An investigation of global versus local online branding

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Abstract

Purpose – 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 web site popularity of multinational corporations 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 web site and employee email addresses.

Originality/value – 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, Brands, Innovation

Paper type Research paper

Introduction

In The World is Flat, triple-Pulitzer Prize-winner Friedman (2006, p. 243) argues that a burning twenty-first century issue is whose values will govern a multinational corporation (MNC) and whose interests that MNC will promote. 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 web site (lenovo.com) is a simple page linking to almost 70 national web sites, 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 web sites 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 web site 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 and Mudambi, 2004, p. 147). An ongoing issue for MNCs, international branding strategies (de Chernatony et al., 1995; Sak and Shaw, 1989) are crucial for companies wrestling with their electronic commerce strategies (Bruton et al., 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 et al., 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, p. 20) 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 (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).

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 to 1980, and by 20 countries from 1980 to 1987 (Franke et al., 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 et al. (2003, p. 18) 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 or countries under investigation”. 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 and Rivas, 2002), as well as on visitors’ usage and perceptions of web sites (Chua et al., 2002; Ju-Pak, 1999; Simon, 2001).
Yet these results contradict views of a homogeneous internet culture (Johnston and Johal, 1999), global village (McLuhan, 1968) and global society (Sklair, 1999). A study of leading Chinese and the US web sites 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 et al., 1995; Sak and Shaw, 1989). Exposure to a brand’s web site can improve consumer perceptions of the brand’s personality (Müller and Chandon, 2003) and build brand equity (Ilfeld and Winer, 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 and Griffith, 2001), should MNCs take a global or local approach to online branding?

Research has focused on how to increase web site visits (Drèze and Zufryden, 2004; Hofacker and Murphy, 1998, 2005; Ilfeld and Winer, 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 web site traffic. Similarly, research of search engine rankings, which drive web site traffic, is underdeveloped (Menczer et al., 2006).

This paper uses the world’s 500 largest MNCs and two internet variables, web site popularity and global versus local domain name selection, to address two questions.

### Table I.
Hofstede’s cultural dimensions (gerthofstede.com)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power distance</td>
<td>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.</td>
</tr>
<tr>
<td>Individualism</td>
<td>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.</td>
</tr>
<tr>
<td>Masculinity</td>
<td>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.</td>
</tr>
<tr>
<td>Uncertainty avoidance</td>
<td>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.</td>
</tr>
</tbody>
</table>
related to broad calls for investigating relationships between culture and electronic commerce strategies (Bruton et al., 2004; Singh et al., 2005). First, what role does corporate use of domain names play in global versus local e-commerce (Chua et al., 2002; Murphy et al., 2003; Ross, 2001; Zhao et al., 2003)? Second, how do web site popularity (Kumar et al., 2002) and domain name selection help study trends in international branding (Dickson, 2000; Lucas et al., 2003; Roberts and Ko, 2001)?

Literature review

Branding and the internet

While having a web site was once a competitive advantage, businesses today need a web site to compete (Porter, 2001). Furthermore, an effective online presence is vital to a brand’s internet success (Hanson, 2000; Ward and 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 and Lee, 2000). Easy-to-remember branded domain names, such as apple.com for Apple Computer, help users find a particular web site (Coyle and Gould, 2002; Roberts and Ko, 2001).

Rather than use a search engine to find a company’s web site, consumers may guess the web site address (Coyle and Gould, 2002; Roberts and 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 and Lee, 2000). MNCs approach their online identity via global and country domain names (Murphy et al., 2003; Tan et al., 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 web site 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 et al., 2003). Some of the over 200 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 and Hofacker, 1998). For example, the domain name for IBM (based in Armonk, New York), would have been ibm.armonk.ny.us.

Owing to the internet’s US heritage, the global.com domain often reflects the 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 et al., 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 et al., 2003; Tan et al., 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 web site. The diffusion of innovations theory argues that organizations evolve in their technology use, from adopting a technology to using that technology well (Cooper and 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 web site.

**Online visibility and web site 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 web site traffic. Industry (Nielsen, 2000) and academic literature (Drèze and Zufridyen, 2004; Hanson, 2000; Park and Thelwall, 2003) note that higher search engine rankings lead to higher traffic, credibility and reputation for a web site. Search engine rankings take on increased importance this century, as searching rather than following links is now the top source of web site visitors (Menczer et al., 2006).

A focus on metrics of online capital increases the popularity of third-party web site evaluation tools (Palmer, 2002), such as the Google Toolbar (Garofalakis et al., 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 web site traffic and search engine rankings. Such tools are available on the client side (CyberspaceHQ’s Addweb Website Promoter; cyberspace-hq.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 (webby-awards.com) in the technical achievement and best practices categories, Google lists search results based on its proprietary PageRank system (Garofalakis et al., 2002; Kumar et al., 2002). In essence, hyperlinks to a page count as a vote, with links from high-traffic web sites weighing more than links from low-traffic sites. Ranging from 0 to 10, 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 et al., 2003), they usually promote their global web site 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 operationalised by Hofstede, as...
independent variables to the model and then hypothesizing the role these dimensions will play. The conceptual model in Figure 1 shows that four cultural values (Hofstede, 1980) and two organizational factors (Rogers, 1995) will lead to the adoption of global or local domain names.

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

\[ H1. \] 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 (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, routinisation 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 web sites to achieve higher search engine rankings, yielding more online visibility and subsequent web site traffic (Drèze and Zufryden, 2004; Hanson, 2000; Nielsen, 2000; Park and Thelwall, 2003). A web site’s search engine ranking serves as a proxy for online visibility. All things equal, the higher a web sites’ Google rank, the further the company’s internet implementation in online visibility. Based on \( H1 \), 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 and Swatman, 1997a, b) 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 et al., 2003). These same variables should show a positive relationship to choosing a .com identity. Thus:

$$H_2. \text{ Compared to MNCs with a country domain, MNCs with a .com domain will be (i) larger and (ii) more technology-oriented.}$$

Summarizing 57 information systems studies using Hofstede’s cultural dimensions, Ford et al. (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 web sites, 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 web sites, 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 favour 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 and Sung).

$$H_3. \text{ The adoption of country domains by MNCs will relate positively to their home country dimensions of (i) uncertainty avoidance, (ii) collectivism, (iii) power distance and (iv) masculinity.}$$

**Methodology**

Castells (2001) suggests analysing internet geography (cybergeography.org, telegeography.com) based on organizational determinants of content production, content consumption and infrastructure. This paper extends his geographical analysis by analysing 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 behaviour, 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 et al., 2000; Weaver et al., 1999), quality management (Baker et al., 1998; Lawler et al., 1992), and international business (Rugman, 2003). Scholars have also analysed MNCs’ web sites from perspectives including content...
(Perry and Bodkin, 2000), marketing (Palmer and Griffith, 1998; Scharl et al., 2004), and customer relationship management (Romano, 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 et al., 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 and Hernández-Murillo, 2005, p. 22). The final stage was visiting the company’s web site 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 US$ 11 billion in equity, 28 billion in revenues, and 661 million in profits. The US accounted for 39 per cent of the MNCs’ physical headquarters (Figure 2), followed by Japan (18 per cent), France (8 per cent), Germany (7 per cent) and the UK (7 per cent).

Although 29 countries hosted their global headquarters, the Fortune Global 500 planted their online flags in just 17 country domains. Over seven out of

![Figure 2. Headquarter location vs domain name location of the Fortune Global 500](image.png)
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 per cent) 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.

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 per cent) and Japanese (86 per cent) MNCs, French (19 per cent), British (18 per cent) and Swiss (9 per cent) companies were less likely to use a local strategy for their Fortune 500 listings (Table II).

<table>
<thead>
<tr>
<th>Country</th>
<th>C (percentage)</th>
<th>Domain</th>
<th>D (percentage)</th>
<th>LR</th>
<th>PDI</th>
<th>IDV</th>
<th>MSA</th>
<th>UAI</th>
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<tbody>
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<td>.au</td>
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<td>0.4</td>
<td>33</td>
<td>36</td>
<td>90</td>
<td>61</td>
</tr>
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<td>65</td>
<td>75</td>
<td>54</td>
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<tr>
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<td>100</td>
<td>69</td>
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<td>49</td>
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<td>12.5</td>
<td>39</td>
<td>80</td>
<td>52</td>
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<td>1.0</td>
<td>45.5</td>
<td>80</td>
<td>20</td>
<td>66</td>
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<td>9.1</td>
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<td>United Kingdom</td>
<td>33</td>
<td>.uk</td>
<td>6</td>
<td>1.2</td>
<td>18.2</td>
<td>35</td>
<td>89</td>
<td>66</td>
</tr>
<tr>
<td>United States</td>
<td>189</td>
<td>.us</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
<td>40</td>
<td>91</td>
<td>62</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1</td>
<td>.ve</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
<td>81</td>
<td>12</td>
<td>73</td>
</tr>
</tbody>
</table>

(Total) | Average (489) (100) (486) (100)  

Notes: Domain, C/C (percentage) = number/percentage of companies, D/D (percentage) = number/percentage of domains (fortune.com), LR = localization ratio; power distance (PDI), individuality (IDV), masculinity, uncertainty avoidance (UAI)

Table II. Macro-measures by country
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 web site 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 web site. 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 1 to 10, with a median rank of 6. Fourteen companies had no PageRank, which suggests near invisibility with Google. About one third of the companies had a PageRank of 6 and another third had a rank of 7. At one extreme, two US companies – Microsoft and Sun Microsystems – achieved the top score of 10. Another two companies had the lowest score of 1, 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. Owing 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 $H1$. 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 analyse 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 the US companies were in the.com domain, the first logistic regression test omitted the US companies. Furthermore, as Japanese companies comprised almost one-third of the non-US companies and most (86 per cent) had a local.jp identity, the second logistic regression test omitted all the US and Japanese companies. As Table III shows, the results of both tests were significant.

In line with organizational diffusion research, size (Rogers, 1995; Wolfe, 1994) and technology orientation (Murphy et al., 2003; Poon and Swatman, 1997a, b) showed significant relationships with the adoption of technology, namely a global domain name (Table IV). These results further support $H2$: large, technology-based organizations tended to adopt global online brands via.com domain names.

<table>
<thead>
<tr>
<th>Sample</th>
<th>$N$</th>
<th>$\chi^2$</th>
<th>df</th>
<th>Cox and Snell $R^2$</th>
<th>Nagelkerke $R^2$</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing of two logistic regression models</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No US MNCs</td>
<td>287</td>
<td>126.264</td>
<td>6</td>
<td>0.356</td>
<td>0.475</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>No US or Japanese MNCs</td>
<td>204</td>
<td>30.741</td>
<td>6</td>
<td>0.131</td>
<td>0.186</td>
<td>$p &lt; 0.001$</td>
</tr>
</tbody>
</table>
The role of culture is also apparent, supporting two subsets of H3: 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 favour 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 et al., 2004; Singh et al., 2005). Despite their national origin, over seven out of ten companies chose global branding by hosting their corporate web site in the.com domain. The most popular country domain, Japan’s.jp, hosted just 15 per cent of the MNCs, followed by Germany’s.de at almost 4 per cent. 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 favour 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 and Johal, 1999; McLuhan, 1968; Sklair, 1999). Rather, the results support research suggesting that online communication strategies differ due to cultural influences (Callahan, 2005; Okasaki and 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

<table>
<thead>
<tr>
<th>Variable</th>
<th>No US MNCs (N = 287) Wald value</th>
<th>Significance</th>
<th>No US or Japanese MNCs (N = 204) Wald value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualism</td>
<td>7.204</td>
<td><em>p = 0.007</em></td>
<td>6.634</td>
<td><em>p = 0.01</em></td>
</tr>
<tr>
<td>Masculinity</td>
<td>35.658</td>
<td><em>p &lt; 0.001</em></td>
<td>9.181</td>
<td><em>p = 0.002</em></td>
</tr>
<tr>
<td>Uncertainty avoidance</td>
<td>2.66</td>
<td><em>p = 0.103</em></td>
<td>1.94</td>
<td><em>p = 0.164</em></td>
</tr>
<tr>
<td>Power distance</td>
<td>0.53</td>
<td><em>p = 0.818</em></td>
<td>0.008</td>
<td><em>p = 0.931</em></td>
</tr>
<tr>
<td>Revenue</td>
<td>4.89</td>
<td><em>p = 0.027</em></td>
<td>5.626</td>
<td><em>p = 0.018</em></td>
</tr>
<tr>
<td>Technology company</td>
<td>9.895</td>
<td><em>p = 0.002</em></td>
<td>4.816</td>
<td><em>p = 0.026</em></td>
</tr>
</tbody>
</table>

Table IV. Logistic regression and significance testing of variables.
(Foner, 2001; Froomkin, 2001; Murphy et al., 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 web sites and employee email addresses. Apple Computer in Brazil, for example, could host its Brazilian web site 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 et al., 2002; Lucas et al., 2003). While literature often associates domain names with trademarks (Foner, 2001; Froomkin, 2001; Murphy et al., 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 web site features to this study’s comparison of cultural values across industries, domain names and search engine rankings. Are there relationships between a web site’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 web site 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 web site popularity, average traffic, and the number of incoming links to a web site (Palmer, 2002).

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