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Abstract

Ten years ago, during the early days of the Internet, research was undertaken that looked for evidence of cultural convergence in the web sites of global corporations using Hofstede's cultural dimensions and country clusters. That study found little homogeneity. Since then, the Internet has matured and corporations have become more sophisticated in designing their web sites. Therefore, the main objective of the current project is to provide a longitudinal view of how national culture has changed over a ten year period by replicating the 1998 study and comparing the results. Findings suggest that there have been some changes towards homogeneity.

Keywords: Cultural Convergence; Internet Homogenizing Effect; Standardization; Global Corporations; Hofstede

INTRODUCTION

Over the last ten years (1998-2008), Internet usage has grown from 147 million (3.6%) worldwide users to 1,319 million (20%) (Group, 2008). In looking over worldwide usage of the Internet, 1999 seems to represent a turning point because US Internet users no longer represented a majority of users (Shirky, 2008). This can be attributed to a number of factors, including the declining cost of technology, which made it more affordable to larger segments of humanity (both in developed as well as developing countries) (Akmanligil, & Palvia, 2004), increases in network bandwidth, and the advances in wireless networks, which have allowed corporations to extend their reach beyond national borders. The resulting globalization has changed the way corporations operate and conduct business. The use of technology has also allowed companies not previously competitive to successfully operate in a multinational environment. But globalization has also created challenges (Akmanligil, & Palvia, 2004) because it is more difficult to balance the needs of local markets, which have specific language preferences and cultural identities, with the need to create a cohesive global corporate image. Companies moving into the global arena find that traditional methods of tailoring advertising campaigns, product mixes, and brand image to reflect the tastes and cultural patterns of specific countries or regions do not always work. A successful web site designed for the global marketplace must be understandable by a diverse group of individuals (Radzievshy, 1998) yet somehow have the flexibility to offer language options and capture the cultural norms of each country (Horwitt, 1997; Horwitt, 1997).

Given the rapid acceptance of the Internet by people around the world, one must question what kind of influence the Internet has had on national culture. Corporate culture has become increasingly visible and can be seen through the way a company designs its web site (Want, 2003). Thus, one can readily observe and compare differences in global corporate culture. The main objective of this study is to update research that was undertaken in the early days of the Internet (Robbins, & Stylianou, 2001-2002, Winter). This project takes a longitudinal view to determine if differences in national culture found in 1998 (Robbins, & Stylianou, 2001-2002, Winter) are still evident in the web sites of global corporations or if national cultures, as reflected through these web sites, have converged.

LITERATURE REVIEW

Culture can be defined as a shared set of values that influence societal perceptions, attitudes, preferences, and responses (Hofstede, 1980.) Today these characteristics are easily visible in the marketplace (Want, 2003). One of the major components of culture is language (Hofstede, 2001). English, although the mother tongue to people in only six countries (dara.NET, No date), has been and still is the dominant language of the Internet (Group, 2008). However, today there is a marked increase in the use of other languages, including Chinese, Spanish, and Japanese (Group, 2008), and customer-focused online language translation services are now available. The increase in the number of people preferring to use languages other than English online will have a profound implication on how the Internet is used and how web sites are developed. As the Internet becomes more of a global mass medium, the way commerce, news, research

and entertainment are presented has had to be rethought. For example, Japanese companies understood the need for the availability of language options early and so now routinely provide both Japanese and English versions of their sites that can be accessed with a single click. In fact, several of the major search engines are offering their services in multiple languages. Furthermore, Internet providers are recognizing that as their audience broadens, so must their language support. It is an open debate whether the English language will continue to be the standard language of cyberspace, or if it will deepen its hold on the world as more people go online, or even if its usage will decline and it will not even survive as the world's lingua franca. Representing one side of the debate, Pinker (2002, January 2) argues that "the Internet is [already] becoming polyglot, and with improving translation engines, English will not be indispensable much longer on the Web." So the question becomes: How has the use of language on global web sites changed over the last ten years?

Other cultural dimensions have been identified and over the years a number of theoretical models have been presented in the literature that allow for the measurement and comparison of different cultures based on a number of factors (for overviews see (Adler, Koktor, & Redding, 1986; Ronen, & Shenkar, 1985). For example, Hall (1976) presented a four factor model that distinguished cultures based on communication, Hofstede developed a five factor model that will be discussed in depth in a later section of this paper, and Trompenaars (1993) developed a seven-factor values model. Schwartz (1984) also developed a seven-factor model along the lines of Hofstede and, finally, Khaslavsky designed a nine-factor model based on the work of the previously mentioned authors. Smith, Dunckley, French (2004) introduced the concept of cultural attractors such as the use of color and color combination, trust signs, and the use of metaphor and language cues. However, it is not clear how some of these cultural attractors were operationalized. Badre (2002) approached the problem from a cultural marker perspective that included such factors as color, spatial organization, fonts, icons, and metaphors.

While there has been a lot of work done in the area of identifying cultural factors, the model that is most often cited and accepted (Choe, 2004; Kondratove, Goldfarb, Gervais, & Fournier, 2005; Marcus, & Gould, 2000; Robbins, & Stylianou, 2003; Singh, & Baack, 2004; Singh, Kumar, & Baack, 2005; Sondergaard, 1994) is the typology of culture developed by Hofstede (1980). His model is based on an extensive survey of foreign subsidiaries of IBM and Hofstede concluded that national cultures differ along five dimensions: *power distance*, *uncertainty avoidance*, *individualism*, *masculinity,* and *long-term orientation*. These dimensions will be discussed in depth in the methodology section of this paper. Hofstede also categorized countries based on commonalities and similar histories. This resulted in the identification of six clusters: *Anglo, Nordic, German, Latin, Asian,* and, *Japan.*

Even though Hofstede's cultural dimensions model is widely used by researchers today, his typology was based on research that was concluded thirty years ago. Therefore, one must wonder if his hypotheses are still valid. Hofstede argued that cultural values are deeply ingrained, enduring, and long-lasting. If that is true, then Hofstede's model retains validity. Also, there have been subsequent studies that provide evidence that Hofstede's cultural dimensions are still relevant (Adler, Koktor, & Redding, 1986; Hoppe, 1992; Robbins, & Stylianou, 2001-2002, Winter; Shackleton, &

Ali, 1990; Singh, & Baack, 2004). However, there are a number of other studies that have reached a different conclusion (Levitt, 1983; Nordstrom, 1991; O'Reilly, 1991; Ohmae, 1985; Roberts, & Boyacigille, 1984; Triandis, 1982). This body of research suggests that core cultural values have converged thus making Hofstede's categorization irrelevant.

It is thought that globalization supported by the Internet and other technologies has had a homogenizing effect that has led to this cultural convergence (CPSR, 1997; Deen, 1999; Lee, 1998; Rothkopf, 1997). And, it could be argued that the world consumption of Coca-Cola and McDonald's hamburgers are examples of such convergence. If homogenization has taken place, then there should be evidence of this effect in the web pages of global corporations. However, research undertaken in the early days of the Internet did not provide support for that (Robbins, & Stylianou, 2001-2002, Winter). Using Hofstede's typology, that study examined the web sites of 90 global corporations and found that the Internet had had some impact on culture but found no evidence of cultural convergence at that time (Robbins, & Stylianou, 2001-2002, Winter). That study was undertaken ten years ago and much has happened in the world since then, including the maturing of the Internet and the growing sophistication of global corporations in designing their web sites. Today, the question of cultural convergence is still not clear. To understand any changes that might have happened over this time period, it would be necessary to undertake a longitudinal study to see if shifts in cultural patterns are evident. To date, no research has been undertaken that looks at web cultural dimensions over time. This study has been designed to address this void in the literature.

METHODOLOGY

This project was developed to reflect Hofstede's (1980) cultural typology. The data instrument developed for the original study (Robbins, & Stylianou, 2001-2002, Winter) was used to replicate and expand the data in order to determine if any changes have occurred over the intervening ten years. The instrument included a number of cultural indicators that were designed to capture the flavor of Hofstede's five dimensions in the Web environment. A brief description of each dimension, its characteristics, and the cultural web site indicators used by the study follows.

Language Dimension

The availability of languages was determined by visiting the home page of each of the corporations included in this study.

Power Distance Dimension

This dimension relates to the extent to which less powerful members of a society accept and expect that power is distributed unequally (Hofstede, 1980). The following characteristics have been adopted from Hofstede (1980):

Low Power Distance

- Distrust of authority figures
- Hierarchy means an inequality of roles, established for convenience

- Decision making is consultative in nature
- Powerful people try to look less powerful than they are

High Power Distance

- Acceptance of authority of superiors
- Inequalities among people are both expected and desired
- Less powerful people should be dependent on the more powerful
- Hierarchy means existential inequality between high-ups and lower downs

Clusters with high power distance characteristics include the Latin, Asian, and Japan and low power distance clusters include the Nordic, Anglo, and German. Cultural indicators were identified to reflect the characteristics of each of Hofstede's dimensions. The presence of organizational charts, biographical sketches of top leaders, and a corporate message from the CEO were used to characterize the power distance dimension. It was reasoned that organizational charts remind people of organizational inequalities (of roles and power) and this is reflected in both the low and high power distance characteristics. High power characteristics include biographical sketches of top leaders because these point out the dependence less powerful people have on corporate leaders, and corporate messages from the CEO because these reflect the acceptance of the authority of superiors (Robbins, & Stylianou, 2001-2002, Winter).

Uncertainty Avoidance Dimension

Uncertainty avoidance refers to how people respond to uncertainty, ambiguity, and environmental threats (Hofstede, 1980). Characteristics include:

Weak Uncertainty Avoidance

- Regionalism, internationalism, attempts at integration of minorities
- High labor turnover
- Less ritual behavior
- Few rules as possible

Strong Uncertainty Avoidance

- Nationalism, xenophobia, repression of minorities
- Hierarchical structures of organizations should be clear and respected
- Lower labor turnover less ambitious employees
- More elaborate legal system

Clusters with weak uncertainty avoidance include the Anglo, and Nordic, while the Latin, German, Asian, and Japan clusters have strong uncertainty avoidance characteristics. Web site indicators used to represent weak uncertainty avoidance included: whether the site included a list of job openings; the presence of career/job opportunity descriptions; and whether the job openings were international in scope. These measures were chosen because high labor turnover and internationalist attitudes associate with weak uncertainty avoidance. Indicators for strong uncertainty avoidance included: presence of a disclosure statement about the use of cookies (the reasoning is that such statements are more likely in countries with more elaborate legal systems); and the presence of organizational charts that reflect an organization's hierarchy (Robbins, & Stylianou, 2001-2002, Winter).

Individualism/Collectivism Dimension

This dimension can be defined as people looking after themselves and their immediate family only versus people belonging to in-groups that look after them in exchange for loyalty (Hofstede, 1980). Characteristics include:

Individualism

- Everyone has a right to privacy
- Everyone is expected to have a private opinion
- Ideologies of individual freedom
- Greater occupational mobility
- Organizations are not expected to look after employees from the cradle to the grave

Collectivism

- Press controlled by the state
- Private life is invaded by group(s)
- Private life is invaded by organizations and clans to which one belongs
- Less occupational mobility
- Policies practices based on loyalty and sense of duty

Anglo, Nordic, Latin, and German clusters have individualistic characteristics and Asian and Japan have collectivistic characteristics. Individualistic indicators include the need to register to use parts of the site, the capability for secure communication and transactions providing protection of personal and/or sensitive information; and the presence of a privacy policy statement (Robbins, & Stylianou, 2001-2002, Winter). These relate to the idea that everyone has a right to privacy. A collectivistic indicator for this dimension is the use of cookies, which can be considered an invasion of privacy.

Masculinity/Femininity Dimension

The dominant values in a masculine society are achievement and success whereas dominant values in a feminine society are caring for others and quality of life (Hofstede, 1980). Characteristics include:

Masculine

- Men are supposed to be assertive, ambitious, and tough
- Money and things are important
- Men should dominate in all settings
- Dominant values in society are material success and progress

Feminine

- Dominant values in society are caring for others and preservation
- Everybody is supposed to be modest
- Sympathy for the weak
- Conservation of the environment is seen as a more important problem than economic growth
- Work is less central in people's lives

Clusters with masculine characteristics include Anglo, German, and Japan. Clusters with feminine characteristics include Nordic, Latin and Asian. Masculine culture

indicators included the availability of the Annual Report on the web site and the inclusion of financial highlights. These indicators reflect the importance of money and assets and represent success. Another masculine indicator was the inclusion of a hit/visitor counter in the web site, an indication of keeping score. Feminine indicators included the discussion of social responsibility issues and evidence of cultural sensitivity. These indicators reflect a caring and sympathetic attitude towards others (Robbins, & Stylianou, 2001-2002, Winter).

Short/Long Term Orientation Dimension

This dimension relates to how people view time (Hofstede, 1980). Characteristics include:

Short-term Orientation

- Respect for traditions
- Concern with 'face'
- Quick results expected

Long-term Orientation

- Thrift, being sparing with resources
- Large savings , and funds available for investment
- Perseverance towards slow results

Clusters with a short-term orientation include Anglo, Nordic, Latin and German. Asian and Japan have long-term orientations. Web indicators that reflect short-term orientation included the use of a site map/index page, and the availability of a search engine. These factors save time and provide quick results. Other short-term indicators included the ability to communicate with a corporate expert in a real time on-line session, the use of a "frequently asked questions" section that provides quick answers, and press releases. These indicators reflect the desire to have information immediately. Finally, the presence of a corporate history on the web site is an indication of respect for tradition. A long-term orientation indicator is the presence of a vision statement on the web site. Vision statements by definition express the long-term orientation of the corporation (Robbins, & Stylianou, 2001-2002, Winter).

DATA COLLECTION

A criticism of work done in the area of assessing cultural values relates to the limited number of countries often included in the studies. Many of the studies only include two or three countries (Baack, & Singh, 2007; Cho, Kwon, Gentry, Jun, & Kroop, 1999; Choe, 2004; Gould, Zakaria, & Yusof, 2000; Lin, 2001; Overbeeke, & Snize, 2005; Singh, & Baack, 2004; Singh, Kumar, & Baack, 2005), which decreases the ability to generalize the results. To overcome this limitation, ninety global companies were included in both the 1998 as well as the current study. These organizations were selected from the list of the 500 largest global corporations published annually by Fortune Magazine in 1998 and 2007 respectively. This project chose not to attempt to survey the same set of companies included in the 1998 study but rather collected data from the current largest global corporations. It was felt that the cultural dimensions

found in the web pages would not be unique to the corporation but rather would reflect the cultural values associated with each cluster assignment. Therefore, it was felt that this decision would not impact the reliability of the data collected. Fortune Magazine was chosen because the companies included in their list have successfully faced the complexity of operating across the globe and have been confronted by cultural issues. These corporations have had to depend on computer technologies to conduct business and also have the financial resources to develop complex web sites that reflect and support the corporate structure.

Hofstede's (1980) six country clusters were used to categorize companies based on the location of the corporate headquarters and the top 15 global corporations in each of the six clusters were included, for a total of ninety (see Table 1). In terms of cluster/country representation, sixteen countries scattered around the globe were included in the 1998 study (Robbins, & Stylianou, 2001-2002, Winter) and 20 countries were included in 2008. The mean revenues for the 90 corporations were $49,909 million in 1998 and $96,682 million in 2008 and the mean number of employees grew from 137,120 and to 209,305 respectively. This represents clear growth both in terms of manpower and financial resources of global corporations over time.

Table 1: Cluster/Country Representation

Cluster	HQ Country	Frequency		Percent	
		'98	'08	'98	'08
Anglo	U.K.	2	2	2.2	2.2
	USA	13	13	14.4	14.4
Nordic	Finland	1	1	1.1	1.1
	Netherlands	9	8	10.0	8.9
	Norway	1	2	1.1	2.2
	Sweden	4	2	4.4	2.2
	Denmark	0	2	0	2.2
Latin	Belgium	0	2	0	2.2
	Brazil	0	1	0	1.1
	France	11	8	12.2	8.9
	Italy	3	2	3.3	2.2
	Spain	0	2	0	2.2
	Venezuela	1	0	1.1	0
German	Germany	12	10	13.3	11.1
	Switzerland	3	3	3.3	3.3
Asian	China	0	7	0	7.8
	India	1	1	1.1	1.1
	Korea	12	4	13.3	4.9
	Malaysia	1	1	1.1	1.1
	Taiwan	1	1	1.1	1.1
	Thailand	0	1	0	1.1
Japan	Japan	15	15	16.7	16.7
Total		**90**		**100%**	

The web site of each corporation in the sample was examined to determine if there is evidence of cultural homogenization over time as a result of conducting business in a global context. For each corporation in the sample, data was collected responding to the demographic questions in the survey from public sources, the company's web site, as well as Fortune Magazine. The web site of each sample company was then examined to determine if cultural convergence has occurred since the original study was undertaken.

Table 2 shows the diversity of companies represented in the 1998 and 2008 studies. Twenty industries were represented in the earlier study and twenty-three in the current.

Table 2: Industry Representation

Industry	**Frequency**		**Percent**	
	'98	**'08**	**'98**	**'08**
Aerospace	1	1	1.1	1.1
Banks: Commercial and Savings	6	18	6.7	20.0
Chemicals	4	1	4.4	1.1
Computers, Office Equipment	1	1	1.1	1.1
Consumer Food Products	0	1	0	1.1
Diversified Financials	0	1	0	1.1
Electronics, Electrical Equipment	12	9	13.3	10.0
Energy	1	1	1.1	1.1
Food	2	0	2.2	0
Food and Drug Stores	2	4	2.2	4.4
Forest and Paper Products	1	0	1.1	0
General Merchandisers	1	1	1.1	1.1
Insurance	10	0	11.1	1.1
Insurance: Life, Health (Mutual)	0	1	0	1.1
Insurance: Life Health (Stock)	0	5	0	5.6
Insurance P + C (Stock)	0	4	0	4.4
Mail, Package, Freight, Delivery	1	1	1.1	1.1
Metals	1	2	1.1	2.2
Motor vehicles and Parts	14	11	15.5	12.2
Network and other Communications Equipment	0	2	0	2.2
Petroleum Refining	13	16	14.4	17.8
Pharmaceuticals	1	0	1.1	0
Shipping	0	1	0	1.1
Telecommunications	5	4	5.6	4.4
Tobacco	1	0	1.1	0
Trading	10	1	11.1	1.1
Utilities, Gas and Electric	3	3	3.3	3.3
Wholesalers: Health care	0	1	0	1.1
Total	**90**	**90**	**100%**	**100%**

FINDINGS AND DISCUSSION

Language Dimension

The language of the home page of each of the 90 web pages included in this study was recorded. The findings indicate that English continues to dominate as the language of choice (see Table 3, which includes results from both studies). This is in agreement with what has been reported in other studies (e.g., (Group, 2008; Lohr, 2000, January 9). However, in 2008 only 86% percent of the home pages were available in English compared to 100% in 1998. The few web pages that did not include English on the home page typically had an English option so that it was possible to collect data from the other parts of the web site. The number of home pages available only in English has increased, while the number of those offering multiple language options has declined in 2008.

Table 3: Home Page Language Options

	Number of Home Pages		Percentage	
	'98	**'08**	**'98**	**'08**
English Available	90	86	100%	86%
English Only	31	38	34%	42%
Bilingual	54	38	60%	42%
Trilingual	5	7	6%	8%
4 or more	0	7	0%	8%

Changes between 1998 and 2008

Table 4 presents the frequency of occurrence of each Web Site Cultural Indicator sorted by country cluster. T-tests were run and the shaded cells indicate significant changes from 1998 to 2008.

Table 4: Frequency Results
Percentage of Occurrence

Dimension	Indicator	Anglo		Nordic		Latin		German		Asian		Japan	
		'98	**'08**	**'98**	**'08**	**'98**	**'08**	**'98**	**'08**	**'98**	**'08**	**'98**	**'08**
Power Distance	Organizational Chart	13	7	40	53	40	33	27	27	13	47*	47	73
	Bio-sketches of Top Leaders	40	80*	67	87	33	73*	33	100**	27	40	7	13
	Message from CEO	13	40	7	7	20	7	20	27	27	60	47	100**
Uncertainty Avoidance	Listing of Job Openings	80	87	60	87	20	47	33	93**	20	20	7	27

	Description of Career/Jobs	93	93	60	93*	27	73**	53	100**	47	33	13	27
	Job Openings International in Scope	40	67	47	80	7	40*	27	87**	7	7	0	27*
	Cookie Disclosure	20	87**	0	87**	0	47**	0	87**	7	20	0	60**
	Organizational Chart	13	7	40	53	40	33	27	27	13	47*	47	73
Individualism/ Collectivism	Use of Cookies	60	87	40	93**	27	87**	27	87**	33	47	13	93**
	Site Registration Requirements	27	67*	7	40*	20	27	20	7	13	7	7	0
	Site Security Provisions	40	13	0	7	0	0	0	7	7	0	0	0
	Privacy Policy Statement	73	100*	13	87**	20	47	13	73**	13	67**	7	73**
Masculinity / Femininity	Annual Report	93	100	100	100	100	100	80	100	60	73	87	100
	Financial Highlights	93	100	100	100	87	100	73	100*	80	80	67	100*
	Hit/Visitor Counter	0	0	0	0	0	0	0	0	20	7	0	0
	Indication of Social Responsibility	93	93	73	87	73	93	60	100**	73	87	73	87
	Indication of Cultural Sensitivity	80	87	20	67**	27	60	33	100**	13	7	7	20
Long/Short Term Orientation	Site Map/Index Page	67	93	40	73	60	93*	60	93*	60	100**	33	87**
	Search Engine	87	93	47	93**	73	93	73	100*	27	87**	40	80*
	On-line Chat with Expert	0	7	0	7	0	0	7	0	0	0	0	0
	Frequently Asked Questions Section	67	87	13	87**	7	60**	47	67	20	53	13	60**
	Press Releases	100	100	100	100	100	100	93	100	80	100	73	100*
	Corporate History	100	80	80	100	80	93	66	93	93	80	60	73
	Vision Statement	33	27	7	60**	7	67**	20	20	53	53	20	47

***Significant at the <.05**
****Significant at the <.01 level**

Following are some of the more interesting findings by dimension:

Power Distance

- The use of organizational charts has increased in all but the Anglo and Latin clusters. The increase, however, is only significant in the Asian cluster.
- A larger number of websites contain leaders' bio-sketches in 2008. The difference between 1998 and 2008 is significant in several country clusters. It is interesting to note that two of the three clusters categorized as having a

low power distance had significant increases, yet this indicator is normally viewed as a high power distance characteristic.
- Four of the six country clusters show increases in the presence of CEO messages (significant only in Japan, which is in keeping with its high power distance categorization).

Overall, there seems to be a tendency towards increased Power Distance.

Uncertainty Avoidance

- There has been an increased listing of job openings in all clusters except the Asian. The increase was significant in the German cluster. This is interesting because one would expect this finding to be restricted to the two weak uncertainty avoidance clusters: Anglo and Nordic. The job openings were also more international in scope in all but the Asian cluster, with the difference between 1998 and 2008 being significant in three strong uncertainty avoidance clusters yet this indicator was used to represent weak uncertainty avoidance clusters.
- Three of the six clusters show significant increases in job/career descriptions. This indicator was also used to represent weak uncertainty avoidance clusters yet two of the three that showed significant increases were categorized as strong. Only the Asian cluster showed a decrease but it was not significant.
- The frequency of use of cookies by corporations was at substantial odds with disclosure of such use in 1998. In 1998, the majority of corporations in the sample using cookies did not disclose their use. Today, there have been clear changes indicating that companies have adopted a more responsible attitude towards users. This is reflective of the increased awareness of the ethical issues involved with the use of computers, especially their impact on privacy.

Individualism/Collectivism

- All clusters report an increased use of cookies. The change from 1998 is significant in four of the clusters. However, in light of the increased cookie disclosure discussed above, we cannot claim a move towards collectivism.
- Our observations regarding site registration requirements seem to point to increased polarization. We found significant increases in the Anglo and Nordic clusters, which are traditionally individualistic, indicating a further move towards collectivism. On the other end, we found decreases (although not significant) in the Asian and Japan clusters. However, this indicator is high for the traditionally individualistic clusters and low for the traditionally collective ones, which is the opposite of what was expected.
- Between 1998 and 2008 there have been significant increases in the use of privacy policy statements across all clusters except the Latin, in which there was an increase although not significant.

Masculinity/Femininity

- With regards to the use of annual reports and the inclusion of financial highlights on the websites, almost all clusters reported perfect scores. The only exception is the Asian cluster, which traditionally has been higher on femininity. The increased availability of financial information on corporate websites may be considered an indicator of the trend towards, or at least the appearance of, openness and transparency, following highly publicized financial scandals and, in some cases, government regulations.
- Social responsibility and cultural sensitivity content (expected to be higher in cultures that are higher in femininity) have also increased for the most part across the board. The only exception is a non-significant decrease in indicators of cultural sensitivity in the Asian cluster.

Overall, we have observed increases (although mostly non-significant ones) in both masculinity and femininity indicators in almost all clusters, making an argument for increased homogenization in this dimension.

Short/Long Term Orientation

- The use of a site map, index page, or a search engine, considered to be a short term characteristic, has increased in all clusters – significantly so in most cases, including the two clusters considered to have a long term orientation. The same is true for the use of FAQs. Increases in the use of press releases (considered to reflect a short term orientation) resulted in 100% coverage in all clusters.
- The availability of an on-line chat with an expert was virtually non-existent in 1998 as it is today. However, companies have now included other mechanisms for communication such as blogs and chat rooms, which, unfortunately, were not captured for this specific project.
- The other two indicators, corporate history and a vision statement, showed mixed and mostly non-significant changes. The only significant changes were increases in the use of a vision statement (associated with long term clusters) in the Nordic and Latin clusters, which are categorized as having short term orientations.

Web Site Cultural Indicators and Cluster Membership

Analysis of variance was used to examine the significance of each of the specified Web Site Cultural Indicators on the country clustering. Country cluster was used as the dependent variable and the cultural indicators were used as the independent variables. The results are presented for both the 1998 study as well as the 2008 in Table 5.

Table 5: Analysis of Variance Results				
Power Distance				
Web Site Cultural Indicator	**F Value**		**Significance Level**	
	'98	**'08**	**'98**	**'08**
Organizational Chart	.540	9.055	.464	.003**
Bio-sketches of Top Leaders	8.349	23.445	.011**	.000**
Message from CEO	6.703	26.074	.011**	.000**
Uncertainty Avoidance				
Web Site Cultural Indicator	**F Value**		**Significance Level**	
	'98	**'08**	**'98**	**'08**
Listing of Job Openings	26.243	22.536	.000**	.000**
Description of Careers/Jobs	17.111	32.306	.000**	.000**
Job Openings International in Scope	12.995	13.477	.001**	.000**
Cookie Disclosure	3.275	8.641	.074	.004**
Organizational Chart	.540	9.055	.464	.003**
Individualism/ Collectivism				
Web Site Cultural Indicator	**F Value**		**Significance Level**	
	'98	**'08**	**'98**	**'08**
Use of Cookies	6.498	1.662	.013*	.201
Site Registration Requirements	1.033	31.717	.312	.000**
Site Security Provisions	10.605	3.275	.002**	.074
Privacy Policy Statement	16.002	3.169	.000**	.078
Masculinity/Femininity				
Web Site Cultural Indicator	**F Value**		**Significance Level**	
	'98	**'08**	**'98**	**'08**
Annual Report	5.807	3.275	.018*	.074
Financial Highlights	6.952	2.405	.010**	.125
Hit/Visitor Counter	2.405	.769	.125	.383
Indication of Social Responsibility	1.438	.184	.234	.669
Indication of Cultural Sensitivity	17.228	24.832	.000**	.000**
Long/Short Term Orientation				
Web Site Cultural Indicator	**F Value**		**Significance Level**	
	'98	**'08**	**'98**	**'08**
Site Map/Index Page	.968	.510	.328	.477

Search Engine	8.068	1.688	.006**	.197
On-Line Chat with Expert	.085	2.831	.772	.096
Frequently Asked Questions Section	4.699	5.327	.033*	.023*
Press Releases	11.728	-[a]	.001**	-[a]
Corporate History	4.119	.709	.045*	.402
Vision Statement	.889	.245	.348	.622

** Significant at .05 level*
*** Significant at .01 level*
[a] *100% in all clusters*

The majority of the selected Web Site Cultural Indicators for each of Hofstede's cultural dimensions were significant in 1998. These results provided continued support to Hofstede's clustering of countries based on cultural similarities and differences. In other words, in spite of the predominantly American look and feel of the Internet in 1998, there were enough differences among the web sites of the global corporations examined to support their clustering into culturally based groups. In 2008, the significance level of a number of indicators has changed. The indicators in the Power Distance and Uncertainty Avoidance dimensions became even more significant and continued to provide support for the heterogeneity argument. However, the results in the other three dimensions indicate a reduction in the number of significant indicators and a movement towards homogenization. This suggests that while cultural convergence has not happened yet, given the direction of the findings, it may in the future.

CONCLUSIONS

It is known that most cultures are stable over time and changes that do happen often come from the outside (Hofstede, 2001). The Internet has had some profound impacts on the globe by helping to open up world-wide communication and providing corporations the opportunity to operate in international marketplaces. In order to be successful, companies operating in this setting must be able to build, manage and service information systems in a dynamic, constantly changing environment. Clearly, culture plays an important role and corporations ignoring this component do so at great risk. It has been argued that the Internet will have a homogenizing effect thus making cultural considerations in the online environment less important. However, research undertaken in the early days of the Internet (Robbins, & Stylianou, 2001-2002, Winter) did not support this belief. Today, with regards to the language(s) used in global web sites, our findings point to an overall minor movement towards less diversity. In agreement, the analysis of web cultural indicators indicates that, although there is still evidence of some cultural diversity, in the last ten years there has been modest movement towards homogenization. The implication of these results is that cultural considerations on the Web are still important, although to a lesser degree. Multinationals need to monitor the changes recorded by this study, but in the mean time continue designing web sites that are sensitive to the cultural differences that may exist in the markets they serve.

In conclusion, the two parts of this longitudinal study were based on Hofstede's cultural dimensions and country clusters (Hofstede, 1980). While Hofstede's work has been widely accepted and the most often used in cultural studies, there are those that

would argue his work no longer is valid given the tremendous changes that have happened in the world since he collected his data used to support the identification of cultural dimensions. It may be considered a limitation of this study that it relied exclusively on Hofstede's cultural dimensions. Therefore, future studies should be conducted using other cultural dimensions. Furthermore, it is not easy to capture cultural richness using a survey instrument, so future research should experiment with other research methodologies. Finally, it was not the purpose of this research to pursue whether or not it is appropriate for global corporations to develop homogeneous web pages. Additional research will be needed to provide answers to that question.

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