcde.gov.au/television/digital\\_television\\_switchover/digital\\_broadcasting\\_policy\\_review/s/reports\\_on\\_digital\\_television\\_reviews\\_-\\_index\\_page](http://www.dbcde.gov.au/television/digital_television_switchover/digital_broadcasting_policy_review/s/reports_on_digital_television_reviews_-_index_page) (viewed 07/05/2010)

<sup>144</sup> Section 216A *Broadcasting Services Act 1992*; and Clause 6A, Schedule 4 –

- “(1) *The Minister may, by legislative instrument, determine a period for the purposes of the application of subparagraph 6(3)(c)(ii) to a specified metropolitan licence area.*
- “(2) *The Minister may, by legislative instrument, determine a period for the purposes of the application of subparagraph 6(3)(c)(iia) to a specified regional licence area.*
- “(3) *A period determined under subclause (1) must end before the end of 31 December 2013.*
- “(4) *A period determined under subclause (2) must end before the end of 31 December 2013.*”

<sup>145</sup> For a history of its policy development see – Foster J and C Lovell, “‘Sorting Out the Bits’ – Digital Television and Datacasting in Australia: A Study in Policy and Regulatory Development” (2000-01) 6 *International Journal of Communications Law and Policy* [http://www.ijclp.net/files/ijclp\\_web-doc\\_8-6-2001.pdf](http://www.ijclp.net/files/ijclp_web-doc_8-6-2001.pdf) (viewed 19/06/2010)

<sup>146</sup> DBCDE, ‘Switchover to digital TV’, 5 January 2010, Fact Sheet, – assistance includes a public awareness campaign, the Household Assistance Scheme, the Digital Switchover Labelling Scheme,

Eligible rural and/or remote households are entitled to a subsidy of \$400 to assist them to “convert to the new satellite service”.<sup>147</sup> The new satellite service, supported by the creation of new commercial television licence areas, will enable full access to free-to-air channels.<sup>148</sup> For some, the transition to digital television will simply require purchasing a satellite set-top box. Others will have to “purchase a new satellite set top box with an access ‘smart card’, a satellite dish and cabling”.<sup>149</sup> Other available assistance measures for digital television adoption include, as part of the Retail Advisor Scheme, the provision of digital advisers who are available to provide advice to consumers at the time of purchase.<sup>150</sup> In-home assistance is also provided to eligible households.<sup>151</sup> More recently the federal government announced the launch of the Viewer Access Satellite Television (‘VAST’) agreement designed to ensure that viewers in remote, regional and blackspot areas would be able to access all free-to-air digital services.<sup>152</sup> However, while digital television is a comparable case study as to the assistance that will be required, the issues for the NBN will be different.

In recognition of the fact that many Australians no longer attend any form of formal education, it will be essential to establish non-school based internet/NBN education programs. However, simply providing education services will not be enough to encourage full user engagement. European experience shows that a lack of understanding of internet benefits adversely impacts on whether individuals want internet access at home.<sup>153</sup> The European response to this issue

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and the Retail Advisor Scheme. Some assistance is linked to rights to obtain certain social security benefits. [http://www.digitalready.gov.au/media/Switch\\_Over\\_To\\_digital\\_TV\\_FactSheet.pdf](http://www.digitalready.gov.au/media/Switch_Over_To_digital_TV_FactSheet.pdf) (accessed 07/05/2010)

<sup>147</sup> Conroy, Hon. S, ‘Landmark agreement to deliver Digital TV to Remote, Regional and Blackspot viewers’, Media Release, 14 April 2010 [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/032](http://www.minister.dbcde.gov.au/media/media_releases/2010/032) (viewed 07/05/2010)

<sup>148</sup> Conroy, Hon. S, ‘Satellite Service to Deliver Digital TV Nation-wide’, Media Release, 18 March 2010 [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/024](http://www.minister.dbcde.gov.au/media/media_releases/2010/024) (viewed 07/05/2010)

<sup>149</sup> Note 147, Conroy

<sup>150</sup> Conroy, Hon. S, ‘The right advice to get ready for digital TV’, Media Release, 14 October 2009 – these are referred to as “digital advisers” [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/092](http://www.minister.dbcde.gov.au/media/media_releases/2009/092) (viewed 07/05/2010)

<sup>151</sup> Conroy, Hon. S. ‘Assistance for households switching to digital TV’, Media Release, 3 June 2009 – to be eligible “households must have at least one resident who is receiving a maximum rate Age Pension, Disability Support Pension, Carer payment, or Department of Veterans’ Affairs (DVA) service pension or the DVA income support supplement payment.” [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/049](http://www.minister.dbcde.gov.au/media/media_releases/2009/049) (viewed 07/05/2010)

<sup>152</sup> Note 147, Conroy

<sup>153</sup> European Commission, ‘Digital Literacy and European Commission Working Paper and Recommendations from Digital Literacy High-Level Expert Group’ *e-Inclusion Ministerial*

was the adoption of recommendations that promote awareness of the benefits digital technology use brings. This, in turn, motivates potential users to acquire the necessary digital literacy skills to engage via the internet.<sup>154</sup> The federal government should consider adopting and implementing similar processes.

US experience supports the European position. Recent data indicates that where people do not use the internet outside the home they have little or no appreciation of its benefits. These non-users therefore have no understanding of the additional benefits high-speed broadband internet access will bring.<sup>155</sup> Awareness campaigns should be targeted to this group. In particular, the federal government should ensure the roll-out of skills<sup>156</sup> happens at the same time as the cables in order to maximise awareness and desire for connection to the NBN. Similarly, part of the roll-out of skills necessary as part of the NBN's implementation will require programs to proactively raise community awareness about the benefits of high-speed broadband access. This could include classes in local libraries as well as site visits to rural or remote locations, and online support.<sup>157</sup> Benefits could also be gained from advisors engaging with residents while cable is rolled out in their street.

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*Conference & Expo, 30<sup>th</sup> November – 2<sup>nd</sup> December 2008, Vienna/Austria, 8 – “The finding that 41% of households respond they don’t need the Internet will partly reflect choice and partly unfamiliarity with its benefits and the services available. In response, many countries are launching awareness campaigns to ensure citizens can make an informed choice.”*  
[http://ec.europa.eu/information\\_society/eeurope/i2010/docs/digital\\_literacy/digital\\_literacy\\_review.pdf](http://ec.europa.eu/information_society/eeurope/i2010/docs/digital_literacy/digital_literacy_review.pdf) (accessed 29/07/2010)

<sup>154</sup> Digital Literacy: High-Level Expert Group, ‘Recommendations’, December 2008 these include :

- *Use existing local social structures, organisations and people to develop and deliver digital literacy actions and to make them sustainable;*
- *Encourage synergies with other public policy initiatives, in particular those concerned with online public, e-Government and commercial services;*
- *Pay attention so that new marginalised groups are not created as an unintended consequence of ‘scaling down’ traditional/off-line services.*
- *Raise awareness of the positive potential and value of new media;*
- *Raise awareness of the benefits of using digital technologies in people’s personal and professional lives;*
- *Raise awareness about the various risks associated with using digital technologies and promote safe use guidelines”.*

[http://ec.europa.eu/information\\_society/eeurope/i2010/docs/digital\\_literacy/digital\\_literacy\\_hlg\\_recommendations.pdf](http://ec.europa.eu/information_society/eeurope/i2010/docs/digital_literacy/digital_literacy_hlg_recommendations.pdf) (viewed 04/11/2010)

<sup>155</sup> US Department of Commerce, ‘Exploring the Digital Nation: Home Broadband Internet Adoption in the United States, November 2010, 42 <http://www.esa.doc.gov/DN/> (viewed 10/09/2010)

<sup>156</sup> As identified in 2009, this may necessitate that *“some form of basic training should be offered by Government to create a truly equitable platform for engagement.”* Note 50, Lundy, 33

<sup>157</sup> As was provided previously by governments and other groups in respect of the internet itself. See – Note 132, Curtin – *“Numerous programs, which seek to enhance Internet access and encourage Internet use amongst citizens and business, have also been put in place at state level and by non-*

Raising awareness of benefits should increase the desire to adopt, migrate to and continue using the NBN. However, without appropriate awareness of the benefits of high-speed broadband, a vast majority will not have the incentive to adopt the NBN. Where users are not already engaged in the internet economy they will need more than just information brochures<sup>158</sup> to encourage adoption. The result of a failure to appropriately engage with the community is already being seen in the low adoption rates in Tasmania.<sup>159</sup> Broad funding will be required in addition to information campaigns focussed on information provision.<sup>160</sup> What is required is clear, targeted, community based awareness-

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*government organisations. The Farm Wide Program, established by the National Farmers Federation in 1997, has sought to provide technical and support for farmers on-line as part of its program, in an effort to encourage farmers to feel comfortable about Internet use.*" [references omitted] Various projects also were previously funded under the Howard government's 'IT Training and Technical Support Program'

[http://www.archive.dbcde.gov.au/2010/january/it\\_training\\_and\\_technical\\_support\\_program](http://www.archive.dbcde.gov.au/2010/january/it_training_and_technical_support_program). (viewed 10/11/2010) For example – telecentres providing public internet access and technical support in Western Australia (the 'Future Skilling Outback WA' project); basic IT training, online support and one-on-one assistance and site visits in very remote areas in north and central areas of South Australia (the 'Outback Connect' project); providing community based basic IT training focused on online banking, email and internet access in central Australia (the 'DESART Remote Art Centre Training and IT Support Project) and the Northern Territory (the 'Pintubi Anmatjerre Warlpiri' project); comprehensive basic IT training course and provide technical support through phone, email and face-to-face assistance (the 'Learning Network Queensland'); and IT training and technical support provided through public libraries and Indigenous Knowledge Centres (State Library of Queensland Taking IT on – Matching access with need in Indigenous communities' project. See – Coonan Hon. H, 'IT Training and Technical Support program, Media Release, 21 December 2004 [http://www.minister.dbcde.gov.au/coonan/media/media\\_releases/it\\_training\\_and\\_technical\\_support\\_program](http://www.minister.dbcde.gov.au/coonan/media/media_releases/it_training_and_technical_support_program) (viewed 10/11/2010) For further details of previous funding and programs see – [http://www.dbcde.gov.au/funding\\_and\\_programs/previous](http://www.dbcde.gov.au/funding_and_programs/previous) (viewed 10/11/2010)

<sup>158</sup> They will need more than merely information brochures on the need to ensure that your Network Termination Unit has a backup battery in case of a power cut (NBN Tasmania, 'Batter Backup User Guide', <http://www.nbntasmania.com.au/assets/283/NBNT1829%20NBN%20UPS%20Brochure.pdf> (accessed 06/11/2010)); or a statement that it will improve education, health, community and lifestyle (NBN Tasmania, 'The NBN Benefits', <http://www.nbntasmania.com.au/index.php?Doo=PageView&id=100> (accessed 06/11/2010)); or a pamphlet drop explaining what the NBN is (LeMay R, 'NBN Tasmania drops "ready to roll" pamphlets', April 15, 2010 *Delimiter* <http://delimiter.com.au/2010/04/15/nbn-tasmania-drops-ready-to-roll-pamphlets/> (accessed 06/11/2010) )

<sup>159</sup> 'Tassie towns snub broadband', April 08, 2010, *Herald Sun* – "Sorell Mayor Carmel Torenus said only about 90 residents turned up for a recent briefing on the Midway Point roll-out. 'We were a bit surprised they [the Government] chose an area like this. It's not a wealthy area and the costs could be off-putting for a lot of people,' she said. 'The benefits at this stage, we're not quite sure. They've got a lot of work to do to educate people. It's going to be interesting to see how many people take it up.'" [http://www.themercury.com.au/article/2010/04/08/138561\\_tasmania-news.html](http://www.themercury.com.au/article/2010/04/08/138561_tasmania-news.html) (accessed 06/11/2010)

<sup>160</sup> Australian Government, 'Policy Statements', DBCDE, 17 September 2010 – "At the time the new fibre optic network is being rolled out by NBN Co, the company in conjunction with the industry and in consultation with the Commonwealth will fund and undertake a public information and education campaign. The purpose of the campaign will be to inform telecommunication end users about the imminent migration of services from the copper based infrastructure to the fibre optic infrastructure. The campaign will provide information concerning the timing for provision of new services, the nature of the services, the action that the consumer will need to take, the extent to which existing

raising and training as to the types the services, content and sites that will be available, and how to access them.<sup>161</sup>

Additionally, users will have ongoing monthly costs payable to an ISP in order to remain connected to the NBN. Many Australians may not be in a position to commit any more of their budgets for higher speed broadband access. Similarly to digital television, a targeted financial assistance policy facilitating acquisition of relevant hardware and software may assist with the adoption of NBN access by eligible users. However, assistance may need to be provided on an ongoing basis. An appropriate policy could enable the provision of financial assistance packages to ensure that eligible Australians are able to adopt as well as maintain NBN access. This could provide subsidies to eligible persons to assist them to acquire hardware and software, cover in-home training to enable them to undertake NBN-specific and general computer skills training, and enable them to maintain their connection. As the roll-out of digital television in rural areas, and the European broadband experience shows,<sup>162</sup> specific attention needs to be given to those in rural areas.

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*equipment will be able to be reused, together with the responsibilities of the respective parties i.e. NBN Co, the retail service provider and the consumer, in implementing migration to the new infrastructure. It will include the provision of access by consumers to call centres and web sites. The campaign, which will be developed in consultation with Telstra as the existing infrastructure provider and the wider industry, will commence prior to commencement of rollout and continue until completion of migration in relevant areas.”*  
[http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/policy\\_statements](http://www.dbcde.gov.au/broadband/national_broadband_network/policy_statements) (viewed 10/11/2010)

<sup>161</sup> Implementing a program similar to that available to Tasmanian tourism may be appropriate. See – Tourism Tasmania, ‘Digital Coach Program’ – *“Tourism Tasmania’s Digital Coach Program helps operators improve their website, market their business better and make online opportunities work for them. Tourism Tasmania developed the Digital Coach program in direct response to requests from tourism operators. Since then, over 230 people have completed Round One of the program with Round Two launching in October 2010. The FREE program gives participants access to seven experts in online marketing and distribution who work with participants as coaches.”*  
[http://www.tourismtasmania.com.au/industry/digital\\_coach\\_program](http://www.tourismtasmania.com.au/industry/digital_coach_program) (accessed 11/11/2010) However, it is a concern that the program appears not to be open to all industry participants. See – Advance Tourism, ‘Tasmanian Tourism Industry Survey of Current Operating Environment’, July 2010, 10, *“Tourism Tasmania have given tourism operates the opportunity to [develop] ... their technological skills thro the Digital Coaching Program, however this again is only available to businesses registered with their local tourism group.”*  
[http://www.advancetourism.com.au/files/HM3EZMROKT/Parliament\\_being\\_misled\\_2.pdf](http://www.advancetourism.com.au/files/HM3EZMROKT/Parliament_being_misled_2.pdf) (viewed 11/11/2010)

<sup>162</sup> European Commission, ‘Study on Availability of Access to Computer Networks in Rural Areas’, *Final report*, November 2007, 2 *“The study shows how to maximise the benefits of ICT for growth and jobs, in all rural areas of Europe, using the support of rural development programmes.”*  
[http://ec.europa.eu/agriculture/analysis/external/networkd/index\\_en.htm](http://ec.europa.eu/agriculture/analysis/external/networkd/index_en.htm) (accessed 29/07/2010)

Extra financial assistance may be required for those living in remote areas where cable cannot be laid to ensure they are able to connect to satellite services. Additional assistance also will be required for Australians with disabilities to enable full access by them.<sup>163</sup>

Australians with financial or physical difficulties may not be the only ones requiring assistance. General information and assistance from reputable suppliers may need to be made available to all Australian by way of an NBN-Smart general assistance package.<sup>164</sup> This could work on the basis that, for the payment of a fixed, nominal fee, a qualified person would attend at the end user's home to review their current access methods, computer equipment and software, and make recommendations for upgrading as necessary. To ensure impartiality and privacy, the qualified person should not be permitted to refer to the end user to any business with which they have an association, and would have confidentiality conditions imposed by the terms of their appointment contract.

Finally, easy access to reliable help at any time of the day may be of particular assistance for house-bound or older Australians. An 'NBN Helpline' service may be useful as a first point of contact for these end users that they could reach or access either by means of the telephone or the internet. The service could provide non-technical assistance as well as the ability to refer end users to more specific technical information and qualified service providers.

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<sup>163</sup> 'Accessible Broadband for All Australians', Policy Paper, MAA, ACE and CTN, March 2008, 10 – *"Industry awareness about accessible equipment needs to be enhanced and appropriate products developed for the marketplace. Many user accessibility issues are related to the programming of equipment which makes it inaccessible; for example a reliance on menus on VOIP handsets creates difficulties for blind users. Inclusive design principles need to be mandatory, and closer relations need to be developed between equipment manufacturers, suppliers and user groups to ensure products are meeting user needs. An industry wide assistive equipment program should be considered as an affordability measure and to ensure all suppliers can offer their customers appropriate products."* <http://www.ctn.org.au/content.cfm-Live=1&ContentType=Content&ContentID=304.htm> (viewed 30/10/2010)

<sup>164</sup> For example a package similar to the ClimateSmart Home Smart service provided by the Queensland government for electricity consumption Queensland Government, 'ClimateSmart Home Service' [http://www.climatesmarthome.com/home\\_service.html](http://www.climatesmarthome.com/home_service.html) (viewed 31/10/2010)

## E. Conclusion

This chapter has identified policy and legislation that could be adopted to ensure maximum migration to the NBN. It has also identified the process that the federal government should utilise as it moves forward with the NBN's implementation and roll-out. International models and positions are examples of what is expected, and possible, regarding legislating to protect the openness and neutrality of high-speed broadband networks. The position of foreign jurisdictions, together with the views of many Australians, highlight the fact that access to high-speed broadband networks is viewed as a fundamental right of all citizens.

By means of examination of international and domestic examples, and the Australian digital television switchover process, the chapter has identified issues common to individual end users. These issues must be addressed by government policy during the transition period and beyond in order to enable all citizens to access the internet. However, as each population base in Australia is unique, this list may be incomplete. By adopting the policy development recommendations above, in particular by ensuring broad and wide consultation with communities, interest groups and individuals, such matters should be easily identified. From that point appropriate region- or need-specific policies may be developed.

As we move forward, the old means of access to the internet are not adequate. The future of the internet economy requires that the federal government take a lead role in ensuring equity of access and services for all, and that the federal opposition be bipartisan in the process.<sup>165</sup> In this regard, suitable legislation that implements appropriate access regimes will be a vital mechanism for conferral of social benefit.<sup>166</sup> Just as constructing the NBN will take many years, the policy process also will take time. Implementing the NBN is not the end of the highway,<sup>167</sup> merely another beginning.

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<sup>165</sup> In fairness it is noted that it is not high-speed broadband that the opposition objects to, just the NBN, its proposed method of implementation and the potential cost implications for Australia and Australians. See – The Senate, 'Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010 [Provisions]', Environment, Communications and the Arts Legislation Committee, May 2010, 47 – *“Coalition Senators support universal access to fast and affordable broadband”*. [http://www.aph.gov.au/Senate/committee/eca\\_ctte/fibre\\_deployment/report/report.pdf](http://www.aph.gov.au/Senate/committee/eca_ctte/fibre_deployment/report/report.pdf) 10/07/2010)

<sup>166</sup> Note 131, Farrar, 51

<sup>167</sup> Note 52, McKinsey Report, 27 – *“If the access network is analogous to local roads, backhaul represents the arterial roads and highways.”*





## CHAPTER 7 – CONCLUSION: ... AND KANGAROOS

*“The future belongs to those who give the next generation reason for hope.”<sup>1</sup>*

### **A. The end of the beginning**

The thesis has explored the role that individual end users will have in the future of the internet economy and whether existing legal access regimes support and nurture their involvement. The past century has seen dramatic changes in telecommunications services and systems, as well as in users’ needs and expectations. In the future of the internet economy, the role of individual end users will change as their needs, wants and desires, and (most importantly) the available technology changes. It is incumbent upon all governments, and not just that of Australia, to ensure that policies and legislative regimes can adapt to, support and promote those changes in a respectful, inclusive manner. As identified, individual end users will impact upon business operations and thus the functioning of the internet economy. The more the individual end users engage in the internet economy, the more businesses will engage. The more businesses engage, the more likely businesses are to innovate and the more Australia as a whole will benefit. The less the individual end users engage, the less likely they, and thus businesses, are to innovate. Let it not be that, for want of an individual employee’s capacity to engage, Australia’s place in the international internet economy is lost.<sup>2</sup>

### **B. Why high-speed broadband? Why the NBN?**

As has been considered, the internet is an important tool for creating and sharing information, for creating and maintaining communities, and for enabling business collaborations. It is also important for education and government service delivery, and for facilitating research. As Howkins noted, we are social creatures first and

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<sup>1</sup> Pierre Teilhard de Chardin, French Jesuit, palaeontologist, biologist, and philosopher (1881 – 1955).

<sup>2</sup> Brucker G, “The horseshoe nail”: Structure and contingency in medieval and Renaissance Italy’ (2001) 54(1) *Renaissance Quarterly*, 1 <http://www.proquest.com/> (viewed 05/05/2010) – referring to the anonymously amended poem by Herbert G, “*Jacula Prudentum; or, Outlandish Proverbs, Sentences, etc.*” –

*“For want of a nail the shoe is lost  
For want of a shoe the horse is lost  
For want of a horse the rider is lost  
For want of a rider the battle is lost  
For want of a battle the kingdom is lost  
And all for the loss of a horseshoe nail”*

economic ones second.<sup>3</sup> However, increased exposure to the internet and its services and content for social purposes will lead to economic growth. As individuals learn better skills<sup>4</sup> there will be greater engagement in, and growth of, the internet economy. Capacity enables engagement. Engagement enables capacity. High-speed broadband access will be vital for enabling engagement and capacity in the future.

In the past Australia telecommunications services and associated infrastructure have been provided either by the federal government directly, or through a corporation under its control or direction.<sup>5</sup> Despite this control, or maybe because of it, the establishment of broadband in Australia has had a “*remarkably checkered*” history.<sup>6</sup> Currently the only ubiquitous communication network in Australia is Telstra’s fixed-line network. Despite the obligation of government to implement appropriate public infrastructure,<sup>7</sup> in the main “*planning responses [to this need] have been blatantly inadequate*”.<sup>8</sup> As compared as a percentage of GDP with other first-world countries, Australian spending on infrastructure has been underfunded for many years.<sup>9</sup> In respect to the telecommunications industry this has resulted in an industry operating with an outdated, slow and disjointed infrastructure. In the current proposal for the NBN there will be a range of new services available.<sup>10</sup> This will bring a range of

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<sup>3</sup> Howkins J, *Creative Ecologies: Where Thinking is a Proper Job* (University of Queensland Press, St Lucia, 2009) 33 – “*Day to day, the vast majority of creative activities take place informally wherever people happen to be. We are thinking, cultural and social beings before we are economic beings, and our creativity is not limited to commercial work.*”

<sup>4</sup> Note 3, Howkins, 54

<sup>5</sup> *Bayside City Council v Telstra Corp Ltd* [2004] HCA 19 [6]

<sup>6</sup> O'Regan T and M Ryan, ‘Trajectories of broadband: The coming, going and return of broadband’ in C Anyanwu (Ed) *Empowerment, Creativity and Innovation: Challenging Media and Communication in the 21st Century* (ANZCA and University of Adelaide) *Australia & NZ Communication Assoc Int Conference 2006*, The University of Adelaide, South Australia (1-13) 4-7 July, 2006 [http://www.adelaide.edu.au/anzca2006/conf\\_proceedings/oregan\\_ryan\\_trajectories\\_of\\_broadband.pdf](http://www.adelaide.edu.au/anzca2006/conf_proceedings/oregan_ryan_trajectories_of_broadband.pdf) (viewed 03/06/2010)

<sup>7</sup> Neutze M, *Funding Urban Services: Options for physical infrastructure* (Allen & Unwin, St Leonards, NSW, 1997) 179

<sup>8</sup> Thompson S ‘Conclusion: Planning Australia into the Future’ in S Thompson (Ed) *Planning Australia: an overview of urban and regional planning* (Cambridge University Press, Melbourne, 2007) 330

<sup>9</sup> The Allen Consulting Group, ‘Funding Urban Public Infrastructure: Approaches compared’, report for the Property Council of Australia, August 2003

<sup>10</sup> Curtin J, ‘A Digital Divide in Rural and Regional Australia?’, Economics, Commerce and Industrial Relations Group, 7 August 2001 – “*While the provision of telecommunications is no longer solely provided by government, there was a time which is still fresh in the memories of many rural Australians, when they could at least expect the right to similar services. In other words, there has been policy tradition underlying the principle of horizontal equalisation, which has informed rural peoples' expectations of entitlement to the same level of service as those in metropolitan Australia.*” <http://www.aph.gov.au/library/pubs/cib/2001-02/02cib01.htm> (viewed 10/11/2010) Also see – McKinsey & Company/KPMG, *National Broadband Network Implementation Study*, 6 May 2010, 417 <http://data.dbcde.gov.au/nbn/NBN-Implementation-Study-complete-report.pdf> (accessed

benefits to both personal and business life that will impact upon both real-world and online activities for, as has been considered, Australia's future generally cannot be separated from the future of its internet economy. The NBN will be a vital tool for accessing the internet and other services. It also will be important as it will enable the creation and sharing of information. In Senator Conroy's words, high-speed broadband will bring "*transformational change*" to Australia.<sup>11</sup>

Issues influencing the adoption and use of broadband services include: frequency of current usage, location of user, availability, affordability, speed of connection, and perceived complexity of related technologies.<sup>12</sup> High-speed broadband will enable more than just access to the internet<sup>13</sup> nevertheless, as was considered in Chapter 4, faster internet speeds are a primary motivator for users to move from dial-up or slow-speed broadband to high-speed broadband services. Conversely, restrictions on access to high-speed broadband by a considerable part of the Australian population will affect the speed of take-up of broadband by the Australian community as a whole. This includes those in rural areas as well as those without the financial and/or skills capacity to become active users. This in turn may adversely affect the level of engagement in the internet economy. The federal government must therefore work to ensure that broadband is deployed in such a manner such that "*poor ... and ... remote and sparsely populated areas*"<sup>14</sup> receive the same service as the more affluent and more readily accessible areas. It will also be important that the residents of those remote and rural areas perceive their service as being the same as is delivered to others.<sup>15</sup> A lack of access to the necessary skills, and training and knowledge of available services will adversely impact upon NBN adoption.

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08/05/2010) ('McKinsey Report')

<sup>11</sup> Conroy, Hon. S, 'Address to RadComms 2009' Wednesday, 29 April 2009 <http://www.minister.dbcde.gov.au/media/speeches/2009/14/> (viewed 09/06/2010)

<sup>12</sup> For specific domestic adoption issues see – DBCDE 'Australian Broadband Telecommunications Research Project – Household Broadband Adoption Report', January 2004 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0011/20441/Household\\_Broadband\\_Adoption\\_Report.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0011/20441/Household_Broadband_Adoption_Report.pdf) (viewed 24/06/2009). For specific business adoption issues see – DBCDE 'Australian Broadband Telecommunications Research Project – Business Broadband Adoption Report', 20 June 2004 [http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0010/20440/Business\\_Broadband\\_Adoption\\_Report.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0010/20440/Business_Broadband_Adoption_Report.pdf) (viewed 24/06/2009)

<sup>13</sup> Whitt R, 'Evolving Broadband Policy: Taking Adaptive Stances to Foster Optimal Internet Platform' (2009) 17 *CommLaw Conspectus*, 417, 451

<sup>14</sup> Mitchell W, *City of Bits: Space, Place and the Infoban*, 5<sup>th</sup> ed (Massachusetts University of Technology Press, Cambridge, Massachusetts, 1995) 18

<sup>15</sup> Fiedler L, submission to the 'Call for submissions on broadband solutions for remote area', 2 May 2008 – "*I realise that because of varied terrain and our huge country that not all in Australia can get*

### C. The importance of *Connectedness*

As identified in Chapter 2, at the heart of *connectedness* where openness, neutrality, rights and innovation overlap, are the individual end users. In Australia in the 21<sup>st</sup> Century *connectedness* and the effectiveness of the internet economy needs to be understood by means of reference to the individual end user's level of connection with the internet.<sup>16</sup> As articulated in Chapter 3, the thesis defines *connectedness* by reference to individual end users' level of access to the internet. This is evident in the changes "*in how consumers participate in activities such as communication, commerce, work and entertainment*".<sup>17</sup> Community needs<sup>18</sup> have changed as have their means of engagement. Facilitating *connectedness* means ensuring all Australians are able to connect with others and with information via the internet. This includes being able to connect with family and friends, business, government and other service providers. It also includes access to information and education.

Ensuring *connectedness* now is an integral part of life and vital for the (internet) economy. *Connectedness* is required so that Australians have the skills,

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*Broadband like the people in Cities do*". Also see Langfield R, submission to the 'Call for submissions on broadband solutions for remote area', 29 May 2009 – "*Are we going to have access to the same quality, price, provider choices and broadband Plans that metropolitan customers enjoy, and who are these providers going to be?*" [http://www.dbcde.gov.au/consultation\\_and\\_submissions/regional\\_broadband\\_public\\_submissions\\_on\\_policy\\_and\\_funding\\_initiatives\\_to\\_provide\\_enhanced\\_broadband\\_to\\_rural\\_and\\_remote\\_areas/submissions](http://www.dbcde.gov.au/consultation_and_submissions/regional_broadband_public_submissions_on_policy_and_funding_initiatives_to_provide_enhanced_broadband_to_rural_and_remote_areas/submissions) (accessed 17/05/2009) The amendments reintroduced as part of the recent NBN legislative package to Parliament are intended to ensure equality of service provision. See - Explanatory Memorandum, 'National Broadband Network Companies Bill 2010 and Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010, November 2010, 14 – "*Access to other services provided over new or upgraded superfast telecommunications networks would be subject to the usual access arrangements applying under Part XIC of the CCA. In summary, these requirements will mean that mass market fixed-line access networks which supply superfast carriage services with a download transmission speed normally of more than 25 Mbps, must offer a Layer 2 bitstream service. The supply of this service is then subject to the key access, non-discrimination and transparency obligations set out in the Access Bill. Furthermore, once the appropriate codes and standards are in place, carriers will be required to build and operate FTTP networks so they are consistent with NBN technical specifications. Together these amendments should ensure that end-users have access to the same high-quality superfast broadband services, regardless of the network provider, and assist the NBN in meeting its objectives nationally by ensuring it operates on a more level regulatory playing field. To provide a period for industry to adjust to these requirements, the provisions commence on Proclamation or otherwise 12 months after the Access Bill receives the Royal Assent.*" [http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495\\_ems\\_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload\\_pdf/349799.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495_ems_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload_pdf/349799.pdf;fileType%3Dapplication%2Fpdf) (viewed 05/12/2010)

<sup>16</sup> Note 3, Howkins, 84 – "*Conventional economics is centred on companies using people. In contrast, the internet, like the rest of the creative economy, is centred on individuals using companies.*"

<sup>17</sup> ACMA, 'Telecommunications Today – Report 6: Internet activity and content', September 2008, 8 [http://www.acma.gov.au/webwr/\\_assets/main/lib310210/report\\_6\\_telecommunications\\_today.pdf](http://www.acma.gov.au/webwr/_assets/main/lib310210/report_6_telecommunications_today.pdf) (viewed 07/01/2010)

<sup>18</sup> Benkler Y, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (Yale University Press, New Haven and London, 2006) 362

communications and collaborations necessary to engage with others. The hope is that the NBN, as a means of accessing the internet, will be able to respond appropriately to Australia's changed needs and to ensure *connectedness* into the future. Any resistance to implementation of a ubiquitous high-speed broadband network should be trumped by recognition that access to the internet as a fundamental right,<sup>19</sup> as well as being essential for enabling innovations to occur.

As has been considered, ease of access to digital information,<sup>20</sup> as well as being able to access knowledge,<sup>21</sup> are both fundamental needs in the internet economy. Broadband may be a means to an end<sup>22</sup> as a way to bring to “*consumers, users and producers*”<sup>23</sup> the benefits of content and information. A ubiquitous high-speed broadband network, however, is more than merely a means to an end; it is essential for ensuring ongoing *connectedness*, without which the content, services and sites of the internet are not as easily accessed. The NBN will support and enable the development of Australia's internet economy by facilitating *connectedness*. In turn *connectedness* will enable communities and economies to be maintained, grow and in some cases to be developed.

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<sup>19</sup> Meyerson D, *Understanding Jurisprudence* (Routledge-Cavendish, Oxon, 2007) 122 – referring to Dworking's statement that “[i]ndividual rights are political trumps”

<sup>20</sup> Willinsky J, *The Access Principle: The Case for Open Access to Research and Scholarship*, (Massachusetts Institute of Technology, Cambridge, 2006) 143-146

<sup>21</sup> Fitzgerald B, A Fitzgerald, M Perry, S Kiel-Chisholm, E Driscoll, D Thampapillai, and J Coates, ‘Chapter 12 – Creating a Legal Framework for Copyright Management of Open Access within the Australian Academic and Research Sector’ [2008] *SydUPLawBk* 43 in B Fitzgerald, *Legal Framework for e-Research: Realising the Potential* (2008) 263 <http://www.austlii.edu.au/au/journals/SydUPLawBk/2008/43.html> (viewed 07/03/2010)

<sup>22</sup> Wu T, ‘Network Neutrality, Broadband Discrimination’ (2003) 2 *Colorado Journal of Telecommunications and High Technology Law*, 34 ref. in Kelso R, *Open Access to Next Generation Broadband*, PhD Thesis (2009) *Institute for Creative Industries and Innovation, QUT*, 17 <http://eprints.qut.edu.au/12663/> (viewed 11/02/2010)

<sup>23</sup> Note 22, Kelso, 23 – identified as being stakeholders in the debate

## D. The Challenges

In 2002 it was identified<sup>24</sup> that the development of internet-specific laws was lacking. In most countries such laws are developed on a reactionary basis as opposed to a proactive basis. This limitation, however, is not peculiar to the internet. It also is relevant in respect of most laws generally,<sup>25</sup> as well as those that purport to regulate technology or technological activities. This manner of law making, in the context of competition principles, has been referred to as legislating by “*trial and error*”<sup>26</sup> and is to be avoided if possible. The issues arising from reactive law making are perhaps more evident when the activity to be regulated has some connection with technology. This is because technology is so fast-moving it usually outstrips the law.<sup>27</sup> Disappointingly therefore, because of the nature of technology, the reality is that the approach regulators adopt can only ever be reactive to technological changes.

As was considered in Chapter 5, Australian related access regimes in the main are targeted to promoting competition principles, restricting access to inappropriate content, or regulating land use. The current regimes do not promote or protect access by users. There are various challenges facing the federal government as it moves to roll-out the NBN. In addition to meeting the need for the infrastructure itself, these challenges include issues of planning, initial investment and ongoing costs.<sup>28</sup> Policy makers will need to give consideration to the cost to consumers of switching to the new technology to ensure that it is affordable and not prohibitive.<sup>29</sup> An issue that affects all users, both regional and metropolitan, is ensuring reliable any-to-any

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<sup>24</sup> *International E-Commerce Regulation: Proceedings of the Regulating Electronic Commerce Group of the XVIth congress of the International Academy of Comparative Law*, 14 – 20 July 2002, Brisbane, Australia (eLaw Practice, 2002)

<sup>25</sup> As Fuller identified laws “*norms are prospective rather than retrospective.*” See Farrar J, *Legal Reasoning* (Thomson Reuters, Sydney, 2010) 28 discussing Fuller’s eight precepts of basic legality.

<sup>26</sup> Beardsley S and D Farrell, ‘Regulation that’s good for competition’ (2005) (2) *The McKinsey Quarterly*

<sup>27</sup> As former Justice Kirby observed “*with technology as vibrant, as energetic, as dynamic and as changing as ... [that] of informatics, there will ultimately be limits. The technology will outpace in its capacity, the imagination of even the most clever law makers. You can get the best experts, the information, [and] the data. Yet tomorrow it can be overtaken by advances in the technology.*” See Kirby M, ‘Four Parables and a Reflection on Regulating the Net’, *Speech delivered to the internet Industry Association, Annual Dinner*, Sydney, Australia, 21 February 2008 (Edited Transcript) 7 [http://www.highcourt.gov.au/speeches/kirbyj/kirbyj\\_21feb08.pdf](http://www.highcourt.gov.au/speeches/kirbyj/kirbyj_21feb08.pdf) (viewed 26/02/2010)

<sup>28</sup> Note 9, Allen Consulting Group

<sup>29</sup> Ramsey I, *Consumer Law and Policy*, 2<sup>nd</sup> ed (Hart Publishing, Oxford and Portland, Oregon, 2007) 7

connectivity<sup>30</sup> by ensuring ease of connection between the ‘last-mile connection’ technologies<sup>31</sup> and the core networks.<sup>32</sup>

As there is not currently unanimity of position of our Parliamentarians as to what is required in order to deliver high-speed broadband to all Australians,<sup>33</sup> successful implementation of high-speed broadband will also involve overcoming the *political divide*. Not achieving this may result in high-speed broadband not progressing as expected.<sup>34</sup> Irrespective of political position, a ubiquitous high-speed broadband network in some form is still required.<sup>35</sup>

As Chapter 6 discussed, the challenges identified in Chapter 5 can be overcome by implementing NBN-specific access regimes, policies and legislation. This will include targeted strategies to address issues of education and financial capacity to ensure the maximum number of Australians engages in the internet economy as individuals and employees. In regards to the social benefits high-speed broadband can bring, these – separate from effective competition – are not within the contemplation of the current regimes. Access is essential for *connectedness*. However, as previously considered, access in this context is not just about unfettered competition or free choice for end users.<sup>36</sup> First, the end users need skills to be able to choose what service provider to use. Second, they need the ability to use the services available through that provider. Third, they need appropriate hardware to be able to access the NBN.

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<sup>30</sup> Bellair D, submission to the ‘Call for submissions on broadband solutions for remote area’, June 8, 2008

<sup>31</sup> i.e. Telstra’s Next G and WiMAX.

<sup>32</sup> 4RF Communications, Submission to the ‘Call for submissions on broadband solutions for remote area’ 6

<sup>33</sup> The Senate, ‘Fourth Interim Report’, Select Committee on the National Broadband Network, May 2010 – For example see the opposition senators’ majority report compared to the government senators’ minority report. [http://www.aph.gov.au/Senate/committee/broadband\\_ctte/interim4-report/report.pdf](http://www.aph.gov.au/Senate/committee/broadband_ctte/interim4-report/report.pdf) (viewed 03/06/2010)

<sup>34</sup> i.e. not in the form known as the NBN see – Abbott T, ‘Budget Reply Speech’, 13 May 2010, *House of Representatives Hansard*, 139, 143 – “*the coalition [if elected to government] will not go ahead with the National Broadband Network, avoiding the creation of a \$43 billion white elephant. Better access to faster broadband should not mean a new nationalised telecommunications monopoly and Telstra shareholders should not have their assets subject to coerced acquisition.*” <http://aph.gov.au/hansard/reps/dailys/dr130510.pdf> (viewed 03/06/2010)

<sup>35</sup> RBS Morgans, ‘Australian Strategy’, *Equity Australia*, 9 June 2010, 4 – in discussing the differences in government and opposition policies suggests that “[a]n alternative to the NBN would likely be put forward, but it would probably be less potentially damaging to TLS than NBN.”

<sup>36</sup> Note 22, Kelso, 1

## E. NBN policy development considerations

As the Australian federal government works towards finalising its NBN legislative package, it needs to consider several matters. First, that the NBN requires its own specific policies and laws. Adapting the application of existing laws, while possible for other matters,<sup>37</sup> is inappropriate for this new environment. There are risks in continuing to strictly develop or apply laws based on existing classifications. This is particularly so when the current circumstances were not within the contemplation of the legislative drafters when the existing laws were created. A primary risk is that classification by itself “*may come to dictate the way in which* [such matters are considered as well as the way in which] *the law is applied*”.<sup>38</sup>

Second, all sides of Federal Parliament need to remember that a high-speed broadband network will be essential for service delivery in the future. A bipartisan approach to the NBN’s construction, development and regulation is the most appropriate approach. Third, the federal government would be advised to remember the words of Sarat and Kearns that “*all too often law ... is a tool of injustice*”<sup>39</sup> and, as Halcons noted, that “*bad regulations can do as much damage as good regulations do benefit*”.<sup>40</sup> Parliament needs to work together to ensure that the law governing the NBN is not capable of having these effects.

The current access regimes are not user-specific. Likewise funding models tend to be directed to ISPs or households and not individual end users. Ensuring *connectedness* does not mean only that houses and businesses are connected and have appropriate access. It requires the government to enable individuals to become activate users, that is, they have the necessary skills and means of access so that they are connected. As Chapter 2 considered, the individual’s rights of access to information, government and education are fundamental for enabling innovation to occur. Innovation in its turn is essential for the development of the internet economy.

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<sup>37</sup> Note 25, Farrar, 216 – “*changes in social policy or behaviour are not always reflected in the law [as i]t may not be possible to adapt the concepts of the law to new circumstances without any dramatic outward change.*”

<sup>38</sup> Note 25, Farrar, 54-55

<sup>39</sup> Sarat A and T Kearns, ‘Legal Justice and Injustice: Towards a Situated Perspective’ in A Sarat and T Kearns (Eds) *Justice and injustice in law and legal theory* (The University of Michigan Press, 2001)

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<sup>40</sup> Note 3, Howkins, 119



The internet may not be affected by traditional jurisdictional boundaries. This is because it “*cut[s] across territorial borders, creating a new realm of human activity and undermining the feasibility – and legitimacy – of laws based on geographic boundaries*”.<sup>41</sup> In reality however, through government regulation and control of users and commercial operations,<sup>42</sup> (i.e. of the telecommunications systems and the content available through it) the internet is subject to the control of individual States.<sup>43</sup> Australia therefore needs to work to implement appropriate regimes to encourage the use of the internet within Australian territory in order to promote its internet economy. As has been identified, innovation is required in order to further Australia’s internet economy. In order ensure innovation, *connectedness* is required. In order to ensure *connectedness*, specific NBN policy and legislation is required. As Chapter 6 considers, this policy and legislation should be targeted to ensuring all Australians – not just school students – are digitally literate and have ongoing access capacity.

## **F. Recommendations**

The thesis makes three recommendations. First, the federal government should legislate for openness and neutrality of the NBN. Second, to provide that access to high-speed broadband should be a right of all citizens. Third, the government should develop an NBN transition assistance policy for all eligible Australians. International example clearly shows that it is possible to achieve legislated rights protecting the openness and neutrality of the internet, and the rights of individual users to access it. International and domestic examples clearly show the level of financial and other assistance that end users will require to connect to the NBN and to maintain that connection into the future.

Implementation of these recommendations will be facilitated by legislating to extend the USO to broadband; adopting a definition of the NBN that is flexible, not related

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<sup>41</sup> Johnson D and D Post, ‘Law and Borders – The Rise of Law in Cyberspace’ (1996) 48(5) *Stanford Law Review*, 1367, 1367

<sup>42</sup> Stein L and N Sinha, ‘New Global Media and Communication Policy: the Role of the State in the Twenty-First Century’ in L Lievrouw and S Livingston (Eds) *Handbook of New Media: Social Shaping and Consequences of ICTs* (Sage Publications, London, 2002) 411

<sup>43</sup> Murdoch S and R Anderson, ‘Shifting Borders’ (2007) 36(4) *Index on Censorship*, 156 <http://ezproxy.usc.edu.au:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ulh&AN=27777748&site=ehost-live> (viewed 22/08/2009); Note 41, Johnson and Post, 1371 – “*The power to control activity in Cyberspace has only the most tenuous connections to physical location.*”

to any entity and is technology neutral; developing targeted planning laws to require roll-out of the NBN to existing premises; and develop an NBN Helpline and NBN-Smart packages to provide guidance and assistance to all Australians. While international examples can assist in identifying what the Australian federal government can do to promote the internet economy, the government should not wait for other jurisdictions to lead the way. Implementing appropriate policy and legislation needs to be addressed as a matter of priority to ensure a vibrant, inclusive and accessible internet economy in the future.

## G. Future Research

The NBN and high-speed broadband will stimulate much research by various disciplines and for many years to come. The purpose of this Part is to identify areas of future research that will be of interest to legal scholars. In 1999 Mitchell<sup>44</sup> raised and considered several questions regarding the new network, including:

- *How will it get constructed and paid for?*
- *How will it interact with existing urban patterns?*
- *Who will control it?*
- *Who will get access, and when?*
- *How might we balance incentives for telecommunications entrepreneurs with investors and policies that ensure equity of access?*

In regards to the NBN, the first two bullet points are relevant for its implementation and the last three for its ongoing operation. While the questions were not specifically asked in respect to the NBN but rather the proposed networks at that time, it is concerning that the questions have not been answered though they were asked more than a decade ago. Of further concern, at a government policy and legal level, is that the question now being asked is “[w]ho will own it?”<sup>45</sup> This is an issue that requires specific further research and consideration.

As Australia works its way to the future, there are several other areas that will require research. These include consideration of the impact that proposed planning

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<sup>44</sup> Mitchell W, *E-topia: Urban Life, Jim – But Not As We Know It* (Massachusetts University of Technology Press, Cambridge, Massachusetts, 1999) see – *Chapter 1: March of the Meganets*

<sup>45</sup> Press L, ‘Broadband policy: Beyond privatization, competition and independent regulation’ (2009) 12(4) *First Monday*, 11  
<http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2374/2159> (viewed 07/01/2010)

requirements will have on the value of brown field sites. Access to land and the network for maintenance into the future, to ensure ongoing and consistent service delivery, is also an issue. In order to address ongoing access, creation, adoption, and use of appropriate standards will be important, but these must be consistently applied. The effectiveness of the new planning regimes will therefore require further investigation on a region by region, as well as State by State, basis.

Issues of network neutrality, and what this will mean in practice, requires further consideration. Also, from both the economic and legal perspective, once it is established, the NBN competition regime will need to be tested to ensure that it is in fact promoting competition. The effectiveness of the ACCC's amended role also warrants further examination both as to its impact on the individual participants and the market as a whole. As Morrison and Potts considered:

*“policy should seek to maintain both the economic system and also the socio-cultural systems as open systems. This task is achieved not by forcing openness, but rather by protecting against undue closure via artificial monopoly or the encroachment of power that excludes access to markets and knowledge the preservation and extension of ‘the rule of law’ has historically been the most effective means of achieving this goal, as has been the commitment to maintaining free movement of resources ... both within and between national boundaries.”*<sup>46</sup> [emphasis added]

The ability of the NBN to deliver health services also is deserving of consideration. That it could be used for such purposes is clear.<sup>47</sup> How it should be used and what additional infrastructure and hardware will be required needs further consideration. Likewise, the NBN's place in Australia's EI requires further thought. This requires an examination of possible and best uses, the level of financial commitment necessary, and how Australia's EI will interact with that of other jurisdictions.

What the best mix of broadband cable and other delivery methods entails, in order to roll-out the NBN to all, also warrants further investigation. For example – is it appropriate in the context of best delivery and appropriate legislation to consider and

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<sup>46</sup> Morrison K and J Potts, ‘Industry policy as innovation policy’ in G Hearn and D Rooney (Eds) *Knowledge policy : challenges for the 21st century* (Edward Elgar, Cheltenham, 2008) 171

<sup>47</sup> Note 33, Senate, 63

develop specific regimes for wireless broadband technologies<sup>48</sup> and satellite delivery?<sup>49</sup> This may be particularly relevant for regional and rural Australia and also needs to be addressed in the context of the ownership of related infrastructure. The implications for Native Title of the physical construction of the NBN should be examined. This is required both from the perspective of legislative rights and obligations and, more importantly, to ensure that the NBN does not offend against any cultural requirements. Further research is therefore required, as is specific government consultation as part of the infrastructure construction planning process,

While consideration of competition issues was beyond the scope of the thesis,<sup>50</sup> these issues remain important for the future of the internet economy. Research is therefore needed as to the actual impact<sup>51</sup> that roll-out of the NBN<sup>52</sup> will have on competition in, and the regulation of, the Australian telecommunications industry.<sup>53</sup> Once that impact is identified, further consideration is required by the federal government as to how it should be addressed. This is particularly so, as ISP and telco concerns show, regarding the appropriate number of points of interconnection.<sup>54</sup>

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<sup>48</sup> Note 10, McKinsey Report, 304

<sup>49</sup> Note 10, McKinsey Report, 290

<sup>50</sup> For a consideration of relevant competition issues see – Porter M, ‘The ‘Four Digital Doors’ – a CEDA Research perspective on digital competition’, in Minh Bui Jones (Ed) *Australia’s Broadband Future: Four doors to greater competition*, CEDA (2008) Growth No. 60, 8-16

<sup>51</sup> That there will be an impact is clear from the ACCC’s statement that it “*considers the Government’s [NBN] announcement will have a significant effect on the telecommunications industry and the regulatory environment.*” See ACCC, Draft Declaration, June 2009, 109

<sup>52</sup> Note 51, ACCC, 14 – “*The eight year transition period will likely be a time of significant structural and competitive changes as the industry moves to an environment where an NBN exists alongside Telstra’s fixed network infrastructure.*”

<sup>53</sup> ACCC, submission to the ‘National Broadband Network: Regulatory Reform for 21<sup>st</sup> Century Broadband Discussion Paper’, June 2009, 50 – “*The telecommunications industry to date has displayed the following characteristics ... –*

- *Telstra is ... vertically integrated ... supplying its downstream competitors with wholesale inputs.*
- *Telstra ... holds relevant information ... to which access seekers do not have ... access.*
- *There are multiple issues and multiple players all simultaneously negotiating access to services.*”

More recently it is noted that the federal government “*is also considering Recommendation 78 of the [McKinsey Report] that an independent review of the telecommunications market and the regulatory framework of the NBN be undertaken following completion of the network and prior to its proposed privatisation.*” Explanatory Memorandum, ‘National Broadband Network Companies Bill 2010 and Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010, November 2010, 61 [http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495\\_ems\\_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload\\_pdf/349799.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r4495_ems_b1f1627d-69f3-40d8-80e0-abfe11389b91/upload_pdf/349799.pdf;fileType%3Dapplication%2Fpdf) (viewed 05/12/2010)

<sup>54</sup> Lee T and M Bingemann, ‘ISPs, telcos may file NBN compo claims’, *The Australian*, December 08, 2010 <http://www.theaustralian.com.au/news/nation/isps-telcos-may-file-compo-claims/story-e6frg6nf-1225967249352> (viewed 08/12/2010)

Attention also needs to be given as to how an NBN USO should be structured and to which carriers and carriage service providers, and at what levels, it should be applied.<sup>55</sup> Finally, further consideration needs to be directed to the steps that should be implemented to ensure that the law will be responsive to the need to maintain access to the internet.<sup>56</sup> This will require that whatever is finalised now for the NBN regimes will need to be rigorously tested and scrutinised by future researchers to ensure that its goals are being met. As Australians move away from the use of fixed-line telephony in favour of mobile services,<sup>57</sup> it will be necessary to ensure that any issue of compatibility between services and providers is maintained. It also will require that concerns specific to mobile telecommunications are identified accurately. Further work will be required to implement mechanisms to ensure that any future issues are identified and any gaps arising can be addressed.

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<sup>55</sup> Note 10, McKinsey Report, 119 – “*In a future market structure where NBN Co owns the only remaining access network servicing most premises, network services will be separated from retail services. Treatment of the USO will need to be re-examined in the context of such a market evolution.*” And 121 – “*Recommendation 30. That a review be undertaken to determine how the universal service regime and other carrier and service provider obligation may apply to NBN Co and other carrier and service providers; that this review be completed by the end of 2011.*” <http://data.dbcde.gov.au/nbn/NBN-Implementation-Study-complete-report.pdf> (accessed 08/05/2010)

<sup>56</sup> Asked by Professor Anne Fitzgerald in 2002 in respect of the internet. See Fitzgerald A, ‘General Report: Regulating Electronic Commerce – Emerging Principles for the Regulation of internet Transactions’ in A Fitzgerald and A Moens (Eds) in *International E-Commerce Regulation: Proceedings of the Regulating Electronic Commerce Group of the XVI<sup>th</sup> Congress of the International Academy of Comparative Law, 14 – 20 July 2002, Brisbane, Australia* (eLaw Practice, 2002) 22 – “*The question of how the law will respond to the need to maintain the open and interconnected architecture of the internet ... has received little attention from law makers although it has been the subject of considerable debate in academic and industry circles.*” The review of the access regime that now must occur before 30 June 2014 (new Section 152EOA *Trade Practices Act 1974* – introduced by The Senate, ‘Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010 – Schedule of the amendments made by the Senate’, November 2010 (21) [http://parlinfo.aph.gov.au/parlInfo/download/legislation/sched/r4479\\_sched\\_98df095b-80aa-4aed-8787-9849390e6d07/upload\\_pdf/Telecommunications%20Legislation%20Amendment%20\(Competition%20and%20Consumer%20Safeguards\)%20Bill%202010.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/sched/r4479_sched_98df095b-80aa-4aed-8787-9849390e6d07/upload_pdf/Telecommunications%20Legislation%20Amendment%20(Competition%20and%20Consumer%20Safeguards)%20Bill%202010.pdf;fileType=application%2Fpdf) (viewed 02/12/2010) therefore should be structured to include specific consideration of broadband and internet economy issues.

<sup>57</sup> ACMA, ‘Convergence and Communications – Report 1: Australian household consumers’ take-up and use of voice communications services’, March 2009 [http://www.acma.gov.au/webwr/\\_assets/main/lib100068/convergence\\_comms\\_rep-1\\_household\\_consumers.pdf](http://www.acma.gov.au/webwr/_assets/main/lib100068/convergence_comms_rep-1_household_consumers.pdf) (viewed 07/01/2010) – although the report indicates that this trend is more prevalent in younger Australians, as Australia’s population ages it is unlikely to decrease. It is also noted that this trend does not extend to business users who still, for a variety of reasons, maintain fixed line use at the same time as adopting other services. See – ACMA, ‘Convergence and Communications – Report 2: Take-up and use of voice communications services by small and medium enterprises’, March 2009 [http://www.acma.gov.au/webwr/\\_assets/main/lib100068/convergence\\_comms\\_rep-2\\_small\\_medium\\_enterprises.pdf](http://www.acma.gov.au/webwr/_assets/main/lib100068/convergence_comms_rep-2_small_medium_enterprises.pdf) (viewed 07/01/2010). Albeit perhaps not as quickly as the rest of the world! See – Note 10, McKinsey Report, 229

## H. Beyond 2010

As the thesis has contemplated, the future of Australia's internet economy requires foresight. The challenge for the legislative draftsman is to develop "*a proposed rule [that is] ... general enough to cover all foreseeable instances ... [with] sufficient detail to ensure that its meaning is clear*".<sup>58</sup> That is, policies, legislation and practice must be implemented bearing in mind that what is necessary is to a large extent dependent upon as yet unknown and uncreated innovations. The issues raised by the thesis, as well as much of the future research identified above, will be relevant to the recently announced Inquiry concerning the NBN.<sup>59</sup> However, despite a reporting date of August 2011, not all matters will be able to be addressed, or even considered appropriately in the short-term.

For example, the McKinsey Report with its 84 Recommendations<sup>60</sup> raises many issues that require long-term solutions. They cannot all be addressed in the short-term by specific policies and/or legislation. Also, appropriate policies to address digital literacy will take time to establish, run and test for effectiveness; as will the transition assistance policy. There is, however, as evidenced by the Seoul Declaration and other recent documents released by the OECD, international consensus that such issues must be addressed as soon as feasible.

Broadband and NBN-specific policies and legislation must be as technology-neutral and practice-neutral as possible. They must also be able to be easily amended to address unknown technologies. There is a need to review and restructure the current regulatory regimes for an NBN-specific environment. Continuance and upgrading of existing infrastructure networks also must continue until full roll-out of the NBN to all Australians. The level of implementation therefore of the McKinsey Recommendations, as well as addressing the challenges identified by the thesis, must be left to a future we cannot clearly see.

For the future of Australia's internet economy, the NBN is only the start; we cannot see let alone imagine the finish. As Australian governments work and plan for the

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<sup>58</sup> Note 25, Farrar, 137

<sup>59</sup> House of Representative, 'Inquiry into the role and potential of the national Broadband Network', Standing Committee on Infrastructure and Communications, 7 December, 2010 <http://www.aph.gov.au/house/committee/ic/NBN/index.htm> (accessed 08/12/2010)

<sup>60</sup> Note 10, McKinsey Report, 506

future, and when the Inquiry Committee considers submissions,<sup>61</sup> they would do well to bear in mind the words of former Justice Michael Kirby:

*“this is a thought for us to ponder upon: what are the technologies that lie just around the corner? If we think of the extraordinary developments that have occurred in our lifetimes, what are the amazing developments that will grow out of these?”*<sup>62</sup>

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<sup>61</sup> Note 59, House of Representatives, the closing date for submissions is 25 February, 2011

<sup>62</sup> Note 27, Kirby, 4





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- Atkinson v Telstra and Anor* [2005] NSWSC 655
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*Age Discrimination Act 2004* (Cth)

American Recovery and Reinvestment Act of 2009

*Archives Act 1983* (Cth)

*Australian and Overseas Telecommunications Corporation Act 1991* (Cth)

*Australian Human Rights Commission Act 1986* (Cth)

*Betting Control Act 1954* (Cth)

Broadband Data Improvement Act, P.L. 110-385 (USA)

*Broadcasting Services Act 1992* (Cth)

*Broadcasting Services (Online Services) Act 1999* (Cth)

*Charter of Human Rights and Responsibilities Act 2006* (Vic)

*Classification (Publications, Films and Computer Games) Act 1995*(Cth)

*Classification of Computer Games and Images Act 1995* (Qld)

*Classification of Films Act 1991* (Qld)

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*Competition and Consumer Act 2010* (Cth)

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*Sex Discrimination Act 1984 (Cth)*

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Standing Orders of the Senate

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*Telecommunications Act 1997 (Cth)*  
*Telecommunications Amendment Act 1988 (Cth)*  
*Telecommunications (Consumer Protection and Service Standards) Act 1999*  
*Telecommunications (Universal Service Levy) Act 1997 (Cth)*  
*Telecommunications Legislation Amendment (Competition and Consumer Issues) Act 2005 (Cth)*  
*Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009 (Cth)*  
*Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010 (Cth)*  
*Telecommunications Legislation Amendment (Future Proofing and Other Measures) Act 2005 (Cth)*  
*Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010 (Cth)*  
*Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010 (Cth)*  
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## **CODES AND STANDARDS**

*Industry guideline on Access to Telecommunications for People with Disabilities (ACIF G586:2006)* [http://www.acma.gov.au/WEB/STANDARD/pc=PC\\_2175](http://www.acma.gov.au/WEB/STANDARD/pc=PC_2175) (viewed 20/03/2010)

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*National Classifications Code*

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## **INTERNATIONAL TREATIES/AGREEMENTS**

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*International Covenant on Civil and Political Rights 1966*

*International Covenant on Economic, Social and Cultural Rights 1966*

*The Universal Declaration of Human Rights*, December 10, 1948, The United Nations

## **APPENDIX A – LINK TO SEOUL DECLARATION 2008**

Seoul Declaration 2008 – <http://www.oecd.org/dataoecd/49/28/40839436.pdf>  
(viewed 05/06/2009)





## APPENDIX B – LINKS TO COPIES OF LEGISLATION

*Human Rights (Parliamentary Scrutiny) Bill 2010*  
[http://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/r4420\\_first/toc\\_pdf/10194b01.pdf;fileType%3Dapplication%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/r4420_first/toc_pdf/10194b01.pdf;fileType%3Dapplication%2Fpdf) (viewed 13/11/2010) [reintroduced in identical form to the 43<sup>rd</sup> Parliament 20/09/2010]

Bill Home page –

[http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset\\_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio\\_Phrase%3A%22attorney-general%22;rec=3;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio_Phrase%3A%22attorney-general%22;rec=3;resCount=Default) (viewed 13/11/2010)

(Previous) *Human Rights (Parliamentary Scrutiny) Bill 2010*  
[http://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/r4380\\_first/toc\\_pdf/10123b01.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/r4380_first/toc_pdf/10123b01.pdf;fileType=application%2Fpdf) (viewed 13/06/2010) [lapsed at dissolution of 42<sup>nd</sup> Parliament 19/07/2010]

Bill Home page -

[http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;orderBy=customrank;page=0;query=Human%20Rights%20\(Parliamentary%20Scrutiny\)%20Bill%202010;rec=10;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;orderBy=customrank;page=0;query=Human%20Rights%20(Parliamentary%20Scrutiny)%20Bill%202010;rec=10;resCount=Default)

*National Broadband Network Companies Bill 2010*  
[http://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/r4495\\_first/toc\\_pdf/10283b01.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/r4495_first/toc_pdf/10283b01.pdf;fileType=application%2Fpdf) (viewed 02/12/2010)

Bill Home page –

[http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset\\_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio\\_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=0;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=0;resCount=Default)

(Previous) *National Broadband Network Companies Bill 2010 - Exposure Draft*  
[http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0005/125897/Exposure\\_draft-National\\_Broadband\\_Network\\_Companies\\_Bill\\_2010.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0005/125897/Exposure_draft-National_Broadband_Network_Companies_Bill_2010.pdf) (viewed 02/06/2010)

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<http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22legislation%2Fbillhome%2Fr4331%22> (viewed 02/06/2010) [lapsed at dissolution of 42<sup>nd</sup> Parliament 19/07/2010]

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(viewed 13/11/2010)

Bill Home page –

[http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset\\_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio\\_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=2;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=2;resCount=Default)

*(Previous) Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009*

[http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0011/120026/B09AL216.V47.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0011/120026/B09AL216.V47.pdf)  
(viewed 02/06/2010) [lapsed at dissolution of 42<sup>nd</sup> Parliament 19/07/2010]

Bill Home page -

[http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;orderBy=customrank;page=7;query=%22Telecommunications%20Legislation%20Amendment%20\(Competition%20and%20Consumer%20Safeguards\)%20Bill%202009%22;rec=13;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;orderBy=customrank;page=7;query=%22Telecommunications%20Legislation%20Amendment%20(Competition%20and%20Consumer%20Safeguards)%20Bill%202009%22;rec=13;resCount=Default)

*Telecommunications Legislation Amendment (National Broadband Network Measures - Access Arrangements) Bill 2010*

[http://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/r4496\\_first/toc\\_pdf/10284b01.pdf;fileType=application%2Fpdf](http://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/r4496_first/toc_pdf/10284b01.pdf;fileType=application%2Fpdf) (viewed 02/12/2010)

Bill Home page -

[http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset\\_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio\\_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=4;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;adv=yes;orderBy=priority,title;page=0;query=Dataset_Phrase%3A%22billhome%22%20ParliamentNumber%3A%2243%22%20Portfolio_Phrase%3A%22broadband,%20communications%20and%20the%20digital%20economy%22;rec=4;resCount=Default)

*(Previous) Telecommunications Legislation Amendment (National Broadband Network Measures - Access Arrangements) Bill 2010 - Exposure Draft*

[http://www.dbcde.gov.au/\\_\\_data/assets/pdf\\_file/0007/125899/Exposure\\_draft\\_Telecommunications\\_Legislation\\_Amendment\\_National\\_Broadband\\_Network\\_Measures\\_Access\\_Arrangements\\_Bill\\_2010\\_.pdf](http://www.dbcde.gov.au/__data/assets/pdf_file/0007/125899/Exposure_draft_Telecommunications_Legislation_Amendment_National_Broadband_Network_Measures_Access_Arrangements_Bill_2010_.pdf) (viewed 02/06/2010)

## APPENDIX C – LINKS TO WEBSITES

### Australian Federal Government Sites

Australia's Human Rights Framework

<http://www.ag.gov.au/humanrightsframework>

Digital television - Household Assistance Scheme

[http://www.digitalready.gov.au/household\\_assistance.aspx](http://www.digitalready.gov.au/household_assistance.aspx)

Digital television switchover

[http://www.dbcde.gov.au/television/digital\\_television\\_switchover](http://www.dbcde.gov.au/television/digital_television_switchover)

Fibre in new developments

[http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/fibre\\_in\\_new\\_developments](http://www.dbcde.gov.au/broadband/national_broadband_network/fibre_in_new_developments)

National Broadband Network Company Legislation and Access Regime

[http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/nbn\\_company\\_legislation\\_and\\_access\\_regime](http://www.dbcde.gov.au/broadband/national_broadband_network/nbn_company_legislation_and_access_regime)

National Broadband Network Implementation Study

[http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/national\\_broadband\\_network\\_implementation\\_study](http://www.dbcde.gov.au/broadband/national_broadband_network/national_broadband_network_implementation_study)

National Broadband Network: Regional Backbone Blackspots Program

[http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/national\\_broadband\\_network\\_Regional\\_Backbone\\_Blackspots\\_Program](http://www.dbcde.gov.au/broadband/national_broadband_network/national_broadband_network_Regional_Backbone_Blackspots_Program)

Telecommunications Regulatory Reform

[http://www.dbcde.gov.au/broadband/national\\_broadband\\_network/telecommunications\\_regulatory\\_reform](http://www.dbcde.gov.au/broadband/national_broadband_network/telecommunications_regulatory_reform)

### Other

NBN Co Limited <http://www.nbnco.com.au/>



