

Social media and cultural interactive experiences in museums¹

ANGELINA RUSSO*, JERRY WATKINS*,
LYNDA KELLY*, SEBASTIAN CHAN*

Abstract: *Social media such as blogs, wikis and digital stories facilitate knowledge exchange through social networking. Such media create a new forum within which dispersed audiences - including youth, regional and rural communities - can engage with museums to actively debate notions of identity, and voice these reflections online. Social media can impact on formal and informal learning within the museum and the effect that this may have on notions of cultural identity. This represents a shift in the ways in which museums:*

- *act as trusted cultural online networks;*
- *distribute community knowledge; and*
- *view their role as custodians of cultural content.*

Museum communication systems such as exhibitions, public programs, outreach and education seek to provide complex cultural interactive experiences. Social media challenge existing communication models, and few museums have clear strategies for engaging communities in content creation. This paper will investigate some of the issues surrounding the use of social media in museum programs and will argue that there are strong epistemological reasons for using social media to add value to museum programs.

Keywords: Social media, museum communication, web 2.0, museum learning.

BACKGROUND

The social role of museums has changed dramatically in the last decade, but communication and design rationales are still catching up. Museums no longer fit the early modernist model of the nineteenth century museum, with its authoritative narratives; many now offer interactive and open-ended experiences (Russo and Watkins 2006). Social constructi-

ivist approaches to communication have helped museums to connect with the experiences, memories and understandings that visitors bring with them (Watkins and Mortimore 1999; Falk & Dierking 2000; Hein 1998). They have also enabled the deconstruction of grand narratives and have affirmed the role of audiences in social learning. Museums are more open to cultural diversity, local knowledge and popular memory. These deba-

tes have tapped a form of community intelligence and have created a path from modernist certainty and institutional centrality to social networking and demand-driven intellectual engagement with culture. In turn, this has changed the ways that museums respond to the challenges of increasingly democratised civic engagement. Museums are now sites in which knowledge, memory and history are examined, rather than places where cultural authority is asserted (Hooper-Greenhill 2000; Witcomb 1999; Kelly, Cook & Gordon 2006). Museums and visitors collaborate in the “making of meaning” whether visitors are local residents who lived through a particular period of time or school students working on problem-based research projects (Hooper-Greenhill 2000; Silverman 1995).

For example, the National Library of Australia² and Yahoo!7’s Flickr³ recently collaborated to develop “Click and Flick”⁴, a site where individuals contribute their images to PictureAustralia⁵ an online image repository. Previously, PictureAustralia only provided access to images within existing library, archive, museum and gallery collections. This initiative addresses issues of democratised civic engagement while posing questions regarding investment in the promotion of community knowledge and negotiated cultural authority.

SIGNIFICANCE OF SOCIAL MEDIA ON MUSEUM LEARNING AND COMMUNICATION

Social media have both short and long term effects on museum learning and communication. In order to realise the immediate opportunities afforded by social media, museums need to work with designers, communications experts and educationists to re-engage young people and communities. This strategy could

encourage audiences to respond to what they discover and relate it back to themselves in ways which are meaningful to them. Holden and Jones (2006: 6) suggest that the modern institution must “draw from our common past and cultural heritage to create a diverse and grounded future”. Social media can capture this social value and explore ways of empowering young people in a more participatory, multi-cultural and engaged society.

In the longer term, social media provide an exceptional platform from which to explore the convergence of multimedia design, museum studies, communication, learning and community informatics to:

- Generate cross-disciplinary connections between museum communication processes, multimedia design, digital content creation, smart information use and user-led innovation.
- Position museums to take a primary role in debate between the world’s leading international cultural institutions on the implications of new social media practices.
- Provide practical examples of ways in which public investment in museums can engage technology-saturated young people with social and scientific history.
- Explore notions of identity through social history and major science issues.

Existing studies suggest that museums enable cultural participants to explore images of themselves, their histories and communities (Falk 2005). Where and how audiences interact with, create and share knowledge are critical issues within the educational infrastructure available to museum audiences. Rounds (2006) advances the notion that museum audiences’ identities, motivations and learning are intertwined, and proposes that many individuals attend museums to confirm and define identi-

ties in a prosaic way. Paris and Mercer (2002) argue that audiences use museums as vehicles for deconstructing deeply expressed identity.

However, there has been little research on how social media and digital content creation can extend learning and build partnerships between museums and communities of interest. For example, highly successful commercial social media such as Flickr,⁶ MySpace⁷ and You Tube⁸ make it possible for individuals to upload personal content to widely accessed websites and add tags to enable others to search and review this content. These kinds of social media present opportunities for museums to research new roles in managing the relationship between cultural heritage and digital cultural content creation. However, museums remain slow to recognise their users as active cultural participants in many-to-many cultural exchanges and therefore social media have yet to make a significant impact on museum communication models, which remain fundamentally one-way (Russo & Watkins 2006, Russo et al 2006).

Museum learning theories are intertwined with the notion of 'communities of practice' where the importance of learning is not only central to the individual but within a process of co-participation within a social context (Kelly et al 2006). Lave and Wenger propose that learners should be active contributing members of communities and that learning is made possible through involvement with, participation in and acceptance into a community (1991). Such social learning could be readily used to describe museum learning. The issues surrounding the impact of social media on museum experiences and learning raise the following questions: could social media affirm learning experiences within dispersed museum audiences in an environment where it has

traditionally proved difficult to sustain communities of practice? Could new communities of practice be formed around the interplay between the mediation provided to audiences?

MODELS OF MUSEUM COMMUNICATION

The ability for an individual to create and display content within an authoritative cultural environment – such as a museum – reflects a growing global interest in the sharing of individual and collective experiences. It also represents changes to the ways in which users interact digitally using different communication models:

- one-to-one (i.e. user to user);
- one-to-many (i.e. museum to user – web pages and blogs);
- many-to-many (knowledge to knowledge – wikis).

Historically, the one-to-one and one-to-many communication models have provided the framework for authoritative cultural knowledge as provided by museum programs. Thomas (1998) proposes that museum authority is historically derived from the primacy of object collections. Museums extend this authority through their practices of display and interpretation. The recognized authority which museums have within the community provides audiences with the means to interpret history and science, which in turn justifies the use of mediated representations of artefact and culture. The outcome of this cultural transaction has traditionally placed museums as provider of both authoritative and authentic knowledge. Such authenticity is critical to the *post-museum*⁹ environment in which social media allow for the evolution of a many-to-many communication model. This shift in cultural practice, while initially seeming to undermine

22 the primacy of objects, can provide significant interpretative knowledge. The notion of authenticity – as provided by the museum – organizes collections of narratives into recognizable and authoritative histories, mediating the relationship between visitors and objects. Social media can extend this authenticity by enabling the museum to maintain a cultural dialogue with its audiences in real time.

An example of this extension of authenticity can be found at the Sydney Observatory blog site (Powerhouse Museum 2006). In July 2006 the Senior Curator at the Sydney Observatory posted this comment:

There is an email circulating in cyberspace saying that the red planet Mars will be exceptionally close on 27 August (2006). According to one version “It will look like the Earth has two moons”!!! Once again this is a good lesson in not believing everything on the Internet. The email is a hoax...(Lomb 2006).

Over the next month, one hundred and thirty five visitors to the blog responded to this comment. Some examples of their comments include:

Ah, I thought the email was a little too exaggerated to be true.... Thanks to the Observatory for setting the record straight and informing the public (Eve Aug 19th, 2006 at 6:01 pm).

Ah ha it sounded too good to be true and I headed straight on over to the “professionals” here at the Sydney Observatory to set my mind at ease that the email is as STUPID as I thought it sounded!... Thanks Sydney Observatory.... (Koobakoop Jul 27th, 2006 at 1:26 pm).

It is not insignificant that many of the responses to the Senior Curator’s comments credited

the Sydney Observatory with providing the “truth” in this matter. This example illustrates how social media can be used to enable cultural and scholarly dialogue while strengthening the veracity of museum knowledge. The subsequent communication demonstrates how the many-to-many model can enhance both audience interaction and experience and museum authority. At the same time, this example poses new questions for museum authority:

- How much does the museum invest in revealing knowledge held in the community?
- How far is the museum willing to relax its own authority in these areas of knowledge?
- To what extent is the museum willing to promote community knowledge over its own?

It is also important to consider whether the Sydney Observatory (or any other institution) would usually respond in any way to a hoax email. Most cultural institutions would leave the job of responding to hoaxes to tabloid media or current affairs/news programs. In this case, the existence of the blog allowed the Observatory to respond in a way that didn’t threaten its status amongst its peer organizations. The Sydney Observatory example demonstrates how blogging can be used by museums to encourage a many-to-many discussion. When audiences had the opportunity to engage in cultural debate, they responded in a variety of ways:

- Asking the community of bloggers whether they could provide information on other related phenomena.
- Extending the social network by linking others to the museum website.
- Asking the community and/or museum to verify other related knowledge/websites.

These responses illustrate the reach of cultural information beyond the blogging community and the way in which the audience found in-

novative links between the information, the museum and between each other. This example also raises some issues regarding

- the types of social software museums use to engage with their audiences;
- how social media audiences are differentiated from other audiences within the museum;
- how social media affect audience ability to create meaningful cultural experiences;
- how this engagement can be captured to add greater fidelity to the collection record.

This contextualisation of social media provides an initial framework for considering the epistemological drivers which could generate new types of cultural interactive experiences between audiences and the museum. They also go some way towards formalising concerns surrounding the perceived threat to museum expertise and knowledge which is often articulated by museum professionals.

CULTURAL COMMUNICATION AND MUSEUM LEARNING

While museums have used their outreach and education programs to innovatively involve audiences in cultural knowledge and exploration both online and offline, social media networks provide a significant and possibly more efficient way of “making public” the ways in which audiences respond to cultural content. The two examples above demonstrate how social media can facilitate many-to-many communication through their recognised role as custodian of cultural content.

When social media are used in museums, they provide an open-ended cultural information space which is structurally ambiguous. This structural ambiguity can result in many unforeseen issues:

- the museum is unable to predict the ways in which social media will be used;
- it is difficult to predict the number of people who will participate (affecting download speeds and time);
- it is difficult to plan for consistent length/duration of participation.

These issues are compounded by barriers to agile business practices within museum bureaucracies which are often slow to respond to changes in audience behaviour (Weil 2002: 3-23). Additionally, while audiences can explore collections and create new content, the resultant information they construct is a product of individual realizations of the relationship between phenomena. Unlike museum professionals, and regardless of the scholarship which may underpin the discussions which audiences bring to the social media forum, there remains a notion that this interaction is in the realm of the amateur.

In the early 1990s, as the World Wide Web was beginning to be used in major museums around the world, debates ranged around how audiences would find their way through a newly attained freedom to access information, and what this would mean for cultural institutions (see for example Trant 1998, Teather and Wilhem 1999).

In the late 1990s Trant (1998: 123) suggested that it was critical to consider the effect of the World Wide Web on object collections in particular through the creation of meaningful pathways into and through digital cultural heritage collections. At that time Trant proposed that if museums did not take a proactive role in the establishment of authoritative web-based cultural information sources, their audiences would seek cultural information elsewhere, possibly through less reliable sources. Recently, Trant provided valuable insight into

24 the constantly evolving notions of trust in relation to social media in museums:

Trust is built on identity; identity requires identification... Trust is also built upon assumptions that behaviour will be appropriate. Assessments of trust require a history of an individual's actions - linking their trace with a distinct identity... Personalization could be a great way for libraries, archives and museums to build connections between collections and individuals, and between people and collecting institutions... Once again, though, we need to realise that we're creating an on-line space that doesn't share all the characteristics of our past space, on-line or on-site (Trant 2006).

In the social media environment, one of the challenges for the museum is to ensure that the veracity of information surrounding cultural content is not abandoned. This is not a new challenge but one which is described over and over as emergent systems, technologies and paradigms affect the museum program. Over the past 30 years museum communication has progressed from the 19th century information transmission models used in the early modernist museums, to social constructivist models which acknowledge the experiences that audiences bring with them when visiting the museum (Watkins and Mortimore 1999 Falk & Dierking 2000; Hein 1998). This shift has focused on the partnerships between the museum and its visitors in the "making of meaning" (Hooper-Greenhill 2000) and is in keeping with more general evolutions in digital media which describe how different modalities combine to create meaning (Snyder 2002).

INNOVATION

The rise of Museum Studies in the past 30

years has applied the critical theories and key principles of semiotics and post-modernism to reframe the larger changes within which the museum now operates (Pearce 1994, Hein 2000). While the focus on post-modernism and semiotics has broadened the more traditional one-to-one communication focus of museum programs, these fields of discourse do little to contend with the realities of consumer-led changes to audience perceptions and user interaction with museum content. Therefore this paper proposes that sociocultural theory can be used as the starting point for an investigation into the effect of social media on museum learning. This theory is based on the idea that human activities take place in cultural contexts through social interactions that are mediated by language and other symbol systems, shaped by an individuals' historical development. It also understands, accounts for and makes explicit the 'unplanned intersection of people, culture, tools and context' (Hansman 2001, 44), emphasising the importance of culture, environment and history in every learning context and event (Schauble et al. 1997). Social learning is considered an active process of reflection leading to self-awareness and change. It is facilitated by a wide range of tools and as data by Kelly (2007) shows, is most successful when undertaken by choice. Sociocultural theory provides an appropriate theoretical framework for an innovative investigation into the 'unplanned' social media environment.

CURRENT EXAMPLES

The link between such communities and social media can be observed in some international models. For example, the European Union's Research Network on Excellence in Proces-

sing Open Cultural Heritage (EPOCH)¹⁰ is currently trialling models for the evolving digital cultural communication pipeline. EPOCH aims to foster integration of technology in the cultural heritage sector; create a joint research infrastructure, including a holistic approach to cultural heritage; and raise awareness towards cultural heritage. The objectives are formed around two distinct programs: (1) to use technology to enhance preservation and scholarship in cultural heritage; and (2) to bring history to life for the citizen through digital reconstruction, story telling, visitor experiences, internet applications and education and tourism.

In the USA, the National Design Museum (Smithsonian Institution) is one of the leaders in the application of social media to museum learning programs through its Educator Resource Center. The Center utilises physical and online resources to link educators to the museum's programs, create a community of practice which shares education experiences and provide best practice examples of design education and museum learning. In 2006 the Museum launched a social media site which enables educators to connect to each other to share and distribute knowledge. This project will extend the evaluation data from this initiative to develop innovative strategies for linking newly established communities of practice to museum collections, knowledge and resources.

The Powerhouse Museum, Sydney is experimenting with social media such as blogs and folksonomies (user-generated taxonomies) in order to create and sustain online communities of interest. In 2006 the Museum launched a new online database OPAC 2.0 which enables audiences to self-classify the collection. OPAC 2.0 provides a best-practice example of how

social media can bring together similar assets (collections, activists/protagonists, audiences, content creators) to engage in cultural debate.

Over the next few years, research in the field beyond these current initiatives will be undertaken by examining the viability and sustainability of social media as tools for education and communication in museums – and by extension, in other cultural institutions such as libraries, galleries and archives. New interactive technologies should be part of a new approach to lifelong history and heritage learning. Museums can use social media to become part of popular knowledge-sharing networks, where people pass on images, information and experiences to a wider public. Working with one another and with educators and community bodies, museums can lead new approaches to lifelong historical learning. By promoting user-led innovation, they can enable audiences to be both critical learners and creators of digital cultural content.

SUMMARY

The field of social media in museums is still very much in its infancy. Few scholarly papers have been written on the subject and while some museums have incorporated social media into their programs, a discussion of their impacts is only just beginning. From the issues discussed in this paper, we propose that the following areas need further discussion:

- changing communication models;
- connecting youth audiences to museum content;
- barriers to agile business processes in the response to social media;
- strategies for engaging communities in knowledge sharing.

Bradburne (1998) argued for a shift in mu-

seum remits from suppliers of information to providers of useful knowledge and tools through which visitors can explore their own ideas and reach their own conclusions. This is in keeping with Freedman's suggestion that increased access to online technologies has "put the power of communication, information gathering, and analysis in the hands of the individuals of the world" (Freedman 2000, p. 299). Freedman also argued that museums should become mediators of information and knowledge for a range of users to access on their terms, through their own choices, and within their own place and time. Research has demonstrated that the shift from education to learning has required a refocussing on the visitor or user, not on the delivery systems (Hooper-Greenhill 2003), and that audiences are seeking these kinds of interactive experiences from museums (Kelly 2006).

Museum communication systems such as exhibitions, public programs, outreach and education seek to provide complex cultural interactive experiences. As social media facilitate knowledge exchange through social networking, they can be used to encourage audiences to respond to their museum experience and relate these thoughts back to themselves, to communities of interest and to the museum itself in ways which are meaningful to them. Social media provide an exceptional platform from which to explore the convergence of multimedia design, museum studies, communication, learning and community informatics to:

- Establish dialogue with / between users
- Build relationships with / between audiences
- Bring together communities of interest
- Enhance external / internal knowledge sharing.

Museums have increasingly directed their com-

munications towards these key areas yet social media provide web technologies which encourage audiences to participate in museum issues in a simple and cost-effective way. This article explores two key shifts in museum practice which are affected by social media; communication and museum learning. The examples and discussions provide an insight into how social media can be used to enhance and extend audience experience.

Given these arguments, it is proposed that museums could use social media in three specific ways:

to **share** information between communities of interest, visitors and museum professionals;
 to **respond** to issues as they become important to visitors and user-groups;
 to **create** new knowledge and/or new digital cultural content which enables the interpretation of collections from a visitor perspective.

By promoting user-generated content, museums could enable cultural participants to be both critics and creators of digital culture. Yet the widespread viability and sustainability of social media as tools for curatorial practice, participatory communication and informal learning in museums, libraries, galleries and archives remains to be determined. Any such implementation should be part of a strategic approach to communication by the museum which addresses changing cultural communication models; engaging communities in scholarly debate and knowledge sharing; and connecting audiences to museum content.

When social media are used to create cultural learning experiences in museums, they affect the ways in which audiences participate in knowledge sharing, communicate with each other and maintain incentive to engage in the longer term. This paper has explored examples which demonstrate an innovative and effective

ve role for social media in evolving a many-to-many communication model within the museum while maintaining – and perhaps even strengthening – its voice and authority. Our research so far indicates there are strong epistemological reasons for social media adding value to museum programs and that those cultural experiences can extend audience participation in novel and important ways.

NOTES

1. The article is based on a lecture held at the NODEM 06 Conference in Norway, <http://www.tii.se/v4m/nodem/index.htm>.
2. <http://www.nla.gov.au/>
3. <http://www.flickr.com/>
4. <http://www.nla.gov.au/pub/gateways/issues/80/story01.html>
5. <http://www.pictureaustralia.org/index.html>
6. <http://www.flickr.com/>
7. <http://www.myspace.com/>
8. <http://www.youtube.com/>
9. Hooper-Greenhill uses post-museum to describe the contemporary museum. She proposes that it could be regarded as the product of changing agendas, broadening boundaries and changes in the relationship between visitors and the museum (Hooper-Greenhill, 2000: 1).
10. <http://www.epoch-net.org/>

REFERENCES

- Bradburne, J.: Dinosaurs and White Elephants: the Science Centre in the 21st Century. *Museum Management and Curatorship*, 17(2), 1998: 119-137.
- Falk, J.: "Free-choice environmental learning: framing the discussion", in *Environmental Education Research*, vol 11 no. 3, 2005: 265-80.
- Falk, J., & Dierking, L.: *Learning from Museums: Visitor Experiences and the Making of Meaning*. Walnut Creek: AltaMira Press 2000.
- Hansman, C.: "Context-Based Adult Learning," in S. Merriam. Ed. *The New Update on Adult Learning Theory*. San Francisco: Jossey-Bass 2001.
- Hein, H.: *The Museum in Transition. A Philosophical Perspective*. Washington: The Smithsonian 2000.
- Freedman, G.: The Changing Nature of Museums. *Curator*, 43(4), 2000: 295-306.
- Hein, G.: *Learning in the Museum*. London: Routledge 1998.
- Holden, J., and Jones, S.: *Knowledge and Inspiration: the democratic face of culture. Evidence in Making the Case for Museums, Libraries and Archives*. Museums, Libraries and Archives Council, London. August 2006.
- Hooper-Greenhill, E.: "Culture and meaning in the museum" in *Museums and the interpretation of visual culture*. London: Routledge, 2000: 1-22.
- Hooper-Greenhill, E.: *Museums and Social Value: Measuring the Impact of Learning in Museums*. Paper presented at the ICOM-CECA Annual Conference, Oaxaca. 2003.
- Kelly, L., & Breault, K.: "What makes a good educational website"? In E. Nardi (Ed.): *Thinking, evaluating, rethinking: Proceedings from ICOM-CECA 2006 Conference*. Rome: Universitè da tre: 2007.
- Kelly (2007): *The interrelationships between adult museum visitors' learning identities and their museum experiences*. Sydney: University of Technology.
- Kelly, L., Cook, C. and Gordon, P: "Building Relationships Through Communities of Practice: Museums and Indigenous People". *Curator*, vol 49 no 2, 2006: 217-234.
- Lave, J. and Wenger, E.: *Situated Learning: Legitimate Peripheral Participation*. Cambridge: CUP 1999.

- Paris, S. G. and Mercer, M.: "Finding self in objects: Identity exploration in museums", in *Learning Conversations in Museums*, G. Leinhardt, K. Crowley and K. Knutson, eds Mahway, NJ: Lawrence Erlbaum and Assocs 2002: 401-423.
- Pearce, S.: *Interpreting Objects and Collections*. London: Routledge 1994.
- Rounds, J.: Doing Identity Work in Museums. *Curator 2006*: 49(2), 133-150.
- Russo, A., Watkins, J., Kelly, L., Chan. S.: How will social media affect museum communication? *Nordic Digital Excellence in Museums conference (NODEM 06) Oslo, Norway December 2006*. http://www.tii.se/v4m/nodem/nw_06/papers/papers.htm
- Schauble, L., G. Leinhardt, and L. Martin: "A Framework for Organising a Cumulative Research Agenda in Informal Learning Contexts". *Journal of Museum Education* 22,1997:3-8.
- Silverman, L.: Visitor Meaning Making in Museums for a New Age. *Curator* 1995. 38(3) 161-169.
- Snyder, I.: *Silicon Literacies, Communication, Innovation and Education in the Electronic Age*, London: Routledge 2003.
- Teather, L. and Wilhem, K. "Web Musing": Evaluating Museums on the Web from Learning Theory to Methodology". *Museums and the Web Conference Proceedings*. 1999. <http://www.archimuse.com/mw99/papers/teather/teather.html>
- Thomas, S.: "Mediated Realities: A Media Perspective", in S. Thomas and A. Mintz (eds.): *The Virtual and the Real: Media in the Museum*. Washington: American Association of Museums 1998: 1-18.
- Trant, J.: "When all You've Got is "The Real Thing": Museums and Authenticity in the Networked World", *Archives and Museum Informatics* 12: 1998: 107-125.
- Trant, J.: "Trust, audience and community: museums, libraries and identity" at <http://conference.archimuse.com/node/106>. 11 September 2006. First accessed 12th September 2006.
- Watkins, C., and Mortimore, P.: "Pedagogy: What do we Know?", in P. Mortimore (ed.): *Understanding Pedagogy and its Impact on Learning*, London: Sage 1999: 1-20.
- Watkins, J., and Russo, A.: "New media design for cultural institutions," in *Proceedings of the Conference on Designing for User eXperience*. San Francisco, USA: AIGA 2005.
- Weil, S.: *Making museums matter*. Washington and London: Smithsonian Institution Press 2002: 3-23.
- Witcomb, A.: "Museums as cultural brokers: Producing rather than representing communities", in B. Henson (ed.): *Exploring culture and community for the 21st century: Global Arts Link: a new model for public art museums*. Ipswich, Queensland: Global Arts Link, 1999: 101-104.

WEB RESOURCES

Assembly of the Museums Australia education group
<http://maeg.textdriven.com>
Sydney Observatory
<http://www.sydneyobservatory.com.au/blog/>

**Dr Angelina Russo, Senior Research Fellow, Queensland University of Technology*

Address: Queensland University of Technology, Centre of Excell, Creative Industries Precinct Musk Ave, Kelvin Grove Brisbane 4059. E-mail: a.russo@qut.edu.au

**Mr Jerry Watkins, Senior Research Associate, Queensland University of Technology*

Address: Queensland University of Technology, Creative Industries Precinct

*Musk Ave, Kelvin Grove Brisbane 4059.
E-mail: jj.watkins@qut.edu.au*

**Dr Lynda Kelly, Head, Australian Museum
Audience Research Centre, Australian Museum*

*Address: : Australian Museum, 6 College Street
Sydney (opposite Hyde Park), NSW 2010 Aus-
tralia.
E-mail: lynda.kelly@austmus.gov.au*

**Mr Sebastian Chan, Manager, Web Services,
Powerhouse Museum.*

*Address: Powerhouse Museum
street - 500 Harris St Ultimo, NSW Australia
postal - PO Box K346, Haymarket, NSW 1238
tel - 61 2 9217 0109
fax - 61 2 9217 0689
www.powerhousemuseum.com
E-mail: seb@snarl.org*