An Investigation of Global versus Local Online Branding

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Purpose of this paper
Draws upon Hofstede's cultural values and Rogers' diffusion of innovations to investigate relationships between search engine popularity and a company's preference for global versus local online branding.

Design/methodology/approach
Investigates the global versus local domain name selection strategies and website popularity of multinational corporations (MNCs) based on their organizational characteristics and Hofstede's cultural values of their host countries.

Findings
Organizational size, industry and two cultural values – individualism and masculinity – relate to how companies adopt innovations, in this case selecting and promoting a global or local online identity. For their web presence, most Fortune Global 500 companies use the global .com domain rather than a local country domain. The results also suggest a virtual divide in online visibility, favoring .com companies over companies using country domains.

Research limitations/implications
Limitations of this study include the lack of a longitudinal perspective and a possible Google bias – towards English content – in its proprietary PageRank metric. Future research could validate the results with other third-party data and enrich the independent variables through automated Web content analysis.

Practical implications
In countries with strong cultural values of masculinity and collectivism, international business managers should consider paying homage to local domain names for website and employee email addresses.

What is original/value of paper
Extending diffusion of innovations and cultural research to domain name selection and search engine popularity, this study underscores the importance of culture in international branding research.

Keywords: Search Engines, Online branding, Cultural Values, Domain Names, Fortune Global 500, Diffusion of Innovations

Categorization: Research Paper

Introduction

In *The World Is Flat*, triple-Pulitzer Prize-winner Thomas Friedman (2006) argues that a burning 21st Century issue is whose values will govern a multinational corporation (MNC) and whose interests that MNC will promote (p. 243). Friedman illustrates this issue with Lenovo, a Chinese company that bought IBM's personal computing division in December 2004. In a wide-ranging partnership, IBM owns almost one fifth of Lenovo and the companies collaborate across sales, financing and research. Although listed on the Hong Kong Stock Exchange, Lenovo now has its global headquarters in Armonk, New York, down the road from IBM's headquarters. Friedman questions if Lenovo will promote US interests, Chinese interests, or neither.

Online, Lenovo uses domain names to reflect global and country interests. The Lenovo website (*lenovo.com*) is a simple page linking to almost 70 national websites, such as Australia (*lenovo.com/au/*) and Austria (*lenovo.com/at/*). Although Lenovo owns it name in Austria's *.at* country domain, *lenovo.at*, this site automatically redirects visitors to *lenovo.com/at/*. All Lenovo websites use the global *.com* domain, yet other MNCs such as Toyota shun *.com*. It uses the Japanese *.jp* domain (*toyota.co.jp*) for its global website and also uses country domains for national sites, such as the Australian *.au* (*toyota.com.au*) and Austrian *.at* (*toyota.at*) domains.

Business practices of MNCs, such as Toyota and Lenovo, often reflect the state of the art in business research (Kotabe & Mudambi 2004, p. 147). An ongoing issue for MNCs, international branding strategies (de Chernatony, Halliburton & Bernath 1995; Sak & Shaw 1989) are crucial for companies wrestling with their electronic commerce strategies (Bruton, Lohrke & Lu 2004). Online, the ongoing debate about a global or local strategy becomes even more important, and culture plays a major role in this issue (Singh, Zhao & Hu 2005).

Culture and Globalization

Links between culture and communication technologies are common through history (Tehranian 1999). Will technology, especially interactive mass media such as the World Wide Web, amalgamate cultures into McLuhan's (1968) vision of a global village? The Web is an artificial, engineered space. But when individuals and organizations create and link Web

pages, their activities form macroscopic patterns governed by social conventions and laws (Berners-Lee et al. 2006). Cultural research can shed light on these conventions and laws, and complement other approaches to studying globalization (Sklair 1999). For example, Barnett and Sung (2005) employ Hofstede's framework to study hyperlink patterns and reveal a small but significant impact of national culture on global information flows.

Hofstede (1980, p20) defines culture as "the collective programming of the mind, which distinguishes the members of one group from another" and proposes four cultural dimensions: Power Distance, Individualism, Masculinity and Uncertainty Avoidance (see Table I). A decade later Hofstede (1991) introduced a fifth dimension, Long Term Orientation, but this value is controversial (Fang, 2003) and sometimes omitted from Internet research (Callahan 2005).

Take in Table I about here

Studies suggest that Hofstede's four cultural dimensions relate to, among other things, economic growth and the quality of life. For example, cultural values explained over half the differences in economic growth by 18 countries from 1965-1980, and by 20 countries from 1980-1987 (Franke, Hofstede & Bond 1991). Examining 43 countries in the early 1990s, Veenhoven (1999) found a positive relationship between individualism and citizens enjoying their life.

The links between information systems research and Hofstede's cultural values however, are uneasy and incomplete. In their review of 57 articles from 22 journals, Ford, Connelly and Meister (2003) argue for using Hofstede's cultural values but lament that too often studies focus "on country-specific, technology-specific studies without considering the nature of the information technology (IT) or countries under investigation (p. 18)." They call for more research that integrates cultural values into hypotheses development and models.

Online Branding and Globalization

Similarly, marketing research of culture, Internet use and globalization seems incomplete. Studies suggest country of origin effects on a company's online communication strategies (Callahan 2005; Okasaki & Rivas 2002), as well as on visitors' usage and perceptions of websites (Chua et al. 2002; Ju-Pak 1999; Simon 2001). Yet these results contradict views of a homogeneous Internet culture (Johnston & Johal 1999), global village (McLuhan 1968) and global society (Sklair 1999). A study of leading Chinese and US websites helps address this contradiction (Zhao et al. 2003). Online users share a common culture for navigating sites and communication styles (Ross 2001), but differ culturally as consumers (Chua et al. 2002; Ju-Pak 1999; Simon 2001).

This same quandary, cultural differences, applies to international branding (de Chernatony, Halliburton & Bernath 1995; Sak & Shaw 1989). Exposure to a brand's website can improve consumer perceptions of the brand's personality (Müller & Chandon 2003) and build brand equity (Ilfeld & Winter 2002). Given the financial importance of brands (Gregory 2001) and the importance of both culture (Chua et al. 2002; Ju-Pak 1999; Simon 2001) and brands in the online environment (Clifton 2002; Geissler 2001; Rubinstein & Griffith 2001), should MNCs take a global or local approach to online branding?

Research has focused on how to increase website visits (Drèze & Zufryden 2004; Hofacker & Murphy 1998, 2005; Ilfeld & Winter 2002), but has largely neglected the role of global versus local domains – i.e., *.com* versus *.at, .au, .jp, etc.* – in both international branding and driving website traffic. Similarly, research of search engine rankings, which drive website traffic, is underdeveloped (Menczer et al. 2006)

This paper uses the world's 500 largest MNCs and two Internet variables, website popularity and global versus local domain name selection, to address two questions related to broad calls for investigating relationships between culture and electronic commerce strategies (Bruton, Lohrke & Lu 2004; Singh, Zhao & Hu 2005). First, what role does corporate use of domain names play in global versus local e-commerce (Chua et al. 2002; Murphy, Raffa & Mizerski 2003; Ross 2001; Zhao et al. 2003)? Second, how do website popularity (Kumar et al. 2002) and domain name selection help study trends in international branding (Dickson 2000; Lucas & Sylla 2003; Roberts & Ko 2001)?

Literature Review

Branding and the Internet

While having a website was once a competitive advantage, businesses today need a website to compete (Porter 2001). Furthermore, an effective online presence is vital to a brand's Internet success (Hanson 2000; Ward & Lee 2000). One facet of a successful online presence is when customers can type the brand name followed by the global or country suffix (Chen 2001; Gregory 2001; Ward & Lee 2000). Easy-to-remember branded domain names, such as *apple.com* for Apple Computer, help users find a particular website (Coyle & Gould 2002; Roberts & Ko 2001).

Rather than use a search engine to find a company's website, consumers may guess the website address (Coyle & Gould 2002; Roberts & Ko 2001). As a participant in Coyle and Gould's (2002) study noted, "Most every well-known company has its own web site, so I didn't have to search for the address with a search engine because I assumed that Panasonic had its own web site. I assumed right, because it did." Thus, a consumer would assume *citibank.com* for Citibank's global site, and *citibank.com.au* for its Australian presence.

These branded domain names extend a company's marketing communication and assuage consumers' lack of trust in e-commerce (Ha 2002; Hanson 2000; Ward & Lee 2000). MNCs approach their online identity via global and country domain names (Murphy, Raffa & Mizerski 2003; Tan, Murphy & Mizerski 2003), albeit sometimes inconsistently. Apple for example, uses *apple.com* to reflect a global presence and *apple.com/mx* and *apple.com.cn* for its Mexican and Chinese presence, respectively. That is, Apple uses the global *.com* domain for its Mexican website and the country *.cn* domain in China.

The Internet Corporation for Assigned Names and Numbers (icann.org) oversees global and country domains. Registration in the global *.com*, *.net*, *.org*, *.biz*, *.pro*, *.info* and *.name* domains is on a first come first serve basis and costs as little as US $10 per year (Murphy, Raffa & Mizerski 2003). Some of the over two hundred countries and territories with country domains, however, impose restrictions such as requiring an Australian Business Number to register in Australia's *.au* domain. Although there is a US country domain, *.us*, companies in the late 1990s avoided its non-intuitive geographical naming convention (Murphy &

Hofacker 1998). For example the domain name for IBM (based in Armonk, New York), would have been *ibm.armonk.ny.us*.

Due to the Internet's US heritage, the global *.com* domain often reflects US companies, but any organization or individual can register global domain names (Hanson 2000). For instance, 32 of the world's 75 leading brands had their headquarters outside the US, but 72 of these 75 brands had an easily recognizable *.com* domain name (Murphy, Raffa & Mizerski 2003). Over two out of three of these top brands also owned their names in the Australian, French, Singaporean and British domains of *.au, .fr, .sg* and *.uk*, respectively (Murphy, Raffa & Mizerski 2003; Tan, Murphy & Mizerski 2003).

The above results suggest that most MNCs would own their domain name in the global *.com* domain, as well as in relevant country domains. Yet owning a domain name represents an early step in the organizational diffusion of the Internet and does not equate to a popular website. The diffusion of innovations theory argues that organizations evolve in their technology use, from adopting a technology to using that technology well (Cooper & Zmud 1990; Rogers 1995). Organizational characteristics such as size and industry often show a positive relationship with technology adoption (Schumpeter 1947; Wolfe 1994), such as moving beyond owning a domain name and having a highly visible website.

Online visibility and website traffic

Sklair (1999) argues that global capitalism is the most productive approach for advancing globalization research. Possible metrics for online capital include a company's search engine ranking and website traffic. Industry (Nielsen 2000) and academic literature (Drèze & Zufryden 2004; Hanson 2000; Park & Thelwall 2003) note that higher search engine rankings lead to higher traffic, credibility and reputation for a website. Search engine rankings take on increased importance this century, as searching rather than following links is now the top source of website visitors (Menczer et al. 2006).

A focus on metrics of online capital increases the popularity of third-party website evaluation tools (Palmer 2002), such as the *Google Toolbar* (Garofalakis, Kappos & Makris 2002), Caphyon's *Advanced Web Ranking* (advancedwebranking.com) and Alexa's *Web Information Service* (pages.alexa.com/prod_serv/WebInfoService.html). These benchmarking

services complement tools to increase an organization's website traffic and search engine rankings. Such tools are available on the client side (CyberspaceHQ's *Addweb Website Promoter*; cyberspacehq.com/products/addweb) and the server side (Microsoft's *Submit-It Search Engine Marketing*; submit-it.com).

While the quest for the best search engine fuels intensive research efforts, Google (google.com) remains the leader (Kumar et al. 2002, searchenginewatch.com). Voted "Most Outstanding Search Engine" in the 9th Annual Webby Awards (webbyawards.com) in the *technical achievement* and *best practices* categories, Google lists search results based on its proprietary PageRank system (Garofalakis, Kappos & Makris 2002; Kumar et al. 2002). In essence, hyperlinks to a page count as a vote, with links from high-traffic websites weighing more than links from low-traffic sites. Ranging from zero to ten, PageRank values determine the sort order of Google's search results.

Conceptual Development

MNCs face a dilemma choosing their online identity. Although top brands register their name in multiple global and local domains (Murphy, Raffa & Mizerski 2003), they usually promote their global website at just one domain – e.g., in the Fortune Global 500 or similar rankings. Given its global perception, MNCs may tend towards a *.com* identity, but *.com* fails to acknowledge the company's local presence or heritage.

This section develops three hypotheses to examine this dilemma. Ford et al. (2003) call for research of information systems and culture. To overcome limitations of past studies, they suggest introducing national culture, as operationalized by Hofstede, as independent variables to the model and then hypothesizing the role these dimensions will play. The conceptual model in Figure 1 proposes that four cultural values (Hofstede 1980) and two organizational factors (Rogers 1995) will lead to the adoption of global or local domain names.

Take in Figure 1 about here

Based on the results of an experimental study, Cho and Roy (2004) deplore most search engines' reliance on links between websites. Link-based algorithms ignore high-quality pages of smaller organizations, favoring global players and well-known brands. Through the same mechanisms, websites hosted on country domains may remain less popular, regardless of their quality. As search engines favor global players and well-known brands, *.com* as the best-known domain should yield higher Google rankings. Thus,

Hypothesis 1: *Compared to MNCs with a country domain, MNCs with a .com domain will have a higher Google PageRank.*

Organizational diffusion of innovations

For over half a century, Diffusion of Innovations has drawn upon sociology, marketing and geography to explain how individuals and organizations adopt innovations (e.g., Rogers 1995). This research stream offers a fruitful approach for investigating how businesses use new technologies, such as global versus local domain names and search engine rankings. Organizations adopt technologies over a continuum, from initiation to implementation (Rogers 1995). For example, Cooper and Zmud (1990) propose six stages in the organizational adoption of a technology: initiation, adopting, adaptation, acceptance, routinization and infusion.

Having a technology represents an early stage of organizational diffusion but fails to reflect using that technology well. Companies in later stages of Internet adoption, for example, promote and redesign their websites to achieve higher search engine rankings, yielding more online visibility and subsequent website traffic (Drèze & Zufryden 2004; Hanson 2000; Nielsen 2000; Park & Thelwall 2003). A website's search engine ranking serves as a proxy for online visibility. All things equal, the higher a websites' Google rank, the further the company's Internet implementation in online visibility. Based on the first hypothesis, a *.com* identity relates to higher online visibility, a further stage of Internet adoption.

Studies of technology adoption often use organizational characteristics such as size and industry as independent variables (Rogers 1995; Wolfe 1994). Compared to smaller organizations, larger organizations tend to adopt innovations faster as they have greater access to resources and need for strategic planning (Rogers 1995; Schumpeter 1947; Wolfe

1994). With regard to industry, technology-based organizations (Poon & Swatman 1997a, 1997b) tend to adopt innovations earlier than non technology-based organizations. For example, size and technology-orientation show a positive relationship to owning branded names in the *.com* domain (Murphy, Raffa & Mizerski 2003). These same variables should show a positive relationship to choosing a *.com* identity. Thus,

> ***Hypothesis 2:*** *Compared to MNCs with a country domain, MNCs with a .com domain will be (i) larger and (ii) more technology-oriented.*

Summarizing 57 information systems studies using Hofstede's cultural dimensions, Ford and colleagues (2003) conclude that there is insufficient research for significant conclusions or generalizations. Their study of Internet adoption showed significant correlations with all four dimensions and Internet subscription rates, but the results of a stepwise regression showed only *uncertainty avoidance* as a strong predictor.

In a 2005 study of university websites, Callahan found positive correlations between the presence of logos and power distance, and between published images of buildings and masculinity. In her literature review of culture and websites, Callahan argues that power distance relates to a reliance on official seals and national symbols and that masculinity relates to an emphasis on tradition. Her arguments and results suggest that *power distance* and *masculinity* lead to more introverted, localized attitudes – suggesting preference for a local domain name rather than a global identity that may dilute traditional or national values.

Uncertainty avoidance may lead MNCs to avoid the uncertainty of venturing outside their traditional country identity towards a global identity. Similarly, companies headquartered in collectivistic societies should opt for local domains, identifying with their country, while individualism should favor global domains. For example, a 2005 study showed that the more central a country is in global Internet flows, the more *individualistic* its culture (Barnett & Sung).

> ***Hypothesis 3:*** *The adoption of country domains by MNCs will relate positively to their home country dimensions of (i) uncertainty avoidance, (ii) collectivism, (iii) power distance and (iv) masculinity.*

Methodology

Castells (2001) suggests analyzing Internet geography (cybergeography.org, telegeography.com) based on organizational determinants of content production, content consumption and infrastructure. This paper extends his geographical analysis by analyzing the distribution of global versus local domain names. It uses this distribution and the Google PageRank as dependent variables. The methodology also addresses two common limitations of organizational diffusion research: relying upon stated rather than actual behavior, and using just one industry (Rogers 1995).

The sample is the Fortune Global 500, the world's leading companies based on revenue. Researchers have used Fortune Magazine's rankings in diverse fields such as business ethics (Reicher, Webb & Thomas 2000; Weaver, Treviño & Cochran 1999), quality management (Baker, DeTienne & Smart 1998; Lawler III, Mohrman & Ledford Jr. 1992), and international business (Rugman 2003). Scholars have also analyzed MNCs' websites from perspectives including content (Perry & Bodkin 2000), marketing (Palmer & Griffith 1998; Scharl, Neale & Murphy 2004), and customer relationship management (Romano Jr. 2002).

Data gathering comprised three steps. After coding the domain name published in the Fortune Global 500 as global or local, the second step was classifying technology-based companies. Drawing on classifications by the leading branding company, Interbrand (interbrand.com), and a domain name study (Murphy, Raffa & Mizerski 2003) led to categorizing the following Fortune industries as technology-based: information technology, electronics, media, telecommunications, pharmaceuticals, chemicals, aerospace and travel. The travel industry, for example, is far ahead of any other service industry in implementing electronic business models (Dinlersoz & Hernández-Murillo 2005, p. 22). The final stage was visiting the company's website in July 2003 and using the Google Toolbar to capture the site's Google PageRank.

Results and Discussion

Descriptive results

Mergers and acquisitions limited the analysis to 489 of the Fortune Global 500 corporations. In 2002, these MNCs averaged 11 billion US dollars in equity, 28 billion in revenues, and 661 million in profits. The US accounted for 39% of the MNCs' physical headquarters (see Figure 2), followed by Japan (18%), France (8%), Germany (7%) and the UK (7%).

Take in Figure 2 about here

Although 29 countries hosted their global headquarters, the Fortune Global 500 planted their online flags in just 17 country domains. Over seven out of ten companies joined the *.com* global hegemony (Table II). Except for insurance company TIAA-CREF using the global *.org* domain, all US companies used *.com* and over half (55%) the non-US companies abandoned their country domain for *.com*. The European Aeronautic and Space Company (Netherlands) used the global *.net* domain, but has since changed to the global *.info*.

Take in Table II about here

All four Brazilian companies kept a local *.br* identity. Most Japanese companies also stayed home via *.jp* domain listings with Fortune. The localization ratio, which associates physical and virtual presence, shows that compared to Brazilian (100%) and Japanese (86%) MNCs, French (19%), British (18%) and Swiss (9%) companies were less likely to use a local strategy for their Fortune 500 listings (see Table II).

Five companies switched their online and offline identities. Germany's Daimler Chrysler and BASF, Great Britain's Barclays, and Australia's Telstra listed a *.com* address with Fortune, but this address automatically forwarded visitors to a website hosted at the country domain. The Spanish bank, Banco Bilbao Vizcaya Argentari did the opposite, listing the Spanish *.es* domain that automatically forwarded visitors to a *.com* website. These five anomalies as well as the two *.net* and one *.org* listings were dropped from further analysis.

The Google PageRank metric for the MNCs ranged from one to ten, with a median rank of six. Fourteen companies had no PageRank, which suggests near invisibility with Google. About one third of the companies had a PageRank of six and another third had a rank of seven. At one extreme, two US companies – Microsoft and Sun Microsystems – achieved the top score of ten. Another two companies had the bottom score of one, the French automotive manufacturer Peugeot and the Taiwanese life insurance company Cathay Life.

Hypotheses Testing

The widespread use of *.com* by US and non-US companies suggests a *.com* dominance, both offline via Fortune's Global 500 ranking and online via Google's PageRank. The results of a Kruskal-Wallis test on these ordinal rankings showed that companies with a *.com* identity had significantly higher Fortune rankings ($\chi 2 = 4.775$, df = 1, $p = 0.029$, n=480) and Google PageRanks ($\chi 2 = 45.218$, df = 1, $p < 0.001$, n=466) than companies with country domains. Due to a strong US bias in *.com*, the authors ran two follow-up Kruskal-Wallis tests on non-US companies. These tests showed similar results with Fortune ($\chi 2 = 2.601$, df = 1, $p = 0.107$, n=288) and Google rankings ($\chi 2 = 8.089$, df = 1, $p = 0.004$, n=282).

These results support the first hypothesis. MNCs with a global *.com* brand have significantly higher Google PageRanks than MNCs with a local country domain. The results also support the size aspect of the second hypothesis. MNCs listing a *.com* domain name have a higher Fortune ranking than MNCs with a local domain.

Next, two logistic regression tests were used to analyze the ability of six variables to predict MNCs listing a *.com* brand. Hofstede's four cultural dimensions and two organizational characteristics – revenue and technology-based companies – yielded the six variables. As all US companies were in the *.com* domain, the first logistic regression test omitted US companies. Furthermore, as Japanese companies comprised almost one-third of the non-US companies and most (86%) had a local *.jp* identity, the second logistic regression test omitted all US and Japanese companies. As Table III shows, the results of both tests were significant.

Take in Table III about here

In line with organizational diffusion research, size (Rogers 1995; Wolfe 1994) and technology orientation (Murphy, Raffa & Mizerski 2003; Poon & Swatman 1997a, 1997b) showed significant relationships with the adoption of technology, namely a global domain name (see Table IV). These results further support the second hypothesis: large, technology-based organizations tended to adopt global online brands via *.com* domain names.

Take in Table IV about here

The role of culture is also apparent, supporting two subsets of Hypothesis 3: *collectivism* and *masculinity*. In both samples, masculinity and collectivism were significant predictors of local online branding. MNCs based in societies that distinguish men and women's roles, and believe that the community is important, tended to use country domains. Alternatively, MNCs based in societies that value men and women equally, and favor the individual, tended to abandon their country domain for *.com*.

Conclusion and Future Research

This paper addresses calls for integrated research of culture, electronic commerce and international business (Bruton, Lohrke & Lu 2004; Singh, Zhao & Hu 2005). Despite their national origin, over seven out of ten companies chose global branding by hosting their corporate website in the *.com* domain. The most popular country domain, Japan's *.jp*, hosted just 15% of the MNCs, followed by Germany's *.de* at almost 4%. As predicted, MNCs with the global *.com* branding had higher search engine rankings than MNCs with a local domain name. For MNCs, the Internet seems to transcend national boundaries and favor globalization through the dominant *.com* branding.

The results of this study extend the diffusion of innovations theory in at least two ways. Firstly, they add two variables – global versus local online branding and Google PageRank – to the study of both organizational adoption and international branding. Secondly, they support previous organizational diffusion research. Technology-related organizations tended to select global *.com* branding and non-technology companies tended to brand locally, using a

country domain for their online identity. Although not causal, compared to companies following a local online branding strategy, the global *.com* MNCs had significantly higher revenues and online visibility via Google PageRank.

This study adds robust results – i.e., with or without the US and Japanese MNCs – to the small but growing stream of research examining culture's role in online environments. That Hofstede's dimensions of *collectivism* and *masculinity* showed significant negative relationships to using the *.com* domain, counters predictions of a global Internet culture (Johnston & Johal 1999; McLuhan 1968; Sklair 1999). Rather, the results support research suggesting that online communication strategies differ due to cultural influences (Callahan 2005; Okasaki & Rivas 2002).

For businesses, this study underscores the importance of culture in international branding research and provides practical suggestions for online branding. As noted earlier, the cost and effort of registering and using local domain names are miniscule. Thus to protect their online brand from domain name abuse (Foner 2001; Froomkin 2001; Murphy, Raffa & Mizerski 2003), companies should reflect on registering their brand name in relevant country domains.

Furthermore, in countries with strong cultural values of masculinity and collectivism, international business managers should pay homage to local domain names for websites and employee email addresses. Apple Computer in Brazil, for example, could host its Brazilian website at *apple.com.br* rather than *apple.com/br*, provide *@apple.com.br* email addresses to its employees, and use the *.br* domain in local print advertisements and television commercials.

From a societal perspective, the variables *Domain Name Selection* and *Google PageRank* reflect the concept of a virtual divide and add to the study of a global economy (Dickson 2000; Iyer, Taube & Raquet 2002; Lucas & Sylla 2003). While literature often associates domain names with trademarks (Foner 2001; Froomkin 2001; Murphy, Raffa & Mizerski 2003), this study supports Zook's (2001) analysis that domain name use amplifies global inequalities.

Future research should continue investigating global versus local online branding. In addition to longitudinal studies of the Fortune 500, does this divide exist when companies promote

their online identity via printed material and advertisements? Web content analysis, both traditional (Krippendorf 1980; McMillan 2000) and automated (Scharl 2000; Schegg et al. 2002), could add website features to this study's comparison of cultural values across industries, domain names and search engine rankings. Are there relationships between a website's features and the use of a global or local domain?

In addition to investigating companies' online branding strategies, a parallel stream of research should investigate consumer reactions to online branding. For example, which would consumers trust more, a website with a global or local domain name? Similarly, would the use of global or local branding in email addresses influence consumer trust?

Finally, future work should address limitations of this study such as a possible bias towards English content in Google's PageRank metric (Menczer et al. 2006). One way to tackle this bias is to compare Google data with metrics from other third-party sources. Alexa's Web Information Service (pages.alexa.com/prod_serv/WebInfoService.html) gauges website popularity, average traffic, and the number of incoming links to a website (Palmer 2002).

References

Baker, W.H., et al. 1998, "How Fortune 500 Companies Are Using Electronic Résumé Management Systems", *Business Communication Quarterly*, Vol 61, No 3, pp. 8-19.

Barnett, G.A. and Sung, E. 2005, "Culture and the Structure of the International Hyperlink Network", *Journal of Computer-Mediated Communication*, Vol 11, No 1, http://jcmc.indiana.edu/vol11/issue1/barnett.html.

Berners-Lee, T., et al. 2006, "Creating a Science of the Web", *Science*, Vol 313, No 5788, pp. 769-71.

Bruton, G.D., et al. 2004, "The Evolving Definition of What Comprises International Strategic Management Research", *Journal of International Management*, Vol 10, No 3, pp. 413-29.

Callahan, E. 2005, "Cultural Similarities and Differences in the Design of University Websites", *Journal of Computer-Mediated Communication*, Vol 11, No 1, http://jcmc.indiana.edu/vol11/issue1/callahan.html.

Castells, M. 2001, *The Internet-Galaxy: Reflections on the Internet, Business, and Society*, Oxford University Press, Oxford.

Chen, S. 2001, "Assessing the Impact of the Internet on Brands", *Journal of Brand Management*, Vol 8, No 4/5, pp. 288-302.

Cho, J. and Roy, S. 2004, "Impact of Search Engines on Page Popularity", paper presented to 13th International World Wide Web Conference, New York, USA.

Chua, P.Y.K., et al. 2002, "Cultural Differences in the Online Behavior of Consumers", *Communications of the ACM*, Vol 45, No 10, pp. 138-43.

Clifton, R. 2002, "Brands and Our Times", *Journal of Brand Management*, Vol 9, No 3, pp. 157-61.

Cooper, R.B. and Zmud, R.W. 1990, "Information Technology Implementation Research: A Technological Diffusion Approach", *Management Science*, Vol 36, No 2, pp. 123-39.

Coyle, J.R. and Gould, S.J. 2002, "How Consumers Generate Clickstreams through Web Sites: An Empirical Investigation of Hypertext, Schema, and Mapping Theoretical Explanations", *Journal of Interactive Advertising*, Vol 2, No 2, http://www.jiad.org/vol2/no/coyle/.

de Chernatony, L., et al. 1995, "International Branding: Demand- or Supply-Driven Opportunity", *International Marketing Review*, Vol 12, No 2, pp. 9-21.

Dickson, P.R. 2000, "Understanding the Trade Winds: The Global Evolution of Production, Consumption, and the Internet", *Journal of Consumer Research*, Vol 27, No 1, pp. 115-22.

Dinlersoz, E.M. and Hernández-Murillo, R. 2005, "The Diffusion of Electronic Business in the United States", *Federal Reserve Bank of St. Louis Review*, Vol 87, No 1, pp. 11-34.

Drèze, X. and Zufryden, F. 2004, "The Measurement of Online Visibility and its Impact on Internet Traffic", *Journal of Interactive Marketing*, Vol 18, No 1, pp. 20-37.

Foner, L. 2001, "Fixing a Flawed Domain Name System", *Communications of the ACM*, Vol 44, No 1, pp. 19-21.

Ford, D.P., et al. 2003, "Information Systems Research and Hofstede's Culture's Consequences", *IEEE Transactions on Engineering Management*, Vol 50, No 1, pp. 8-25.

Franke, R.H., et al. 1991, "Cultural Roots of Economic Performance: A Research Note", *Strategic Management Journal*, Vol 12, No Summer, pp. 165-73.

Friedman, T.L. 2006, *The World Is Flat*, Second edn, Penguin Group Australia, Camberwell.

Froomkin, A.M. 2001, "The Collision of Trademarks, Domain Names, and Due Process in Cyberspace", *Communications of the ACM*, Vol 44, No 2, pp. 91-7.

Garofalakis, J.G., et al. 2002, "Improving the Performance of Web Access by Bridging Global Ranking with Local Page Popularity Metrics", *Internet Research: Electronic Networking Applications and Policy*, Vol 12, No 1, pp. 43-54.

Geissler, G.L. 2001, "Building Customer Relationships Online", *Journal of Consumer Marketing*, Vol 18, No 6, pp. 488-502.

Gregory, J.R. 2001, "The Bottom-Line Impact of Corporate Brand Investments: An Analytical Perspective of the Drivers of ROI of Corporate Brand Communications", *Journal of Brand Management*, Vol 8, No 6, pp. 405-16.

Ha, H.-Y. 2002, "The Effects of Consumer Risk Perception on Pre-purchase Information in Online Auctions: Brand, Word-of-Mouth, and Customized Information", *Journal of Computer-Mediated Communication*, Vol 8, No 1, http://jcmc.indiana.edu/vol8/issue1/ha.html.

Hanson, W. 2000, *Principles of Internet Marketing*, South-Western College Publishing, Cincinnati.

Hofacker, C.F. and Murphy, J. 1998, "World Wide Web Banner Ad Copy Testing", *European Journal of Marketing*, Vol 21, No 7/8, pp. 703-12.

---- 2005, "Using Server Log Files and Online Experiments to Enhance Internet Marketing", in S Krishnamurthy (ed.), *Contemporary Research in E-Marketing*, Idea Group, Hershey, Pennsylvania, vol. 1, pp. 226-49.

Hofstede, G. 1980, *Culture's Consequences: International Differences in Work-Related Values*, Sage, Beverly Hills.

---- 1991, *Cultures and Organizations: The Software of the Mind*, McGraw-Hill Europe, London.

Ilfeld, J.S. and Winer, R.S. 2002, "Generating Website Traffic", *Journal of Advertising Research*, Vol 42, No 5, pp. 49-61.

Iyer, L.S., et al. 2002, "Global E-Commerce: Rationale, Digital Divide, and Strategies to Bridge the Divide", *Journal of Global Information Technology Management*, Vol 5, No 1, pp. 43-68.

Johnston, K. and Johal, P. 1999, "The Internet as a "Virtual Cultural Region": Are Extant Cultural Classification Schemes Appropriate?" *Internet Research: Electronic Networking Applications and Policy*, Vol 9, No 3, pp. 178-86.

Ju-Pak, K.-H. 1999, "Content Dimensions of Web Advertising: A Cross-National Comparison", *International Journal of Advertising*, Vol 18, No 2, pp. 207-31.

Kotabe, M. and Mudambi, R. 2004, "From Markets to Partnerships and Hierarchies to Coalitions: Perspectives on the Modern Multinational Corporation", *Journal of International Management*, Vol 10, No 2, pp. 147-50.

Krippendorf, K. 1980, *Content Analysis: An Introduction to Its Methodology*, Sage, Beverly Hills, California.

Kumar, R., et al. 2002, "The Web and Social Networks", *IEEE Computer*, Vol 35, No 11, pp. 32-6.

Lawler III, E.E., et al. 1992, "The Fortune 1000 and Total Quality", *The Journal for Quality and Participation*, Vol 15, No 5, pp. 6-10.

Lucas, J., Henry C. and Sylla, R. 2003, "The Global Impact of the Internet Widening the Economic Gap between Wealthy and Poor Nations?" *Prometheus*, Vol 21, No 1, pp. 3-22.

McLuhan, M. 1968, *War and Peace in the Global Village*, Bantam, New York.

McMillan, S.J. 2000, "The Microscope and the Moving Target: The Challenge of Applying Content Analysis to the World Wide Web", *Journalism and Mass Communication Quarterly*, Vol 77, No 1, pp. 80-98.

Menczer, F., et al. 2006, "Googlearchy or Googlocracy?" *IEEE Spectrum*, February, http://www.spectrum.ieee.org/feb06/2787.

Müller, B. and Chandon, J.-L. 2003, "The Impact of Visiting a Brand Website on Brand Personality", *Electronic Markets*, Vol 13, No 3, pp. 210-21.

Murphy, J. and Hofacker, C.F. 1998, "Coveted .us Domain Is Waiting for a Change in Management", *The Wall Street Journal Interactive*, 4 August.

Murphy, J., et al. 2003, "The Use of Domain Names in E-Branding by the World's Top Brands", *Electronic Markets*, Vol 13, No 3, pp. 222-32.

Nielsen, J. 2000, *Designing Web Usability*, New Riders Publishing, Indianapolis, Indiana.

Okasaki, S. and Rivas, J.A. 2002, "A Content Analysis of Multinationals: Web Communication Strategies: Cross-cultural Research Framework and Pre-testing", *Internet Research: Electronic Networking Applications and Policy*, Vol 12, No 5, pp. 380-90.

Palmer, J.W. 2002, "Web Site Usability, Design, and Performance Metrics", *Information Systems Research*, Vol 13, No 2, pp. 151-67.

Palmer, J.W. and Griffith, D.A. 1998, "An Emerging Model of Web Site Design for Marketing", *Communications of the ACM*, Vol 41, No 3, pp. 44-51.

Park, H.W. and Thelwall, M. 2003, "Hyperlink Analysis of the World Wide Web: A Review", *Journal of Computer-Mediated Communication*, Vol 8, No 4, http://jcmc.indiana.edu/vol8/issue4/park.html.

Perry, M. and Bodkin, C. 2000, "Content Analysis of Fortune 100 Company Web Sites", *Corporate Communications*, Vol 5, No 2, pp. 87-96.

Poon, S. and Swatman, P. 1997a, "Internet-based Small Business Communication: Seven Australian Cases", *Electronic Markets*, Vol 7, No 2, pp. 15-21.

---- 1997b, "Issues Related to Small Firms on the Internet in Australia", *International Marketing Review*, Vol 14, No 5, pp. 385-402.

Porter, M. 2001, "Strategy and the Internet", *Harvard Business Review*, Vol 79, No 3, pp. 63-77.

Reicher, A.K., et al. 2000, "Corporate Support for Ethical and Environmental Policies: A Financial Management Perspective", *Journal of Business Ethics*, Vol 25, No 1, pp. 53-64.

Roberts, M.S. and Ko, H. 2001, "Global Interactive Advertising: Defining What We Mean and Using What We Have Learned", *Journal of Interactive Advertising*, Vol 1, No 2, http://www.jiad.org/vol1/no2/roberts/.

Rogers, E.M. 1995, *Diffusion of Innovations*, Fourth edn, The Free Press, New York, New York.

Romano Jr., N.C. 2002, "Customer Relationship Management for the Web-Access Challenged: Inaccessibility of Fortune 250 Business Web Sites", *International Journal of Electronic Commerce*, Vol 7, No 2, pp. 61-117.

Ross, D.N. 2001, "Electronic Communications: Do Cultural Dimensions Matter?" *American Business Review*, Vol 19, No 2, pp. 75-81.

Rubinstein, H. and Griffith, C. 2001, "Branding Matters More on the Internet", *Journal of Brand Management*, Vol 8, No 6, pp. 394-404.

Rugman, A.M. 2003, "Regional Strategy and the Demise of Globalization", *Journal of International Management*, Vol 9, No 4, pp. 409-17.

Sak, O. and Shaw, J.J. 1989, "The International Dimension of Branding: Strategic Considerations and Decisions", *International Marketing Review*, Vol 6, No 3, pp. 22-34.

Scharl, A. 2000, *Evolutionary Web Development*, Springer, London.

Scharl, A., et al. 2004, "Analyzing the Prevalence of Sports-Related Terms among the Web Sites of Global Corporations", *International Journal of Computer Science in Sport*, Vol 3, No 2, pp. 5-18.

Schegg, R., et al. 2002, "Benchmarks of Web Site Design and Marketing by Swiss Hotels", *Information Technology and Tourism*, Vol 5, No 2, pp. 73-89.

Schumpeter, J.A. 1947, *Capitalism, Socialism and Democracy*, McGraw-Hill, New York.

Simon, S.J. 2001, "The Impact of Culture and Gender on Web Sites: An Empirical Study", *The DATA BASE for Advances in Information Systems*, Vol 32, No 1, pp. 19-37.

Singh, N., et al. 2005, "Analyzing the Cultural Content of Web Sites: A Cross-national Comparison of China, India, Japan, and US", *International Marketing Review*, Vol 22, No 2, pp. 129-46.

Sklair, L. 1999, "Competing Conceptions of Globalization", *Journal of World-Systems Research*, Vol 5, No 2, pp. 143-63.

Tan, J., et al. 2003, "E-Branding by the World's Top 100 Brands", paper presented to the World Marketing Congress, Perth, Australia.

Tehranian, M. 1999, *Global Communication and World Politics*, Lynne Rienner, Boulder.

Veenhoven, R. 1999, "Quality-of-Life in Individualistic Society", *Social Indicators Research*, Vol 48, pp. 157-86.

Ward, M.R. and Lee, M.J. 2000, "Internet Shopping, Consumer Search and Product Branding", *Journal of Product and Brand Management*, Vol 9, No 1, pp. 6-20.

Weaver, G.R., et al. 1999, "Corporate Ethics Practices in the Mid-1990's: An Empirical Study of the Fortune 1000", *Journal of Business Ethics*, Vol 18, No 3, pp. 283-94.

Wolfe, R.A. 1994, "Organizational Innovation: Review, Critique and Suggested Research Directions", *Journal of Management Studies*, Vol 31, No 3, pp. 405-31.

Zhao, W., et al. 2003, "Cultural Dimensions of Website Design and Content", *Prometheus*, Vol 21, No 1, pp. 75-84.

Zook, M.A. 2001, "Old Hierarchies or New Networks of Centrality? The Global Geography of the Internet Content Market", *American Behavioral Scientist*, Vol 44, No 10, pp. 1679-96.

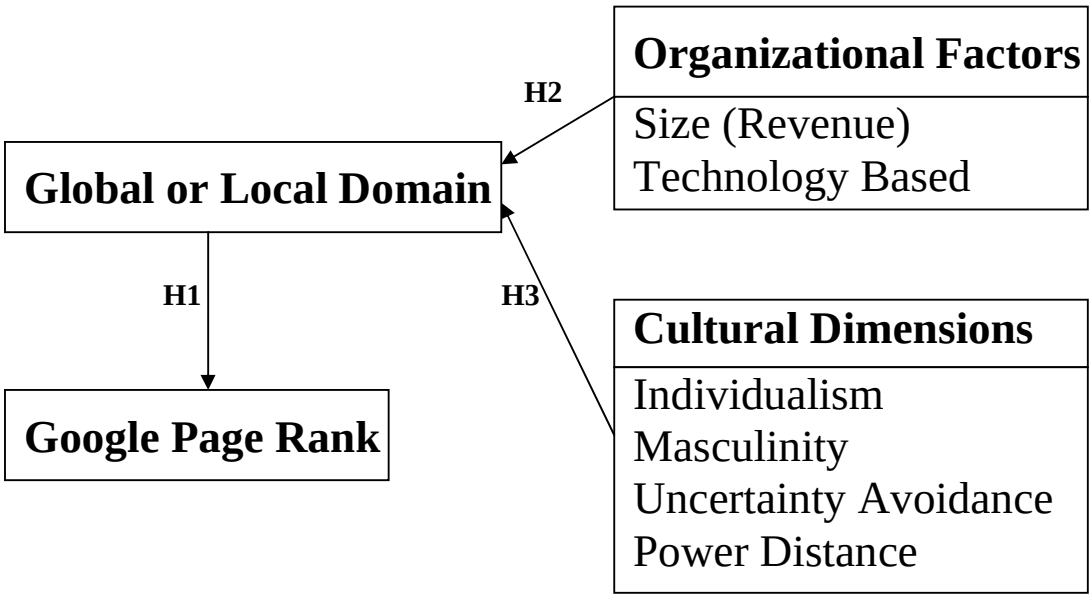

Figure 1. Conceptual Research Model

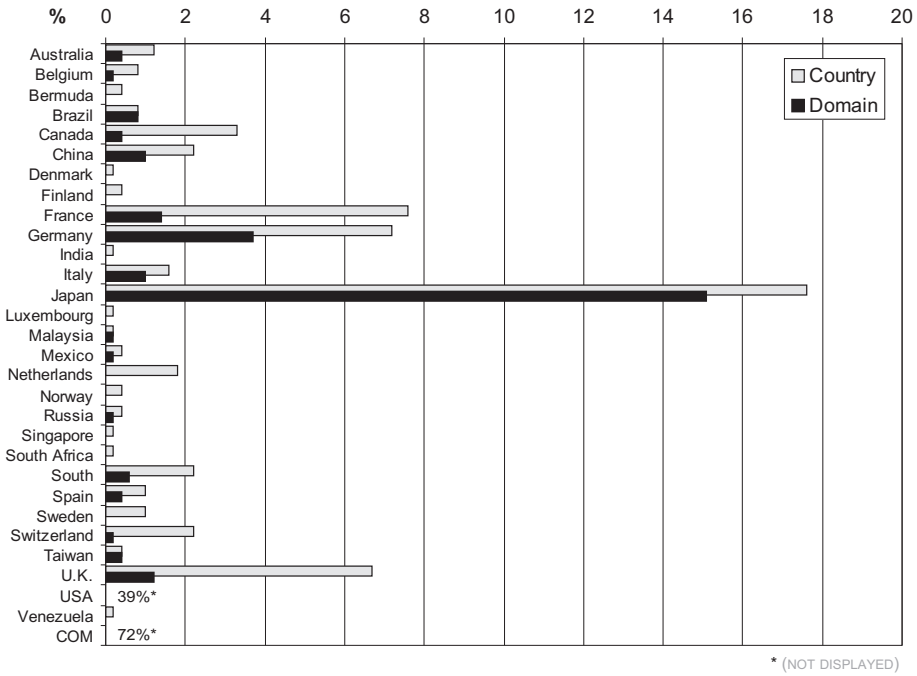

Figure 2. Headquarter Location vs. Domain Name Location of the Fortune Global 500

Table I: Hofstede's Cultural Dimensions (gerthofstede.com)

Dimension	Description
Power Distance	Equality, or inequality, between people in a country's society. A High Power Distance suggests tolerance of inequalities of power and wealth within the society. These societies are more likely to follow a caste system that does not allow significant upward mobility of its citizens. A Low Power Distance suggests the society de-emphasizes differences between citizen's power and wealth, stressing equality and opportunity for everyone.
Individualism	How society reinforces individual or collective achievement and interpersonal relationships. High Individualism suggests that individuality and individual rights are paramount within the society. Individuals in these societies may tend to form a larger number of looser relationships. Low Individualism typifies societies of a more collectivist nature with close ties between individuals, reinforcing extended families and collectives where everyone takes responsibility for fellow group member.
Masculinity	Society reinforces, or does not reinforce, traditional masculine roles of achievement, control, and power. High Masculinity suggests a high degree of gender differentiation. Males dominate a significant portion of the society and power structure, with females controlled by male domination. Low Masculinity suggests the country has a low level of differentiation and discrimination between genders, treating females equal to males.
Uncertainty Avoidance	A society's tolerance for uncertainty and ambiguity - i.e. unstructured situations. High Uncertainty Avoidance suggests a low tolerance for uncertainty and ambiguity. This creates a rule-oriented society that institutes laws, rules, regulations, and controls in order to reduce uncertainty. Low Uncertainty Avoidance suggests less concern about ambiguity and uncertainty and more tolerance for a variety of opinions. The society is less rule-oriented, more readily accepts change, and takes more and greater risks.

Table II. Macro-Measures by Country; Domain, C/C% = Number/Percentage of Companies, D/D% = Number/Percentage of Domains (fortune.com), LR = Localization Ratio Power Distance (PDI), Individuality (IDV), Masculinity, Uncertainty Avoidance (UAI)

Macro-Measures by Country							Cultural Dimensions			
Country	**C**	**C%**	**Domain**	**D**	**D%**	**LR**	**PDI**	**IDV**	**MSA**	**UAI**
Australia	6	1.2	.au	2	0.4	33.3	36	90	61	51
Belgium	4	0.8	.be	1	0.2	25.0	65	75	54	94
Bermuda	2	0.4	.bm	0	0.0	0.0				
Brazil	4	0.8	.br	4	0.8	100.0	69	38	49	76
Canada	16	3.3	.ca	2	0.4	12.5	39	80	52	48
China	11	2.2	.cn	5	1.0	45.5	80	20	66	30
Denmark	1	0.2	.dk	0	0.0	0.0	18	74	16	23
Finland	2	0.4	.fi	0	0.0	0.0	33	63	26	59
France	37	7.6	.fr	7	1.4	18.9	68	71	43	86
Germany	35	7.2	.de	18	3.7	51.4	35	67	66	65
India	1	0.2	.in	0	0.0	0.0	77	48	56	40
Italy	8	1.6	.it	5	1.0	62.5	50	76	70	75
Japan	86	17.6	.jp	74	15.1	86.0	54	46	95	92
Luxembourg	1	0.2	.lu	0	0.0	0.0	40	60	50	70
Malaysia	1	0.2	.my	1	0.2	100.0	104	26	50	36
Mexico	2	0.4	.mx	1	0.2	50.0	81	30	69	82
Netherlands	9	1.8	.nl	0	0.0	0.0	38	80	14	53
Norway	2	0.4	.no	0	0.0	0.0	31	69	8	50
Russia	2	0.4	.ru	1	0.2	50.0	93	39	36	95
Singapore	1	0.2	.sg	0	0.0	0.0	74	20	48	8
South Africa	1	0.2	.za	0	0.0	0.0	49	65	63	49
South Korea	11	2.2	.kr	3	0.6	27.3	60	18	39	85
Spain	5	1.0	.es	2	0.4	40.0	57	51	42	86
Sweden	5	1.0	.se	0	0.0	0.0	31	71	5	29
Switzerland	11	2.2	.ch	1	0.2	9.1	34	68	70	58
Taiwan	2	0.4	.tw	2	0.4	100	58	17	45	69
United Kingdom	33	6.7	.uk	6	1.2	18.2	35	89	66	35
United States	189	38.7	.us	0	0.0	0.0	40	91	62	46
Venezuela	1	0.2	.ve	0	0.0	0.0	81	12	73	76
			.com	351	72.2	0.0				
(Total) | Average	(489)	(100)		(486)	(100)					

Table III: Testing of Two Logistic Regression Models

Sample	**N**	**$\chi 2$**	**df**	**Cox and Snell R^2**	**Nagelkerke R^2**	**Significance**
No US MNCs	287	126.264	6	0.356	0.475	**p < 0.001**
No US or Japanese MNCs	204	30.741	6	0.131	0.186	**p < 0.001**

Table IV: Logistic Regression and Significance Testing of Variables

Variable	**No US MNCs N = 287**		**No US or Japanese MNCs N = 204**	
	Wald Value	Significance	Wald Value	Significance
Individualism	7.204	**p = 0.007**	6.634	**p = 0.01**
Masculinity	35.658	**p < 0.001**	9.181	**p = 0.002**
Uncertainty Avoidance	2.66	p = 0.103	1.94	p = 0.164
Power Distance	0.53	p = 0.818	0.008	p = 0.931
Revenue	4.89	**p = 0.027**	5.626	**p = 0.018**
Technology Company	9.895	**p = 0.002**	4.816	**p = 0.026**