



NTT DoCoMo and M-Commerce: A Case Study in Market Expansion and Global Strategy

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Executive Summary

This case discusses and evaluates NTT DoCoMo's overseas expansion and global strategies in the wireless and mobile phone industry. The primary objective of this work is to examine NTT DoCoMo's recent acquisitions within the concept of internationalization and global expansion issues. Analysts believe that in the next five years, NTT DoCoMo will become one of the leading players in the global wireless industry because of increasing consumer demand and growth potential. On the other hand, NTT DoCoMo may also face

a heightened competition and will be challenged by other competitors in Japan and other markets. © 2002 John Wiley & Sons, Inc.

INTRODUCTION

This case discusses and evaluates Nippon Telephone and Telegraph's (NTT) wireless operations, DoCoMo (hereafter called NTT DoCoMo) and its recent

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Thunderbird International Business Review, Vol. 44(1) 139–164 • January–February 2002 © 2002 John Wiley & Sons, Inc. The material in this case is intended to be used as a basis for discussion rather than to illustrate either effective or ineffective handling of a managerial situation or business practices. A comprehensive Teaching Note is available to readers of TIBR from the author by contacting him at sanwar@mail.wtamu.edu.

expansion and overseas diversification in global business.¹ The primary objective of this case is to examine NTT DoCoMo's changing focus and expansion strategies in the i-mode (mobile Internet-via-cell-phone) and other overseas markets. NTT DoCoMo is a Tokyo-based company, established after a spinoff from NTT in 1991 (see Tables 1 and 2). The company is composed of 40 consolidated subsidiaries and nine affiliates. NTT DoCoMo has established itself as the main leader in the wireless industry by introducing highly competitive and useful technologies for the Japanese market. NTT DoCoMo's i-mode is one of the fastest growing products in Japan. As of August 2001, NTT DoCoMo was the largest mobile-phone operator in Japan and maintains over 40 million subscribers (see Table 3). The company's main services include: cellular phone business, personal handyphone system (PHS), business and paging businesses, maritime telephone service, in-flight telephone service, international service, etc.

NTT DoCoMo's i-mode is one of the few technologies in the wireless industry that helps companies download data and other information. NTT DoCoMo's success can be judged from the

fact that in 2001, the company was ranked first in market capitalization (\$175.43 billion) in Japan and second among world telecommunication companies (Tables 4 and 5; *Business Week*, 1999, 2000a, b, c, 2001; *The Economist*, 1999a, b). Of course, as of August 2001, NTT DoCoMo's market value has dropped because of the Internet bubble, corporate debt, and prospects of 3G (third generation) technology. The company is one of the best high-tech performers in Japan and other East Asian markets. NTT DoCoMo's early successes in Japan benefitted from its i-mode technology, changing demographics, strong consumer demand, and other innovative services. In 2001, NTT DoCoMo's consolidated revenues reached \$41.53 billion with a profit of \$3.23 billion. Because of the company's marvelous growth and unique i-mode technology, it is well praised by the world media and industry analysts. *The Economist* (2000, pp. 69-70) writes about NTT DoCoMo:

Launched quietly just over a year ago, DoCoMo's i-mode service has succeeded beyond the wildest dreams of its inventors. Little i-mode handsets in "hone platinum" and "lime gold" have become a fashion accessory for Japanese teenagers, often worn around the neck like a piece of jewelry.

Like other innovative companies, NTT DoCoMo is highly focused and committed to its consumers

¹In the Japanese language, DoCoMo means "anywhere." In 1999, DoCoMo changed its name to NTT DoCoMo.

Table 1. NTT DoCoMo: Selected Financial and Corporate Data*A. Financial Data (2001)*

Consolidated Revenues	\$41.53 billion
Profit	3.23 billion
Market Capitalization	175.43 billion
Assets	30.9 billion
Return on Equity	14.0 %
Shareholder Return	-14.0 %
Employees	15,100

B. Corporate Data

Head Office	11-11 Nagatacho-2-Chome, Chiyoda-Ku, Tokyo, 199-6150, Japan.
NTT DoCoMo Group's Subsidiaries	NTT DoCoMo Hokkaido, Inc. NTT DoCoMo Tohoku, Inc. NTT DoCoMo Tokai, Inc. NTT DoCoMo Hokuriku, Inc. NTT DoCoMo Kansai, Inc. NTT DoCoMo Chugoku, Inc. NTT DoCoMo Shikoku, Inc. NTT DoCoMo Kyushu, Inc. Nippon Senpakutsushin, Inc
<i>Key Businesses:</i>	Cellular Phone Business, Personal Handyphone System (PHS), Business and Paging Businesses, Maritime Telephone Service, In-Flight Telephone Service, International Service, etc.

Board of Directors & Corporate Auditors:

Chairman:	Kouji Ohboshi
President:	Keiji Tachikawa
Senior Executive VPs:	Norioki Morinaga, Ryuji Murase, Yoshinori Uda
Executive VPs:	Hideki Nomura, Shiro Tsuda, Toyotaro Kato, Masao Nakamura, Nobuharu Ono, Itsuki Tomioka, Kimio Tani, Masayuki Hirata
Senior VPs:	Eisuke Sugiyama, Kota Kinoshita, Ken-ichi Aoki, Hideaki Yumiba, Kunito Abe, Yoshihiro Yoshioka, Kunio Ishikawa, Kunio Ushioda, Noboru Inoue, Keiichi Enoki, Yasuhiro Kadowaki, Yoshiaki Aigami, Takanori Utano, Kiyoyuki Tsujimura, Shigehiko Suzuki
Corporate Auditors:	Ikuo Kawabe, Osamu Kajima, Kenichi Matsumura

Source: NTT DoCoMo (company data), Tokyo, Japan: June 2001; *BusinessWeek*. June 18, 2001, pp. 121-130; Financial Times, FT 500: The World's Largest Companies, May 11, 2001, pp. 1-55.

Table 2. NTT DoCoMo: Brief History and Timeline*Corporate History*

August 1991:	Parent company established.
November 1991:	Eight subsidiaries established in various regions of Japan.
April 1992:	Parent company was named NTT Mobile Communications Network, Inc. Names of eight regional subsidiaries changed to present names at the same time.
July 1992:	Sales activities transferred from Nippon Telegraph and Telephone Corporation (NTT) to NTT Mobile Communications Network, Inc.; NTT Mobile Communications Network, Inc. takes over NTT's mobile operations.
July 1993:	NTT Mobile Communications Network, Inc.. transfers sales and business activities to regional subsidiaries.
1999:	Company name changed from DoCoMo to NTT DoCoMo.

Services Launched

March 1959:	Maritime telephone service established by NTT Public Corp.
July 1968:	Paging service offered by NTT Public Corp.
December 1979:	Car telephone service offered by NTT Public Corp.
May 1986:	In-flight public telephone service offered by NTT.
April 1987:	Mobile telephone service offered by NTT.
April 1991:	Ultra-small cellular phone "mova" introduced by NTT.
February 1993:	Number of NTT DoCoMo's cellular phone subscribers exceeded 1 million.
March 1993:	Digital service for cellular phones started (800 MHZ).
April 1994:	"Terminal Acquisition on Purchase Basis" for cellular phones offered; Digital service for cellular phones (1.5 GHz) and Wireless PBX (Private Branch Exchange) System "Passage" started.
March 1995:	"Terminal Acquisition on Purchase Basis" for pagers offered.
April 1995:	Digital cellular phone 9.6 kbps high-speed data communications services initiated.
March 1996:	Satellite mobile communications service "Next Service" (FLEX-TD Radio Paging System) offered.
April 1996:	Number of NTT DoCoMo's cellular phone subscribers exceeded 5 million.
July 1996:	"INFONEXT" pager service (display of Chinese characters) offered.
March 1997:	Packet Data Communications service offered.
August 1998:	Number of NTT DoCoMo's cellular phone subscribers exceeded 20 million.
1999:	I-mode service introduced; I-mode subscribers reached one million.
2000:	Satellite packet communication introduced; Total mobile customers reached 30 million
2001:	FOMA (Freedom of Mobile Multimedia Access), M-stage music, and Java-based I-mode services introduced; Total mobile customers over 40 million.

Source: NTT DoCoMo (company data), Tokyo, Japan: June 2001.

Table 3. Worldwide Cell-Phone Subscribers, NTT DoCoMo's I-Mode Users and Site Categories

<i>A. Cell-Phone Subscribers Worldwide:</i>	
<i>Company</i>	<i>Subscribers (in million)</i>
Vodafone Group Plc	80 million (in 30 countries*)
NTT DoCoMo	40.0*
China Mobile	34.0
Verizon (Bell Atlantic & GTE)	19.8
France Telecom	19.7
T-Mobile International/Deutsche Tele.	18.6
SBC	14.9
Telecom Italia Group	14.7
AT&T/AT&T Wireless	14.0

<i>B. Profile of NTT DoCoMo's I-Mode Users:</i>	
<i>Age</i>	<i>%</i>
Over 39	27%
20–24	24
25–29	20
30–34	12
35–39	8
Under 20	7

<i>C. NTT DoCoMo's I-Mode Site Categories by Ranking:</i>		<i>Ranking</i>
(Sites Available as of 2001: Official: 1,600; Voluntary: 40,000)		
Transactions (Banking, Stock Trading, Ticket Reservations, etc.)		1
Entertainment (Games, Horoscope, Character Downloading; Club Guides, etc.)		2
Information (News, Weather, Local Events)		3
Databases (Telephone Directories, Restaurant Guides, Dictionaries)		4
Others		5

*As of March 2001

Source: Financial Times. (2001f). NTT DoCoMo in Focus: I-Mode is Taking the Business World by Storm, (April 11), 21; *Fortune*, (2000). Today, Tokyo Tomorrow the World, (September 18), 146.

and the Japanese market. The company's vision 2010 states:

There are three words that characterize the business of DoCoMo—mobile, wireless, and personal. Our aim is to make the most of these features and pursue evolution of the mobile communications market. DoCoMo Vision 2010 is based on five key concepts that can be represented by MAGIC.² However, MAGIC cannot be achieved by DoCoMo alone. We would like to create businesses and market opportunities through collaboration with other companies and organizations. (NTT DoCoMo, 2001)

Furthermore, the company is very well aware of its competitive position and changing consumer demand in Japan. The company's principle of DREAM include: dynamics, relationships, ecology, action, and multi-view. About the changing Japanese economy, NTT DoCoMo (2001) states:

While the mobile communications market in Japan has grown remarkably, it has started to show signs of slowing down. At the same time, Japan is facing the major challenge of emerging from the long-lasting effects of a slow economy. With this in mind, DoCoMo will challenge the mobile frontier, in an endeavor to reach the second stage of growth. By the year 2010, the mobile communications market is projected to grow to three times its current size.

²MAGIC is an acronym for: M—Mobile Multimedia, A—Anytime, Anywhere, Anyone, G—global mobility support, I—integrated wireless solutions, C—Customized personal service.

After establishing itself as the key player in the wireless industry, NTT DoCoMo has sought aggressive global diversification by acquiring selected wireless and Internet-type companies in Asia, Europe, and the U.S. As of August 2001, NTT DoCoMo's selected overseas acquisitions and shareholdings include: KPN, The Netherlands (15%); Hutchison Whampoa, Hong Kong, (13%); KG Telecom, Taiwan (20%); AT&T Wireless Group (16%); Verio, USA (100%); and SK Telecom, South Korea. In the last three years, the company has created a multitude of alliances and partnerships with companies such as: America Online, Coca-Cola Japan, Denstu, Itochu, Microsoft, SEGA Corp., Sony, Sun Microsystems, 3Com, Walt Disney, and others. Regarding the nature of its long-term shareholdings in foreign markets, NTT DoCoMo has avoided acquiring companies and instead preferred taking minority ownership in Asia, Europe, and North America. Except for Verio, the company has taken a low-profile approach in its acquisitions but still exercise some control over the management. In the area of alliances and collaborations, the company's strategy is to tie-up with other high-tech and mobile operators that have significant national and global visibility, i.e., AOL, Coca Cola, Denstu, Microsoft, and others. This

change in NTT DoCoMo's core strategy and overseas expansion signifies its future growth in the wireless and Internet industries. Analysts believe that in the next five years, NTT DoCoMo plans on becoming one of the leading players in the global wireless industry because of increasing demand and growth potential in the Internet and m-commerce. On the other hand, NTT DoCoMo may face heightened competition and will be challenged by newcomers in the industry in Japan, Europe, and North America. The case is intended to look at NTT DoCoMo's future expansion and growth within research issues such as internationalization, global strategies, technological capabilities, and competitive advantage areas. The research issues discussed in the case are relevant to the world telecommunications industry which is taking many new turns because of the Internet and other technologies. The case is organized as follows: First, issues in global expansion and the world telecommunications/wireless industry are covered. Second, m-commerce and global wireless standards are discussed followed by a section on NTT DoCoMo's changing markets and critical issues. Third, future capabilities and global strategies are presented. The case ends with a section on selected future issues and concluding comments.

ISSUES IN GLOBAL EXPANSION AND THE WORLD TELECOMMUNICATIONS/WIRELESS INDUSTRY

In the last five years, the world telecommunications/wireless industry has taken many new turns and shapes regarding acquisitions, takeovers, joint ventures, and alliances. There are hundreds of alliances and other collaborative activities initiated by telecom companies. This phenomenon is the result of what the business world called the new economy and its Internet boom (Bailey & Lawrence, 2001). Because of the growth in the Internet areas, the wireless and mobile industry is redefining itself by seeking a major restructuring. Companies like NTT DoCoMo, Vodafone, Verizon, Sprint PCS, AT&T Wireless, and others are in the fast lane. Unlike the traditional telecommunications industry, wireless operators are well positioned in the areas of fulfilling consumer needs by providing a variety of new digital products and 3G services.

Global expansion in the wireless and mobile industry is different from the mainstream multinational enterprises (MNEs). First, in contrast to the 1980s and 1990s MNEs, today's wireless industry is part of the Internet revolution which brings different types of internationalization strategies. Companies

Because of the growth in the Internet areas, the wireless and mobile industry is redefining itself by seeking a major restructuring.

like Vodafone and NTT DoCoMo maintain such a high market capitalization which was unthinkable in the eighties and nineties. Second, the new product development process pursued by high-tech companies is totally different from the mainstream manufacturing companies. Finally, at the global level, more opportunities are available to the wireless and mobile phone companies because of deregulations, privatizations, and a surge in consumer demand. Mobile phone companies are able to bypass obstacles that were faced by traditional MNEs in the process of internationalization. Vodafone is an interesting example where the company has sought internationalization in over 30 countries in a very short time because of the above mentioned opportunities. Unlike traditional MNEs from Japan, NTT DoCoMo is more risk-prone and innovative in the areas of its global acquisitions, alliances, and expansion. This is a bold strategy for a Japanese company which pursued developing its own i-mode technology instead of dealing with established hardware manufacturers.

There has been extensive literature on MNEs' overseas expansion and mode of entry issues. Topics that deal with global expansion issues include global acquisitions, firm-specific advantages, internalization, and other

internationalization issues. Researchers such as Bartlett, Buckley, Casson, Caves, Dunning, Ghoshal, Guisinger, Hymer, Kindleberger, Kogut, Roth, Rugman, Stopford, Vernon, Wells, and others have been at the forefront of MNE investigations. Since 1990, global expansion, technological progress and changing markets have brought a multitude of opportunities to the telecommunications industry (Sarkar et al., 1999; Blaine & Roche, 2000; Parker 2001). In the high-tech areas, first-mover firms always capture market share in the initial stages which results in economies of scale, learning curve, and setting the industry standards (Pan et al., 1999). NTT DoCoMo definitely fits in this category because of its mobile-phone services and i-mode technology. Selected recent studies which investigated the MNE entry mode, acquisition, and other topics include issues of reciprocity and alliances (Kashlak et al., 1998), issues of isomorphism (Davis et al., 2000), technology and knowledge transfer/acquisitions (Bresman et al., 1999; Lord & Ranft, 2000), the acquisition process as a learning process (Very & Schweiger, 2001), managerial and synergistic motives (Seth et al., 2000), profitability and market share issues (Pan et al., 1999), and internalization issues (Buckley & Casson, 1998). The studies have provid-

ed various explanations and criteria in the development of MNEs' global acquisitions and expansion strategies which are often motivated by the companies' first-mover advantage, internalization issues, gaining access to niche-oriented markets, and availability of suppliers and consumers.

Since 1990, logical alliances, mergers, and collaborative activities have become the norm because of industry-specific standards, reciprocity issues, and deregulations in the telecommunication markets (Kashlak et al., 1998; Sarkar et al., 1999; Parker, 2001). The growing consumer demand, wireless compatibility, and available digital standards encourage firms like NTT DoCoMo and others to seek expansion abroad. Other emerging issues related to overseas expansion have been investigated by the research community as well. For recent investigations, see Dusauge et al. (2000) on learning from competing partners, Ahuja and Katila (2001) on technological acquisitions and innovations issues, Bartlett and Ghoshal (2000) on lessons from late movers, Krogh and Cusumano (2001) and O'Donnell (2000) on managing foreign subsidiaries, Anand and Khanna (2000) on value creation and alliances, Elg (2000) on home-market relationships and international alliance partners, and Afuah (2000) on co-opetitors' capabilities. In addi-

tion, some of the recent studies in strategic networks and their related areas include knowledge sharing, inter-firm linkages, composition and startups, learning and protection of proprietary assets, and the evolution of firm networks. For example, see Ahuja (2000), Gulati et al. (2000), Hite and Hesterly (2001), Kale et al. (2000), Kogut (2000), and Stuart (1998).

After looking at NTT DoCoMo's expansion in Japan and other world markets, we can draw the following four conclusions which are based on the above cited literature: (a) the company capitalized on its innovative i-mode technology very early after the spin-off from NTT which brought Web-based and other wireless and Internet-related opportunities; (b) the company's product development activities and its first-mover advantage helped maintain the competitive advantage in the Japanese markets; (c) the company targeted those niche-oriented markets in Japan where very few companies were willing to take risks; and (d) the company fulfilled the business and consumer needs with the right digital products and service, i.e., i-mode, 3G, Freedom of Mobile Multimedia Access (FOMA), and other products.³ The above conclusions about NTT DoCoMo corrob-

³For a recent discussion on disruptive technologies, see: Christensen, Craig, and Hart (2001).

rate that internationalization in the high-tech industries is totally different from the mainstream manufacturing industries. On the other hand, in Japan, NTT DoCoMo had no competition in the market. Of course, it was a blessing that NTT owned 67.1% of the company.

In the last five years, the world telecommunications and wireless industry has taken many new turns and shapes regarding consolidations, joint ventures, alliances, and acquisitions. There are hundreds of alliances and other collaborative activities initiated by telecom companies. Because of the Internet, the global wireless industry is redefining itself and changing at a fast pace. Unlike the traditional telecommunications industry, wireless operators are well positioned in the areas of fulfilling consumer needs and providing a variety of new digital tools. *Fortune* (2000, p. 45) comments:

The telecom industry today is just like the steel industry in the 70's, the airlines in the 80's, and commercial real estate in the early 90's. The next few years will bring a wrenching consolidation of these oversuppliers.

At present, traditional telecommunication companies have had a hard time increasing their customers because of regulatory barriers and compatibility problems in wireless technologies. Wireless operators such as NTT

DoCoMo, Vodafone, Verizon, Sprint PCS, and others are in a better position to provide efficient and better services. Wireless companies tend to carry a high market-value because of their future growth potential and strong consumer demand. Vodafone and NTT DoCoMo each maintains a market capitalization which is larger than IBM, Toyota Motor, Coca-Cola, AOL, AT&T, Proctor & Gamble, Hewlett-Packard, and others. In 2001, Vodafone ranked eighth and NTT DoCoMo sixteenth in market capitalization among the Global companies worldwide. In Japan, NTT DoCoMo ranked first in market capitalization, even beating established companies such as Toyota Motor, Sony, Hitachi, Mitsubishi, and others (see Tables 4 and 5; *Financial Times*, 2001g). Just five years ago, for a wireless operator to acquire such a high company value was unthinkable. These developments signify an industry which is impacted by new digital standards and the Internet-related technologies. In addition, mobile-phone companies have benefited from a strong consumer demand. The phenomenon also resembles the dot.com industry where market values did not conform to the basic business fundamentals taught in the textbooks. Of course, in 2001, many telecommunication companies lost market values because of the dot.com downturn and 3G debt (see Table 4).

In the last four years, many European and Asian governments have started to auction broadband and 3G wireless licenses to raise capital and offer better technologies.

Table 4. World Telecommunications Industry: Companies Ranked by Market Capitalization (2001)

Rank/Company	Market Capitalization (billion; as of 2001)	Sales (2000) (billion)	FT Global 500 Ranking by Market Capitalization*		
			2001	2000	1999
1. Vodafone Group	\$227.15	\$22.19	8	24	70
2. NTT DoCoMo	175.43	41.53	16	3	27
3. SBC Communications	174.83	51.47	17	23	31
4. Verizon Communications	147.85	64.70	21	na	n
5. NTT	116.65	103.23	29	7	13
6. China Mobile HK	102.34	15.04	34	51	na
7. France Telecom	96.65	31.12	39	29	43
8. Deutsche Telecom	94.74	37.83	40	10	23
9. Bellsouth	81.21	26.15	53	54	36
10. AT&T	78.96	65.98	54	18	7
11. Quest Communications Int'l	75.87	16.61	59	198	na
12. Telefonica	75.51	26.32	61	55	80
13. Alcatel	68.31	29.02	67	121	191
14. Telecom Italia Mobile	64.65	na	74	65	58
15. British Telecom	59.01	30.79	81	22	26
16. Telecom Italia	57.82	na	84	67	na
17. Worldcom	55.96	39.00	87	26	14
18. Hutchison Whampoa	54.18	na	91	90	na
19. AT&T Wireless Group	50.24	na	103	na	na
20. Telstra Corp.	46.68	12.47	115	70	na
21. Telefonos de Mexico	40.61	10.65	130	180	na
22. Cable & Wireless	38.99	11.98	133	143	na
23. Voicestream Wireless	28.80	na	183	482	na
24. Singapore Telecommunications	23.56	na	223	176	na
25. Sprint PCS	22.32	23.61	238	134	na
26. Sprint Fon	20.87	na	252	107	na
27. Nextel Communications	20.54	na	257	158	na
28. SK Telecom	19.76	na	270	217	na
29. Swisscom	18.83	8.75	286	200	na
30. Korea Telecom	18.13	na	297	115	na
31. KPN	16.55	12.06	326	130	na
32. Olivetti	15.64	27.83	342	442	na

*Financial Times Annual Global 500 Rankings; na: not available.

Source: *Business Week*. (2001). The Global 1000, (June 9): 72-90; *Business Week*. (2001). The Information Technology 100, (June 18): 121-130; *Financial Times*. (2001). FT 500: The World's Largest Companies, (May 11): 1-55; *Fortune*. (2001). Fortune Global 500, (July 23): F1-F24).

In the last four years, many European and Asian governments have started to auction broadband and 3G wireless licenses to raise capital and offer better technologies. Some of these auctions have raised billions of dollars and proved to be very popular in Germany, Japan, Spain, and the UK. In 2000, the German government raised \$46 billion in its 3G mobile-phone auction versus UK's \$35.5 billion and The Netherlands' \$2.5 billion. Of course, this has sparked more mergers and acquisitions among wireless and telephone companies. In 2000, Vodafone acquired Germany's Mannesmann for \$183 billion. The acquisition drew worldwide attention and some opposition from German shareholders. In the world telecommunications industry, it is expected that total cost of 3G licenses and equipment may cost \$300 billion.⁴ On the downside, it is not clear whether good rates of return from these new digital wireless technologies are possible because of their exorbitant cost and initial investments.⁵

⁴As of August 2001, Vodafone owns 99.4 percent of Mannesmann and changed its name to Vodafone Deutschland. For more discussion, see: The Wall Street Journal, Minority of Mannesmann holders continue resistance to Vodafone, August 27, 2001, p. A10.

⁵For more discussion on 3G spectrum/licenses, see: *The Economist*. (2000). The price is right, (July 29), 21; *The Economist*. (2000). Two stumbling steps to 3G, (December 9), 16; *The Financial Times*. (2001). Mobile leaders to address problems at Vegas gathering, (March 20), 18; *Business Week*. (2001). Wireless: A little government meddling may not hurt, (February 19), p. 44; Deloitte Research. (1999). Third generation mobile: A six-step guide to building a 3G telco, Deloitte Consulting, pp. 1–35.

M-COMMERCE AND GLOBAL WIRELESS STANDARDS

New product development in the high-tech and Internet-related industries is unique and extraordinary, because of speed, prospects for high profits, time-to-market, haphazard growth, and shorter life cycles. Traditional new product development methods are often bypassed to achieve a competitive edge and meet the consumer demand. Rapid release of new products becomes the norm although it may bring setbacks and failures (Hanson, 2000). When applying the new product development procedures to m-commerce, it is evident that many products encounter the same problems that impacted the Internet companies. Beta testing is used in m-commerce but setting the industry standards is difficult. For example, in the wireless area, there are numerous standards used in Japan, Europe, and North America. Because of incompatibility, wireless operators in the areas of m-commerce and 3G have a hard time mass marketing their new technologies.

With all the standards and other market hurdles, m-commerce is one of the fastest growing markets in Japan. In the Internet and e-business areas, markets are growing at a very fast pace because of changing 3G technologies and demand patterns. m-commerce transactions take the form of wireless technolo-

gies which help businesses and consumers to be connected to the Web while they are traveling or away from their jobs or homes. According to industry experts, Japan is ahead of Europe in the wireless technology and Europe in turn is ahead of the U.S. In Japan, demand for m-commerce is attributed to lesser regulatory barriers, availability of infrastructure, strong consumer interest, quality of wireless services, and availability of DoCoMo-style i-mode technologies (*The Wall Street Journal*, 2000c).⁶ Although future prospects look promising, technology glitches and dwindling consumer interest are often cited as one of the major problems in the widespread use of m-commerce.⁷ In Japan, growing m-commerce areas include: vending machines, parking meters, payment of bills, delivery of news, travel, video conferencing, traffic information and other navigation tools, portable television, and music on demand, etc. (for detail, see Table 5; *Business Week*, 2000c; *Financial Times*, 2000c). In addition, unlike Japan and Europe, U.S., companies are slow to adopt more powerful digital wireless standards. In

⁶Also see: *The Wall Street Journal*, Wireless Web's vast promises still unkept in the US, December 1, 2000, pp. B1&B4; *The Financial Times*, US wakes up to the potential of wireless, (July 12), 2001, p. 22; *The Financial Times*, Difficulties for DoCoMo in wooing US, (August 21), 2001, p. 19.

⁷See: *The Wall Street Journal*. (2001). Interest in Mobile Commerce is Declining, (May 11), p. B7.

North America, m-commerce is available but lacks speed and service because of incompatible wireless standards and poor quality of service (U.S. Department of Commerce, 1999; Evans & Wurster, 2000; Mann et al., 2000; Tapscott et al., 2000;). *The Wall Street Journal* (2000c, p. B1) comments on m-commerce and wireless industry as follows: "Overseas, mobile phones work like electronic wallets; bank, buy wines, pay rent."

In Japan, m-commerce is synonymous with NTT DoCoMo and its chief internet operations director, Keichi Enoki who helped introduce i-mode technology (*Business Week*, 2000c). In the Japanese market, m-commerce has become very popular because of factors such as population density, changing lifestyles and demand patterns (*The Wall Street Journal*, 2000a; Bloomer et al., 2001).

In the area of global wireless standards, companies have adopted different types of technologies depending on their needs and patents. Table 6 provides a list of these standards. In Europe and other markets, most of the wireless operators use GSM (Global System for Mobile Communications). In 2000, there were 176 million subscribers of GSM worldwide. NTT DoCoMo and U.S. companies use the CDMA (Code Division Multiple Access) standard

Table 5. Top 30 Companies in Japan Ranked by Market Capitalization (2001)

Rank/Company	Market Capitalization (billion; as of 2001)	Sales (2000) (billion)	Ranking by Market Capitalization* (In Japan)(Global Ranking)	
1. NTT DoCoMo	\$175.43	\$41.53	1	16
2. Toyota Motor	123.86	121.41	2	25
3. NTT	116.65	103.23	3	29
4. Sony	67.06	66.15	4	69
5. Mizuho Holdings	58.12	52.06	5	83
6. Takeda Chemical Industries	53.46	na	6	93
7. Matsushita Electric Industries	49.84	69.47	7	106
8. Seven-Eleven Japan (Ito-Yokado)	48.14	28.39	8	110
9. Bank of Tokyo-Mitsubishi	46.98	26.34	9	112
10. Honda Motor	37.26	58.46	10	141
11. Nomura Securities	37.18	11.75	11	142
12. Tokyo Electric Power	34.53	47.55	12	153
13. Canon	32.62	25.80	13	161
14. Sumitomo Bank	32.06	24.66	14	163
15. NEC	30.98	48.92	15	168
16. Hitachi	30.21	76.12	16	175
17. Fujitsu Ltd.	29.94	49.63	17	177
18. Murata Manufacturing	29.77	na	18	179
19. Sakura Bank	25.95	16.04	19	201
20. Rohm	24.54	na	20	208
21. Oracle Corporation Japan	24.16	na	21	213
22. Matsushita Communications Ltd.	23.84	na	22	218
23. East Japan Railway	23.76	23.08	23	219
24. Nintendo	23.56	na	24	224
25. Nissan Motor	22.49	55.07	25	235
26. Toshiba	21.92	53.82	26	243
27. Fuji Photo Film	20.87	13.02	27	253
28. Kyocera Corp.	20.81	11.62	28	254
29. Denso	20.32	18.22	29	259
30. Sanwa Bank	20.53	17.17	30	260

*Financial Times Annual FT 500 Rankings;

na: not available/not included in Global Fortune 500 list.

Source: Financial Times. (2001). FT 500: The World's Largest Companies, (May 11): 1-55; Fortune. (2001). Fortune Global 500, (July 23): F1-F24).

which currently has 67 million subscribers worldwide. TDMA (Time Division Multiple Access) is an extension of CDMA that has attracted 47 million subscribers. Currently, NTT DoCoMo is experimenting with Wideband CDMA. Because of company-specific needs, competition, and compatibility problems, wireless operators have not been able to make a single global standard for the global markets (see Table 6).

To develop and introduce m-commerce-type products, NTT DoCoMo, Vodafone, and others have been working on 3G-based technologies which encompass wireless multimedia (see Table 6). To have access to radio spectrum, the companies have spent billions to acquire wireless licenses. According to one estimate, over \$100 billion was spent in the acquisition of wireless licenses before the dot.com crisis. Many telecom companies in Europe are burdened with 3G-related debt. Future 3G products have been delayed because of sluggish demand and infrastructural problems. On the other hand, in the U.S., there is a shortage of radio spectrum/airwaves since most of it is used by

⁸For more discussion on 3-G, see *Business Week*, Web woes, (June 4), 2001, pp. EB22-27; *Financial Times*, Understanding 3-G: The mobile revolution, (Summer), 2001, pp. 1-30; *The Wall Street Journal*, The fate of next waves's licenses for wireless spectrum is unclear, June 28, 2001, pp. C1, 4; *The Wall Street Journal*, Telecom executives say they will back legislation to open Pentagon's airwaves, (July 25), 2001, pp. B4.

the U.S. Defense Department.⁸ Both NTT DoCoMo and Vodafone have delayed introducing their plans to bring 3G wireless services in Japan and Europe. In the meantime, wireless operators are offering 2.5G-type of services which only connects with the Internet and e-mail. In short, the hype behind 3G is over. This can also be attributed to an absence of one wireless standard in the world (see Table 6).

CHANGING MARKETS AND CRITICAL ISSUES

In the coming years, NTT DoCoMo may face a multitude of critical issues because of the changing wireless market and consumer demand in Japan as well as other markets (see Table 7). Some of the areas encompass:

- Unlike Microsoft, AOL, AT&T, Deutsche Telecom, British Telecom, SBC Communications, and other high-tech companies, NTT DoCoMo is not a household name in the U.S. and other Western countries. The company is very well known in Japan but carries limited clout in other parts of the world.
- Since 1992, NTT DoCoMo has mostly stayed in Japan and sought its growth through minority acquisitions in Hong Kong, The Netherlands, and the U.S.

Table 6. Profile of M-Commerce and Digital Wireless Standards*A. Profile of M-Commerce (current and future areas)*

M-Commerce in 2001–02	Future M-Commerce (next 4–5 Years)
- Yellow Pages	- Travel Reservations
- Travel Updates	- Online Auctions
- Instant Messaging	- Reverse Auctions
- E-mails	- Stock Trading
- AOL, Vodafone & Others	- Events-Driven Transactions
(North America & Europe)	- Navigational Aids
- NTT DoCoMo, KDDI & others	- Online Coupons for Supermarkets
(Asia)	- Business-to-Business (B2B), B2C, C2B, C2C, Business-to-Government (B2G), etc.
	- Selected Value Chains
	- E-Exchanges, Net/Online Marketplaces
	- Selected Industries for Wireless Market: Wireless Portals, E-Commerce Companies, Movie/Music, Industries
	- Auto Companies, Satellite Companies

B. Current and Future Global Wireless Standards

- Bluetooth: Short-range wireless communications standard for linking various devices.
- CDMA (Code Division Multiple Access): For 2G and 3G services.
- CDMA2000: Introduced by Qualcomm for its 3G standard.
- Edge: For GSM enhancement.
- GPRS (General Packet Radio Service)
- GSM (Global System for Mobile Communications): 2.5G for Internet access.
- I-Mode: Mobile service based on Internet access from NTT DoCoMo.
- IMT-2000: 3G standard from International Telecommunication Union based on CDMA2000, UITS and W-CDMA
- UMTS (Universal Mobile Telecommunications System): W-CDMA standard for 3G; used in Europe.
- WAP (Wireless Application Protocol): Standard for mobile applications; used for text-based Internet and e-mail.
- W-CDMA (Wideband-CDMA): CDMA for 3G; used in Japan.*

C. Wireless Technology Timeline (2nd to 3rd Generation)

- 1989–1999:	2.0G - Wireless Voice [10 kbps - GSW/TDMA; 14.4 kbps - CDMA one]
- 1999–2000:	2.5G - Differentiation Usage [115 kbps - GPRS; 64 kbps - IS 95B]
- 2000–2001:	2.75G - Wireless Internet [115/384 kbps - EDGE; 144 kbps - 1XRTT]
- 2001–2002:	3.0G - Wireless Multimedia [-384 (512) kbps - wide area; (2 mbps) local W-CDMA; 1.4 mbps - HDR 3XRTT]
- 2002–2003:	Availability of limited 3G services in the Triad
- 2004hr –2005:	Broader usage of 3G in the Triad

*D. Global Wireless Subscribers (as of April 2000)**

Digital Wireless Subscribers Worldwide (in million):

GSM 900:	176.0
GSM 1800:	44.7
GSM 1900:	8.1
GSM 900/1800:	102.3
CDMA:	67.1
PDC:	48.2

US TDMA (Time Division Multiple Access): 47.8

Table 6. Profile of M-Commerce and Digital Wireless Standards (continued)**GSM Subscribers by Region (in million):**

Europe:	21.0
Asia-Pacific:	90.1
Africa:	7.5
North America:	7.4
Other:	11.1

*At present, NTT DoCoMo is experimenting with W (Wideband)-CDMA.

Source: Buckley, Sean. 3G Wireless: Mobility Scales New Heights, *Telecommunications*, October, 2000, pp. 32-36; *The Economist*, Waves of the Future, July 18, 2000, pp. 71-74; B2B. Special Report: E-Hub Essentials, July 3, 2000, pp. 1-32; *Business Week*, Wireless in Cyberspace, May 29, 2000, pp. 135-164; (4). *Financial Times*, Understanding 3G: The Mobile Evolution, Summer, 2001, pp. 1-30; *The Wall Street Journal*, Deutsche Telekom Bets Big on GSM Standard, July 12, 2000, p. A3.

These acquisitions carry limited room for future growth. In the U.S. and other countries, NTT DoCoMo and other foreign wireless operators may not be able to acquire local telecommunication companies because of national security laws. In 2000, NTT DoCoMo and Deutsche Telekom encountered such problems in the U.S. The U.S. congress and the FBI proposed legislation which blocked outside companies from seeking U.S. telephone licenses (*The Wall Street Journal*, 2000b).

- The Japanese market may saturate in the coming years. In 2000, 51% of Japanese owned a cell phone. In the coming years, many foreign mobile operators in Japan may establish their operations because of market potential and consumer demand. In 2001, Vodafone invested \$9 billion in Japan Telecom Co. and plans on merging its

three wireless units into a new company called J-Phone Co. At present, Vodafone maintains a 60% share in Japan Telecom Co.⁹

- NTT DoCoMo is not listed on the New York Stock Exchange or NASDAQ. The company's ability to attract mutual fund managers and institutional investors in the U.S. is limited. In addition, this may hamper the company's future growth in Japan, the U.S. and Western Europe. As of 2001, the company delayed its listing in the U.S. because of the depressed markets.
- The East Asian crisis has affected NTT DoCoMo's expansion in the Asian markets. Although economic con-

⁹For more discussion, see *The Wall Street Journal* (2000). The FBI raises security issues on NTT-Verio. July 6: A3; *Financial Times* (2000). U.S. threat to foreign telecoms takeovers recedes. September 8: 15; *The Wall Street Journal* (2001). Vodafone is set to merge Japan Telecom Co. units. August 27, p. A8.

Table 7. NTT DoCoMo: Current and Future Strengths/Opportunities and Weaknesses/Threats

Strengths and Opportunities

Marketing Capabilities, Strengths and Opportunities

- NTT DoCoMo is the largest cellular/wireless telephone company in Japan; also one of the most innovative communications companies in the world.
- Has established 9 regional companies in Japan under the umbrella of NTT DoCoMo; aims to be one of the industry leaders worldwide.
- Shows excellent growth potential through acquisitions in Asia and North America.
- Recent alliances with Microsoft, Sun Microsystems, Walt Disney, Coca-Cola Japan, Sony, and others, look very promising.
- Shows excellent potential in the area of m-commerce in Japan and other markets.
- Maintains an excellent learning curve in Japan.
- Knows how to expedite the product development process and target new markets in the wireless technology.
- Plans to bring significant changes in Japan's Internet and m-commerce market; top management is highly entrepreneurial.

Financial Strengths

- NTT DoCoMo is a cash rich company.
- NTT Owns 67.1% of DoCoMo; chances for a future hostile takeover are limited since foreign investors hold only 11% of DoCoMo shares.

Technological Capabilities and Opportunities

- Carries excellent potential in the areas of current and future 3-G i-mode technology; the largest and most advanced cell-phone operator in Japan.
- First-Mover in the Internet-related cell-phone technologies.
- I-mode is the only network which provides continuous access to the Internet via cell-phone; CDMA (Code Division Multiple Access) technology is competitive worldwide.
- By 2001, NTT DoCoMo's wireless technology will provide a speed of 300 kps and two megabits by 2003; consumers will be able to download music, TV shows, and real-time video-conferencing.
- Maintains a state-of-the art R&D facility in Yokosuka Park, Tokyo; over 700 engineers & \$1 billion R&D budget

Weaknesses and Threats

Marketing Weaknesses and Threats

- NTT DoCoMo is not a household name in the U.S. and Western Europe.
 - In the coming years, may encounter competition in the m-commerce markets in Europe and North America.
 - Limited expertise in North American and European markets; global expansion may create problems in the coming years; world voice and data service markets have become very competitive.
 - In the U.S., 41% of the population lives in urban areas versus Japan's 78 %; may not have good market share in the U.S.
 - Japanese competitors such as KDDI and othesr have captured 27% of the wireless market; may create problems in 3–5 years.
 - May not be able to compete with Vodafone Group in some markets because of Vodafone's massive acquisitions and global alliances.
 - May have problems in overseas alliances because of limited overseas experience and exposure.
 - European and North American demographics are different from Japanese consumer market; unlike Japan, majority of m-commerce consumer overseas are in business markets.
-

Table 7. NTT DoCoMo: Current and Future Strengths/Opportunities and Weaknesses/Threats (*continued*)**Weaknesses and Threats****Financial Weaknesses**

- NTT's rigid/bureaucratic culture controls DoCoMo since it owns 67.1% of the company; may not have enough autonomy and independence to seek international expansion.
- The stock is not listed in the U.S. (NYSE or NASDAQ).
- East Asian markets may take some years to recover from 1997's crisis.
- In North America, tougher competition is expected from telecommunication companies and application providers.

Technological Weaknesses and Threats

- M-commerce is still in its infancy in North America; incompatible and multiple wireless standards in North America and Europe may create problems.
- Technology may change in the coming years which could impact 3-G i-mode technology; limited compatibility between GSM (Global System for Mobile Communications) & CDMA.

Source: AsiaWeek, Business Week, The Economist, Financial Times, Fortune, and The Wall Street Journal.

ditions are improving, NTT DoCoMo and other wireless companies may be affected because of currency depreciation in the weaker economies, i.e., Indonesia, Thailand, Malaysia, and others.

- At the international level, NTT DoCoMo is still a small player in the wireless market, although its i-mode technology is well known and may have good prospects.
- To expand and compete effectively in the global markets, NTT DoCoMo may seek additional expansion and acquisitions into Europe, North America, and Asia. Long-term synergies are difficult to emulate in high-tech acquisitions (Chaudhuri & Tabrizi, 1999). Some analysts believe that NTT DoCoMo would face heightened competition because of its unfamiliarity with those

markets. The company's strong know-how in i-mode may not be replicated in Europe and North America which are totally different in consumer lifestyles and demand (*Financial Times*, 2000a-e).

- At the global level, the Internet and e-commerce industry is a complex market because of the regulatory environment and country-specific standards. Besides this, e-commerce and its business models have been scrutinized because of valuation problems and long-term viability issues (Porter, 2001). As of August 2001, the mobile phone and wireless market is somewhat stagnant because of downsizing in the high-tech areas. The i-mode technology may not be replicated in other markets because of competition,

unavailability of infrastructure, incompatible standards, and slow consumer demand.

- Some analysts feel that DoCoMo's association with NTT is a liability. NTT owns 67.1% of DoCoMo which provides limited autonomy in the area of internationalization and global expansion. In addition, NTT is a government bureaucracy and lacks an entrepreneurial culture for global initiatives and expansion (*Financial Times*, 2000f-j, 2001a-h).
- In Japan, NTT DoCoMo's competitor KDDI (formerly DDI, IDO and KDD), the second largest mobile operator, carries a 27% market share and is more niche-oriented in product development and technology areas. Some of the smaller companies in the m-commerce industry are perceived to be more successful and profitable because of their corporate structure and independence (*Financial Times*, 2000g).
- According to Yip (1992), there are many strategies in the area of internationalization that can help companies maintain competitive advantage and increase market share. For example, patents, research and development (R&D) capability, breadth of product lines, customer relationships, cross-business synergy, superior financial

resources, vertical networks, and reputation of company are crucial when designing global strategy. NTT DoCoMo carries most of these advantages except customer relationships, vertical integration, and brand visibility outside of Japan. Fixing these areas could be beneficial for NTT DoCoMo in the coming years because of 3G prospects.

FUTURE EXPANSION AND GLOBAL STRATEGIES

In today's e-commerce/m-commerce environment, many analysts see NTT DoCoMo as a unique and well-positioned wireless company which is in a favorable position to reap huge rewards if markets and its 3G-based i-mode technology remain strong and unchanged in the coming years. According to Zook (2001), on the average, only one in 10 companies at the global level is able to reach a profitable growth rate (5.5% average annual revenue and income growth). NTT DoCoMo definitely falls in this category. In the short-term, NTT DoCoMo can reap all the benefits by being the market leader in Japan. More overseas acquisitions and alliances are expected in the Internet and wireless areas. Analysts believe that in Japan, the company plans on consolidating its position in the mobile-phone and Internet-related markets in the coming years and may gradually detach itself

from NTT as it starts to go global (*Financial Times*, 2001e). It is only fair to say that NTT DoCoMo has a better chance to succeed in Japan and other East Asian economies because of technology, corporate experience and competition. In Japan, the company is the number one market shareholder in i-mode and mobile phone segments. The cost of pursuing new markets in Asia (alliances, joint ventures, acquisitions, etc.) looks easier than other triad countries. The wireless markets in North America and Western Europe are rapidly changing because of the spectrum issues and consumer demand.

On the other hand, the company is dealing with the worldwide telecom turmoil caused by global glut, 3G debt, hastily done acquisitions, and overbuilt networks and fiber-optic infrastructure.¹⁰ Although NTT DoCoMo is not impacted by the problems which are faced by European and North American telecom companies, its global expansion is partially halted. In Japan, the company is still number one in the wireless/mobile phone sectors. In other parts of Asia, NTT DoCoMo is somewhat cautious. In North America and Europe, the company has made acquisitions and alliances which are

for the long term, especially with AT&T Wireless.

As of August 2001, the company has pursued and implemented the following strategies to deal with the changing global markets:

Global Acquisitions and Alliances

- NTT DoCoMo has become more aggressive in its global expansion and minority acquisitions. In September 2000, NTT DoCoMo and AOL announced a strategic alliance in the Japanese market to provide mobile-Web services and other Internet-related products. According to the agreement reached with AOL, NTT DoCoMo will invest \$100 million for a 42.3% control in AOL Japan, Inc. For NTT DoCoMo, this means positive future prospects to get into the Internet area. For AOL, it was a viable option to expand in the Japanese market. In addition, the companies announced plans to cooperate in other global markets as well. In April 2001, NTT DoCoMo had 35 million phone subscribers and its i-mode subscribers reached 21 million. In the case of AOL, its fixed-line subscribers reached over 24 million worldwide (*The Wall Street Journal*, 2000d; *Financial Times*, 2000f).
- In September 2000, NTT DoCoMo made a \$5.5 bil-

It is only fair to say that NTT DoCoMo has a better chance to succeed in Japan and other East Asian economies because of technology, corporate experience and competition.

¹⁰For detail, see: *Business Week*, 8 Lessons from the telecom mess, (2001, August 13), pp. 60–67; *The Wall Street Journal*, How Europe tripped over a wireless phone made for the Internet, (2001, June 5), p. A1&A8; *The Wall Street Journal*, Telecom sector's bust reverberates loudly across the economy, (2001, July 25), p. A1&A6.

lion acquisition in Verio, a Colorado-based Web hosting and Internet access service company. The FBI raised concerns regarding the issues of national security but later approved the deal (*Financial Times*, 2000e).

3. In December 2000, NTT DoCoMo announced the choice of AT&T wireless for its U.S. expansion. According to the agreement reached with AT&T, NTT DoCoMo will invest \$9.8 billion in AT&T in return for 16% stake in its U.S. partner. According to the analysts, the partnership looks viable since NTT DoCoMo's i-mode technology is compatible with AT&T's wireless technology. On the other hand, AT&T had looked for an alliance partner to upgrade its second-generation wireless technology.¹¹

Unveiling of the Third Generation Wireless Technology (i-mode)

NTT DoCoMo has announced the unveiling of 3G wireless technology called the "i-mode"/W-CDMA (Wideband Code Division Multiple Access). This technology was originally going to be available in the Japanese

¹¹This story was covered in all the major business periodicals. See *The Wall Street Journal* (2000). A big deal for tiny screens. (December 1), p. B1, B4; *Asian Wall Street Journal—Weekly Edition* (2000). DoCoMo chooses AT&T Wireless for push into the U.S. (December 4–10), p. 2; *Financial Times* (2000). Danger of culture clash in high-tech lesson from Japan. (December 1), p. 23; *Business Week* (2000). AT&T tries downloading DoCoMo's magic. (December 11), p. 48.

market in May 2001 (see Table 6).¹² Currently, NTT DoCoMo and Vodafone have delayed their 3G plans because of technical glitches and infrastructure problems. Vodafone and other European telecom companies have invested billions in the acquisitions of 3G licenses. Some analysts question the future viability of these licenses and market growth in m-commerce. Telecom companies such as British Telecom, Deutsche Telecom, and France Telecom are severely impacted by the debt incurred by 3G licenses. According to some analysts, at the global level, companies' investments to acquire 3G spectrum have surpassed \$100 billion. To avoid a major disaster, British Telecom and Deutsche Telecom have announced building and sharing their 3G networks in Germany. In the coming years, more alliances are expected to take place in this area. NTT DoCoMo is somewhat immune from this problem because of its affiliation with NTT.¹³

¹²In Japan, W-CDMA services are called FOMA (Freedom of Mobile Multimedia Access); also see NTT DoCoMo's advertisement in *The Economist* (2000), (December 16), p. 23; *Financial Times* (2000), Iconic I-Mode. (December 1), p. 12.

¹³For more discussion on 3G and spectrum auctions, see Gruber, H. (2001). Spectrum limits and competition in mobile markets: The role of license fees. *Telecommunications Policy*, 25(2), pp. 59–70; Melody, W.H. (2001). Spectrum auctions and efficient resource allocation: Learning from the 3G experience in Europe. *Telecom Reform*, 1(1), pp. 1–8; *The Wall Street Journal* (2001). Telecom sector's bust reverberates loudly across the economy. (July 25), pp. A1, A6; *The Wall Street Journal* (2001). Europe's phone giants, plagued by troubles, turn into fair game. (August 10), pp. A1, A4; *Business Week* (2001). Eight lessons from the telecom mess. (August 13), pp. 60–67.

Issuing New Shares and a Possible NYSE Listing

To implement its global expansion, NTT DoCoMo plans on issuing \$9 billion worth of new shares. In addition, the company is expected to list its shares on the NYSE in 2001, although the plan may be delayed because of the depressed markets. If all goes well, the company expects to raise sufficient capital to fulfill its global ambitions. Of course, other telecom companies have announced issuing new shares in 2001 as well. These include French Telecom, British Telecom, AT&T, Deutsche Telecom, KPN (The Netherlands), Verizon, and Bell South (*Financial Times*, 2000j).

Changing Competition and Global Markets

In Japan, NTT DoCoMo's main competitors include a group of three telecom/wireless companies (DDI, IDO, and KDD). In October 2000, the three companies merged together to form a new group called KDDI which maintains a combined revenues of 42 billion Yen versus NTT's 825 billion Yen (*Financial Times*, 2000g). In the overseas market, NTT DoCoMo's major competitor is a UK-based Vodafone which is expanding in the world markets as well. At the end of August 2001, Vodafone's subscribers reached 80 million in 30 countries. In fact, it is seeking global expansion even faster than NTT DoCoMo because of its


cash rich situation. Vodafone is the largest wireless company in the world and has made a multitude of acquisitions and alliances since it acquired Germany's Mannesman for \$181 billion in 2000. Just five years ago, Vodafone was a small wireless company from the UK. In December 2000, it also invested \$2.21 billion in Japan Telecom Co. (*Forbes*, 2001). As of August 2001, the company has raised its stake in Japan Telecom to 60%. This was the second largest acquisition made by a foreign company in Japan after Renault's 37% purchase of Nissan in 1999. In addition, last November, Vodafone acquired 25% of Swisscom's cellular division.¹⁴ Some analysts question the legitimacy of transnational mergers in the high-tech area because of value-added issues and long-term synergies (Chaudhuri & Tabrizi, 1999; Ghemawat & Ghadar, 2000).

CONCLUSION

As of August 2001, NTT DoCoMo's diversification strategy looks right on track even though the dot.com-related downturn has affected many telecom companies worldwide. NTT DoCoMo continues to

¹⁴For more discussion on Vodafone, see: *The Wall Street Journal*, Vodafone Now Looks Toward Asia, November 15, 2000, p. A21; *Financial Times*, Vodafone Buys Stake in JT, December 21, 2000, p. 18; Fortune, Mr. Gent Takes a Whack at the Web, October 30, 2000, pp. 154-164; <http://www.vodafone.com>.

amass a huge market share in the Japanese market. In 2001, its market capitalization surpassed \$175.43 billion which is larger than some of the more established companies like Toyota, Sony, Hitachi, and Mitsubishi. Unlike its main competitor Vodafone, the company is making inroads in the global markets by minority acquisitions. Overall, NTT DoCoMo continues to expand in the areas of its core business. The analysts believe that in the coming years, NTT DoCoMo, in addition to Vodafone, is set to become one of the top wireless companies in the world. Of course, competition in the industry may be heightened because of the availability of additional 3G wireless licenses, rigid national laws and regulatory barriers, cost factors, and above all, Vodafone's massive global acquisitions. Finally, regarding NT DoCoMo's proprietary standard and future markets, one analyst states:

While NTT DoCoMo has done well, Japanese telecommunications suppliers have done poorly on world markets because NTT chose its own proprietary standard to build its networks. Learning from its past mistakes, DoCoMo, with MPT's support, is moving aggressively to be the first to introduce broadband CDMA, a technology widely expected to be one of the two global standards. If Japanese manufacturers are among the first to build the equipment, they could once again become competitive players in the global market. (Helm, 2001, p. 111) 

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REFERENCES

- Afuah, A. (2000). How much do your competitors' capabilities matter in the face of technological change? *Strategic Management Journal*, 21, 387–404.
- Ahuja, G. (2000). The duality of collaboration: Inducements and opportunities in the formation of interfirm linkages. *Strategic Management Journal*, 21, 317–343.
- Ahuja, G., & Katila, R. (2001). Technological acquisitions and the innovation performance of acquiring firms: A longitudinal study. *Strategic Management Journal*, 22, 197–220.
- Anand, B. N., & Khanna, T. (2000). Do firms learn to create value? The case of alliances. *Strategic Management Journal*, 21, 295–315.
- Asian Wall Street Journal. (2001, May 21–23). I-mode boosts DoCoMo net, 3.
- Baily, M.N., & Lawrence, R.Z. (2001). Do we have a new economy? *The American Economic Review*, 91(2), 308–312.
- Bartlett, C.A., & Ghoshal, S. (2000). Going global: Lessons from late movers. *Harvard Business Review*, 78(2), 132–142.
- Blaine, M.J., & Roche, E.M. (2000). Introduction. In E.M. Roche & M.J. Blaine (Eds.), *Information technology in multinational enterprises* (pp. 3–18). Cheltenham, UK: Edward Elgar.
- Bloomer, J., Cicalese, M., & Markovitz, J. (2001). DoCoMo's quest to go global. In M. Kotabe & H. Kristiaan. *Global marketing management*, 2nd edition (pp. 828–833). New York, NY: John Wiley & Sons.
- Bresman, H., Birkinshaw, J., & Nobel, R. (1999). Knowledge transfer in international acquisitions. *Journal of International Business Studies*, 30(3), 439–462.
- Buckley, P.J., & Casson, M.C. (1998). Analyzing foreign market entry strategies: Extending the internalization approach. *Journal of International Business Studies*, 29(3), 539–562.
- Business Week. (1999, November 29). Power play: Let the big mobile-phone duel begin. Pp. 54–55.
- Business Week. (2000a, January 17). A high-tech surprise from Japan. P. 118.

- Business Week. (2000b, July 10). The global 1000: The world's most valuable companies. Pp. 107–152.
- Business Week. (2000c, July 24). The Stars of Asia: Leaders at the forefront of change. Pp. 58–66.
- Business Week. (2001, June 9). The Global 1000. Pp. 72–90
- Chaudhuri, S., & Tabrizi, B. (1999). Capturing the real value in high-tech acquisitions. *Harvard Business Review*, 77(5), 123–130.
- Christensen, C., Craig, T., & Hart, S. (2001). The great disruption. *Foreign Affairs*, 80(2), 80–95.
- Davis, P.S., Desai, A.B., & Francis, J.D. (2000). Mode of international entry: An isomorphism perspective. *Journal of International Business Studies*, 31(2), 239–258.
- Dussauge, P., Garrette, B., & Mitchell, W. (2000). Learning from competing partners: Outcomes and durations of scale and link alliances in Europe, North America, and Asia. *Strategic Management Journal*, 21, 99–126.
- The Economist. (1999a, November 20). Mobile warfare. Pp. 20–22.
- The Economist. (1999b, November 27). A fight to the wire. Pp. 63–64.
- The Economist. (2000, March 11). I-Modest Success. Pp. 69–70.
- The Economist. (2001, January 27). The great merger wave breaks. Pp. 59–60
- Elg, U. (2000). Firms' home-market relationships: Their role when selecting international alliance partners. *Journal of International Business Studies*, 31(1), 169–177.
- Evans, P., & Wurster, T.S. (2000). *Blown to bits: How the new economics of information transforms strategy*. Boston, MA: Harvard Business School Press.
- Financial Times. (2000a, May 4). FT 500. Pp. 1–55.
- Financial Times. (2000b, July 21). International strategists or adventurer? P. 23.
- Financial Times. (2000c, August 2). Sony, DoCoMo in games link-up. P. 13
- Financial Times. (2000d, August 21). Difficulties for DoCoMo in wooing US. P. 19.
- Financial Times. (2000e, September 1). NTT Plans to Buy Internet Backbone. P. 22.
- Financial Times. (2000f, September 28). AOL and DoCoMo in PC/Internet Deal. P. 26.
- Financial Times. (2000g, October 2). KDDI's tricky start behind the fanfare. P. 21.
- Financial Times. (2000h, December 15). World's most respected companies. P. I.
- Financial Times. (2000i, December 15). Vision transformed into dominant force. P. VI.
- Financial Times. (2000j, December 22). DoCoMo Plans New York Listing. P. 1.
- Financial Times. (2001a, January 4). A Little goes a long way. P. 13.
- Financial Times. (2001b, March 1). Worlds apart. P. 12.
- Financial Times. (2001c, March 8). European telecoms still on the search for a hangover cure. P. 25.
- Financial Times. (2001d, April 4). Too close to call. P. V.
- Financial Times. (2001e, April 11). Japan waters down telecoms reforms. P. 4.
- Financial Times. (2001f, April 11). NTT DoCoMo in focus: I-mode is taking the business world by storm. P. 21.
- Financial Times. (2001g, May 11). FT 500: The World's Largest Companies. P. 1–55
- Financial Times. (2001h, August 8). The race is on to solve early technical hitches. P. IV.
- Forbes. (2001, April 16). Third (de)generation. P. 72.
- Fortune. (2000, September 18). Telecom: What a wreck! P. 45.
- Ghemawat, P., & Ghadar, F. (2000). The dubious logic of global megamergers. 78(4): 65–72.
- Gulati, R., Nohria, N., & Zaheer, A. (2000). Strategic networks. *Strategic Management Journal*, 21, 203–215.
- Hanson, W. (2000). *Principles of Internet marketing*. Cincinnati, OH: Southwestern College Publishing.
- Helm, L. (2001). Social communications innovation and destruction in Japan. In L.W. McKnight, P.M. Vaaler., & R.L. Katz (Eds). *Creative destruction: Business survival strategies in the global Internet economy* (pp. 111–116). Cambridge, MA: The MIT Press.
- Hite, J.M., & Hesterly, W.S. (2001). The evolution of firm networks: From emergence to early growth of the firm. *Strategic Management Journal*, 22, 275–286.
- Kale, P., Singh, H., & Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: Building relational capital. *Strategic Management Journal*, 21, 217–237.
- Kashlak, R.J., Chandran, R., & Di Benedetto, C.A. (1998). Reciprocity in international business: A study of telecommunications alliances and contract. *Journal of International Business Studies*, 29(2), 281–304.
- Kogut, B. (2000). The network as knowledge: Generative rules and the emergence of structure. *Strategic Management Journal*, 21, 405–425.
- Krogh, G.V., & Cusumano, M.A. (2001).

- Three strategies for managing fast growth companies. *MIT Sloan Management Review*, (Winter), 53–61.
- Lord, M.D., & Ranft, A.L. (2000). Organizational learning about new international markets: Exploring the internal transfer of local market. *Journal of International Business Studies*, 31(4), 573–589.
- Mann, C.L., Eckert, S.E., & Knight, S.C. (2000). *Global electronic commerce: A policy primer*. Washington, D.C.: Institute for International Economics.
- McKendrick, D.G. (2001). Global strategy and population-level learning: The case of hard disk industry. *Strategic Management Journal*, 22(4), 37–334.
- NTT DoCoMo. (2001). <http://www.nttdocomo.com>.
- O'Donnell, S.W. (2000). Managing foreign subsidiaries: Agents of headquarters, or an interdependent network? *Strategic Management Journal*, 21, 525–548.
- Pan, Y., Li, S., & Tse, D.K. (1999). The impact of order and mode of market entry on profitability and market share. *Journal of International Business Studies*, 30(1), 81–104.
- Parker, A.R. (2001). Strategic choices in a dynamically changing deregulatory environment. *Journal of Business Research*, 51, 201–208.
- Porter, M.E. (2001). Strategy and the Internet. *Harvard Business Review*, 79(3), 63–78.
- Sarkar, M.B., Cavusgil, S.T., & Aulakh, P.S. (1999). International expansion of telecommunication carriers: The influence of market structure, network characteristics, and entry imperfections. *Journal of International Business Studies*, 30(2), 361–382.
- Seth, A., Song, K.P., & Pettit, R. (2000). Synergy, managerialism or hubris? An empirical examination of motives for foreign acquisitions of U.S. firms. *Journal of International Business Studies*, 31(3), 387–405.
- Stuart, T.E. (1998). Network position and propensities to collaborate: An investigation of strategic alliance formation in a high-technology industry. *Administrative Science Quarterly*, 43(3), 668–698.
- Tapscott, D., Ticoll, D. & Lowy, A. (2000). *Digital capital: Harnessing the power of business Webs*. Boston, MA: Harvard Business School Press.
- U.S. Department of Commerce. (1999). *The emerging digital economy II*. Washington, D.C.: U.S. Department of Commerce.
- Very, P., & Schweiger, D.M. (2001). The acquisition process as a learning process: Evidence from a study of critical problems and solutions in domestic and cross-border deals. *Journal of World Business*, 36(1), 11–31.
- The Wall Street Journal. (2000a, May 26). Japan's NTT steps up its push into overseas markets. P. A16.
- The Wall Street Journal. (2000b, July 6). The FBI raises security issues on NTT-Verio. P. A3.
- The Wall Street Journal. (2000c, August 18). M-commerce: Mobile and multiplying. P. B1.
- The Wall Street Journal. (2000d, September 28). AOL deal marks radical move in Japan. P. 18.
- Yip, G.S. (1992). *Total global strategy: Managing for worldwide competitive advantage*. New York, NY: Prentice Hall.
- Zook, C. (2001, April 2). Amazon's core problem. *The Wall Street Journal*, P. A22.