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Toru Sakaguchi
The University of Memphis

Prashant Palvia
The University of Memphis

Ravinder Nath
Creighton University

Brian Janz
The University of Memphis

Greg Boller
The University of Memphis

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Consumer-Oriented Electronic Commerce on the World Wide Web: A Comparison of the U.S. and Japanese Practices

Toru Sakaguchi, The University of Memphis, tsakagch@memphis.edu

Prashant Palvia, The University of Memphis, ppalvia@memphis.edu

Ravinder Nath, Creighton University, rnath@creighton.edu

Brian Janz, The University of Memphis, bdjanz@memphis.edu

Greg Boller, The University of Memphis, gboller@memphis.edu

Abstract

Internet's World Wide Web (WWW) is viewed as a strategic information technology with the potential to change the rules by which organizations conduct business as it provides new means of advertisement, sales, customer services, logistics, and business communications. Another important network application phenomenon is electronic commerce (EC). Although WWW is a worldwide application by definition, little is known about the profiles of EC activities on the WWW around the world. In this environment, this study attempts to shed light on understanding EC and the WWW and conducts research, as an example of phenomena surrounding them, on consumer-oriented EC on the WWW comparing the U.S. and Japanese practices.

Introduction

Electronic Commerce (EC) has become a "hot" issue among practitioners and academics. This public attention is because there has been a phenomenal growth in the Internet and WWW, and they have accelerated the growth of EC. In general, EC means sharing business information, maintaining business relationships, and conducting business transactions by means of telecommunication networks (Zwass 1996). It includes many business activities, such as advertising and sales, accounting and finance, procurement and purchasing, and so forth, if they are done through electronic telecommunications (Kalakota & Whinston 1996).

It may not be exaggerating to say that EC can be beneficial for all the activities involved in business. However, consumer-oriented EC, for instance, is still in its infant stages. Some fundamental business issues must be addressed before it can become widespread (Wigand 1997; Zwass 1996).

In this environment, this study attempts to shed light on understanding EC and the WWW and conducts research, as an example of phenomena surrounding them, on consumer-oriented EC on the WWW comparing the U.S. and Japanese practices. Given the growing emphasis on Web technology and EC, this study examines the following research questions:

- (1) What are the essential Web-site characteristics for consumer-oriented electronic commerce in Japan and the U.S.?
- (2) Are Web-site characteristics for consumer-oriented electronic commerce different between Japan and the U.S.? If so, how?

The answers to the above research questions have numerous implications. "National culture" can serve as a criterion in selecting and designing EC applications (especially the Web presence) for the target markets so that the possibility of the application's success is optimized. The benefits of exploiting the phenomena surrounding EC on the Web, therefore, are two-fold: one for practitioners who are planning and implementing EC applications into their business activities, and one for academics who are studying the phenomena. Practitioners will learn that they need to pay attention to the other countries' consumer behavior and how it affects their Web commerce, and designers who plan to launch Web sites in Japan, for example, will know what other companies in Japan are using for their sites and learn what are the key issues to be considered. It is often better to learn from what the locals do than to try and error. For academics, this study will be a step forward in understanding the complete picture of the phenomena surrounding EC on the Web.

Research Model

Although WWW is a worldwide application by definition, little is known about the profiles of activities on the WWW pages around the world. Ho (1997) studied several major countries from North America to Europe to the Pacific Rim yet did not find many differences among profiles of Web pages. Prattipatti and Mummalaneri (1997) compared the information contents of U.S. and Singapore Web sites and found differences between two countries' Web sites.

From these studies, it is clear that choosing and comparing countries that are similar economically and technologically but are significantly different culturally is important in order to study the cultural impact on Web characteristics. This study examines the effect of

“country” on the characteristics of Web sites by considering two countries (Japan and the U.S.), and these two countries satisfy these conditions.

The main research model derived from the main research questions is shown in Figure 1. The major purpose of this study is discovering the significance of country difference in the characteristics of Web sites. Literature review revealed several characteristics of Web sites that should be studied. In advertising literature, there is a lot of empirical evidence for differences between U.S. and Japanese advertising. From the review of these literature the following can be discussed.

Purposes of Web sites: Ho (1997) classified the purposes of Web sites into three: promotion, provision, and processing. Based on Quelch and Klein (1996), one more dimension, customer service, is added within this category. Since "promotion" is about providing information about products and services and the company, "hard-sell" appeal is evident. More American sites will have hard-sell appeal than Japanese; therefore, American sites are more "promotion" oriented. "Provision" is about other information to gain a good-will from potential customers. This is to make customers feel good about the company; therefore, Japanese sites are more "provision" oriented. As to the "customer support" and "transaction" purposes, they are somewhat out of the category of advertising in which companies try to get sales-pitches. Both "customer support" and "transaction" are beyond the point of getting sales bits. There may be different kinds of values offered within these categories between Japanese and U.S. sites, but there may be no difference in these purposes as a whole.

Values of Web sites: Ho (1997) classified the values of Web sites into four: timely, custom, logistic, and sensational. As far in "promotion" purpose, the information cues give a hint for the values consumer may get. According to Lin (1993), availability and packaging/shape information cues were more in Japanese ads. These give more logistic values to consumers. However, logistic values are not limited to these two information cues. Therefore, it is hard to say that "Japanese sites are more 'logistic' value oriented." Therefore, it is not easy to predict the direction of hypotheses in values of Web sites based on these studies.

Types of payments and Language used: These categories are based on the differences on general consumer behavior and business practices. Japanese consumers use cash on daily life more than credit cards and personals checks. Cash on delivery, bank transfer, and postal money order are preferred in mail orders. Since English is a *de-facto lingua franca* in the business world, more English usage in Japanese sites are expected than the usage of Japanese in U.S. sites.

In reality, there are several moderating variables, such as industry type and level of technology in the company. The industry type is controlled, company size is measured, and other contextual variables are randomized by selecting random samples from the population pool.

Methodology

This study employs the content-analysis technique for gathering data. Content analysis is the systematic and reliable coding of communication content (Aikat, 1995) in the body of communication (e.g., a Web page). In this study, the unit of analysis is a "Web site," which may consist of multiple Web pages, of a firm in the computer industry. By using content analysis, the content (information) in the Web pages (communication) will be coded in order to identify the characteristics of EC on the WWW. A coding sheet is developed to enforce objective and systematic coding throughout the data-collection phase. For each characteristic, the definitions of categories into which a Web site is classified are described in the coding manual. The definition of each category was accompanied by relevant examples to further clarify its scope and interpretation.

Sampling

The sample for analysis is drawn from a population of Japanese and U.S. commercial sites in the computer and automobile industries. A fundamental problem with studies on Web sites is the difficulty of locating and tracking sites because of the enormous number of them. Moreover, a complete listing of all Web sites is not available from any single source (Aikat, 1995), and several hundred or thousand new Web sites are created every week (Ho, 1997). All of these problems with studies of Web sites result in the difficulty of specifying the population frame. For this research, a master list of Web sites is compiled from two sources: *Yahoo!*'s and *Yahoo! Japan*'s "Companies/Computers" and "Companies/Automobile" lists. This process of selection results in about 30,000 URLs (as of January 19, 1999). The U.S. list has almost three times more sites than the Japanese list does. *Yahoo!*'s and *Yahoo! Japan*'s "Company/Computers" lists have subcategories of businesses, such as accessories, multimedia, and games. These subcategories were grouped into two categories: hardware and software. "Company/Automobile" lists have subcategories of businesses, such as makers, parts, and dealers.

From this list, 200 sites were randomly chosen for analysis. This was done by proportionate stratified sampling and systematic sampling so that the sample represented the population. In the next section, the assessment (based on objective, systematic, and quantitative characteristics of content analysis) of the validity and reliability of this research is discussed.

In order to obtain a systematic, objective description of communications content, the researcher's subjectivity must be minimized. The issue of reliability becomes pivotal. The measure of reliability in content analysis is interjudge reliability. "Interjudge reliability is the percentage of agreement between judges processing the same communications material. It is the degree of consistency between coders applying the same set of categories to the same content" (Kassarjian, 1977, p. 14).

The number of coders for data collection in the main study is kept to a minimum--one--in order to attain the maximum efficiency in coding. Therefore, there would be no problem of interjudge reliability itself; however, there would be a question of the subjectivity-objectivity issue. Thus, 10 random samples from each country's Web sites are assigned for "check-coding" using another coder, in order to test the accuracy of this content analysis and get some measure of the extent of interjudge reliability on

each country's Web-site content. The one author and the second coder, to whom the definitions and examples of coding material using the coding manual are explained, made an independent analysis of all the pages under the randomly sampled 20 Web sites, then coded the results. The commonly used reliability index, the ratio of coding agreements to the total number of coding decisions, is used in this content analysis. The two coders agreed on 97 percent of judgments.

Results and Conclusion

The data have been coded. The primary analysis were conducted and listed in Table 1. Full results and discussion will be available upon request from first author.

References

References available upon request from (first) author.

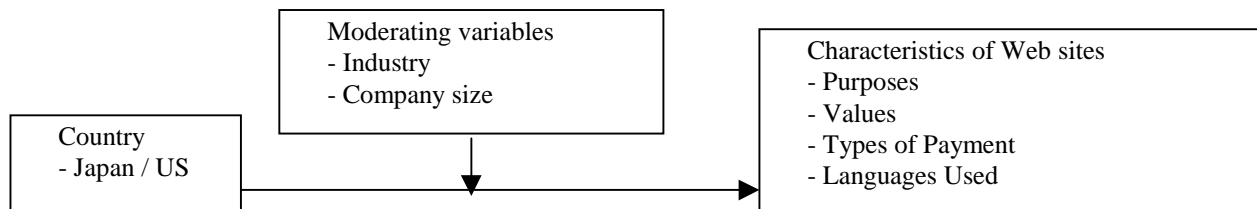


Figure 1: Research Model of the Study

Table 1

Multivariate Analysis of Variance for Country and Purposes/Values of Web Site

	Wilkes' Lambda	F	df	p-value
Promotion	.983	.841	4:194	.501
Provision	.961	1.976	4:194	.100
Customer Service	.960	2.027	4:193	.092
Processing	.960	1.997	4:194	.097
Timely	.973	1.324	4:194	.262
Custom	.956	2.239	4:194	.066
Logistic	.965	1.748	4:193	.141
Sensational	.988	.598	4:194	.665