

# GLOBAL MOBILE ELECTRONIC COMMERCE

## –Developments in the Mobile Phone Electronic Commerce in Japan–

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### Summary

The terms “compactness” and “smallness” are prevalent slogans in the development of e-commerce in Japan. However, these two terms are not new in the marketing activities by Japanese companies. Compactness and smallness have been the core conceptual basis of product development by many industries as well as companies in Japan since the end of World War II.

The development of e-commerce through mobile phone, another compact product, has been phenomenal. The Nippon Telephone and Telegraph (NTT) DoCoMo spearheaded the tremendous growth in e-commerce based on mobile phones through its i-mode services. The success of the i-mode service, even at this period of depression, is in contrast with the situation being faced by the “traditionally” strong Japanese industries and companies.

NTT DoCoMo and the other companies in the mobile phone market are planning to take the service to international height. Will history repeat itself? In addition to analyzing the developments of mobile phone e-commerce in Japan, the prospects of a global marketing strategy leading to the wide use of mobile phones in e-commerce is reviewed in this paper.

## 1) INTRODUCTION

### 1) Background

The continued developments in business based on network has led to the emergence of the need to have online connections that make it possible to transfer vital information in real-time. This situation has called for the development, institution and management of infrastructures as well as devices which make it possible to achieve a real-time transfer and receipt of information, services, products (mainly digital products) and data to mention a few.

The Japanese businesses are noted for being among the world leaders in creating “small things”. The application of the concept of compactness is especially known in the developments of many “international products” like radios, tape recorders, TVs, compact cars, and even laptop computers. It may be no surprise that Japan has been attracting attention in some circles concerning the role of mobile devices in the e-commerce of the country. However, although the current mobile commerce possesses some to the characterized of “small things” in Japan, still questions are being asked as to whether mobile e-commerce will achieve the international market penetration as has been seen in other Japanese industries.

### 2) Task of this Paper

All indications in Japan show that the electronic commerce (e-commerce) sector of the economy from 1998 to the mid 2001 was in a state of bubble. The period from mid 2001 seemed to indicate a burst of this e-commerce economy. However, in Japan the use of personal computers, especially at home, has not seen the phenomenal growth as can be witnessed in most developed countries like USA, Canada, the UK and Germany. On the other hand, the situation is different with respect to mobile phone (1). Although it is difficult to present an up-to-date data on the mobile users and market in Japan, especially the mobile phone, because of the growing technology and the related application of mobile appliances, all indicators show that the industry is still growing with one out of two Japanese using a mobile phone.

The first objective of this paper is to trace the changing phases of the mobile phone sector of the mobile market in Japan. The second objective is to review the user

market of mobile phone in Japan. The third objective is to look at the mobile phone market from the standpoint of the development of a global marketing strategy for which Japanese companies are believe to excel. Furthermore, the developments in a global marketing with respect to e-commerce have been one of the main topics in international marketing research since the mid 1990s.

### 3) Concept Definitions: Electronic Commerce, Electronic Business, Net Business and Mobile Market

Although definitions have been provided for concepts like e-commerce electronic business (e-business) and network business (net-business) it seems that these concepts are often being used interchangeably in many situations and context. However recently, attempts are being made to provide conceptual meaning to these terms, as research in e-commerce tends to gain grounds in the academic field.

#### a) E-Commerce

The use of the term e-commerce has now cut across many fields of research and activities to the level that a definition depends on whom you ask. However, from a broad perspective, e-commerce can be defined to encompass all potential and actual electronic as well as networked economic exchanges that involves pre-transactional, transactional and post transactional activities. The parties to these transactional activities can be individuals, companies or other forms of organizations. The focus of e-commerce is to develop business systems that are able to nurture and cope with relationships between businesses/consumers by maximizing on the use of information technology. In other words, basically the term e-commerce is used in this paper to indicate the method of processing electronic and networked business transactions between supplies, sellers, buyer and consumers.

The emergence of IT has been seen as leading to the creation of a new business environment which is fundamentally different from the traditional ways of conducting business as IT itself has become an integral part of business. E-commerce transactions, as used in this paper, are geared not only towards consumers but also businesses. Although the use of these systems outside business environment is equally

important, it is being used in a narrow sense in this paper. E-commerce transactions from the perspective of the parties involved are to lead to the emergence of leverage across networks that may involve other consumers.

#### b) E-Business

E-business is used as part of the broad concept of e-commerce. E-business implies the design and application of electronic communication network, which make it possible to send and receive information in various forms by businesses. Such information could be used for various reasons including for the purpose of conducting transactions, give information or received feedback which may or may not result in transactions. The design of e-business revolves around networks that are used in the form of intranets, extranets and internets.

#### c) Net-Business

Basically, electronic communication networks that are relevant to conducting e-business are intranets, extranets and internets. While e-business is the design and application of intranets, extranets and Internets network, net-business involves communication and transactions using these intranets, extranets and internets. These networks can be used for other proposes outside the business environment. The use of these networks may or may not end in a transaction, but by limiting the use of the term to a business environment, the infrastructure require to secure a stable business which will lead to the achievement of an effective secured e-commerce as well as e-business operating environment can be termed net-business. In general, networks must be able to achieve the aims and objectives set by a business itself and the required business environment. The relevance of defining a net-business is that network failure can range from trivial issues to big losses in business (image, revenue, customers, damages etc). Net-business also is a major element that has to be considered when developing an e-commerce strategy. Furthermore, a net-business is closely related to business performance as it measures availability, reliability, security and timely delivery of transaction. It is also an integral part of systems related to planning and management. The various kinds of networks used in a business (including intranet, extranets and internet), defines whether planning and management

are to be established within or outside a company environment.

#### 4) The Mobile Market in Japan

In Japan the mobile market is classified according to the appliances used in these respective markets. Based on the classification in Nikkei Mobile (2). The following classification is applied in this paper.

- 1) Note Personal Computer (Note PC)
- 2) Mini Note Personal Computer (Mini Note)
- 3) PDA
- 4) Digital Camera
- 5) Mobile Phone
- 6) PHS/Pocket Bell
- 7) CAR NAVI

With the exception of Note PC and Mini Note, the mobile device (hardware) being put on the market contains both the operation system and the application software. Basically, there is little room or need to install application software or operating systems or change any to these two. However, most of these devices can be connected or use in combination with other devices for extended use and application.

## II) E-COMMERCE IN JAPAN.

### 1) The Development of E-Commerce

It is difficult to trace the precise history e-commerce in Japan. A number of factors can be attributed to the lack of ability in providing such line of history. One of the main reasons is the presence of different perspectives as to what constitute e-commerce. Secondly, the history of e-commerce in Japan depends on which stage of the development of the use of IT devices and network to undertake business is regarded as e-commerce. However if considered from the point of view of net-business, as defined within the framework of e-business as well as e-business defined as a subset of e-commerce, the history of e-commerce can be traced to the early 1990's with the emergence of the World Wide Web (www).

It should be noted that some of the functions of e-business as well as net business were in practice in the 1970s. These functions of e-business like electronic fund transfer (EFT) among banks, point of sales (POS) system in the retail industry, electronic data exchange (EDI) among others were designed under the framework of intranet and extranet. The introduction of internet revolutionized the conduct of net-business. If www is considered as the engine of e-commerce, then Japan does not have a history of its own. The development of e-commerce in Japan can then be considered as intertwined with developments in e-commerce in the OECD especially the United States of America. Furthermore, the developments in the computer industry in Japan, both hardware and software, have been dependent on United States. However, if considered from the point of differentiating between mobile and non-mobile in e-commerce, then e-commerce in Japan, especially through mobile phone became established from the mid 1990's.

## 2) Ownership of Personal Computers

A survey covering 4,278 families conducted by the Prime Minister Office (3) shows that 50.5% of the families surveyed owned personal computers, 46.0% had no personal computers of any kind and 3.5% did not respond to this survey. On the other hand, 82.4% of the companies survey indicated that they owned personal computers, 16.6% had no computers, 2-8% were planning to purchased computers and 0.9% did not respond. Asked as to the use of personal computers by the companies, 63.5% stated that they were being used for communication within and outside the company. 32.2% indicated that they were also being used to offer homepage information and advertising. 57.2% stated that the personal computers are for accessing information outside the company. 28.1% stated that they were being used to share information and data with other companies, 10.8% indicated that they are being used for market research. 7.9% of the surveyed population used the personal computers for financial transactions, and 7.3% use them for customer support. A closer look at the companies, which use the personal computer, is indicated that 88.3% use e-mail services. 78.2% use e-mails for communicating outside the company and 10.1% use the e-mail for communicating within the company.



On the other hand in the survey of families, 34.0% indicated that they use the computer to access internet at home. 64.9% do not use their computers for accessing the internet. 1.1% did not respond. 42.9% use the personal computer for e-mail and 47.4% use to access information.

### 3) Mobile Phone Ownership

The same survey conducted by the Prime Minister Office indicated that 75.4% of the respondents Japanese families have mobile phone. 23.3% indicated that they do not have mobile phones. 1.2% did not respond to the survey. 33.3% indicated that the family had one mobile phone. 26.0% stated that they had two mobile phones. 10.9% had three mobile phones, 4.3% had four mobile phones and 1% had more than five mobile phones. The survey also shows that 13.0% of the families own PHS (4).

10% indicated that they own both mobile phones and PHS. 65.5% answered that they own only mobile phones and only 3.1% indicated they own only PHS. 20.3% indicated that they did not own either mobile phones or PHS. 1.2% did not respond to the survey.

In a similar survey conducted during the same period that targeted companies (with 5 or more employers) the results show that 68.1% of the 3,070 companies (5) survey owned mobile phones. 31.0% indicated that they did not own a mobile phone and had no plans to own one. 0.9% companies did not respond. 10.7% indicated that they had PHS. The survey did not cover companies, which own both PHS and mobile phones. Based on this survey, it becomes clear that the ownership of mobile phones is crucial in Japan. Even though company's office-based phone is the main means of making calls, the ownership of mobile phones is considered as very important means of owning an IT equipment.

### 4) The Use of Mobile Phones in Japan

The mobile phone is the only IT equipment which woman users exceed men in Japan. The survey shows that about 54.4% of the users of mobile phone are women as compared to 45.6% being men. Of the women users of mobile phone those in the age between 16 to 19 years form 33% of the user population. This age group comprises 18% of the entire mobile phone market (women and men combined).

By age, those below 15 years form 4.6% of the user population, 16-19 years 31%, 20-24 years 26.5%, 25-29 years 20.1%, users in their 30's 15.2% and those above 40 years 2.7%. This shows that the largest users are high school students (14.6%). Pupils and students (primary school 0.4%, middle school 1.8%, high school 14.6%, preparatory school 6.9%, colleges/universities 6.8%, specialized institutions 5.7%) formed 36.2% % of the populations using mobile phones. Those employed, in the third industries, including the service, industry comprise 36% of the user population. According to income, those who earn ¥200,000\* (about US \$1,700) or less per month form 68% of the user population. On martial status, 86% of the users of mobile phones are single. Out of this 58.9% live with their parents.

As shown in the Table 1 below, there is a trend of increasing possession of mobile phone and a decrease in home-based phones. Quite a number of students living alone in apartments away from home, have increasing abandoned the idea of installing a home-based phone. Furthermore, the diffusion of mobile phone has led to drastic reductions in public telephones. This has forced NTT to introduce the L-mode on home phone. This system provides some internet services including e-mail, information and shopping sites.

Table 1 Trend in the Japanese electronic communication market telephone ownership

Item	1995	1996	1997	1998	1999	2000
Home phone	61,105,840	61,525,876	60,451,330	58,558,694	55,5474,25	52,257,622
Mobile phone		10,204,023	20,876,820	31,526,870	41,530,002	51,138,946

Source: Extracted from the IT Data of Prime's Office 2002,pp 248 & 256

The increasing use of mobile phone is due to the provision of net-business on the phone. There are four major net-business providers of mobile phone.



Table 2 Service Systems of Mobile Phone Companies in Japan

System	As of Oct, 2001	Company
i-mode	28,638,000	NTT DoCoMo
EZ web	8,724,400	au & TU-KA
J-sky	8,819,500	Vodafone
Total	46,181,900	

Source: Extracted from the IT Data of Prime Minister Office 2002, p 268

In addition this survey indicates that only 33.5% possess mobile phones that cannot be used to access any of the above-mentioned net business, especially the internet. 16.9% indicated that although their mobile phones can be used for net business, they do not use them to access net business. By sex 47.2% of the boys in their tens, 46.0% of the men in their twenties, 27.8% of men in their thirties, 15.0% of men in their forties and 3.4% of the men in their fifties use their mobile phone for net business. In the case of women, 34.3% of those in the tens, 34.2% of women in their twenties, 17.2% of those in their thirties, 4.7% of those in their forties and 2.6% of those in their fifties use mobile phones in net business context.

As to the frequency of the use of mobile phones in a day to access net business, 14.4% stated that they use it three times a day, 21.6% once or twice a day, 11.7%, four or five time in a week, 19.9%, twice or thrice a week, 15.8% once or twice in a month and 11% once in a month. The rest did not respond to this question. Furthermore, as to the specific use of the mobile phone, 17.5% indicated that they use them mainly for e-mails, 52.2% use mobile phone mainly for e-mails and sometimes the web, 11.7% indicated that they use the mobile phone almost equally for e-mail and the web, and only 7.6% declared that they use their mobile phone mainly for the web and sometimes to access for e-mail, and 8.6% indicated that they use them for only the web.

As to the specific menu or areas of business transaction for which mobile phones are being used for, 60% stated that they use them to download paid melodies, 45% for

downloading paid images as screen of their mobile phone, 31.1% to listen to the news, 31.9% to listen to weather information and other timely information services, 25.2% to receive information on leisure activities, 21.5% to access transportation information, 25.2% to play games, 10.4% for financial transactions, 6.7% to make ticket reservation, and 10.4% to access the “dating” site. It should be noted that the use of the web is paid for. This also applies to sending and receiving e-mails.

For those who use their mobile phone to browse the web, 56.7% answered that they browse paid sites and 43.3% free sites. In a month, 24.2% spend ¥ 200 on web site, 29.6% pay between ¥200 to ¥400, 23% pay ¥400 to ¥600 and the rest pay more than ¥600. The average is ¥430 per month.

### III) THE PLACE OF MOBILE PHONE E-COMMERCE IN DEVELOPMENT OF NET-BUSINESS IN JAPAN

#### 1) Developments in the Mobile Phone

The historical development of mobile phone in Japan, especially with respect to the topic of this paper, can be describe as a movement from analog to digital in 'handy phones'.

The mobile phones of today can be traced to car phones in Japan. The used of cars phones began in the 1970's. As the name of the product implies, car phones were wireless phones installed in automobiles. Reception was made possible through the installation of special antennas, which can be considered as similar in nature to the car navi, and radio of today. Although in the 1970's the car phone was considered to be a convenient piece of device, it was found to be power consuming. Secondly, car phones could not be used outside the car. Attempts made to remove and use the car phone from inside the car led to developments leading to the mobile phone. In other words, mobile phones are the products of mobile car phones in Japan. The name given to these mobile car phones was 'shoulder phones'. These phones were hang from the shoulder using a shoulder belt.

Digitalization of the mobile phone commenced in 1993. The digitalization of the

mobile phone system has led to subscriptions of many customers and the development of multiplex channels. Furthermore, the digitalization of the mobile phone has resulted in the development of other uses of the phone in addition of voice communication. Consequently, the introduction of the i-mode services by NTT DoCoMo in 1999 set the stage for using the mobile phone to access the internet and also send e-mails through the internet.

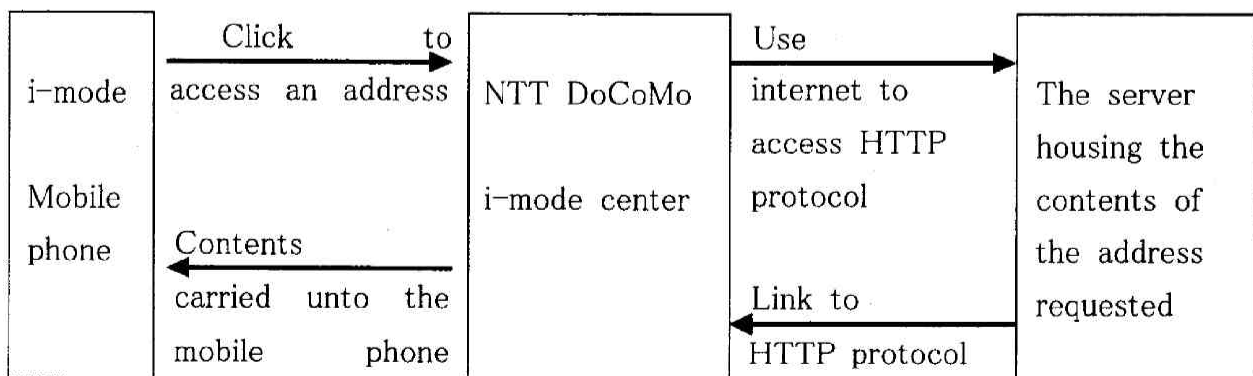
## 2) The Mobile Phone Internet Service

The first major service provided through the internet for mobile phone users is e-mail. E-mails can be exchange between mobile phones and also computers. However, one can block mails from either computers or other mobile phones. Sending and receiving e-mail by mobiles is more popular than by computers in Japan. The mobile phone has become the main medium through which most Japanese exchange e-mails.

Although almost all the major internet services can now be performed by mobile phones, the mobile itself cannot directly access the World Wide Web (www) server. While a computer through its TCP/IP (http) can directly access a server, the mobile phone does it differently. In addition, the mobile phones posseess almost all the functions of a PDA.

The system of internet use by mobile phone in Japan is shown in Figure 1 below with reference to the NTT DoCoMo I-mode service.

Figure 1 The i-Mode Internet Access System



### 3) The Mobile Phone in Net-Business in Japan

Of all the mobile devices presented earlier, the mobile phone is the most widely used device in the mobile e-commerce in Japan. Mobile phone is becoming an industry in itself. A few years ago mobile phone was not even considered a major product of the electronics industry. Until recently in the electronic industry of Japan, three products categories commanded leading roles. These were the video tape recorder, videogame consoles and CD players. Although other electronic goods have been widely in use, these three products were moving towards a stage to be called industries because they are not only hardware but also equally strong in the software and service industry.

In Japan, activities by mobile phone service providers, mobile phone manufacturers, network operators, content and service suppliers under the leadership of mobile phone companies is resulting in the creation of a phenomenal situation which has not been seen in Japan for a very long time. This situation is increasingly becoming one of the major elements, if not the core engine, aimed at in determining business models and services that will generate the revenues and customer required to establish a firm e-commerce in Japan. Internet mobile phone service revenue of NTT DoCoMo, the largest mobile phone company in Japan expanded to ¥350 billion in 2000 financial year, about nine times larger than the figure in the preceding fiscal year (6).

In May 2001, NTT DoCoMo Inc., the top Japan mobile phone operator, reported a pretax profit of ¥686.9 billion in the fiscal year of 2000, which ended on March 31, 2001. This shows an increase of 36.5% from that of fiscal year of 1999 and the largest profit achieved by NTT DoCoMo so far. The company registered operating revenue of ¥4.69 trillion, which is a year-to-year increase of 26%. The consolidated net profit of ¥365.51 billion for the fiscal year of 2001 that is also the largest even was up 45% from the previous year (7).

The business performance of NTT DoCoMo and the other mobile phone operators can be attributed to the place of wireless internet mobile phone service. The i-mode, which is the Internet mobile phone service of NTT DoCoMo grew to a business value

of ¥350 billion. This is about nine times larger than the business performance in the 2000 fiscal year. The size of the profit of NTT DoCoMo is approaching that of Toyota Motor Corp., the largest Japanese automobile assembler. This phenomenal growth of the mobile phone company NTT DoCoMo since it was established 11 years ago in 1991 can be attributed to a large extent to growth of wireless Internet mobile phone users. The number of i-mode subscribers is forecasted to be 29.8 million in Japan that is a year-on-year growth of 37% as at the end of fiscal 2001 (8). The i-mode that was launched in February 1991 had subscribers of 10 million in August 2001. The number increased to 20 million by March 2001. It is estimated that subscribers will increase by 10 times during the present fiscal year ending on March 31, 2003.

The growth of mobile phone industry in Japan can be attributed of a number of factors. Included in these factors are technology, type of services provided by the industry, the nature of the Japanese market, and to some extent the old-fashioned Japanese way of conducting business.

#### IV) IMPLICATIONS OF DEVELOPMENTS IN MOBILE E-COMMERCE FOR JAPANESE INTERNATIONAL MARKETING

##### 1) Globalization Through Net Business

One of the main characteristics of the internet aspect of net business is the use of the World Wide Web (www). The www is considered as global information sharing system. Furthermore, the www presents online network content, which is a software foundation upon which a global marketplace can be developed. Consequently, among other factors, companies have found themselves placed in a position to invest and adopt the Internet for the following reasons.

a) A new global economic order has emerged with the development of the internet. It has become indispensable for a company that operates in this new world economy order to ignore the requirement for an internet presentation. Many companies have to invest in net-business as part of this new world economic order. As mentioned above, the internet is an effective medium through which to provide to and receive

information from both existing and potential customers as well as consumers on a global basis.

b) The internet has made it possible to acquire easier international directory listing by a kind of companies. The Internet has become an integral part of what has been termed a global “yellow pages” or “phone book”. This is especially necessary for companies engaged in industries, which are engaged in global businesses as well as international/global companies.

c) The internet is also becoming an important competitive tool. From the perspective of companies, the Internet is a means of undertaking differentiation strategies. The consumer may use the Internet to conduct timely comparison of companies as well as their offerings.

## 2) A Review of the Presentations of Globalization of Marketing

### a) Meaning of Global Marketing

The conceptualization of global marketing was spearheaded by Theodore Levitt in 1983 (Levitt, Theodore, “Globalization of Markets” Harvard Business Review, Vol. 61. No. 3, May/June 1983, pp. 92-102). About a decade of academic arguments followed the presentation made by Levitt. Currently there seems to be a general consensus that the core concepts of global marketing could be based on the presentations made by Levitt in 1983. According to Levitt, a situation has been created under which many companies have become disillusioned with marketing on the international market. According to Levitt, technology is the driving force to international commonality. Consequently through the use of technology, it is possible to offer similar products (services inclusive in this paper) to many countries which otherwise before the 1980s will have been considered as unique markets. The ability to undertake similar marketing activities in many national markets leads to international marketing standardization. One major characteristic of these markets is the quick acceptance of modernization, which transcends cultural and national boundaries.

Furthermore, this trend towards standardization of international markets, especially in the area of product/service offer and product/service acceptance has been amplified

by the current wave of information and communication. Levitt indicated that these new forms of international markets, which have to satisfy through standardized international marketing, are to be organized under global marketing strategy. A global marketing strategy therefore is a strategy within international marketing under which standardized marketing strategies are applied to internationally standardized markets. The most effective approach from the presentations of global marketing strategy is to incorporate superior quality and reliability into the cost structure. Companies engaged in global marketing strategy are to compete on the basis of appropriate value best combination of price, quality, reliability and delivery of products/services that are globally identical in design, function and fashion

Since the latter half of the 1980's global marketing strategy approach has taken two main forms. Firstly, standardized marketing is developed to meet the needs of a single international market (whole market). Secondly, the international market is being treated as consisting of few standardized markets (niche markets) rather than many customized markets.

Based on the presentations of Levitt the development of international marketing by Japanese companies can be viewed as presented in Figure 2 below. Figure 3 explains the nature of these developments from a different perspective. A, B and C are used to represent national markets.

Figure 2 Matrix of International Marketing Development by Japanese Companies

One Nation

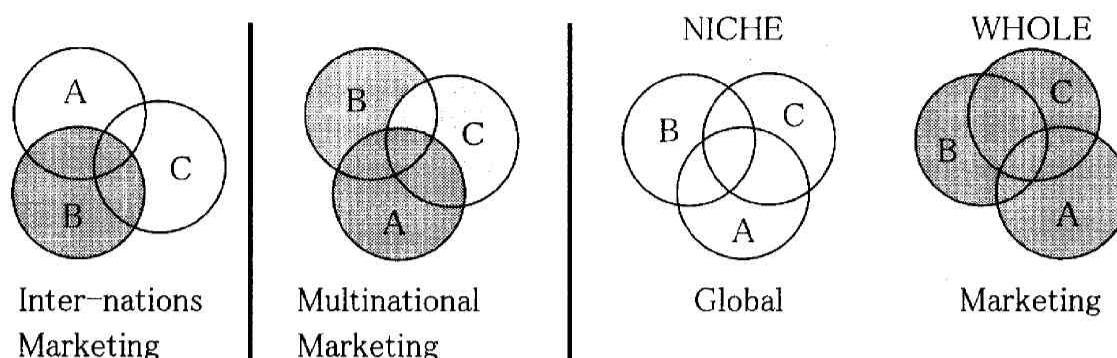
① Domestic Marketing	② Inter-nations Marketing
③ Multinational Marketing	④ Global Marketing

Multi-nations/adaptation

Standardization



Figure 3 Model of International Marketing Development by Japanese Companies



- ① Shows the development of marketing specially to one country
- ② Indicates the export of marketing specify in ①
- ③ Illustrates the development of marketing in different countries based on adaptation or creation of completely new marketing for the targeted markets
- ④ Shows standardization of international marketing based on a niche and whole market approaches.

The mid 1980s witnessed a new momentum in the international standardization of business, which was different from the situation that gave rise to standardization issues in the 1960s. The development of Japanese international marketing in 1960s emphasized developmental stages approach in its international business. In the 1980s technology and travel (9) were mentioned as being the major elements leading to international standardization approach, especially marketing. With respect to technology, standardization was presented from the point of view of producers applying production technology to manufacture standardized products (10).

As a result, technology in the 1980s functioned as a means for eliminating product boundaries between individual “country-markets” as well as regional markets. This can be seen as the core of the development of global marketing strategy. However, IT as used in e-commerce has led to the introduction of new forms of global standardization of marketing in the development of a global marketing strategy. IT makes it possible to present the elements of marketing through a single means, that is net business. Furthermore, the development of digitized elements of marketing (for e.g. products and interactive promotion among others) are themselves means of

achieving global standardization of business and marketing. The same can be said of the other elements of e-commerce through net business such as taxation systems and security among others call for global perspective instead of the traditional country-wise approach to business before the introduction of www.

### 3) Mobile Phone E-Commerce in International Business and Marketing in Japan

Mobile commerce (m-commerce) is a term often used to describe the e-commerce aspect of mobile devices. In Japan, at the center of m-commerce is the mobile phone. Under e-commerce, net-business including the internet from the beginning was characterized as being international or global in nature. Computer OS had been fairly internationally standardized under DOS V and Mac before the introduction of the integrated net-business system. However, mobile phones became popular when the industry was in different business development stage and environment.

#### a) System of Mobile Phones on the Japanese Market

One of the main characteristics of the system of mobile phones in Japan is that it has not yet been standardized in the net business. The three main systems in operation are as follows:

Table 3 Mobile Phone Systems in Japan

System	Name of Company	No of Mobile Phones as of Oct., 2001
	NTT DoCoMo	38,828,000
PDA	au	1,845, 400
	Vodafone	11,266,600
	TU-KA	3,982,600
PDA Subtotal		55,922,600
Cdma	au	9,985,800
W-CDMA	NTT DoCoMo	11,000
Total		65,918,400

Source: Extracted from the Electronic Communication Association Report, Oct., 2001

NTT DoCoMo, the leading mobile phone company in Japan has spearheaded an attempt to develop a system for the global marketplace. This system is called the wideband code division multiple access (W-CDMA). At its initial stage in 1999, it had been decided that this system will to be used in Europe and Australia among other areas and countries. This is the third generation (3G) system. This system was launched in Japan in March 2000 and practical trial of use was undertaken in May 2000. It was initiated in Europe in 2001.

A major feature of W-CDMA is the cooperation between service providers and mobile phone manufacturers who are already global companies to develop a global market for the system. Matsushita Communication Industrial that holds about 35% of the Japanese mobile phone market has planned to increase its worldwide mobile share market from 9% in 1999 to 15% by 2001 through the marketing of W-CDMA. Matsushita Communications Industrial holds a sizeable market in the European digital standard Global System for Mobile Communication (GSM) market. NEC, which is one of the leading computer and communication companies in Japan, is actively engaged

in W-CDMA. Through its alliance with Germany's Siemens, NEC has access to the GSM market of Europe that will be a platform to launch its global GSM system. NEC holds about 40% of the network device market of Japan and hopes to capitalize on the globalization on the W-CDMA. Fujitsu, which holds 13% of the mobile phone market and 16% if all wireless devices in Japan is also one of the partners in the W-CDMA market. Although at present Fujitsu does not offer any sizeable wireless products overseas, the company intends to tap on the W-CDMA in the internationalization of its wireless products.

NTT DoCoMo has been involved in the internationalization of mobile phones from two other fronts in addition to being in alliance with some major phone companies of promote it systems. These are in the areas of providing service (i-mode), developing operating systems. As a service provider, NTT DoCoMo intends to promote i-mode internationally. NTT DoCoMo holds 42.3% shares in AOL Japan as compared to AOL parent company shares of 40.3%. Other areas of activities are the formation of alliance with Microsoft Corp. aimed at developing mobile access service for use by companies. This service is to be introduced in Japan and then the United States. In partnership with Sun Microsystems Inc., NTT DoCoMo is developing net-capable handsets that will incorporate Sun's Java software. NTT DoCoMo also holds 19% stake in Hutchison Telecom, which operates mobile phones in Hong Kong and 15% stake in KPN Mobile. KPN Mobile is the wireless division of the Dutch national phone company. NTT DoCoMo has also invested in Hutchison 3G UK Holdings with an eye on getting more involved in developing 3G for the European market. It is also noteworthy that Nippon Telecom, the second biggest Japanese company telephone after NTT the parent company of NTT DoCoMo is working with BT and AT&T to promote W-CDMA outside Japan.

However, as NTT DoCoMo intends to use the combination of these three approaches to its advantage, the company faces some problems.

i) NTT DoCoMo worldwide expansion has focused on purchasing stakes in existing companies. Since these companies have their own agenda, the rate of developing W-CDMA through these companies can be slow.

ii) NTT DoCoMo parent company NTT has less international exposure and experience. This is due to the fact that before the recent deregulation of the Japanese phone market, NTT was assigned the domestic market and KDD was in-charge of the international telephone.

iii) At present NTT DoCoMo faces little competition on the Japanese market making is self-satisfied. This situation is making the company less aggressive in the development of international strategies.

#### 4) Mobile Phones Market In A Global E-Commerce Marketing Strategy.

The main question being posed is whether an international marketing standardization can be achieved in the mobile e-commerce leading to a global marketing strategy.

Three main international marketing approaches can be envisaged in the development of a mobile e-commerce international marketing from the present movement of the major Japanese mobile phone e-commerce company. The figures below illustrated the approaches being made to globalize the marketing of mobile phone e-commerce.

Figure 4 Matrix of Global Marketing the Development of Mobile Phone E-Commerce by Japanese Companies

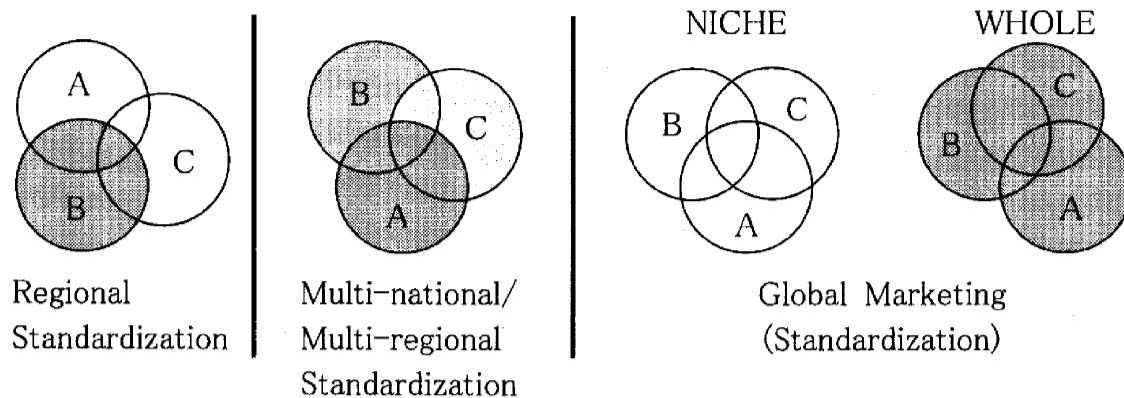
One Nation

① Regional Standardization	② Niche Global Marketing
③ Multinational Multi-regional Standardization	④ Global marketing (Whole)

Multi-nations/adaptation

Standardization

Figure 5 Model of Global Marketing Development of Mobile Phone E-Commerce by Japanese Companies



- ① Regional Standardization: Attempts are being made to establish common regional standard on limited basis of i-mode services.
- ② Multi-national and Multi-regional standardization: I-mode is being introduced in some individual countries or as one of the regional standard systems.
- ③ Show globalization of i-mode based on the contentions of Levitt on a niche approach
- ④ Indicates globalization on a world-wide standardization basis.

#### b) A Developmental Approach

This international marketing strategic approach call for the market to be developed in Japan and then internationalized in a stepwise approach. This seems to be the strategy being adopted by NTT DoCoMo on behalf of the other Japanese companies mobile phone service companies. The developmental approach was the main international marketing strategic approach that the major Japanese companies used to launch products, which have become global or international products.

However, the current international market of mobile phones is too fragmented than any marketing situation Japanese companies may have experienced in the past. Especially, the United States market that also has been the most important market for the development by Japanese marketing approach has two other competing systems to establish a national standard for digital. Namely, TDMA and GSM. Winning the United State market will be crucial in the development of a global e-

commerce marketing strategy based on international standardization. Bell Atlantic, Ameritech and GTE who in the 1999 embraced cDMA were slow in offering such digital services. The situation has been complicated by the fact that the United States has adopted a regional license instead of the national cellular license approach in the development management of its mobile phone market.

One other major characteristic of the United States is that Internet is considered basically as being a free service. In Japan the comparison of mobile phone e-commerce is not with Internet based on computer but making a phone call using the mobile phone. Making a call is expensive than sending and receiving e-mails on a mobile phone. The use of Chinese characters makes it possible to transmit a sizeable amount of message or information than using the alphabets. Charging for the receipt of mobile phone calls can be partly attribute to the less penetration of mobile phone in the United States than in Japan or some European countries but Japanese consumers have been well prepared to pay for mobile phone e-commerce services.

#### 5) Niche Global E-Commerce Marketing Strategy

Niche global marketing strategy based on international marketing standardization has been one other international marketing strategy that Japanese companies have scored substantial success. Through this marketing approach products are standardized based on the Japanese market or the United States market. Markets that meet such strategies are target with some modification where necessary.

Current, in the mobile phone industry, instead of well identified niche markets, existing systems are competing against each other. The business-to-business environments, which can be defined in terms of intranet and extranet, are potential area of niche global marketing strategy. However, it is not the intranet and extranet which have led to the development of e-commerce as it is known today but the open Internet system. For sometime, it appears that the development of mobile phone e-commerce will be continue to target niche markets that will embrace not only business-to-business but also business to consumer and consumer-to-consumer services. A multi-domestic approach under niche international marketing strategy or



worldwide international marketing will be too expensive to undertake from the perspective of time and financial resources.

## V) CONCLUSION

The only market with visible and substantial life under the current Japanese depression is the mobile phone market. Although still developing, Japanese companies have been doing well in the mobile phone industries. This paper aimed at dealing with developments in the mobile phone market especially as one of the IT devices in the emergence of an e-commerce economy. A greater portion of the paper was devoted to providing figures. These figures are changing very fast but they provide a general picture of the situation in Japan. Will Japan achieve another global marketing feat through the development of an integrated international marketing of mobile phones is question being posed by developments in the mobile e-commerce? Or will the United States market, which leads in the development of the traditional e-commerce market, determine the extent to which mobile phone e-commerce could be an important subset of a global e-commerce system. The development of a global market is important to Japanese companies. In the case of the mobile phone industry this is important to move the main market force of mobile e-commerce from the young generation with relatively lower income to a more promising and stable market.

It appears that other countries in Asia are rather embracing the system than in the developed countries. The approach to the development of international marketing by Japanese companies after World War II by introducing hi-tech products first in developed countries and later in developing countries will not apply in this situation. However, the service content of the NIES and other developing countries has become a challenge of development of a global marketing strategy.

## Notes

- (1) The term mobile phone (or phone) is being used in this paper to refer to mobile phones with Internet access capabilities.
- (2) This is a monthly magazine on mobile devices and its market. This magazine is published by Nihon Keizai Shinbun, Inc. the leading publishers of newspapers,

magazines, periodicals, directories etc. on the Japanese economy and business in Japan.

(3) Survey by Prime Minister Office often target “family” and “companies” rather than individuals. This survey was conducted in November 2000 and published on June 12, 2002 by the Consumer Information Center The Survey of families target people 20 years and older.

(4) As mentioned in the text, PHS is a form of mobile phone which is more a less an extension of the home phone. Coverage depends on antennas that are often connected to public phones.

\* Roughly, ¥120=\$1

(5) Companies were selected from the 13 main industries based on the government classification. The number of companies was weighted according to the strength of the industry

(6) Yomiuri Shinbun “DoCoMo Profit Hits Record ¥686.9 billion.” The DAILY YOMIURI, Thursday May 10, 2001, p 1.

(7) Ibid.

(8) Ibid.

(9) Levitt, T “Globalization of Markets”, Harvard Business Review, Vol. 61. No 3, May/June 1983, pp 92-102

(10) Ibid.

## References

1) Data Planet, The Mobile Phone Directory, March, 2001

2) Electronic Communication Association Report, Oct., 2001

3) Fellenstein, Craig & Wood, Ron Exploring E-Commerce, Global E-business and E-societies, Prentice Hall, 2000

4) Inuoe, Y All About FOMA, Communication Using 3G

5) IT Data of Prime Minister Office 2002

NTT DoCoMo <http://www.nttdocomo.co.jp>

NTT East Japan <http://www.ntt-east.co.jp>

au <http://www.au-mobile.com/company/index.html>

KDDI <http://www.kddi.com/index.html>

## GLOBAL MOBILE ELECTRONIC COMMERCE

Nippon Telecom	<a href="http://www.ttnet.co.jp">http://www.ttnet.co.jp</a>
Prime Minister Office	<a href="http://www.soumu.go.jp">http://www.soumu.go.jp</a>
Ministry of Industries	<a href="http://www.meti.go.jp">http://www.meti.go.jp</a>