Design Preferences of U.S. and Chinese
Virtual Communities: An Exploratory Study

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Abstract

This paper explores the design preferences of virtual communities in two cultural groups – the U.S. and China. The design preferences studied are web design, tools used and types of virtual communities preferred. Content analysis was employed to study twenty of the most popular Chinese and U.S. virtual communities. The study found that there are differences in the preference for the type of virtual communities and the tool used by Chinese and U.S. communities. The findings challenge aspects of website design across these cultural groups thought to be dissimilar based on prior research. Implications for research and practice are also discussed.

Keywords:

virtual communities, design preferences, cross culture

INTRODUCTION

Businesses are recognising that the development of a good virtual community to meet customers multiple social and commercial needs can create customer loyalty, which in turn can help achieve greater profits (Armstrong & Hagel 1996). There are an increasing number of non-U.S. users on the Internet, a good proportion of who are non-English speakers with diverse cultural background (Robbins & Stylianou 2001). In order to attract customers from different cultural groups, a virtual community should be designed to accommodate their varied preferences. It is therefore important to study how a virtual community can be better designed to suit the different cultural groups of customers.

Prior research into virtual communities has focused on the community types (Armstrong & Hagel 1996; Chaudhury, Mallick, & Rao 2001), tools used (Chaudhury et al. 2001; Preece 2000), and website design (Preece, 2000). However, there has been little work into cultural preferences in the choice of tools and types of communities preferred. Although many have suggested that websites (in general) should be designed to suit different cultural preferences (Chen 2002; Fink & Laupase 2000), our understanding of the cultural preferences in virtual communities website design remain limited. The aim of this study is therefore to explore the design preferences of U.S. and Chinese virtual communities in hope to fill this gap in our knowledge.

In the next section, we review prior research into virtual communities. The methodology employed is then discussed. Result and analysis is subsequently presented. Discussion and conclusion follow.

LITERATURE REVIEW

The Concept of Virtual Communities

There are a number of definitions of the term virtual communities in the literature. Toomey (1998) describe virtual communities as spatially distributed people who are able to meet each other, form relationships and pool their resources through computer-mediated support. Igbaria's (1999) definition of virtual communities is focused more on the communication side of the communities - where virtual community is "a term normally used to describe various forms of computer-mediated communication, particularly long-term, textually mediated conversations among large groups". Virtual communities are considered different from traditional communities as they are "more active and discerning, less accessible to one-on-one processes and provide a wealth of valuable

cultural information" (Evans, Wedande, Ralston, & Hul 2001). This paper therefore defines virtual communities as communities formed by people, who can be from a different space/time zone and culture, interact together, share resources and interest, and build up relationships through computer-mediated communication.

Virtual Community Types

A number of studies have attempted to classify virtual communities. For instance, Armstrong and Hagel (1996) identified four groups, based on how communities meet different types of consumer needs. The four types of communities are: Transaction, Interest, Fantasy and Relationship. Communities of Transaction aim to assist the selling and purchasing of products and services, information related to those transactions are also provided. Communities of Interest involve more active interactions between members on specific topics. The degree of interpersonal communication is much higher compared to the Communities of Transaction. Communities of Fantasy enable members to create new stories in new environments or even play imaginary characters. The heart of these kinds of communities is interaction with others. Communities of Relationship are for people who want to form some deep personal connections. It is useful to note that the sampling procedure employed by this study did not result in the inclusion of communities of transaction.

Website Design for Virtual Communities

Web usability is important as websites play an important role in virtual communities; in addition users view the website and the virtual community as the same entity, and each of them influences the user's impression of the other (Preece 2000).

Several methods to assess the usability of websites can be found in the literature. Among these, the most commonly cited are Agarwal & Venkatesh (2002), Benbunan-Fich (2001), Palmer (2002). Key website design categories identified by these works include content, ease of use, interactivity, promotion, navigation and response time. Taking these into account, the categories employed in this study are: content, promotion, interactivity, and navigation - as most of the features can be placed within these categories.

There are also several studies that have examined the impact of culture on website design (Chau, Cole, Massey, Montoya-Weiss, & O'Keefe 2002; Fink & Laupase 2000; Luna, Peracchio, & Juan 2002; Robbins & Stylianou 2001; Singh 2003). These studies agree that there are differences in the preferences in website design between cultures studied. However our understanding of the cultural preferences in virtual communities' website design remains limited.

Virtual Community Tools

A variety tools have been used in virtual communities. The software often used in virtual communities can be broadly grouped as asynchronous or synchronous tools. Synchronous tools are software supporting communication in real time eg. chat room and audio broadcast. They are unlike asynchronous tools, which do not require users to be available at the same time (Preece 2000). A good asynchronous example is forum, which allows users to post and respond to posts any time and continuously (Ruhleder 2002). A website can employ both synchronous and asynchronous tools at the same time. Table 1 presents the various synchronous and asynchronous tools that can be employed in a virtual community.

Synchronous/Asynchronous Tool	Asynchronous Tools	Synchronous Tools
Web site (the basic is asynchronous, but also with synchronous software embedded frequently).	Email	Chats
	Bulletin boards	Instant messaging
	Listserver	MUDs
	Forums	MOOs
	UseNet	Virtual environments
	Virtual postcards and greeting cards	

Table 1: Synchronous and Asynchronous Tools (adapted from Preece, 2000)

Culture and Virtual Communities

Yap (2002) suggests that each virtual community has its own culture as it provides a virtual space for people who have the same belief and interest to group together, and also share their knowledge. However, people in the virtual communities may be from different places around the world, sharing different real world culture. For

instance, a virtual community can be formed by people from North America and Asia, who have different beliefs and behaviour patterns (Fink & Laupase 2000).

Culture is the "integrated pattern of human knowledge, belief, and behaviour that depends upon man's capacity for learning and transmitting knowledge to succeeding generations" (Yap 2002); it is "a shared set of values that influence societal perceptions, attitudes, preferences, and responses" (Robbins & Stylianou 2001) and "what every person carries within him or herself patterns of thinking, feeling and potential acting which were learned throughout their lifetime" (Simon 2001).

Several models of culture has been identified in the literature (Myers & Tan 2002). This study employed Hofstede's (Hofstede 2001) and Hall's (1976) cultural dimensions – ie. uncertainty avoidance, individualism - collectivism, masculinity – femininity, long - short term orientation and low-high context. Hofstede suggested countries can be classified into six clusters – ie. the Anglo cluster, Nordic cluster, German cluster, Latin cluster, Asian cluster and Japan (Robbins & Stylianou 2001) based on the believe that cultural values and cultural differences between countries have existed for a long time and are stable, and based on cultural commonalities and similar histories.

In summary, the literature review highlighted three areas of research focus – virtual community types, website design and tools used. There has been little work into cultural preferences in the types of communities and choice of tools preferred. Although many have suggested that websites (in general) should be designed to suit different cultural preferences (Chen, 2002; Fink & Laupase, 2000), our understanding of the design preferences in virtual communities between cultures remains limited. The aim of this study is therefore to explore the design preferences of U.S. and Chinese virtual communities in an attempt to explore this gap in our knowledge.

METHODOLOGY

This study investigates the design preferences of participants in U.S. and Chinese virtual communities. To ascertain these design patterns, content analysis was employed; as it made it possible to compare a large volume of contents over different virtual communities (Neuman 2000).

An a priori coding scheme was created (see Table 2). It described all the measures in the study and their references. Measures selected are website design features, tools and types of virtual communities. Website design features were grouped into content, navigation, promotion, emotion and interactivity. These categories had been suggested in previous studies on web usability evaluation guidelines. Features that do not fit into any of these categories were grouped into the 'others' category.

Measures		Definition	Reference
Web Site Design Features	Content	The informational and transactional capabilities of a Web site	Agarwal and Venkatesh, 2002
	Navigation	What allows users to acquire more of the information that they are seeking, and what makes the information easier to be found	Palmer, 2002
	Promotion	The advertising of a Web site	Agarwal and Venkatesh, 2002
	Interactivity	Nature of the interaction between users and Websites	Benbunan-Fich, 2001
	Others	Features not included in above measures	
Tools Used		Synchronous vs asynchronous	Agarwal and Venkatesh, 2002
Community type		Types of virtual communities	Amstrong & Hagel, 1996, Chaudhury, Mallick, & Rao, 2001

Table 2: Coding Scheme

A codebook and a corresponding coding form were developed. All measures were fully explained in the codebook so ambiguity of the measures can be largely reduced (Neuendorf 2002). A coding form was also developed based on the codebook, for recording all measures.

In order to make sure that virtual communities selected were highly representative of the U.S. and Chinese cultural clusters, only those most popular communities were included in the study. These communities have attracted more visitors and members. A more popular virtual community implies that it is more acceptable and preferred by some users than others; and therefore advantages of its design can be assumed. All virtual

communities were retrieved from Yahoo directory (<u>Directory</u> > <u>Society and Culture</u> > <u>Cultures and Groups</u> > <u>Cyberculture</u> > Virtual Communities). The communities representing Anglo cluster were on the Yahoo "Most Popular" list. However, the "Most Popular" list was not available in the Yahoo Chinese version. Instead, a total of 49 virtual communities werre listed. In order to determine the most appropriate communities, the traffic rank of each community was checked with <u>www.alexa.com</u>. Alexa.com was founded in 1996 and it provides services such as traffic rank and site statistics (<u>http://pages.alexa.com/company/index.html</u>). The top ten virtual communities were then selected. Table 3 lists the U.S. and Chinese virtual communities sampled.

The U.S. Communities	
Yahoo! Groups	http://groups.yahoo.com/
Well	http://www.well.com/index.html
MSN Groups	http://groups.msn.com/
Everything2	http://www.everything2.com/
Cybertown	http://www.cybertown.com/main_ieframes.html
Bolt	http://www.bolt.com/
Bianca	http://www.bianca.com/
Meet Up	http://www.meetup.com/
SmartGroups.com	http://www.meetup.com/
Makeoutclub	http://www.makeoutclub.com/
The Chinese Communities	
新浪 (Sina)	http://www.sina.com.cn/
网易 (NetEase)	http://bj.163.com/
天涯虚拟社区 (Tianya Club)	http://www.tianyaclub.com/
第九城市(4) (The 9 City)	http://www.the9.com/ http://city.the9.com/
碧聊大观园 (Yinsha Chat)	http://154008.chat.yinsha.com/
塞迪网 - 社区 (Ccidnet)	http://bbs.ccidnet.com/
雨後池塘 (Yuhou)	http://www.yuhou.net/
逸海情天 (Seasky)	http://www.seasky.cn/
乐乐社区 (Joyie)	http://ww.joyie.com/
异侠 (Exia)	http://www.exia.cn/

Table 3: U.S and Chinese Virtual Communities Sampled

Coding was done by a research assistant. Each community selected was evaluated against each of the measures individually. The detailed coding process is as follow:

- The access date and time of the community, along with the community name, URL, and cultural cluster must be noted at the beginning of each evaluation.

- If the Web site designing feature is present, a "Yes" is given, or else a "No" is recorded.

- Tools used in each community are recorded. Multiple tools can be checked for one single community.

- Types of the community are also coded accordingly. As one community may provide more than one type of community service, multiple community types may be recorded.

All data collected was keyed into a spreadsheet for reporting in the next stage.

RESULTS

Table 4 below presents the frequency of each item.

Categories	Features	Chinese	U.S.
Content	Job list	30%	30%
	Corporate history	80%	50%
	Financial reports	20%	10%
	Social responsibility	70%	80%
	Design focus is use of art	70%	40%
	Design focus is informative content	30%	60%
Navigation	Hierarchical structure	90%	40%
	Search-based structure	10%	60%
	Links to local Websites	40%	0%
	Links to consumer groups	20%	0%
	Site map/index	70%	20%
Promotion	Soft sell approach	70%	30%
	Hard sell approach	30%	60%
Interactivity	FAQ	100%	80%
	Free choice of interactions	90%	80%
	Guided choice of interactions	0%	0%
	Interactions support group activity	80%	60%
	Interactions support individual effort	60%	70%
	Social communication	100%	90%
	Secure communication	10%	40%
	Clubs	60%	40%
Others	Cookies	20%	70%
	Registration	20%	10%
	Hit or visitor counter	100%	10%
	Quizzes and games	70%	30%
	Free trials and downloads	50%	40%
	Customer service	50%	10%
	Local stores & terminology	50%	0%
	Search engine	60%	60%
Tools Used	Asynchronous tools	40%	32%
	Synchronous tools	40%	18%
Community Types	Transaction	0%	0%
	Fantasy	60%	10%
	Relationship	50%	40%
	Interest	60%	100%

Table 4: Item Frequency Comparison between Chinese and U.S. Communities

DISCUSSION

Virtual Community Website Design

Prior research has clearly argued that there are differences in cultural preferences in (general) website design. In terms of virtual communities' website design, it is of interest to explore if the findings of this study support prior research. Table 5 presents this analysis. A 'Yes' is given if the design feature supports prior research, or else a 'No' is assigned.

Categories	Web Design Features	Supports Prior Research
Content	Design focus is use of art (**High context, Chinese**)	Yes
	Design focus is informative content (**Low context, U.S.**)	Yes
	Presence of a job list (**WUA, US**)	*No*
	Presence of financial reports (**M, US**)	*No*
	Presence of corporate history (**STO, US**)	*No*
Promotion	Politeness and soft sell approach (**HC, CN**)	Yes
	Hard sell approach (**LC, US**)	Yes
Interactivity	Secure communication (**I, US**)	Yes
	Social communication (**C, CN**)	*No*
	Clubs (**C, CN**)	*No*
	Interaction supports group activity (**C, CN**)	*No*
	Interaction supports individual effort (**I, US**)	*No*
	Guided interactions (**SUA, CN**)	*No*
	Interactions are free for choice (**WUA, US**)	*No*
	FAQ (**STO, US**)	*No*
Navigation	Links to distributors (**HC, CN**)	Yes
	Hierarchical structure (HC, CN)	Yes
	Search-based structures (**LC, US**)	Yes
	Links to local Websites (**C, CN**)	Yes
	Site map/index pages (**STO, US**)	*No*
Others	Customer service (**SUA, CN**)	Yes
	Local stores (**SUA, CN**)	Yes
	Free trials or downloads. (**SUA, CN**)	Yes
	Heavy animated graphics/video/audio. (**LTO, CN**)	Yes
	Avoidance of registration requirement (**I, US**)	*No*
	Search engine (**I, US**)	*No*
	Use of cookies statements (**SUA, CN**)	*No*
	Hit or visitor counter; quizzes and games (**M, US**)	*No*

HC: High Context; **LC:** Low Context
WUA: Weak Uncertainty Avoidance; **SUA**: Strong Uncertainty Avoidance
M: Masculinity
STO: Short Term Orientation; **LTO**: Long Term Orientation
I: Individualism; **C**: Collectivilism
CN: China; **US**: United States

Table 5: Comparison of Research Findings against Previous Studies

Findings that Support Prior Research

Content: The design focus of the virtual communities in this study supports previous studies which have suggested that in high context cultures the design focuses more on use of art, while in low context cultures the focus is on information content (see, for example, Singh 2003). In this study, Chinese communities (high context culture) use colourful design with many images (70%) while the U.S. communities use relatively less (40%). Heavy animation is more acceptable for attracting more long-term orientated culture members; but not appropriate for short-term orientated culture (Chau et al. 2002). Many of the Chinese communities in our sample present a large volume of graphics or animation. This seems to be less popular in U.S. communities.

Promotion: Singh (2003) has suggested that the soft sell approach is more preferred in high context culture, and less preferred in low context culture. Our results support this view with more Chinese communities choosing a soft sell approach in selling their membership to users, using techniques such as building relationships with users by emphasising their care of the members; while U.S. communities tend to sell their memberships by promoting discounts and superiors benefits.

Interactivity: Secured communication is believed to be important for a culture of individualism (Robbins & Stylianou 2001) as freedom and privacy are essential for this cultural group. The results show that more U.S. communities provide secure communication for members, with clear statements on their website highlighting their policy regarding privacy. Few Chinese websites have such a declaration.

Navigation: As low context culture is more interested in getting information as quickly as possible. a search-based structured community may be more acceptable. On the other hand, a high context culture tends to prefer a hierarchical structured website (Fink & Laupase 2000). The study shows that almost all (90%) of the Chinese communities are of hierarchical structure and more than half of the U.S. websites are of search-based structure. This tends to agree with what has been suggested by earlier research (Fink & Laupase 2000). Links to distributors and consumer groups, and to local websites are suggested for high context and collectivist culture (i.e. Chinese) (Luna et al. 2002; Singh 2003). These links are available in some of the Chinese Websites. The U.S. is a low context and individualist culture; this might explain why none of the U.S. communities studied have these types of links available.

Others: Customer service and local stores terminology, as well as free trials or downloads are important functions to reassure users in the strong uncertainty avoidance culture (Singh, 2003). Half of the Chinese communities provide customer service that offer suggestions for users, and state the contact information of local stores. Few U.S. communities provide these types of services or information. However, the number of communities that provide free trials and download is similar in both cultural groups. This may be due to the fact that free trials and downloads are an effective way to attract traffic and therefore are widely used nowadays in both cultures.

Findings Different to Prior Research

Content: It is suggested that U.S. culture is more likely to present a job list, financial report and corporate history on the web pages, while the Chinese culture is more likely to state the corporation's social responsibility (Robbins & Stylianou 2001). However, the number of communities that present this content on their Web pages is similar between the two cultures. Interestingly, for corporate history, more Chinese communities present company history on their website than U.S. ones (80% versus 50%). This may suggest that "presence of company history" is possibly not as important as it is thought to be for U.S. culture. Conversely, it is popular within Chinese communities. Declaring how well the companies are doing help to lower users' uncertainty and increase their confidence in the company.

Interactivity: It is suggested in previous studies that social communication opportunity should be provided to collectivist culture (Chau et al. 2002) and clubs may be organised for members to join (Singh, 2003). Similarly, interaction supporting group activity is suggested for this cultural group while interactions supporting individual effort are a better option for an individualism group (Poppink 2000). In this study, all Chinese communities provide social communication opportunity; however, 90% of the U.S. communities also provide the same option. The number of clubs available in both Chinese and U.S. communities are also similar. Moreover, the number of interaction opportunities that either support group activity or individual effort is similar in both community groups. This can be seen as a characteristic of virtual communities, where members get together on line to socialise with others. Therefore group activities and social communication may be preferred in both cultural groups. For this reason, it is easy to understand that all communities selected in this study have provided the chance for members to freely choose what type of interactions that they would prefer, instead of guiding them. Doing it this way, members can enjoy the virtual communities' life freely without being interrupted. This is important for both cultural groups.

Navigation: Short term orientated cultures prefer the use of a site map/index page as it can lead to information quicker (Robbins & Stylianou 2001). The study's result shows that in fact many more Chinese websites include a site map/index page compared with U.S. websites. It is possible that search engine are widely used nowadays and the need of a site map/index for search information has decreased.

Others: A few more features, namely FAQ, search engine and registration requirement, were also found to be different between Chinese and U.S. Websites (Fink & Laupase, 2000, Robbins & Stylianou 2001). However, similarities are shown for all these features in the study of virtual communities. A reason behind this could be that some of the virtual community cultures have become more homogenous despite differences in cultural

background. A declaration of the use of cookies is important for strong uncertainty avoidance culture (Robbins & Stylianou 2001). However, in this study it was found, that many more U.S. websites present this declaration compared to Chinese ones. This could be because in a culture of individualism, protection of privacy is very important and legislations are more complete in the U.S. as compared with China.

The result for a hit or visitor counter, quiz and game features are also opposite to what have been suggested in previous general website studies - that is, these should be the indicators of a masculinity culture (Robbins & Stylianou 2001). All of the Chinese websites employ a hit or visitor counter and many of them make games available on-line for users or members to play individually or in groups. Conversely, not many U.S. websites employ these features. One of the reasons could be that the masculinity index for the U.S. is only slightly higher than China (Hofstede 2001). Members in a collective culture are more tied to groups and try to be the same as the others (Robbins & Stylianou 2001), thus group activities are more preferred. A hit or visitor counter is a tool to show the popularity of the site. By convincing visitors of its popularity, the community can attract more members to join. On-line games also provide an opportunity for users to be part of a group and to play with others.

Communication Tools

The preferences of tools are found to be consistent with cultural characteristics. Some differences are found in the choice of communication tools. As noted, members in a collective culture are more tied to groups and try to be the same as the others (Robbins & Stylianou 2001), thus group activities are more preferred. This characteristic is also shown in their choice of communication tools.

Since synchronous tools provide more chances for users to interact at the same time, they are more popular for Chinese communities. Moreover, Chinese culture is also a high context culture and Chinese are more interested in a rich format of communication (Fink & Laupase 2000). Some of the synchronous tools, such as MUDs provide such kinds of communication opportunity and therefore are very popular in Chinese communities. On the other hand, asynchronous tools are more readily accepted by low context cultures such as U.S. as fewer nonverbal cues are required (Ross 2001). In this study, more U.S. communities employ asynchronous tools. Even common tools such as e-mails, show usage number within U.S. communities as being higher than in Chinese ones. As well, some of the asynchronous tools are not used in Chinese communities at all, such as UseNet. Information of communication tools usage is presented in the Table 6.

Tools Type	Tools	Chinese	U.S.
Asynchronous tools	Email	50%	70%
	BBS	90%	60%
	Cards	70%	40%
	Listerver	10%	20%
	UseNet	0%	30%
	Forums	0%	40%
Synchronous tools	Instant messaging	10%	30%
	Chat	90%	50%
	Virtual environments	10%	10%
	MUDs	30%	0%
	MOOs	20%	0%

Table 6: Communication Tools Usage Frequency Comparison

Community Types

Virtual communities can be classified into four types. It should be noted that each virtual community may be classified as more than one type in the study. None of the communities selected falls into the transaction type and therefore it is not discussed here. More Chinese communities are of the fantasy type. Many of these types of communities provide MUDs games, in which members can play a fantasy character and interact with other members, thereby gaining more chances to communicate with others in a much richer format (compared with e-mailing). Another possibility is that Chinese communities have a shorter history compared with U.S. ones, and playing on-line fantasy games seems to be a novelty and a fashionable thing to do, which make the fantasy type of communities more popular.

In this study, the percentage of fantasy type communities within the Chinese groups is 60%, which is the same as with the interest type; however, all U.S. communities are classified as interest type. This could be because the interest types of communities requires less interaction and provides more information flow (Armstrong & Hagel

1996). As an individualist and low context culture, U.S. users are more comfortable with these kinds of communities, compared with fantasy or relationship type communities. The number of relationship type communities is similar between both cultural groups. Further research is therefore needed.

CONCLUSION

This study has highlighted some differences in the design preferences of virtual communities between the Anglo and Asian cultural groups. Preferences of tools and types of virtual communities are also different. For instance, Chinese communities prefer using MUDs (synchronous tool) as a communication tool to interact directly with other members, in a fantasy type of community while U.S. communities prefer to use UseNet or e-mail (both asynchronous tool) to exchange information on their interested topics indirectly, in an interest type of community. Some of the features seem to be more desired by one cultural group but not the other. These features can then be used as indicators for cultural differences in the design of virtual communities. As this study is exploratory in nature, further research is therefore required to validate and extend our understanding of the design preferences of virtual communities between different cultural groups.

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