

## WEB SITE LOCALIZATION IN THE CHINESE MARKET

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### ABSTRACT

After content analyzing 100 multinational companies' webpages for American and Chinese consumers respectively, this study validates Singh et al.'s [2009] localization framework (i.e., cultural customization, content localization and translation quality) in the Chinese market and present best practices in localizing websites for the Chinese market.

Key words: Website localization; Chinese market; Cultural customization; Content localization; Translation quality

### 1. Introduction

The phenomenal growth of the Internet since the mid 1990s is changing the economy fundamentally. Since then, the Internet has become more than a simple and effective way to exchange e-mails and documents; it is emerging as a critical backbone of commerce. The growth of the Internet also has prompted the proliferation of electronic commerce, or e-commerce. U.S. retail e-commerce has grown 14.3 percent from 2007 to 2008 and U.S. retail e-commerce will be about \$182.5 billion by 2010 [Grau 2008].

The e-commerce proliferation happens not only in the developed countries, but also in developing countries. According to UNCTAD, at the end of 2002, e-commerce consumers in developing countries accounted for 32% of the world's 591 million Internet customers, up from 28% in 2001, with predictions of 50% by 2008 [UNCTAD, 2003]; The e-commerce proliferation does not solely belong to English-speaking countries. Global Reach, a marketing communications consultancy firm, found only about 48% of the world's online population is English-speaking. European languages accounted for 29% of the rest of the online users and Asian languages accounted for 23%. According to IDC, an e-business research company, 46% of the worldwide e-commerce spending came from Non-English-speaking countries in 2003 [Bayan 2001]. Therefore, the market opportunities are vast for e-commerce ventures in both developing and non-English-speaking countries. Yet despite the obvious importance of localization

for such international online activities, only 55% of U.S. companies have attempted to adapt their Web sites to the needs of developing-country and non-English-speaking customers [Tixier 2005].

Companies with a Web presence are struggling between two alternatives when it comes to reaching their international online consumers. Some businesses develop standardized, global Websites, whereas others localize their sites, according to the presence of cross-cultural differences in online consumer behavior [Luna et al. 2002, Simon 2001, Singh & Pereira 2005]. Research by Singh and Pereira [2005] and Cyr and Trevor-Smith [2004] demonstrate that to sell successfully to online global consumers, a firm must move beyond globalization to localize its Website, both linguistically and culturally. Byte Level Research therefore uses localization as one of its main criteria for rating companies in its Annual Globalization Report Card [Brandel 2007]. A recent cross-national study by Singh, Fassott, Chao, and Hoffman [2006] provides empirical evidence that cultural adaptations of Web content significantly increase consumers' purchase intentions and lead to favorable attitudes toward the site. Effective localization reportedly can produce a 200% increase in the e-sales of a company, outside its language borders [Tixier 2005].

Industry experts also agree that companies must build culturally relevant online communities to ensure the success of their Internet marketing efforts [Vence 2005]. In recent years, many companies have developed Websites that customers can use to acquire product information, purchase products, and diagnose product problems [Choe et al. 2006, Kim et al. 2005, Foo et al. 2000]. To attain these outcomes though, users need to be able to read, understand, and follow the text that appears on the Website. Such demands can be particularly challenging for users who do not speak the language of the site.

Traditional solutions have involved developing localized Websites that present the same information to users in different languages. Most users prefer to read Web content in their own language and make purchases from locally based Websites [Singh & Boughton 2005]. Yet translating entire sites can be expensive and time consuming. Therefore, the online localization efforts by leading corporations continue to lag, especially for marketing to consumers in multiple languages. This lag may also reflect the lack of guidance available to companies to help them evaluate current localization efforts and suggest areas for improvement.

To solve the problem of lacking guidance, Singh, Toy and Wright [2009] proposed a diagnostic framework for measuring Website localization and tested it in the U.S. Hispanic online market context. Their framework included four major constructs: content localization, cultural customization, local gateway, and translation quality. Content localization was used to measure how the company has localized the basic Web content to the target audience (e.g., the equivalency, relevancy, navigation, support, and currency of the Website's Hispanic content); cultural customization measured whether the Web content has culturally adapted to the target audience through things like the promotion of products and services unique to Hispanics and the use of appropriate colors, graphics, and Webpage design specifically for the Hispanic segment; local gateway evaluated the ease of finding the Webpages for the target audience (e.g., the placement of Hispanic gateway links and the use of Hispanic URLs); translation quality provided an assessment of how well the English Webpages have been translated into the local language (i.e., Spanish).

One objective of this current study is to explore the level of localization that multinational companies use when they target consumers in foreign developing countries (i.e., China) where English is not the primary language. The study also identifies best practices in web localization when targeting the Chinese market. Moreover, this paper attempts to validate Singh, Toy and Wright [2009] localization framework by measuring localization based on: (1) the extent of translation practiced for the Chinese sites, compared with U.S. English sites; (2) the quality of the Chinese translation in terms of conceptual equivalence, idiomatic equivalence, and vocabulary equivalence; (3) the amount of Web content localized for the Chinese audience compared with the U.S. audience; (4) the availability of unique products and services for the Chinese market; and (5) the extent to which the Chinese site appeals culturally to the Chinese audience. This framework is proposed by Singh et al. [2009] but has not been validated cross-nationally.

By addressing these points through an in-depth examination of foreign (i.e., Chinese) Websites in support of 100 multinational corporations, this study offers both managerial and theoretical insights. Specifically, the study extends the research on web localization and provides a cross-national validation of Singh et al. [2009] localization framework. Managers can use this framework to analyze their own company's localization efforts, as well as determine where their localization efforts stand compared with those of most multinational corporations.

## **2. Literature Review**

### **2.1. Web Site Localization: Challenges**

Through Website localization, the site gets customized such that it seems natural or "local" to members of a particular language or cultural group. To localize a Website successfully, the firm needs to address factors such as

language, culture, customs, color preferences, currency, and time zones in the site design [Singh & Boughton 2005, Brandel 2007, Cyr & Trevor-Smith 2004, Vyncke & Brengman 2010, Sinkovics et al. 2007, Yalcin et al. 2011].

Table 1 provides statistics regarding the top 10 languages used online in 2009. As it reveals, English-speaking persons constitute approximately 37.9% of the total current Internet users. The remaining 62.1% speak languages other than English as their native language. In addition, only about 28.3% (1.26 billion) of the global population (4.44 billion) consists of native English-speaking people. Although the population of English-speaking Internet users has grown 237% between 2000 and 2009, this rate of growth still is less than the global average growth rate (380.3%) during the same period. Therefore, the importance of languages other than English online continues to increase.

Table 1: Top Ten Languages Used in the Web

<b>Top Ten Languages Used in the Web ( Number of Internet Users by Language )</b>					
Top Ten Language in the Internet	Internet Users by Language	Internet Penetration by Language	Growth in Internet ( 2000 – 2009 )	Internet Users % of Total	World Population for this Language (2009 Estimate)
English	478,442,379	37.9 %	237.0 %	27.6 %	1,263,830,976
Chinese	383,650,713	27.9 %	1,087.7 %	22.1 %	1,373,859,774
Spanish	136,524,063	33.2 %	650.9 %	7.9 %	411,631,985
Japanese	95,979,000	75.5 %	103.9 %	5.5 %	127,078,679
French	78,972,116	18.6 %	547.4 %	4.6 %	425,622,855
Portuguese	73,052,600	29.5 %	864.3 %	4.2 %	247,223,493
German	64,593,535	67.0 %	133.2 %	3.7 %	96,389,702
Arabic	50,422,300	17.3 %	1,907.9 %	2.9 %	291,798,743
Russian	45,250,000	32.3 %	1,359.7 %	2.6 %	140,041,247
Korean	37,475,800	52.7 %	96.8 %	2.2 %	71,174,317
Top 10 Languages	1,444,362,506	32.5 %	363.5 %	83.3 %	4,448,651,771
Rest of the Languages	289,631,235	12.5 %	487.1 %	16.7 %	2,319,153,437
World Total	1,733,993,741	25.6 %	380.3 %	100.0 %	6,767,805,208

**Acknowledgement**

Source: Internet World Stats – [www.internetworldstats.com/stats7/htm](http://www.internetworldstats.com/stats7/htm). Estimated internet users are 1,733,993,741 for September 30, 2009. Copyright © 2009, Miniwatts Marketing Group.

In addition to language diversity, cultural differences demand localized Websites [Brandon 2001, Sears 2000, Sun 2001]. As Table 1 shows, the non-English-speaking population accounts for 71.7% of world population, and though some of these people may have learned English, it is not their primary language, and their cultures differ. In this respect, cultural differences represent another and separate factor to consider, as several researchers have distinguished [Aykin 2005, Nielsen 2000 1996 1993].

In the past 10 years, the online localization industry has grown as companies look for help designing localized, multilingual Websites and software applications for various cultures [Cyr & Lew 2003]. The localization industry is currently estimated to be worth \$8.8 billion; it is expected to reach \$12 billion in 2010 [DePalma & Beninato 2006]. Research by Cyr and Trevor-Smith [2004] has demonstrated that Website design preferences vary across cultures, such that several key localization variables predominantly affect users' perceptions of a site: language translation, layout, symbols, content and structure, navigation, and color.

Tixier [2005] also classifies the Websites of different U.S.-based companies with an international presence (e.g., banking, entertainment, car manufacturing, and fast food) into three categories: global sites, glocal sites, and local sites. Global Websites offer no cultural adaptation and cater only to Americans or specific English-speaking target markets. Glocal sites make some cultural adaptations to appeal to local markets, but they have not invested the resources necessary to create a truly localized site. Finally, local sites are designed to appeal specifically to local cultures and customs. However, few studies have attempted to provide a comprehensive analysis of Website localization efforts [Cyr & Lew 2003, Singh & Boughton 2005, Singh & Pereira 2005, Cyr & Trevor-Smith 2004, Tixier 2005].

## 2.2. Web Site Localization: Culture Customization

The Web is not culturally neutral but rather is filled with cultural markers [Barber & Badre 1998] that identify sites as unique to their local cultures. If Web users encounter foreign languages, signs and symbols, or culturally incongruent content, they likely feel more cognitive stress because they sense a lack of control over the interaction, which may cause them to lose focus [Luna et al. 2002]. Singh and Pereira [2005] define a culturally customized Website instead as one that is completely congruent with the culture of the target locale, which implies it is culturally adapted at perceptual, behavioral, and symbolic levels. In turn, culturally customized Websites require an in-depth understanding of target cultures that can be communicated adequately over the Web. When Web users confront these culturally congruent Websites, they feel less anxiety and find it easier to interact with the site [Barber & Badre 1998]. That is, users in a specific country prefer Website features that have been customized to their needs or preferences in terms of navigation, security, product information, customer service, shopping tools, and so on [Fink & Laupase 2000, Luna et al. 2002, Simon 2001, Tsiriktsis 2002].

Empirical studies also support demand for Website localization in different country contexts. Ferranti [1999] finds that more than 75% of Korean online shoppers prefer Websites in Korean. Similarly, French and Spanish consumers exhibit strong preferences for sites in their local language [Lynch et al. 2001]. More evidence for localization comes from a recent survey of 2,400 worldwide Internet users, more than half of whom buy only from sites that present information in their local language [DePalma 2006].

Insufficient research addresses the importance of culture in Web communications, though several studies reveal that international consumers prefer locally adapted Web content [Fink & Laupase 2000, Luna et al. 2002, Simon 2001, Tsiriktsis 2002]. Singh, Zhao, and Hu (2005), in their examination of the cultural values depicted on Websites in China, India, Japan, and the United States, find that local Websites represent local cultural values. They further show that German, Chinese, and Indian consumers consider Websites for U.S. multinationals more effective when they have been adapted to their culture. Recently, Singh and Boughton [2005] have measured localization in terms of content adaptations to a locale that accommodate elements such as language, navigation structure, use of appropriate colors and graphics, providing a global gateway for different language sites, and offering culturally relevant content. They identified five Website categories based on these variables: standardized, proactive, global, localized, and highly localized Websites. The first three categories do not provide any localized content; for example, standardized Websites provide the same content in the same language for both domestic and international users. Proactive sites have standardized content but provide contact information for foreign subsidiaries or operations. Global websites go one step further by providing both contact information about their foreign subsidiaries and basic country-level information that describes their activities and operations in different countries. In contrast, localized and highly localized Websites provide some customization for international users. Localized Websites include country-specific times, dates, zip codes, and number formats; they also might provide links to country-specific Webpages (with multiple language options), though such pages are not located throughout the site. Finally, highly localized Websites have sophisticated, country-specific pages that are easy to find and navigate.

Singh and Pereira [2005] provide one of the few frameworks for Web marketers and localization professionals to measure web cultural customization. Their Website cultural customization framework is based on the cultural values proposed by Hofstede [1980] and Hall [1976] and demonstrates how cultural values, such as individualism/collectivism, masculinity/femininity, power distance, uncertainty avoidance, and high and low context orientations, might be depicted on Websites to make them more congruent with cultures that score higher or lower on these cultural values. Such knowledge is beneficial for managers trying to determine a set of etic cultural values that they can apply to create sites for different locales.

## 3. Methodology

### 3.1. Sample

This study used the online Chinese market to test Singh, Toy and Wright [2009] framework, because this group holds enormous potential for global businesses. There are currently 383 million Chinese online consumers (see Table 1); they represent 80.1% of the total non-English-speaking Internet user population. We analyzed the websites of Fortune 500 companies first to ensure that they do business in China and have websites for China. This screening reduced our sample size. Then we closely looked at their Chinese websites to ensure that they have all web page content translated into simplified Chinese. This step actually further lowered our sample size. Previous studies have also found that several top multinational companies do not have localized websites for different countries. For example, study by Singh and Boughton [2005] found that out of the 900 Forbes international companies only 598 companies were found to target international customers.

Furthermore, we examined 15-20 web pages per web site for content analysis for all culture categories included in our framework. There are differences among the characteristics of these companies' web sites as we saw during

our examination of web sites. Some companies do not include much information, causing data unavailability. To ensure data availability, we chose to examine the web sites of companies on which data were available. Also, there is not much industry difference in our samples as we paid attention to equalize the number of companies in each group with respect to industry. Therefore, our final sample size is 100. Each Website was equipped with both English and Chinese Webpages. Please see Table 2 for the company list and Table 3 for the industry classification for the sample. Around 20% of the sample companies were in the computer-related industries followed by consumer consumption good industries (15%), automobile industry (13%) and machinery industry (12%).

Table 2: Company List

<b>Company List (N=100)</b>			
3M	Deere	IKEA	Netgear
ABB	Dell	Imation	NewBalance
Accenture	DHL	IngramMicro	Nortel
Acuvue (J&J)	Discovery	Intel	Novartis
Adidas	Disney	Jaguar	OTIS (United Technologies)
Adobe	Durex	Jeep	Paypal
Alcoa	Ebay	Johnson&Johnson	PepsiCo
AMEX	EDS	Kingston	Pfizer
Apple Computer	Emerson Electric	Kodak	Ping
Avis	Ericsson	Land Rover	PizzaHut
BMS	Exxon Mobil	Levis	Procter & Gamble
BMW	FedEx	Logitech	Saab
Boeing	Ford	Manpower	Starbucks
Cadillac	General Electric	Mastercard	Symantec
Cartier	General Motors	McAfee	Unilever
CAT	Goldman Sachs Group	McDonald's	United Parcel Service
Chanel	Goodyear	Mercedes	VISA
Chevrolet	Google	Merck	Volvo Cars
Chrysler	Grundfos	MetLife	Walmart
Cisco	H&S	Microsoft	Whirlpool
Clinique	Hewlett-Packard(HP)	Motorola	Wonderware
Coca-Cola	Honeywell	Mozilla	Wyeth
Colgate	HSBC	MSN	Xerox
Creative	IBM	MTV	Yahoo
CSC	IDC	Nestle	

### 3.2. Content Analysis

Two Chinese coders received training in the specific coding scheme performed a content analysis according to the framework for this research. Both coders were native Chinese speakers. They analyzed a total of 100 Websites provided by multinational companies as a basis of comparison. For each company site, this study content analyzed approximately 80 Webpages (40 U.S. and 40 Chinese). This process took several months to complete.

Content analysis provides a widely used tool for conducting objective, systematic and quantitative analyses of communication content [Berelson 1952, Kassarian 1977]. Several previous studies have used content analysis to analyze Web communications and design elements [Ju-Pak 1999, Singh & Boughton 2005]; in this study, it serves to identify Web design elements and the Website structure. The unit of analysis was a company's entire site for U.S. English-speaking and Chinese-speaking consumers around the world. As mentioned, two bilingual raters (fluent in both English and Chinese) performed content analyses of thousands of Webpages across the 100 sample Websites. To ensure the results were reliable, an inter-rater reliability test confirmed the percentage of agreement between raters coding the same Webpage for a specific set of parameters was high (Kappa = 0.83 with  $p < 0.001$ ).

The study used the Website localization variables proposed by Singh et al. [2009] and tried to validate them by measuring Web localization in the online Chinese market context. Table 4 contains the construct definitions, measurement, and sources. The framework includes three primary constructs to categorize the extent of a Website's localization: content localization, cultural customization, and translation quality.

Table 3: Industry Classification for the Sample

<b>Industry Classification for the Sample</b>					
Industry	Frequency	Percent	Valid Percent	Cumulative Percent	
Automobile	13	13.0	13.0	13.0	
Entertainment/Media	3	3.0	3.0	16.0	
Financial Services/Insurance	6	6.0	6.0	22.0	
Computer-related	19	19.0	19.0	41.0	
Internet-based	5	5.0	5.0	46.0	
Consumer Consumption Goods	15	15.0	15.0	61.0	
Service-related	7	7.0	7.0	68.0	
Telecom	3	3.0	3.0	71.0	
Travel-related	1	1.0	1.0	72.0	
Machinery	12	12.0	12.0	84.0	
Retail	3	3.0	3.0	87.0	
Food	6	6.0	6.0	93.0	
Oil	1	1.0	1.0	94.0	
Pharmaceutical	5	5.0	5.0	99.0	
Other	1	1.0	1.0	100.0	
<b>Total</b>	<b>100</b>	<b>100.0</b>	<b>100.0</b>		

Table 4: Construct Definition, Measurement and Sources

<b>Construct Definition, Measurement and Sources</b>		
Constructs/ measurement	Definition	Sources
Cultural Customization	Content adaptation to local culture through elements such as the promotion of products and services unique to Chinese consumers, as well as the use of appropriate colors, graphics, and designs <ul style="list-style-type: none"> <li>• Color and Aesthetics</li> <li>• Chinese Cultural Symbols</li> <li>• Chinese Cultural Values</li> <li>• Unique Products/Services for China</li> <li>• Web Page Structure</li> </ul>	Singh & Bartikowski 2006, Singh & Boughton 2005, Singh & Pereira 2005
Content Localization	The equivalency, relevancy, navigation, support, and currency of the Website’s Chinese content <ul style="list-style-type: none"> <li>• Customer Support</li> <li>• Policies</li> <li>• Navigation</li> <li>• E-Commerce Readiness</li> <li>• Content Depth</li> </ul>	Cyr & Lew 2003, Singh & Boughton 2005
Translation Quality	An assessment of how well the English Website pages have been translated into Chinese, on the basis of conceptual, vocabulary, and idiomatic translation equivalence <ul style="list-style-type: none"> <li>• Translation Quality</li> </ul>	Singh & Pereira 2005

The content localization construct addresses the equivalency, relevancy, navigation, support, and currency of the Website's Chinese content. The pertinent variables therefore provide a general understanding of how the company has localized its basic Web content to appeal to the Chinese audience, as derived and adapted from previous studies by Cyr and Lew [2003] and Singh and Boughton [2005]. The cultural customization construct was adapted from studies by Singh and Bartikowski [2006], Singh and Boughton [2005], and Singh and Pereira [2005]. Specifically, in this research context, the cultural customization measures focus on content adaptation to local culture through elements such as the promotion of products and services unique to Chinese consumers, as well as the use of appropriate colors, graphics, and designs. The translation quality construct provides an assessment of how well the English Webpages have been translated into Chinese, on the basis of conceptual, vocabulary, and idiomatic translation equivalence, as proposed by Singh and Pereira [2005].

#### 4. Results

The test of the framework employed reliability factor analysis; the results of this factor analysis produced three factors: cultural customization, content localization, and translation quality. Table 5 provides their factor loadings, percentage of variance, and internal consistency. Cultural customization (Cronbach's Alpha=0.774) includes color and aesthetics, Chinese cultural symbols, Chinese cultural values, unique Chinese products, and the Webpage's structure. The key elements of the second factor, which relates to content localization (Cronbach's alpha=0.644), are customer support, policies and procedures, navigation, e-commerce readiness, and content depth. The test for discriminant validity (i.e., degree to which measures of constructs are distinct) examines the correlation between each pair of latent constructs [Anderson & Gerbing 1988]. If the two latent constructs are distinct, their correlation should be unidimensional. In Table 6 and 7, we compute the 95 % confidence interval for the "correlation" between two latent constructs, whether the confidence interval encompass 1 demonstrates discriminant validity or not, the smaller the value of the correlation, the greater the degree of discriminant validity. Our results indicate that for both cultural customization and content localization, none of the correlations indicates values beyond the acceptable level .6 [Anderson & Gerbing 1988]; thus, discriminant validity can be assumed. The third factor extracted includes translation quality as a single-item variable.

This research represents one of the first academic attempts to cross-nationally validate the diagnostic framework for measuring Website localization proposed by Singh et al. [2009]. The three factors identified in this study—cultural customization, content localization, and translation quality—provide some useful empirical guidance for both managers and researchers.

Table 5: Factor Analysis Results

<b>Factor Analysis Results</b>			
Constructs/Measured Variables	Factor Loading	% of Variance	Internal Consistency
<b>Cultural Customization</b>			
• Color and Aesthetics	0.853		
• Chinese Cultural Symbols	0.809		
• Chinese Cultural Values	0.492	24.497 %	$\alpha = 0.774$
• Unique Products or Services for China	0.450		
• Web Page Structure	0.656		
<b>Content Localization</b>			
• Customer Support	0.647		
• Policies	0.573		
• Navigation	0.741	20.465 %	$\alpha = 0.644$
• E-Commerce Readiness	0.513		
• Content Depth	0.737		
<b>Translation Quality</b>			
• Translation Quality	0.914	9.589 %	

Table 6: Correlation Matrix for Cultural Customization

<b>Correlation Matrix for Cultural Customization (N=100)</b>					
	Unique Products	Cultural Symbol	Cultural Values	Web Page Structure	Color/Aesthetics
Unique Products	1				
Cultural Symbol	.289** (.004)	1			
Cultural Values	.062 (.541)	.374** (.000)	1		
Web Page Structure	.271** (.006)	.422** (.000)	.106 (.295)	1	
Color/Aesthetics	.259** (.009)	.566** (.000)	.294** (.003)	.564** (.000)	1

\*. Correlation is significant at the 0.05 level (2-tailed).  
 \*\*. Correlation is significant at the 0.01 level (2-tailed).

Table 7: Correlation Matrix for Content Localization

<b>Correlation Matrix for Content Localization (N=100)</b>					
	Customer Support	Policies	Navigation	E-Commerce Readiness	Content Depth
Customer Support	1				
Policies	.203* (.042)	1			
Navigation	.293** (.003)	.359** (.000)	1		
E-Commerce Readiness	.270** (.007)	.162 (.107)	.220* (.028)	1	
Content Depth	.328** (.001)	.348** (.000)	.417** (.000)	.319** (.001)	1

\*. Correlation is significant at the 0.05 level (2-tailed).  
 \*\*. Correlation is significant at the 0.01 level (2-tailed).

4.1. Cultural Customization

The colors used on a site should be appropriate to the Chinese culture. Red is a lucky color that expresses joy, prosperity, luck, and happiness. Therefore, the use of red or a carefully selected shade of red (e.g., burgundy, as on the MTV Chinese site) can improve the visual imagery of the site. Yellow is the imperial color of power, so combining red and shades of yellow may insinuate happiness, power, and luck. The use of these colors in background images and borders would be ideal. Green and blue symbolize growth, harmony, and longevity. Therefore, a site might use shades of red and yellow as the primary colors, with green to demarcate boxes and images. However, the results in this study indicate that only about 20% of the studied sites use colors and aesthetics thus customized to Chinese culture.

Table 8: Cultural Customization Construct

<b>Cultural Customization Construct</b>				
	Count	Percent	Valid Perc.	Cum. Perc.
<b>Color and Aesthetics</b>				
• Colors and aesthetics look very western	3	1.6	3.0	3.0
• Colors and aesthetics look somewhat western	26	13.8	26.3	29.3
• Colors and aesthetics look somewhat Chinese	41	21.7	41.4	70.7
• Colors and aesthetics look Chinese	28	14.8	28.3	99.0
• Colors and aesthetics look very close to Chinese	1	.5	1.0	100.0
Total	99	52.4	100.0	
<b>Chinese Cultural Symbols</b>				
• Graphics/images look very western	4	2.1	4.0	4.0
• Graphics look somewhat western	55	29.1	55.0	59.0
• Graphics and Images look somewhat Chinese	15	7.9	15.0	74.0
• Graphics and Images look Chinese	24	12.7	24.0	98.0
• Graphics look very close to Chinese culture	2	1.1	2.0	100.0
Total	100	52.9	100.0	
<b>Chinese Cultural Values</b>				
• Lack of Chinese cultural values	37	19.6	37.0	37.0
• Some cultural values seen	33	17.5	33.0	70.0
• 3-4 instances of cultural values seen	23	12.2	23.0	93.0
• More than 5 instances of cultural values seen	6	3.2	6.0	99.0
• Several Instances of cultural values seen	1	.5	1.0	100.0
Total	100	52.9	100.0	
<b>Unique Products or Services for China</b>				
• Products and services look very western	3	1.6	3.0	3.0
• Products and services look somewhat western	23	12.2	23.0	26.0
• Products and Services look somewhat catered to Chinese	68	36.0	68.0	94.0
• Few products and services are unique to Chinese	2	1.1	2.0	96.0
• A whole range of unique products and services	4	2.1	4.0	100.0
Total	100	52.9	100.0	
<b>Web Page Structure</b>				
• Standardized	8	4.2	8.0	8.0
• Mostly Standardized	34	18.0	34.0	42.0
• Some Differences	14	7.4	14.0	56.0
• Localized	27	14.3	27.0	83.0
• Highly Localized	17	9.0	17.0	100.0
Total	100	52.9	100.0	

With regard to Chinese cultural symbols, site designers should recall that Chinese culture is based on the Confucian values of balance and harmony, the Yin and Yang. For example, Frito-Lay discovered that certain flavors and colors were associated with the Yin and Yang, so it developed special packaging with pastel colors for summer to emphasize the presence of the Yin [Hawkins et al. 2007]. The use of nature imagery and harmony appeals also may help the site appear more in tune with Chinese culture. China's traditional society is marked by symbols, rituals, and contextual elements. For example, marketers have recognized that when they price services, they should use combinations ending in 98 or 88, which imply the road to prosperity, but avoid the use of 4 and 7, which relate to death. The results of this analysis show that only about 13% of the studied sites contain symbols customized to Chinese culture.

In terms of Chinese cultural values, in the well-established cultural typology suggested by Hofstede [1980], Chinese society is a collectivist society, with high power distance and masculinity scores. Thus, sites should play off these values; only about 15% of the Websites in this study do so.

The variable pertaining to unique products or services for China attempts to measure the extent to which multinationals offer services or products that are unique to China. The analysis reveals that only about 3% of the sites offered anything close to unique products to a Chinese audience.

Finally, the Webpage structure measures whether the company has created a Webpage layout and structure that is unique to the local market, in its attempt to ensure the Website looks and feels localized to the Chinese audience. However, only 23% of the sites' layout and look and feel could be categorized as localized or highly localized.

Table 9: Content Localization Construct

<b>Content Localization Construct</b>				
	Count	Percent	Valid Perc.	Cum. Perc.
<b>Customer Support</b>				
• No online support	1	.5	1.0	1.0
• Some basic support	20	10.6	20.0	21.0
• Basic support in form or customer service contact	39	20.6	39.0	60.0
• Several pages of Customer support	31	16.4	31.0	91.0
• Customer support available equivalent to English pages	9	4.8	9.0	100.0
				0
	Total	100	52.9	100.0
<b>Policies</b>				
• Not available	8	8.0	8.0	8.0
• Only one or two of the policies	16	16.0	16.0	24.0
• 2-3 policies available	24	24.0	24.0	48.0
• Most policies available	23	23.0	23.0	71.0
• All Policies available	29	29.0	29.0	100.0
				0
	Total	100	100.0	100.0
<b>Navigation</b>				
• Very Poor	4	4.0	4.0	4.0
• Poor	8	8.0	8.0	12.0
• Few Navigational elements	28	28.0	28.0	40.0
• Navigation elements seen	41	41.0	41.0	81.0
• Navigation Equivalent to English Site	19	19.0	19.0	100.0
				0
	Total	100	100.0	100.0
<b>E-Commerce Readiness</b>				
• No e-commerce seen	13	13.0	13.0	13.0
• Just product information	15	15.0	15.0	28.0
• Extensive prod. Info. But no shopping	63	63.0	63.0	91.0
• e-commerce present	7	7.0	7.0	98.0
• E-commerce equivalent to English Site	2	2.0	2.0	100.0
				0
	Total	100	100.0	100.0
<b>Content Depth</b>				
• Just basic store location	1	1.0	1.0	1.0
• Two or Three sections from English page are translated	12	12.0	12.0	13.0
• 4- 5 sections from English page are translated	68	68.0	68.0	81.0
• All the sections from the English page are translated	19	19.0	19.0	100.0
				0
	Total	100	100.0	100.0

4.2. Content Localization

With regard to customer support, the variable measures the extent to which the Websites dedicated to Chinese consumers also provided customer support in Chinese. Only 5% of the sites offered Chinese-language support that was equivalent to that on the English-language site. The policies variable, which measured the availability of e-

commerce information about shipping policies, returns, privacy, terms of use, copyrights, and so on, indicates the best performance among the various measures. More than half the multinational sites had translated most or all of their policies into Chinese. The navigation variable measured the navigational ease in terms of the sitemap, local search, and navigation buttons. However, only 19% of the studied sites included navigation elements equivalent to those of the English-language site. The e-commerce readiness variable measures the extent to which the Chinese site has e-commerce information available; only about 9% of the Chinese sites had some or an equivalent level of e-commerce readiness compared with the U.S. English site. Finally, the content depth variable measures the extent of content made available to Chinese online users, including contact, company, and product information, services, and shipping and handling details. Only 20% of the sites had translated all these sections into Chinese.

#### 4.3. Translation Quality

This factor pertains to the quality of the Chinese translation effort on the main home page (Chinese) and a couple of additional pages. The appropriate use of words, as well as conceptual equivalence, idiomatic equivalence, and vocabulary equivalence, were carefully examined. Although almost 83% of the sites achieved good translation quality, only 3% were ranked as excellent. Overall, it seems that multinationals focus primarily on translation as their main localization variable when they localize their sites for China.

Table 10: Translation Quality Construct

Translation Quality Construct				
	Count	Percent	Valid Perc.	Cum. Perc.
Translation Quality				
• Poor translation quality	1	1.0	1.0	1.0
• Translation quality is okay	13	13.0	13.0	14.0
• Translation quality is good	83	83.0	83.0	97.0
• Translation quality is excellent	3	3.0	3.0	100.0
Total	100	100.0	100.0	

## 5. Best Practices

For content localization, cultural customization, and translation quality, we identify several companies' Chinese Websites as best practices which can serve as benchmark for multinational companies' future Website localization efforts. In addition, several cross-sectional analyses were run based on the 4 major industries in the sample (i.e., computer-related industries, consumer consumption good industries, automobile industry and machinery industry), so we can see which industry, on average, performs better in the customer support, Webpage structure, unique product and translation quality categories.

### 5.1. Customer Support

The support page on Dell China site covers very detailed information on Dell support service to the customers. Dell support service starts from its customer segments. According to each customer segment, it provides different types of services. There is very detailed contact information under each service in Dell China site. The contact information includes email address, phone number, fax number, online chat and local maintenance center, which is equivalent to that of Dell global site. Based on the cross-sectional analysis (see Table 11), companies in the computer-related industry did the best job in this category with 52.6% on "several pages of customer support" and 15.8% on "customer support available equivalent to English pages."

### 5.2. Webpage structure

The website homepage of Wal-Mart China looks quite different from that of Wal-Mart global and is highly localized. Wal-Mart global site is designed as a place for product searching and online shopping. The company information is placed at the bottom of the site. This is what most of the retailers do in the U.S. Wal-Mart China site is designed like an official website of a big company instead of an online shopping website. The China site basically talks about Wal-Mart as a corporate through listing company introduction, social responsibility, latest news, supplier services, food security, promotion information, etc. and the site doesn't provide online shopping service. As we all know, if a foreign company wants to grow well in China, it needs to collaborate with Chinese government actively. Government emphasizes a lot on food quality and security cross the nation. As a retailer, Wal-Mart China especially provides a "Food Security" sector on its homepage, which shows that the company actively corresponds to Chinese government policy and further builds its socially responsible image locally. The menu tabs on Wal-Mart global site

is vertically listed, while those on its China site is horizontally listed. Based on the cross-sectional analysis (see Table 12), companies in the automobile industry did the best job in this category with 30.8% on “localized” and 15.4% on “highly localized.”

Table 11: Which Industry Performed the Best in Customer Support

Which Industry Performed the Best in Customer Support							
		No online support	Some basic support	Basic support in form or customer service contact	Several pages of Customer support	Customer support available equivalent to English pages	Total
	Count	0	4	8	1	0	13
Automobile	% within Industry	.0%	30.8%	61.5%	7.7%	.0%	100.0%
	% within Support	.0%	36.4%	38.1%	5.6%	.0%	22.0%
	Count	1	1	4	10	3	19
Computer-related	% within Industry	5.3%	5.3%	21.1%	52.6%	15.8%	100.0%
	% within Support	100.0%	9.1%	19.0%	55.6%	37.5%	32.2%
	Count	0	4	4	3	4	15
Consumer Consumption Goods	% within Industry	.0%	26.7%	26.7%	20.0%	26.7%	100.0%
	% within Support	.0%	36.4%	19.0%	16.7%	50.0%	25.4%
	Count	0	2	5	4	1	12
Machinery	% within Industry	.0%	16.7%	41.7%	33.3%	8.3%	100.0%
	% within Support	.0%	18.2%	23.8%	22.2%	12.5%	20.3%
	Count	1	11	21	18	8	59
Total	% within Industry	1.7%	18.6%	35.6%	30.5%	13.6%	100.0%
	% within Support	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



Figure 1: Web page structure

Table 12: Which Industry Performed the Best in Webpage Structure

Which Industry Performed the Best in Webpage Structure							
		Standardized	Mostly Standardized	Some Differences	Localized	Highly Localized	Total
Automobile	Count	0	5	2	4	2	13
	% within Industry	.0%	38.5%	15.4%	30.8%	15.4%	100.0%
	% within Web Page Structure	.0%	20.8%	20.0%	33.3%	33.3%	22.0%
Computer-related	Count	2	11	3	3	0	19
	% within Industry	10.5%	57.9%	15.8%	15.8%	.0%	100.0%
	% within Web Page Structure	28.6%	45.8%	30.0%	25.0%	.0%	32.2%
Consumer Consumption Goods	Count	4	6	0	3	2	15
	% within Industry	26.7%	40.0%	.0%	20.0%	13.3%	100.0%
	% within Web Page Structure	57.1%	25.0%	.0%	25.0%	33.3%	25.4%
Machinery	Count	1	2	5	2	2	12
	% within Industry	8.3%	16.7%	41.7%	16.7%	16.7%	100.0%
	% within Web Page Structure	14.3%	8.3%	50.0%	16.7%	33.3%	20.3%
Total	Count	7	24	10	12	6	59
	% within Industry	11.9%	40.7%	16.9%	20.3%	10.2%	100.0%
	% within Web Page Structure	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

5.3. Unique product

EBay China site provides products from China and other countries. The site offers a whole range of products uniquely designed for the Chinese consumers. Here are some examples. There are Chinese tea, locally special foods, Chinese health-improvement products, Chinese snacks and etc. invented and produced by Chinese manufacturers for the Chinese consumers, and they can't be found on EBay global and other countries' sites. Except consumer consumption good industry, companies in automobile, computer-related, and machinery industries performed poorly in this category (see Table 13).

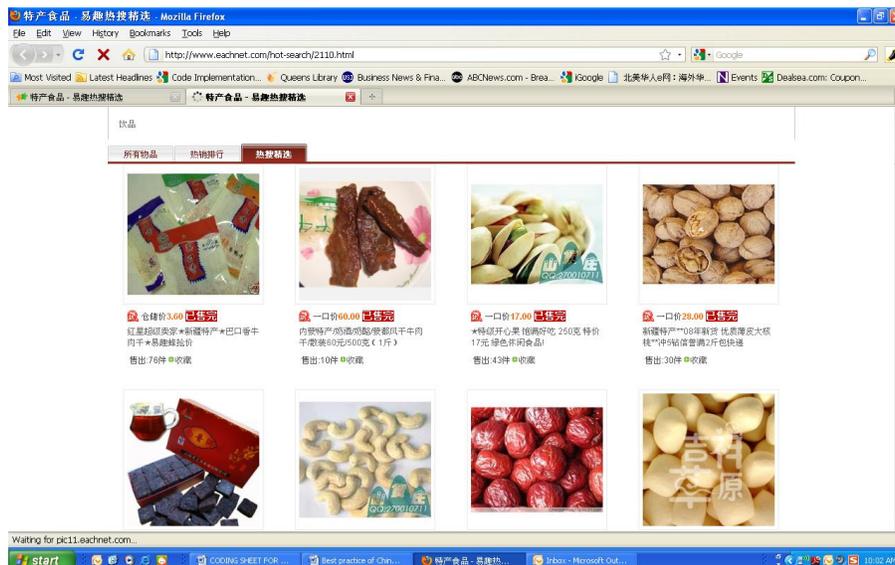


Figure 2: Unique Products

Table 13: Which Industry Performed the Best in Unique Product

Which Industry Performed the Best in Unique Product							
		Products and services look very western	Products and services look somewhat western	Products and Services look somewhat catered to Chinese	Few products and services are unique to Chinese	A whole range of unique products and services	Total
	Count	1	8	4	0	0	13
Automotive	% within Industry	7.7%	61.5%	30.8%	.0%	.0%	100.0%
	% within Unique Products	33.3%	44.4%	11.4%	.0%	.0%	22.0%
	Count	2	4	13	0	0	19
Computer-related	% within Industry	10.5%	21.1%	68.4%	.0%	.0%	100.0%
	% within Unique Products	66.7%	22.2%	37.1%	.0%	.0%	32.2%
	Count	0	2	10	2	1	15
Consumer Consumption Goods	% within Industry	.0%	13.3%	66.7%	13.3%	6.7%	100.0%
	% within Unique Products	.0%	11.1%	28.6%	100.0%	100.0%	25.4%
	Count	0	4	8	0	0	12
Machinery	% within Industry	.0%	33.3%	66.7%	.0%	.0%	100.0%
	% within Unique Products	.0%	22.2%	22.9%	.0%	.0%	20.3%
	Count	3	18	35	2	1	59
Total	% within Industry	5.1%	30.5%	59.3%	3.4%	1.7%	100.0%
	% within Unique Products	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

5.4. Translation quality

Clinique China site’s product names and concepts are precisely translated with appropriate words and these words are easy to understand. For example, Clinique China will launch the new product, “Clinique repair wear laser focus wrinkle & UV damage corrector”. On the Chinese site, the product name is translated into “倩碧焕妍活力精华露”. The words “焕妍活力” fully expresses the product concepts not only from the functional perspective but also from the emotional perspective. In addition, Chinese consumers sometimes don’t quite understand the new technology concept, so the Chinese translation doesn’t include the word “laser” and avoids talking about this. On the other hand, the translated words on the Chinese site are read with fluency and no awkwardness. For example, “Gentle, versatile makeup removal” is translated into “温和，全面的卸妆体验”. Here the words “体验” is added in the translation, while there is no English word for “体验” in the English name of this product. So the Chinese translation has made the Chinese name of the product sound comprehensible, easy and smooth. There are appropriate uses of idiomatic equivalence. For instance, “expert tips” is translated into “专家小贴士”. The usage of “小贴士” is quite idiomatic and localized. In general, the translation is with appropriate conceptual equivalence, idiomatic equivalence, and vocabulary equivalence.

6. Discussion & Implications

Based on the analysis it is clear that multinational companies are not really adequately localizing their sites for the Chinese market. The primary focus seems to be dealing with translation of the content in Chinese. It seems most companies equate localization to translation. This myopic view of equating localization to translation could be explained by the lack of sensitivity by companies to other socio-cultural variables. Companies seem to not realize that true localization goes beyond simple translation and incorporates other issues such as cultural values, symbols, colors, navigation, structures and etc [Singh & Pereira 2005]. Another reason for lack of localization practiced by companies is the lack of education, training and reliable frameworks to help companies better understand the intricacies of website localization. We hope the cross-national validation of Singh et al. [2009] localization

framework in this study will provide managers with a reliable and validated framework to guide their web localization efforts. Moreover the study also provides insights into localizing Chinese sites, which according to a survey of multinational executives is one of the most difficult markets to localize [Petro et al. 2007].

Another reason for companies to not fully localize their websites is the lack of professional help from the localization industry. The localization industry provides translation and localization services to companies wanting to create multilingual software, website and other content. In the past years the focus of large and small localization companies has been primarily toward cost leadership based on providing cost effective translation services aided by automating translation workflow. In this business model localization service providers primarily compete with each other on basis of translation cost and translation process automation and fail to provide fully integrated localization solutions requiring cultural and content customization. This shortsightedness of localization service providers seems to originate primarily due to the leadership of such companies which happens to be mostly trained in translation and not in business or cultural issues. Lee [2005] recommends that for the Localization industry to be viable it needs to expand its role from just a translation or technology-solution provider to truly embracing the wider concept of localization by providing international marketing expertise. We hope the insights from this study will not only be valuable to multinational companies wanting to extend their web presence globally but also to localization services providers, who can use the recommendations of the localization framework to offer a more holistic localization service offering incorporating translation, content localization and cultural customization. Furthermore, the companies can use the validated web localization framework to help benchmark their localization efforts against their competitors'. The best practices identified in this study can also provide valuable insights into localizing websites for the Chinese market in terms of cultural markers like colors, symbols, icons and other stylistic elements.

## 7. Conclusion and Future Research

The goal of this study was to cross-nationally validate and refine the web localization framework proposed by Singh et al. (2009) and present best practices in localizing websites for the Chinese market. The study validated the framework in the Chinese market which is one of the emerging economies not only in general sense but also with respect to e-commerce. However, the contribution of this study is only limited to measuring the front end of international web design. The framework proposed by Singh et al. [2009] and its validation and refinement in this study does not address the back end issues dealing with international web design. Internationalization or i18n needs to be fully implemented for proper localization to occur. The Internationalization step ensures that a modular approach to design is taken wherein the software/website supports and is able to incorporate international characters, date and time formats, number formats, address fields, and other locale specific elements. Thus future studies should complement the web localization framework with a framework that can help companies and web designer adequately measure and assess their internationalization (i18n) efforts. Furthermore the study also needs to test this framework in not only other countries but also other industries. The web localization framework in this study is primarily geared toward measuring web localization on business to consumer sites. B2B e-commerce relates to various forms of electronic platforms, including company websites and e-marketplaces that facilitate transactions, interactions, and collaborations among multiple firms. B2C e-commerce on the other hand is more geared towards selling and communicating with masses of consumers rather than a select group of business clientele. Thus future research is also needed to identify how localization of B2B websites differs from B2C websites. With regard to the methodology, Chinese companies' Chinese Websites should also be analyzed in the future to find out their localization efforts. The results then can serve as a baseline to be compared with the findings in this current study. Also, it might be useful for the researchers to consider including a criteria item for each of the constructs and an overall localization satisfaction item in the future studies. Data could be collected from the coders on those items and researchers could test the constructs as formative and then test all the constructs in a nomological net. This would enhance the theoretical contribution of the study.

In conclusion, assessment of global e-business orientation and website localization can help companies measure the effectiveness of their global e-business effort. Having a web localization assessment framework helps companies to have measureable goals and milestones to achieve leading to enhancements in web globalization efficiencies. Such assessment can provide companies useful information on not only how they are doing but also how their global e-business efforts compare with those of their competitors.

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