

**GLOBAL INVESTMENTS FOR SUSTAINABLE GROWTH
IN THE WIRELESS TELECOMMUNICATION INDUSTRY**

by

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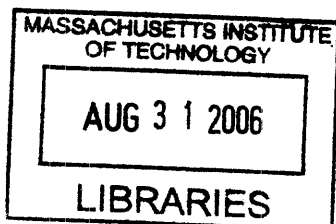
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OSAMU MATSUDA

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Abstract

Since its establishment in 1992, NTT DoCoMo had accomplished rapid growth by developing innovative strategies and meeting consumer demands. However, the population-based penetration rate of Japanese wireless phones now exceeds 70%, and the market is approaching saturation. Tariff reduction battles have occurred among competitors since the introduction of flat rate packages in 2004. Furthermore, this competitive environment will become even more fierce with the introduction of Mobile Number Portability and the addition of new entrants

It is difficult for Japanese wireless telecom operators to achieve sustainable growth if they continue to follow existing business models. DoCoMo therefore has begun to implement a new business platform, 'Mobile Wallet' on which DoCoMo aims to build an unprecedented business model—the fusion of its credit card and wireless phone businesses.

DoCoMo still generates a high level of cash flow from its existing businesses, even though its growth rate has decelerated. In addition to the new strategy that has been implemented for the domestic market, I believe DoCoMo should reinvest its abundant investment resources effectively into markets with high growth potential in order to increase the company's corporate growth.

In the past, DoCoMo acquired a minority stake in several wireless telecom operators in developed countries for the purpose of expanding its W-CDMA and i-mode platforms (developed by DoCoMo) but not for pursuing returns on its investment.

In contrast, Vodafone, DoCoMo's chief rival telecom operator, acquired a majority stake in several wireless telecom operators in order to expand the scope and scale of its business and to pursue synergy effects.

DoCoMo's present basic strategy can be defined as a *technology-driven policy*, while Vodafone's basic strategy focuses on financial matters as a *finance-driven policy*. In this thesis, I analyze the global strategies of these two wireless telecom operators, comparing their respective *technology-driven policy* and *finance-driven policy*. I present a philosophy and methodology for a global investment strategy that will create future sustainable growth for DoCoMo. Finally, I examine specific investment candidates who could bolster the implementation of the new strategy.

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Osamu Matsuda
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This thesis is dedicated to all the people of NTT DoCoMo.

CHAPTER 1

Introduction

NTT DoCoMo was spun off from NTT and began operation in July 1992, when the population-based penetration rate of wireless phones in Japan was only around 1%. After thirteen years, by September 2005, the number of wireless phone subscribers was 93.6 million and the penetration rate was 73.3%—close to saturation. DoCoMo's business has expanded rapidly with the rapid growth of the wireless telecom market. DoCoMo's operating revenue in FY 1993 was ¥574 billion, with a net income of ¥3.8 billion, while FY 2004 revenues were ¥4,845 billion and net income was ¥748 billion.

DoCoMo's growth in the Japanese wireless telecommunication market falls roughly classified into three stages. The first stage was voice communication, from 1992 to 1998. Voice communication led the expansion of the wireless phone market. The major applications were voicemail and call forwarding. During this period, handsets became smaller and lighter, and a drastic tariff reduction was implemented. These caused a dramatic surge in demand for wireless phones.

The second stage was the wireless phone Internet period, from 1999 to 2003. In February 1999, DoCoMo launched i-mode, its wireless phone Internet service, in Japan. i-mode was the world's first service platform for e-mail and Web content through wireless

digital data communication. Three year after the launch, the number of i-mode subscribers reached approximately 30 million, firmly entrenching DoCoMo at the top of the industry.

The third stage of growth began in 2004. Because the domestic market is close to saturation and tariff reduction battles occur repeatedly among competitors, it is difficult for DoCoMo to grow sustainably if they continue to follow the existing business model, especially since introducing the flat rate package for 3G data transmission. In such a highly competitive business environment, DoCoMo has begun to seek additional new revenue sources through implementation of new business models such as Mobile Wallet. DoCoMo aims to build an unprecedented business model in the wireless telecommunication industry by fusing the credit card business with wireless phones—a business that will not depend on existing telecommunication traffic business.

In this thesis I will propose a global investment strategy that establishes sustainable future growth for DoCoMo while supporting its current strategies in the domestic market. I believe that the concept of global investment, a strategy I will examine in this thesis, is different from strategies executed by DoCoMo several years ago. In Chapter 2, I will analyze the saturation of the wireless telecommunication market in Japan and the competitiveness of the market, followed by a study of DoCoMo's current strategy—the fusion of the credit card business with wireless phones. In Chapter 3, I examine DoCoMo's global strategies from a historical basis, analyze the intent and problems of DoCoMo's global strategies during the telecom bubble, and identify important considerations for DoCoMo's future global strategy. In Chapter 4, I analyze Vodafone, which expanded its global footprint by means of several M&As, and I examine the differences in global strategies between DoCoMo and Vodafone. I identify within Vodafone's M&A strategy clues that will help DoCoMo develop its own

global investment strategy. In Chapter 5, I develop a philosophy for DoCoMo's global investment strategy for sustainable growth, examine a methodology to translate that philosophy into reality, and consider specific candidates for DoCoMo's future global strategy, which I have proposed.

CHAPTER 2

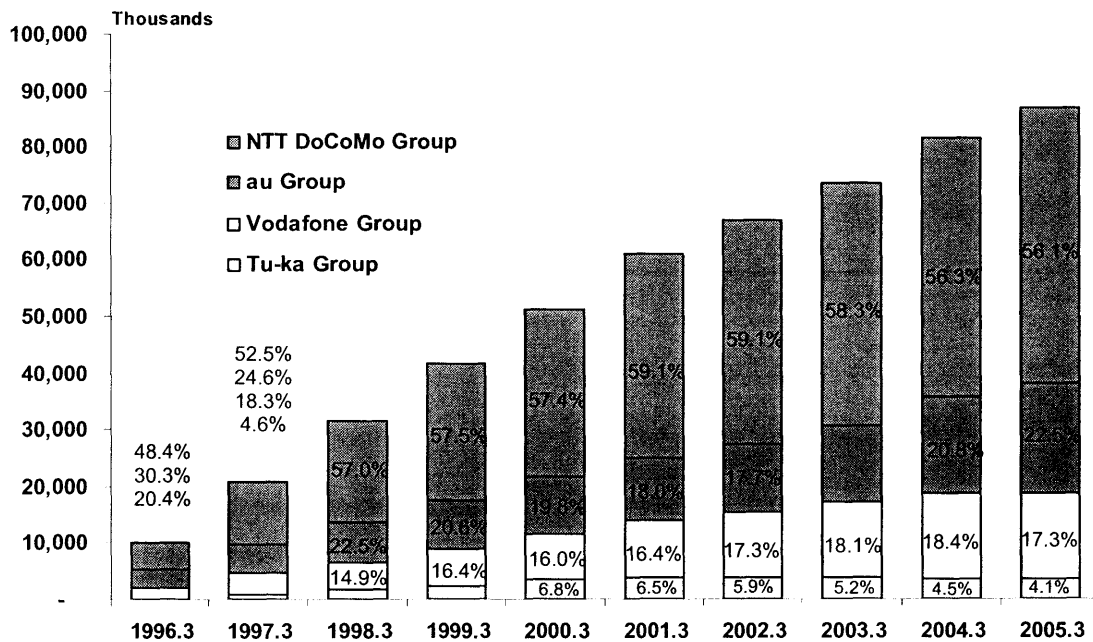
The Wireless Telecommunication Industry in Japan

In this chapter, I will discuss recent trends in the wireless market in Japan, which has led the wireless revolution with its explosive growth in the 1990s. Today, however, the speed of that growth has slowed, and the market is reaching the saturation point. The slowdown illustrates how quickly the wireless landscape can change. For regional operators in a highly volatile industry, the effect of saturation is to slow revenue growth and squeeze profit margins. Moreover, operators now face new threats such as mobile number portability and new entrants to the market.

2.1 Structural Changes in Japan's Market

2.1.1 Market Saturation

The number of wireless phone subscribers in Japan was 93.6 million by the end of September 2005, while the population-based penetration rate had reached 73.3%. The penetration rate (excluding children and seniors) is around 80% in Japan. At the same time, however, the number of new subscribers is slowing. It is uncommon in Japan to own more than a handset because post-paid subscriptions are dominant, whereas pre-paid predominates in Europe, which has a higher penetration rate. The subscription trend of the Japanese cellphone market is shown in Figure 2.1.



Source: InfoCom Research (2005)

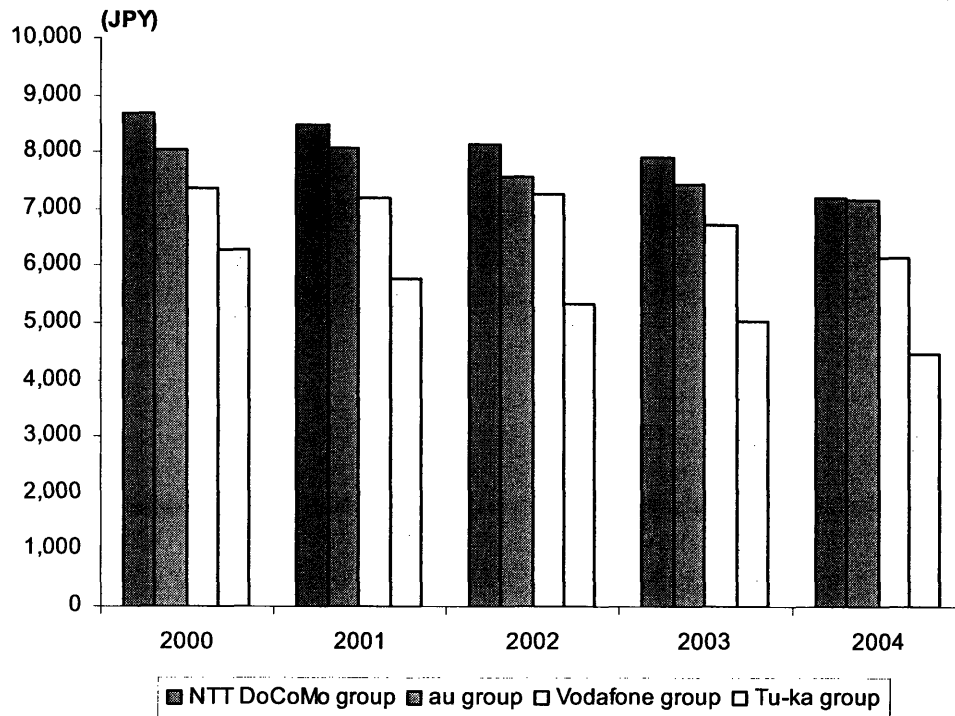
Figure 2.1 Subscription trend of Japanese cellular phones market

While the growth rate has diminished somewhat after peaking in FY 2000, au Group extended its share in FY 2004 by introducing a flat-rate package plan for 3G data transmission and a high-speed music download service. This enabled au Group to realize an increase in the number of younger-generation subscribers by offering new technologies ahead of its competitors. On the other hand, the incumbent player, NTT DoCoMo Group, gradually lost market share after FY 2000. However, the cancellation rate is decreasing as a result of its discount tariff plan for families in FY 2004, and another new service, “Mobile Wallet,” is expected to increase demand in the future.

2.1.2 Reasons for Low Growth in Wireless Telecom Business

2.1.2.1 Declining ARPU (Average Revenue per Unit)

The monthly profit per subscriber, known as average revenue per unit (ARPU), for the major wireless telecom operators in Japan is shown in Figure 2.2.



Source: InfoCom Research (2005)

Figure 2.2 ARPU of major Japanese wireless telecom operators

Because of its flat-rate packaged plan for 3G data transmission, and the expansion of various tariff discount plans, the ARPU for each operator tends to decrease every year.

Recently au Group narrowed the difference between itself and DoCoMo, and the ARPU of these two operators were virtually the same in FY 2004. In comparison, in 2003 the ARPU of Japanese operators was almost twice that of the US\$38 (OECD Communication Outlook,

2005). It is clear that mobile Internet service continues to increase the ARPU. In the case of DoCoMo, around 26% of ARPU comes from its mobile Internet service known as “i-mode.”

2.1.2.2 Flat Rate Package for 3G Data Transmission

In November 2003, KDDI began offering “EZ Flat,” a flat rate for Internet access to its EZWeb service in Japan. Shortly thereafter, DoCoMo introduced the same flat-rate called *Pake-Hodai*, in late June 2004, and Vodafone introduced “Packet Free” in November 2004. Suddenly the mobile communication industry had rushed into the flat-rate era (see Table 2.1).

Carrier	NTT DoCoMo Group	au Group	Vodafone Group
Service brand	Pake-Hodai	EZ flat (Double Flat Rates)	Packet Free
Service start date	June, 2004	November, 2003	November, 2004
Monthly charge (Include tax)	¥4,095	¥1,050 – 4,410	¥1,050 - 4,095
Available applications	i-mode, E-mail	EZ web, E-mail	Vodafone live!, E-mail
# of subscribers (as of Dec. 2005)	4,450	6,750	N/A
Notes	Except for data transmission via PC	Except for data transmission via PC	

Source: Each operator providing data (2005)

Table 2.1 Flat rate packages for data transmission by Japanese operators

Before flat-rate packages were introduced, revenue from data was the cash cow in the industry because voice revenue has been declining as a result of tariff discounts. As operators

can expect no more growth in their data revenue, each one is trying to develop a new business model that will generate new revenue. For example, DoCoMo has developed its i-mode FeliCa service, which generates new revenue that is not dependent on the existing telecommunication traffic business. I will discuss this service in section 2-2.

2.1.2.3 NTT DoCoMo's Business Performance

In January 2006, DoCoMo disclosed its consolidated financial results for the nine months from April 1, 2005 to December 31, 2005 (see Table 2-2).

	2004/4-12 (1Q~3Q) (1)	2005/4-12 (1Q~3Q) (2)	Changes (1) - (2)	2006/3 E (full-year)(3) <small>(As announced on Oct. 26, 2005)</small>	Progress to forecast (2)/(3)
Operating Revenues (Billions of yen)	3,643.1	3,582.2	-1.7 %	4,784.0	74.9 %
Cellular Services Revenues (Billions of yen)	3,131.6	3,130.3	-0.0 %	4,127.0	75.8 %
Operating Income (Billions of yen)	751.4	693.5	-7.7 %	830.0	83.6 %
Income before income taxes (Billions of yen)	1,250.1	811.2	-35.1 %	942.0	86.1 %
Net Income (Billions of yen)	756.5	516.4	-31.7 %	604.0	85.5 %
EBITDA (Billions of yen)	1,304.0	1,243.3	-4.7 %	1,609.0	77.3 %
EBITDA Margin (%)	35.8	34.7	-1.1 points	33.6	-
Adjusted Free Cash Flows (Billions of yen)	845.4	463.1	-45.2 %	630.0	73.5 %

Source: NTT DoCoMo (2006)

Table 2.2 FY2005/3Q Financial Results Highlights

For the nine months ending December 31, 2005, operating revenue was ¥3,582.2 billion (down 1.7% compared to the same period of the prior year), operating income was ¥693.5

billion (down 7.7% compared to the same period of the prior year), net income before income taxes was ¥811.2 billion (down 35.1% compared to the same period of the prior year), and net income was ¥516.4 billion (down 31.7% compared to the same period of the prior year).

DoCoMo also disclosed a tariff plan reduction, and it expanded its *Pake Hoodai* flat-rate data program to all new service plans. Management is interested in retention and churn-in effects as well as encouraging additional data usage among current low-volume users. Yet this strategy could reduce ARPU for heavy data users to a level exceeding the positive impacts in the short term. It is estimated that this will cost around ¥40-50 billion in revenue and profits annually. Some analysts such as Merrill Lynch, Credit Suisse, and Nomura are worried about the next stage of tariff reduction battles with competitors. Mobile number portability (MNP) is expected to result in new tariffs in November 2006, and new entrants will be strong competitors in the market. Therefore the analysts reduced their investment rating for DoCoMo.

Historical business performance data is shown in Table 2.3. An examination of the operating revenue and EBITDA show that the core business performance is in a downward trend and weakening earning power after peaking in FY 2003. It is clear that the flat-rate package for 3G data service, and the tariff reductions are gradually affecting the overall results. Moreover, as mentioned previously, APRU is rapidly and surely decreasing. On the other hand, DoCoMo still generates abundant cash flow from its business. However, it did not use the cash efficiently after previous cross-border investments failed. In order to improve its business performance, DoCoMo should develop investment policies and strategies that will produce new revenue sources. I will discuss some of these options later.

(¥ billion)

Fiscal year	2000	2001	2002	2003	2004	2005 (Est.)
Operating Revenue	4,178.1	4,659.3	4,809.1	5,048.1	4,844.6	4,784.0
Operating Income	778.6	1,000.9	1,056.7	1,102.9	784.2	830.0
Income before income taxes	758.1	956.4	1,043.0	1,101.1	1,288.8	942.0
Net income	401.8	(116.2)	212.5	650.0	747.6	604.0
EBITDA	1,425.3	1,680.6	1,836.3	1,859.9	1,625.7	1,609.0
EBITDA margin (%)	34.1%	36.1%	38.2%	36.8%	33.6%	33.6%
CAPEX	1,012.8	1,032.3	854.0	805.5	861.5	871.0
Free cash flow	-1,886.4	216.0	713.2	862.9	603.3	630.0
ARPU (JPY/month)	8,680	8,470	8,130	7,890	7,200	6,770

Source: NTT DoCoMo

Table 2.3 NTT DoCoMo's historical financial data

2.1.3 New Competitive Environment

Within the Japanese wireless industry, extensive industry changes in the competitive environment are called the “Year 2006 problem.” They include two problems: Mobile Number Portability, and “New entrants.” It is possible that both of these issues will result in squeezing the profit margins of incumbent operators.

2.1.3.1 Mobile Number Portability

In Japan, mobile number portability (MNP) will begin on November 1, 2006. MNP means that every subscriber will be able to retain his/her unique wireless phone number, even

	Introduction time	Availability (No. of users)	Procedure place	Procedure period	Commission (US\$)
UK	Jan-99	5% (2,510K)	Original operator + New operator	15-25 days → 2 days + 1 week	Max 52.8
Netherlands	Jan-99	5% (600K)	Original operator + New operator	3 biz days	10.9
Switzerland	Jul-00	N/A	New operator	N/A	Free
Spain	Dec-00	1.6% (530K)	N/A	5 days	Free
Denmark	Jul-01	11% (330K)	New operator	30 days	Free
Sweden	Sep-01	5% (400K)	New operator	5 biz days	Free
Norway	Nov-01	14.8% (590K)	New operator	6.5 days	12.7
Italy	May-02	1.6% (870K)	N/A	30 days	Free
Belgium	Oct-02	2.2% (170K)	New operator	2 days	Max 18
Germany	Nov-02	0.47% (270K)	Original operator + New operator	4 days + 2 days	27~30
Ireland	Nov-02	2.2% (66K)	New operator	Several hours	Free
France	Jun-03	0.1% (45K)	Original operator + New operator	30 days	18
EU average	Apr-02	2% (6,000K)		9 days	16.8
US	Nov-03	N/A	New operator	2.5 hours	Max 1.75
Singapore	Apr-97	N/A	N/A	N/A	Charged → Free
Hong Kong	Mar-99	86.3% (5,780K)	New operator	1~2 days	Free → 5.2
Australia	Sep-01	8.6% (1,080K)	New operator	Several hours	6.0
South Korea	Jan-04	0.9% (300K)	New operator	1 hours	1.1

Source: Ministry of Internal Affairs and Communications of Japan (2005)

Table 2.4 Introduction of MNP in other countries

if that user changes to a different wireless service provider. Such a system has been introduced in many other countries as another way to accelerate competition between companies. The environment into which MNP is introduced varies significantly by country.

The key reason why users choose a carrier is “tariff.” However, the cellphone tariff in Japan may decline as operators institute tariff reductions as a way to retain customers. Price cuts have already occurred three times in Hong Kong, both before and after MNP was introduced, while the cost for wireless fell by about 10% in Australia. Wireless phone operators in Japan cannot avoid reduced revenues and income unless they stop the price cuts as a strategy for dealing with MNP.

Whether MNP succeeds or fails, judging from introductions that have already taken place in other countries, the “procedure period” and the “commission” seem to be key. For example, the availability of MNP in EU remains about 2% because the average procedure period is as long as nine days. MNP availability in Hong Kong is 80% or more because there was no commission fee in the beginning and the ten operators competed fiercely in that small region.

A similar subscriber acquisition competition could intensify in Japan. It may be possible that wireless telecom operators and their agencies will bear the costs/commissions rather than shifting the costs to the users. In other countries, not only was there no commission, but consumers were offered gifts as incentives to subscribe. For example, DVD players were offered to new subscribers in Finland who moved from other operators. Campaigns that offered high-priced commodities were implemented to attract new customers. In Japan, MNP will be likely offered free of charge or very cheaply. The length of the procedure period will be the key to the success or failure of MNP.

2.1.3.2 New Entrants

In September 2005, the Ministry of Internal Affairs and Communications of Japan disclosed that 1.7GHz spectrum and a part of 2.0GHz were available to new entrants in the Japanese wireless telecom market. As a result, Softbank and E-access applied for the 1.7GHz spectrum, and IP Mobile applied for the 2.0GHz spectrum. In November 2005, licenses were delivered to these operators, and they began to prepare for wireless phone services (see Table 2.5)..

	Soft Bank (BB mobile)	E-access (E-mobile)	IP Mobile
Spectrum band	1.7GHz	1.7GHz	2.0GHz
3G Method	W-CDMA	W-CDMA	TD-CDMA
Service Launch			
Data	Apr-07	Mar-07	Oct-06
Voice	Dec-07	Feb-08	-
Target subscribers (million)	6.69	5.05	11.60

Source: Info-Sharing Business Institute (2006)

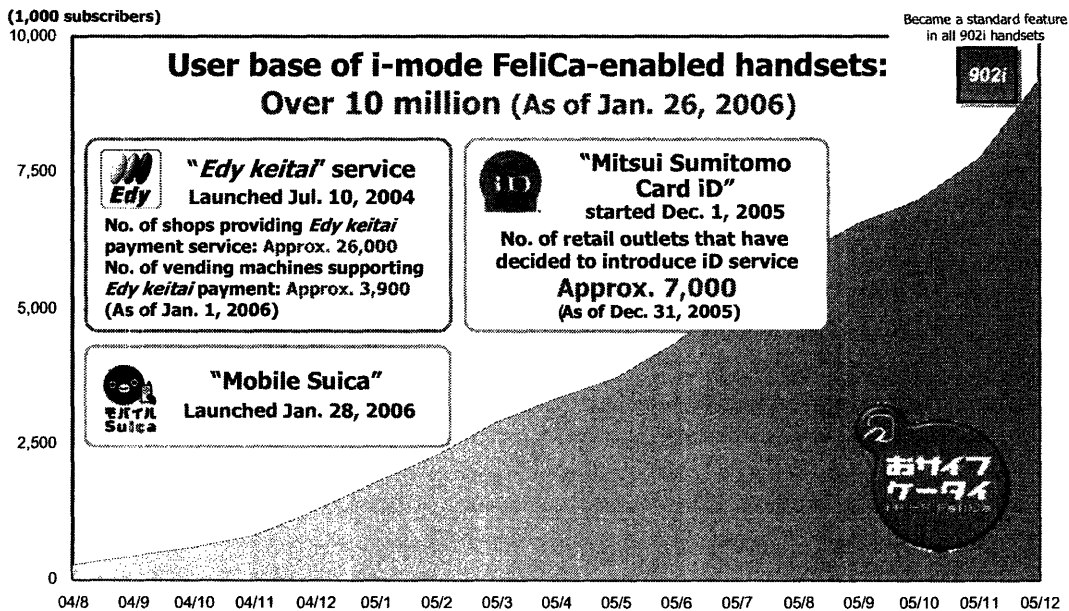
Table 2.5 Service Overview of the New Entrants

These operators wanted to enter the wireless market at this time not just to open new spectrums but also to take advantage of MNP in November 2006. The launch of MNP offers an excellent opportunity for new entrants to joint the market. If the new entries can be timed with the introduction of MNP, they have great potential for acquiring more new customers.

The target of each new entrant is to acquire more than five million subscribers within five years after it launches service. Naturally, that means depriving existing operators of customers because the market is close to saturation.

2.2 Challenges in the Home Market for NTT DoCoMo

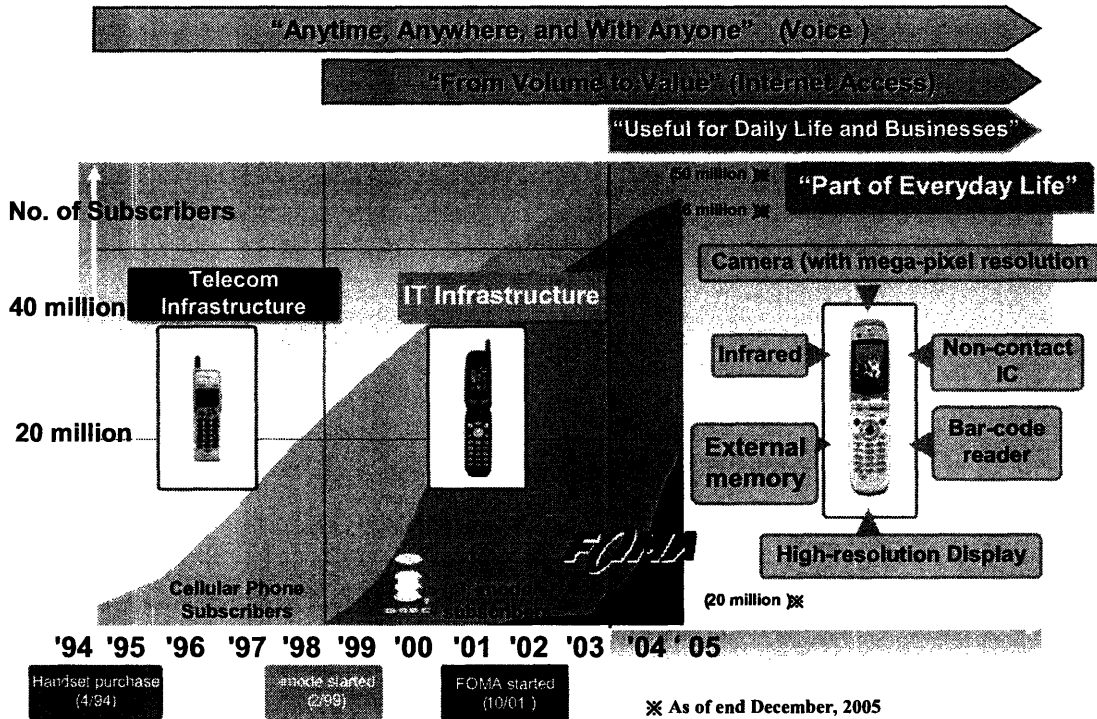
As explained in section 2.1, although the Japanese wireless market is becoming more significant, DoCoMo's business performance has grown worse following the introduction of the flat rate package for 3G transmissions in FY 2003. I believe 2003 was a turning point for the Japanese wireless industry. Without exploring new markets, incumbent wireless operators may lose opportunities for growth. For these reasons, DoCoMo has been developing a new business model for creating new revenue sources. As one method of creating new markets, DoCoMo is working to enhance the services it offers in its "brick-and-mortar" businesses (see Figure 2.3). This is an entirely new business model in which the wireless phone, which



Source: NTT DoCoMo (2006)

Figure 2.3 Services linked with brick-and-mortar businesses

is close to saturation in Japan, evolves beyond the scope of voice and data communications to become a useful tool in variety of daily life and business situations. DoCoMo refer to this new business environment as “Wireless phone moving toward the third phase of growth,” as shown in Figure 2.4.



Source: NTT DoCoMo (2005)

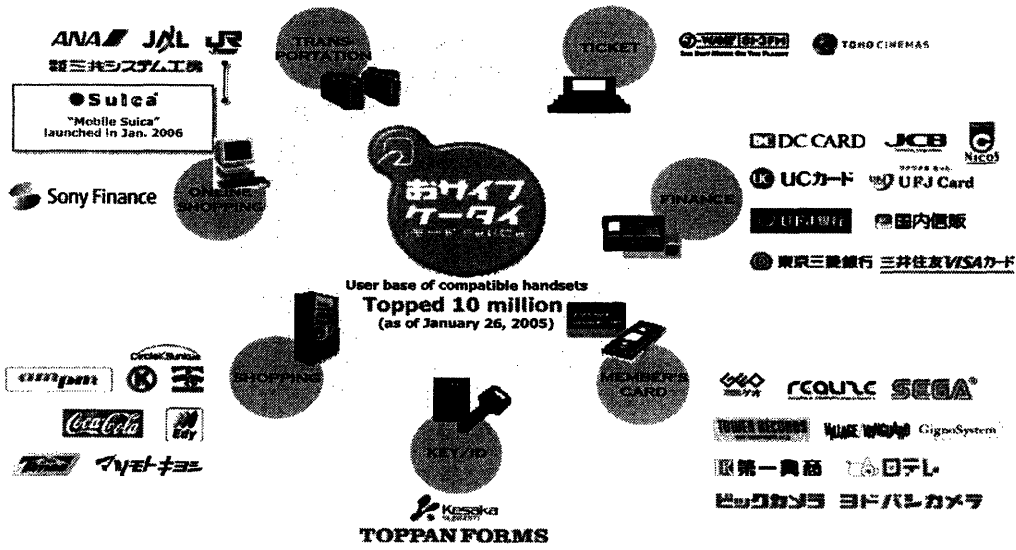
Figure 2.4 Wireless phones moving toward the third phase of growth

2.2.1 i-mode FeliCa (Mobile Wallet)

The key to DoCoMo’s enhanced service is “Mobile Wallet,” which is a wireless phone equipped with a contactless IC chip (FeliCa). The concept behind mobile wallet is to integrate the functions of the many cards normally in one’s wallet, such as ID cards, credit

cards, membership cards, room keys, and commuting passes/tickets. In place of the cards, the wireless phone can perform a range of similar functions, including shopping. As of January 2006, the number of subscribers using wireless phones with Mobile Wallet had already surpassed 10 million, while 26,000 shops were accepting Mobile Wallet.

Mobile Wallet is a new revenue source for DoCoMo, as well as lifestyle tool for customers (see Figure 2.5), and it is likely to become an effective tool in the MNP period. DoCoMo customers traditionally do not move to other operators, and this will be especially true if they begin to fully utilize Mobile Wallet to store important personal information such as ID cards and credit cards in their handsets. Mobile Wallet could be called the ultimate enclosure for retaining customers.



Source: NTT DoCoMo (2006)

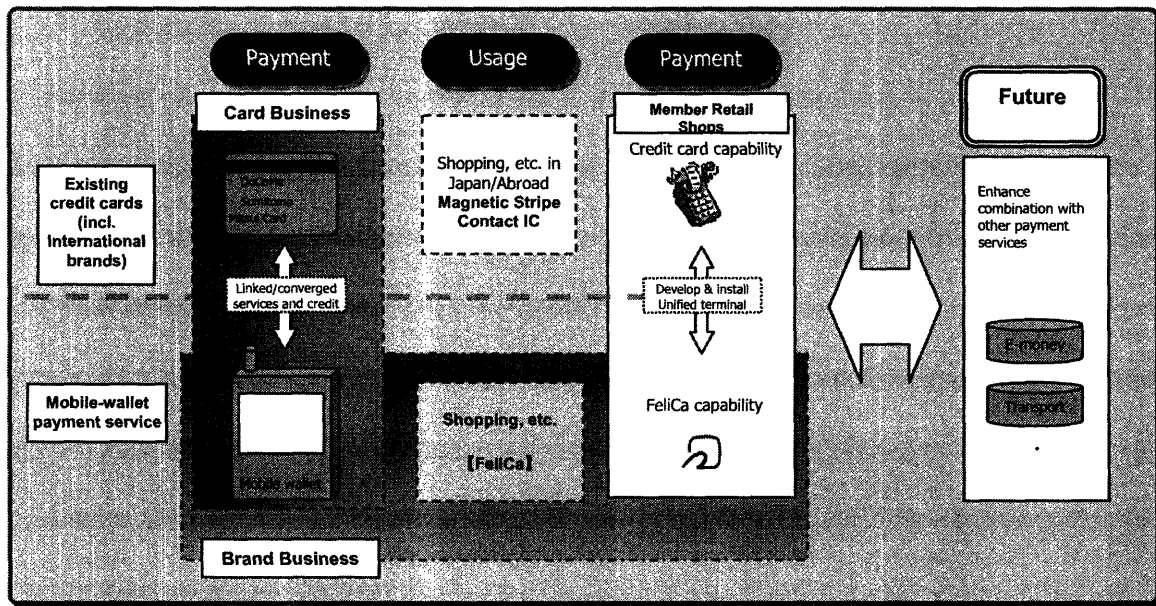
Figure 2.5 Creating a new “Lifestyle Infrastructure”

DoCoMo established its FeliCa Networks Company in a joint venture with Sony in January 2004. The joint venture develops a FeliCa IC chip that fuses FeliCa with the functions of a cellphone. It also grants manufacturing and sales licenses to handset manufacturers, develops and operates the FeliCa platform and provides the IC chip and the platform to other wireless operators and content providers. If the FeliCa IC chip and settlement platform are adopted by other wireless cellphone operators, a portion of the license fee will be returned to DoCoMo, which is shareholder in FeliCa Networks. Wireless handsets equipped with FeliCa have already been sold by au Group since September 2005, and by Vodafone Group since November 2005.

2.2.2 Credit Card Business

In April 2005, DoCoMo entered into a strategic business and capital alliance with Sumitomo Mitsui Financial Group and for ¥98 billion acquired 34% of Sumitomo Mitsui Card, the credit card arm of the financial group. Through this alliance, DoCoMo is now in a position to create a credit payment platform for its Mobile Wallet service (see Figure 2.6), with the goal of creating a new market for credit payments using wireless phones. DoCoMo is working to expand the range of credit payments to include small sums that are now typically paid in cash. This added platform enables DoCoMo to make further progress in turning the wireless phone into part of the overall lifestyle infrastructure.

In December 2005, DoCoMo launched “iD”, its new credit card that allows DoCoMo customers to use Mobile Wallet to make payments. iD enhances DoCoMo’s existing credit card services by giving credit card owners the option of making payments through Mobile Wallet linked to the card, in addition to conventional payments with their plastic credit cards.



Source: NTT DoCoMo (2005)

Figure 2.6 Mobile Wallet credit card payment service

The payment procedure is easy: simply wave the wireless phone in front of dedicated reader/writers that are located in stores. No signature is required for purchases under a certain amount, while purchases exceeding this amount require the user to enter a password via a device linked to the reader/writer. In addition to enjoying secure payments with iD, DoCoMo users also benefit from security features built into their Mobile Wallet. A user can, for example, call a designated phone number to immediately lock a misplaced or stolen phone. Also a user can choose to require a password for all payments. Applications for iD are accepted through credit card issuers. Once the application is accepted, the user downloads an i-appli application into their handset and chooses various settings to use the service.

In April 2006, DoCoMo launched DCMX consumer credit services via iD, DoCoMo's brand and platform for mobile credit cards. Users of Mobile Wallet can choose from two plans to make secure purchases in any amount using their mobile phones as a

DoCoMo-issued credit card. The “DCMX mini” offers a monthly credit line of ¥10,000 and payments are included with the user’s monthly DoCoMo phone charges. There is no membership fee to use this service. Customers can start using the service immediately after applying through the DCMX i-mode site.

Credit lines from ¥200,000, and cash advances, will be available in a separate service also called DCMX. Purchases over ¥10,000 require the customer to enter a four-digit password. There is no membership fee during the first year, but in subsequent years a fee of ¥1,312 (including tax) will accrue if no transaction has taken place within 12 months. Customers can apply for either type of credit line via the DCMX i-mode site or in writing. Payments made via DCMX earn points that can be redeemed for discounts on products and services from DoCoMo and other participating establishments. Users will also be issued either a Visa or MasterCard card to make purchases at stores overseas, as well as at stores in Japan that do not have iD reader/writers. Users under age 20 require a guardian's consent, and must apply at a DoCoMo Shop, accompanied by a guardian.

Total credit card sales in Japan were approximately ¥26.6 trillion in 2003 – approximately 9% of total personal consumption in Japan, which is ¥300 trillion. In the U.S. credit card sales equal about 24% of total personal consumption. DoCoMo expects that credit card sales will expand to ¥50 trillion as the use of “iD” increases and will hold 10% of the future market. With a commission of about 2%, revenue from the credit card business will be ¥100 billion. According to some of Japanese telecom analysts, if DoCoMo enters the consumer cashing loan business, DoCoMo may be able to increase its net profit by around ¥100 billion in five to seven years.

2.2.3 Alliances to Promote Mobile Wallet and the Credit Card Business

DoCoMo has formed alliances with several companies in order to promote its Mobile Wallet service and DoCoMo's iD credit card brand.

2.2.3.1 Alliance with UC Card and Mizuho Bank

In March 2006, DoCoMo entered into an agreement with UC Card and Mizuho Bank. Under the agreement, Mizuho Bank transferred its stake in UC Card (approximately 18% of UC Card's outstanding shares) to DoCoMo for about ¥1 billion. In addition, UC Card will expand its acceptance of the iD brand at its network of participating stores nationwide. In collaboration with DoCoMo, Mizuho Bank will upgrade the function of the Mizuho Mileage Club (MMC) Card, an ATM card with credit card functions issued by Credit Saison. MMC members are provided with the latest method of credit card payment via iD service through their wireless phones. Going forward, the three companies will consider various ways to enhance the collaboration:

- Mizuho and DoCoMo will collaborate at each other's place of business;
- Install iD-compatible readers at Mizuho ATMs;
- DoCoMo and Mizuho Bank will cooperate with each other's membership programs;
- Develop settlement services for mobile phones;
- Develop mobile banking services for Mizuho Bank's high-end customers and DoCoMo; and
- UC Card will work together to develop new businesses.

2.2.3.2 Alliance with LAWSON

In March 2006, DoCoMo entered into an agreement with LAWSON, one of the largest Japanese convenience store chains. The business alliance will mean that customers can use DoCoMo's Mobile Wallet for a variety of mobile services at LAWSON convenience stores, such as making credit card payments or getting information about store promotions. In addition, DoCoMo acquired 2,092,000 shares of LAWSON common stock owned by LAWSON as treasury stock, or about 2% of total issued shares, for about ¥9 billion. The capital tie-up strengthens cooperation and facilitates faster development and implementation of new services. The deals converge substantial business assets of the two companies, namely DoCoMo's more than 50 million mobile phone subscribers and LAWSON's 8,300 convenience stores nationwide. The combination of brands, customer bases, know-how, and experience will result in a variety of convenient, value-added services. Initially, about 100 LAWSON convenience stores introduced iD credit card payment service. The service will be expanded to all LAWSON stores by the end of March 2007. Going forward, the two companies will hold regular meetings to consider ways to enhance the collaboration, such as:

- Providing LAWSON club members with iD-linked Mobile Wallet services;
- Installing iD-compatible readers on ATMs in LAWSON stores;
- LAWSON stores providing administrative services for certain DoCoMo services;
- Developing store operations utilizing Mobile Wallet; and
- Utilizing both companies' resources to provide new services at LAWSON stores.

2.2.3.3 Alliance with Tower Record Japan

In November 2005, DoCoMo agreed with Tower Records Japan Inc. (TRJ) to form a business alliance through a capital tie-up to jointly offer various DoCoMo phone services. DoCoMo acquired an approximate 42% stake in TRJ for about ¥12.8 billion. The tie-up enables TRJ and DoCoMo to leverage mutually beneficial strengths. TRJ operates an extensive network of more than 100 outlets in Japan and has developed a strong brand, particularly among young people and music lovers. DoCoMo boasts about 50 million customers and extensive know-how in operating i-mode wireless phone Internet and Mobile Wallet services/iD credit card service. TRJ has become a Mobile Wallet/iD retailer. The combination of these strengths and resources will foster new value-added services and increase convenience for the customers of both companies. DoCoMo expects to increase the value of its wireless phones as essential tools for everyday life by turning them into powerful devices for enjoying music-related information.

2.2.4 Other Challenges

In business fields other than Mobile Wallet and credit cards, DoCoMo is trying to develop new businesses to create additional revenue sources. DoCoMo has entered into Internet auction business and broadcasting business.

2.2.4.1 Alliance with Rakuten (Internet Auction Business)

In October 2005, DoCoMo entered into an agreement with Rakuten, a leading Japanese e-commerce company, to form a business and capital alliance that would provide Internet auction services over wireless phones and PCs. Rakuten spun off part of its Internet

auction business as the newly established Rakuten Auction. DoCoMo acquired a 40% stake of Rakuten Auction for ¥4.2 billion. Rakuten Auction will expand its Internet auction service to allow DoCoMo customers to participate using their wireless phones. Rakuten Auction plans to develop other services in the Internet auction field. The agreement will enable the companies to mutually leverage complementary strengths, namely, DoCoMo's expertise in i-mode and Rakuten's expertise in the Internet auction business. In addition, Rakuten will expand its auction business through mobile Internet phones owing to the increasing demand for DoCoMo's popular 3G service, while DoCoMo further diversify its revenue stream by gaining a service not tied to communications traffic.

2.2.4.2 One-Segment Territorial Broadcasting

One-segment broadcasting commenced in April 2006. Since this enables even cellphone users to view digital broadcasts, broadcasters will greatly expand their reach. In addition to traditional TV broadcasts, one-segment broadcasting also allows two-way data services that utilize advanced communications features.

In January 2006, DoCoMo agreed to acquire an approximate 2.6% stake in Fuji Television for ¥20.7 billion. DoCoMo and Fuji Television have been discussing how to link mobile communications and broadcasting. The agreement preceded the launch of "One-segment" terrestrial digital broadcasting on April 1, 2006, which presents new opportunities for links with mobile services. The partners will cooperate closely with each other by sharing resources and expertise to create a new market and develop innovative mobile communications and broadcasting services.

In February 2006, DoCoMo agreed in principle with Nippon Television Network Corporation (NTV) to begin a business tie-up to develop content and related services that combines mobile communications and conventional TV programs. Under the agreement, the companies formed a seven-year limited liability partnership with each partner investing ¥5 billion. The partnership invests in and develops content, including TV programs that can be viewed using mobile phones. In addition, the two companies jointly study new business opportunities, including a service that combines One-segment terrestrial digital broadcasting.

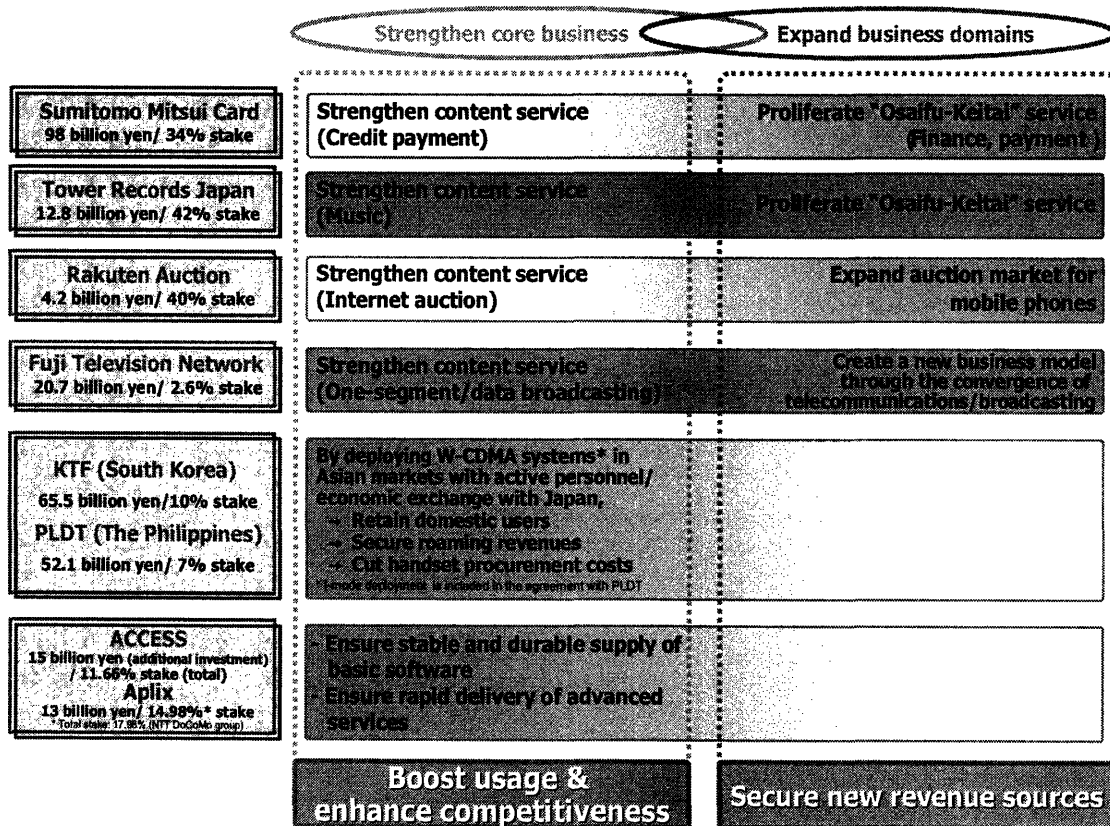
2.3 Summary

As the analysis shows, it is difficult for Japanese wireless telecom operators to grow sustainably if they continue to follow the existing business model, because the domestic market is close to saturation and tariff reduction battles occur repeatedly among competitors, especially since introducing the flat rate package for 3G data transmission. This competitive environment will become even fiercer with the introduction of Mobile Number Portability and the addition of new entrants later in 2006. In addition, new wireless technologies, such as WiMAX, may become a threat to the growth strategies of existing operators.

In such a highly competitive business environment, DoCoMo has begun to seek additional new revenue sources through the implementation of new business models such as Mobile Wallet. DoCoMo aims to build an unprecedented business model in the wireless telecommunication industry—the fusion of the credit card business and wireless phones—a business that does not depend on the existing telecommunication traffic business.

Recently, DoCoMo disclosed the investments in KT Freetel (South Korea) and PLDT (Philippines). I believe that these types of investment in some of the growing foreign markets,

combined with a new business model for the domestic market, are important strategies that will help to ensure continuous growth for DoCoMo. Both the new business model and cross-border investments represent important ways to enhance value for wireless telecom operators in this mature market.



Source: NTT DoCoMo (2005)

Figure 2.7 Major investments for future growth, and their objectives

CHAPTER 3

NTT DoCoMo's Global Business Strategy

In this chapter, I will examine NTT DoCoMo's global strategies over the past several years. DoCoMo actively invested in foreign operators from 1999 to 2000. However, a year later it suffered large losses following the plunge in telecom stock prices. As a result, DoCoMo changed its strategy to a pursuit of global alliances that did not require enormous investment. Recently, after a four-year interval, DoCoMo executed two cross-border investments.

3.1 Overview

3.1.1 Company Profile

DoCoMo is Japan's leading wireless telecommunications services provider and one of the largest cellular telephone service operators in the world as measured by total number of cellular subscribers, with an aggregate cellular subscriber base of approximately 48.82 million and an estimated domestic market share of 56.1% as of March 31, 2005. The company's financial profile is characterized by significant revenues and earnings, consistent operating margins, and a strong balance sheet. For the year ended March 31, 2005, DoCoMo had operating revenues of ¥4,844,610 million (US\$45,184 million) and operating income of ¥784,166 million (US\$7,314 million), representing an operating margin of 16.2%. The net

income was ¥747,564 million (US\$6,972 million), which was equivalent to net income per share of ¥15,771 (\$147).

3.1.2 Basic Management Policies

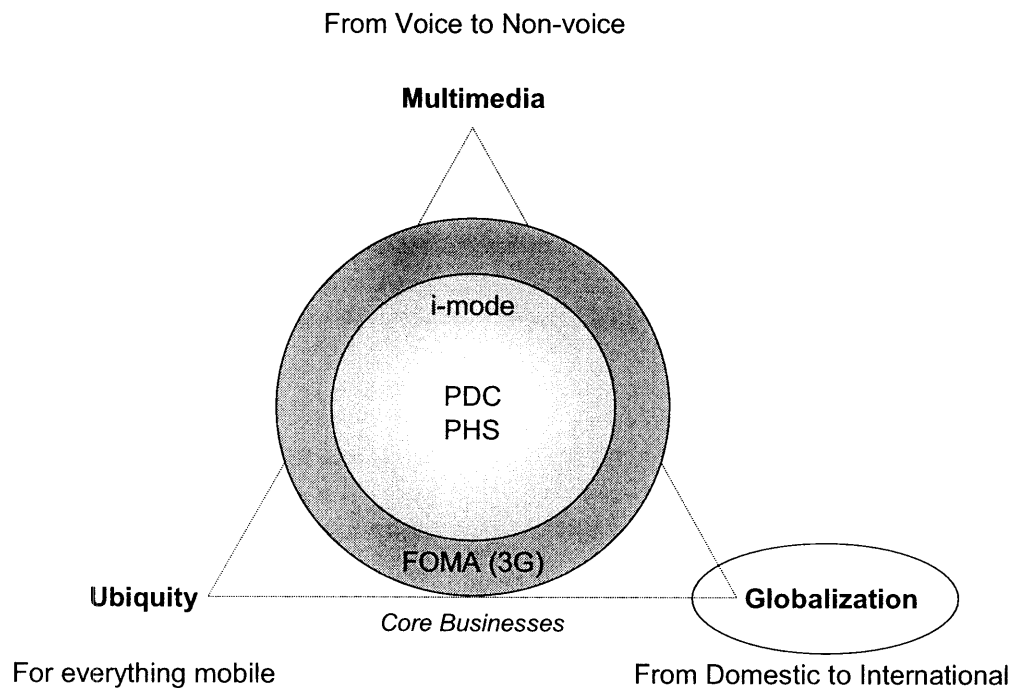
With a corporate philosophy of “creating a new world of communications culture,” DoCoMo aims to contribute to a rich and vigorous society by reinforcing its core business focused on 3G services, and promoting mobile multimedia services that are useful for customers and businesses. It also seeks to maximize corporate value in order to be greatly trusted and highly valued by its shareholders and customers.

3.1.3 Medium- and Long-Term Management Strategies

Competition among carriers in the Japanese cellphone market is expected to intensify in the future due to increased market penetration rate, diverse customer needs, and the scheduled introduction of mobile number portability (MPN) in Japan during FY 2007. Against this backdrop, DoCoMo will seek to reinforce its core businesses by taking comprehensive measures to improve its offerings in the areas of handsets, services, rate plans, network coverage and quality, and after-sales support, in an effort to react swiftly and precisely to the diverse needs of customers from a “customer-centric” perspective.

At the same time, DoCoMo will review its under-performing businesses, and continue its endeavors to boost operational efficiency through reduced handset procurement and network costs and a more efficient allocation of distributor commissions. This is expected to strengthen the company’s competitive position.

To create new channels for revenue generation, DoCoMo will actively expand its business domains based on the three principal growth strategies of “multimedia,” “ubiquity,” and “globalization.”



Source: NTT DoCoMo (2005)

Figure 3.1 NTT DoCoMo’s medium- to long-term growth strategies

As the company transforms its cellular handsets to a multifunctional tool for everyday life and business, it will also evolve its cellular services by equipping handsets with electronic money, credit card payment options, transportation tickets, and other features, thereby creating new revenue sources that are independent from traditional volume-based communication charges. To keep abreast with and react dynamically to the intensifying

competition and changes in the market, DoCoMo plans to continually advance its cellular services, aggressively expand its business domains, and thus enhance its enterprise value.

3.1.3.1 Multimedia

To increase the use of i-mode and FOMA services, which can transmit large amounts of data at high speeds, DoCoMo plans to add more handsets tailored to user's needs in its product lineup, and will strive to develop and provide a wide array of sophisticated non-voice services, including visual communications and video/text delivery services. DoCoMo also embarked on the development of High-Speed Downlink Packet Access (HSDPA) system—a technology that further enhances the packet transmission speeds supported by the FOMA network.

3.1.3.2 Ubiquity

In addition to conventional efforts to expand usage by promoting services such as remote control over intelligent home appliances and information distribution for automobiles (Telematics), DoCoMo intends to promote “linkages with brick-and-mortar services” with other related companies, thereby combining its wireless phone services with various commercial transactions through external interface capabilities embedded in cellular handsets, including contactless IC chips, bar codes, and infrared data transmission.

3.1.3.3 Globalization

As competition in wireless telecommunications business expands globally, DoCoMo intends to enhance user convenience and increase the company's revenue opportunities by

further expanding its “i-mode” alliances and offering W-CDMA-based global handsets. Also, in view of global competition, DoCoMo will look into a wide range of opportunities for revenue growth, including investments in or alliances with telecommunications carriers, enterprises that own promising technologies, and companies engaged in wireless telecommunications-related peripheral businesses, while taking into consideration the overall synergies expected from such alliances.

3.2 Global Investment Strategy

3.2.1 Technology-Driven Policy

In 1992, DoCoMo began full-scale research into W-CDMA to realize its third-generation (3G) wireless telecommunication services. Mobile multimedia is required in the 3G world in order to enjoy music, images, and video via wireless handsets, and high-speed data transmission is required to support these advanced services. Furthermore, international standardization (IMT-2000) was supposed to provide the same quality of service worldwide.

However, DoCoMo’s position in the global wireless telecommunication industry was unusual from a technical viewpoint. Generally, research and development in wireless telecommunication has been done by manufacturers excluding Japan. The DoCoMo laboratory, which belongs to NTT’s school, has long been at the top in research and development of wireless telecommunications. In addition, DoCoMo and NTT built cooperative relationships with manufacturers such as NEC, Panasonic, and Fujitsu after DoCoMo was spun off from NTT. By comparison, telecommunication manufacturers such as Ericsson and Nokia (i.e., not telecommunication operators like DoCoMo), have researched and developed their advanced wireless technologies in Europe. They had large-scale research

and development formations that were far superior to those of the Japanese manufacturers, because their GSM system—the European 2G system—had expanded throughout the world except in Japan. However, in 1997, DoCoMo decided to promote the standardization of W-CDMA in cooperation with Ericsson and Nokia.

The international standard for 3G, IMT 2000, was instituted by the International Telecommunications Union (ITU), a subordinate organization of the United Nations. There are two major streams of standardization. One is W-CDMA, developed primarily by DoCoMo and Ericsson. The second is CDMA2000, the U.S. method recommended by Qualcomm. Concrete specifications for both methods were examined by working groups, and DoCoMo took a leading role in the working group responsible for devising the standardization of W-CDMA. Ultimately, it was decided that the wireless telecommunication world would be split between by the two major methods, W-CDMA and CDMA2000, as international standardization progressed.

It was DoCoMo's hope that more wireless operators would adopt W-CDMA because it had spent more than one trillion yen on research and development for the new method. At the same time, DoCoMo recognized the potential of wireless phone Internet service, especially given the success of i-mode in Japan, and it was believed that the new business model would be expanded worldwide.

Thus, DoCoMo developed its basic strategy of global investments to focus on expanding W-CDMA and i-mode to as many overseas wireless telecom operators as possible.

3.2.2 Major Global Deals

In the relatively short period between 1999 and 2001, DoCoMo acquired a minority share of wireless telecommunication operators in Hong Kong, UK, Netherlands (the Dutch operator has subsidiaries in Germany and Belgium), US, and Taiwan, as shown in Table 3.1. The key objective of these investments was to make W-CDMA the *de facto* standard and to establish mobile multimedia services in the world's major markets. During this same period, DoCoMo successfully expanded its footprint in Europe, the U.S., and Asia. Most partners agreed that W-CDMA should be introduced as the primary 3G technology, and they supported the use of i-mode service. It seemed that DoCoMo's global investment strategy might be successful.

Date	Partner/Investee	Amount (¥, bil)	Share
Dec. 1999 (May. 2001)	Hutchison Telephone Co., Ltd.	46.2	25.37%
Sep. 2000	Hutchison 3G UK Holdings Ltd.	185.7	15.00%
Aug. 2000	KPN Mobile N.V.	407.3	15.00%
Jan. 2001 (Feb. 2002)	AT&T Wireless Service, Inc.	1,165.5	16.01%
Feb. 2001 (Jun. 2001)	KG Telecommunications Co., Ltd	68.8	21.42%

Source: NTT DoCoMo (2000, 2001)

Table 3.1 NTT DoCoMo investments in wireless telecom operators

DoCoMo invested ¥1.9 trillion in total. However, its attitude toward such investments was different from its rival, Vodafone. Vodafone took control of the target companies through majority shareholdings through a leveraged M&A; DoCoMo chose minority shareholding up to a maximum of 25% without controlling its target.¹ DoCoMo's top priority

¹ In general, the shareholding ratio represents the relation of risk to return. Although a firm can control a company tightly with more than 50% shareholding, such a position also involves greater risk.

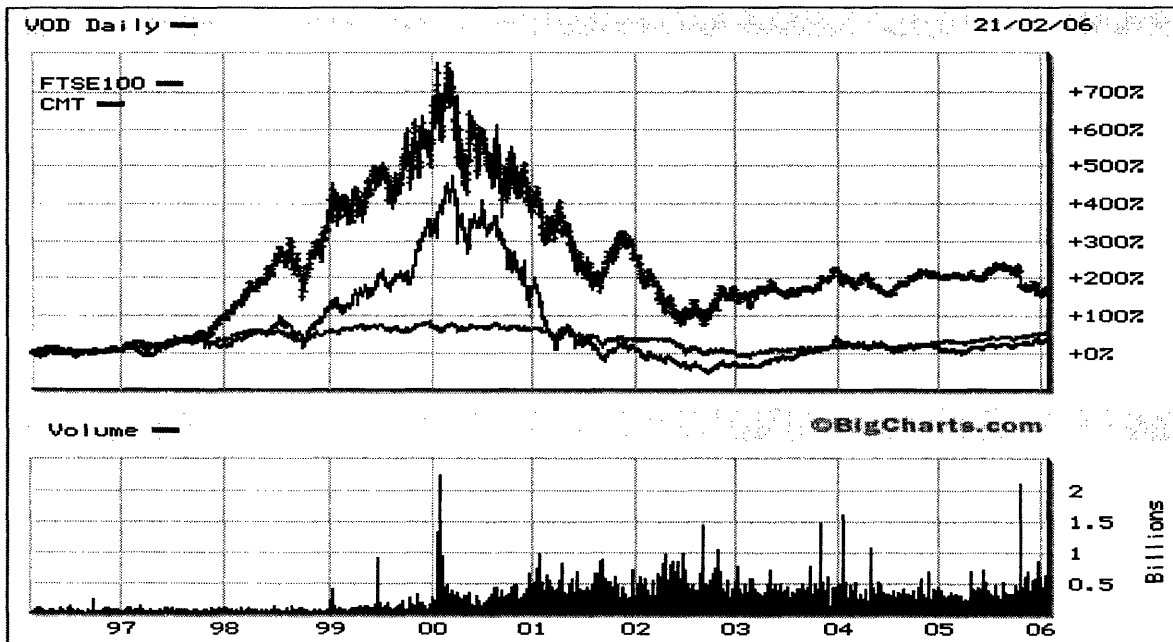
was to expand W-CDMA and i-mode to overseas wireless telecom operators, so DoCoMo management decided that majority shareholding was not required as part of its investment strategy.

Why did DoCoMo invest ¥1.9 trillion in these operators in such a short term?

Because major wireless operators worldwide were entering into M&As around the same time. Vodafone, DoCoMo's chief competitor, had actively sought M&As, for example, with AirTouch and its acquisition of German Mannesmann. In addition, Deutsche Telekom purchased Voice Stream (a GSM operator in the U.S.), and France Telecom purchased Orange in the UK. Singapore Telecom was eager to invest in Asian operators to improve its international presence. Finally, in addition to its desire to spread W-CDMA and i-mode to foreign countries, DoCoMo management believed its domestic business would have been endangered if the company did not hold a dominant position in the global market.

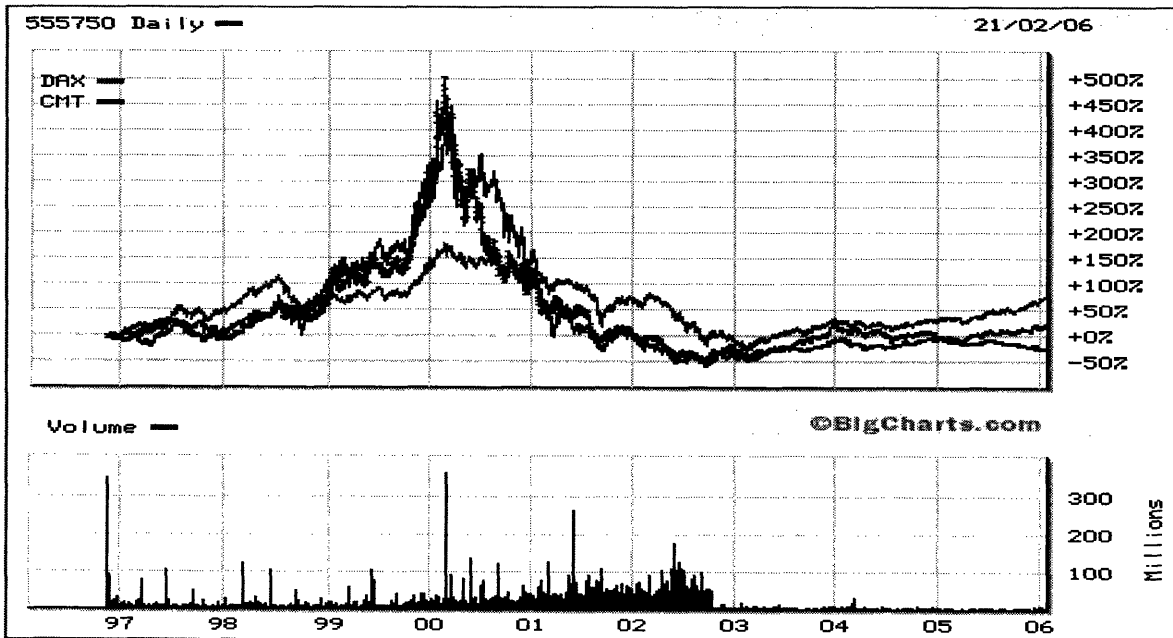
3.2.3 The Telecom 'Bubble'

Excessive expectations for the success of wireless telecommunications were largely responsible for the so-called telecom 'bubble' that occurred mainly in Europe. Many analysts believe it was caused by M&As among major operators, as well as 3G license auctions in Europe. This resulted in abnormal peaks in the prices of telecom shares at the beginning of 2000 (see Figures 3.2 and 3.3). When the telecom bubble burst, along with the economic bubble, the investment value plunged because the major telecom operators had invested at unusually high prices. As a result, the major operators were forced to reduce their acquired asset value to conform to accounting regulations.



Source: Financial Times (2006)
 Note: The graph under Vodafone's chart is FTSE

Figure 3.2 Share price changes for Vodafone



Source: Financial Times (2006)

Figure 3.3 Share price for Deutsche Telekom

3G license auctions were one cause of the economic bubble. In particular, license prices in the UK and Germany had soared due to strong expectations for the potential of 3G (see Table 3.2). For example, the total bidding amount in Germany reached €50.8 billion and the amount in UK was €38 billion. The enormous cost put heavy pressure on the financial position of the auction winners, and by the end of 2000 the major credit-rating agencies cut the ratings of the auction participants.

	Number	Total Value (EUR millions)	Method	Population (thousands)	Value/Person
Germany	6	50,800	Auction	82,071	618.98
UK	6	38,000	Auction	58,200	652.92
Italy	6	12,200	Auction	57,523	212.09
France	4	10,000	Screening	58,607	170.63
Netherlands	5	2,700	Auction	15,604	173.03
Austria	6	700	Auction	8,072	86.72
Spain	4	500	Screening	39,323	12.72
Belgium	4	450	Auction	10,188	44.17
Portugal	4	400	Screening	9,802	40.81
Sweden	4	0.05	Screening	8,846	0.01

Source: Nikkei (2001), Ministry of Internal Affairs and Communication of Japan (2001)

Table 3.2 Granting methods and total value of 3G licenses in Europe

3.2.4 Impairment Review

DoCoMo accounted for its investment by using the equity method, which requires that a company assess if a decline in value of any such investment has occurred, and if so,

whether such decline is other than temporary. DoCoMo performs a review for impairment whenever events or changes in circumstances indicate that the carrying amount of an investment may not be recoverable. Factors that DoCoMo consider important, which could trigger an impairment review, include the following:

- Significant and/or continuing declines in the market value of telecommunication industry companies;
- Current period operating cash flow losses of investee;
- Significant underperformance of historical cash flows of the investee;
- Significant impairment losses or write-downs recorded by the investee;
- Significant changes in the quoted market price of public investee affiliates;
- Negative results among competitors of investee affiliates; and
- Other negative industry or economic trends.

In performing such evaluations, DoCoMo utilizes various information, including cash flow projections, independent valuations and, if applicable, stock price analysis.

Because of the economic and financial environment surrounding the telecommunication industry and the significant declines in equity value among global telecommunications companies in recent years, DoCoMo reviewed the business outlook of its affiliates to determine if the value of DoCoMo's investments had suffered a decline that was other than temporary. As a result of these evaluations, DoCoMo determined that there were other-than-temporary declines in the values of several of its investee affiliates and in FY 2001 recorded impairment charges. The gross impairment charges were ¥664,493 million for AT&T Wireless, ¥320,481 million for KPN Mobile, ¥36,461 million for KG Telecommunications, and ¥56,444 million for Hutchison 3G UK. DoCoMo also recorded

impairment charges in fiscal 2002. The gross impairment charges were ¥284,078 million for AT&T Wireless, ¥117,898 million for KPN Mobile, ¥9,619 million for KG Telecommunications, ¥123,245 million for H3G UK. Additionally DoCoMo recorded impairment charge of ¥8,612 million for Hutchison Telephone in fiscal 2004. Details of each transaction are provided below.

3.2.4.1 AT&T Wireless

In July 2001, AT&T completed the planned spin-off of its wireless group, AT&T Wireless Group. In connection with the spin-off, all the assets and liabilities of AT&T Wireless Group were transferred to a new entity, AT&T Wireless, a wholly owned subsidiary of AT&T. The spin-off was then affected by redeeming all the outstanding shares of AT&T Wireless Group tracking stock in exchange for shares of AT&T Wireless common stock and distributing additional shares of AT&T Wireless common stock to holders of AT&T common stock, resulting in AT&T Wireless becoming an independent, publicly traded company. DoCoMo's investment in AT&T Wireless preferred tracking stock was converted to AT&T Wireless common stock, resulting in approximately 16% voting interest in AT&T Wireless. DoCoMo accounted for its common stock investment in AT&T Wireless using the equity method due to its ability to exercise significant influence over operating and financial policies, primarily through board representation, appointment of key management positions, approval rights, and rights to require repurchase of the investment under certain circumstances.

In February 2004, AT&T Wireless entered into a merger agreement with Cingular Wireless, which became effective in October 2004. It was agreed that all outstanding shares

of AT&T Wireless common stock would be converted to cash at US\$15 per share. As a result, DoCoMo's entire AT&T Wireless shares transferred to Cingular, and DoCoMo received US\$6,495 million (approximately ¥699,514 million) in cash.

3.2.4.2 Hutchison 3G UK

In May 2004, DoCoMo agreed to sell its entire shareholding in H3G UK to Hutchison Whampoa Ltd. for £120 million. Under terms of the agreement, DoCoMo will receive final payment in December 2006, either in cash or shares of Hutchison Telecommunications International Ltd., a subsidiary of HWL.

3.2.4.3 KG Telecommunications

In October 2003, KGT entered into a stock purchase agreement with Far Eastone Telecommunications Co., Ltd., a wireless telecom operator in Taiwan, by which KGT agreed to become a wholly owned subsidiary of FET. Simultaneously, DoCoMo signed a memorandum of understanding with FET to collaborate on promoting 3G wireless phone service and i-mode in Taiwan. Pursuant to the stock purchase agreement, KGT merged into a subsidiary of FET and ceased to exist as of January 2004. In April 2004, the entire transaction was complete, and former shareholders of KGT received 0.46332 FET shares plus NT\$6.72 for each KGT share they owned. As a result, DoCoMo became an approximately 5% shareholder of FET, and received approximately NT\$2.5 billion (approximately ¥8 billion).

3.2.4.4 KPN Mobile

In November 2002, DoCoMo was asked by KPN Mobile to subscribe for additional shares of KPNM, as DoCoMo had such a right in order to maintain its portion of voting rights. In December 2002, DoCoMo decided not to exercise its right to subscribe for additional shares of KPNM. As a result, DoCoMo's ownership interest in KPNM decreased from 15% to approximately 2.2%, and DoCoMo lost certain of its minority shareholder's rights under the shareholders' agreement.

In October 2005, DoCoMo agreed to transfer its 2.2% interest in KPN Mobile to KPN, KPNM's corporate parent, while continuing to license its i-mode technology to KPNM. Under the agreement, KPN agreed to cooperate with DoCoMo in the smooth operation of the global i-mode alliance, and paid DoCoMo five million euros.

3.2.5 Recent Investments

As mentioned previously, DoCoMo was forced to take massive impairments of nearly ¥1,500 billion on its investment in overseas operators including AT&T Wireless, KPN Mobile and Hutchison 3G. However, two recent overseas investments are different, for the following reasons.

- *Investment amount:* Previous investments occurred during the telecom bubble. The recent investment amounts are smaller because of the simultaneous burst of the economic bubble.
- *Timing:* Previous investees adopted GPRS and EDGE (2.5G), improved GSM (2G) technologies, because they could not afford to invest in the W-CDMA (3G) infrastructure owing to the burst of the economic bubble. These strategies did not

necessarily concur with DoCoMo's strategy at that time. However, W-CDMA is now rapidly expanding globally.

- Expectation of profit: More roaming service revenue would be expected because the number of travelers between Japan and Asian countries is increasing. Moreover, cost reductions would be expected as a result of joint procurement of terminals and infrastructure equipment.

3.2.5.1 KT Freetel

In December 2005, DoCoMo entered into an agreement with KT Freetel, the second largest wireless operator in South Korea, to form a strategic alliance including equity participation. DoCoMo invested approximately KRW 564.9 billion (approximately ¥65.5 billion) to acquire a 10% stake. This alliance enables both companies to provide better services to customers in their respective markets through the development and promotion of wireless telecom technologies and applications. The nationwide deployment and early stabilization of KTF's W-CDMA network, with DoCoMo's technical support, is a key to achieving these objectives.

3.2.5.2 Philippine Long Distance Telephone Company

In January 2006, DoCoMo entered into an agreement with NTT Communications, Philippine Long Distance Telephone Company, and PLDT's largest shareholder First Pacific Company, that DoCoMo would acquire 12,633,486 PLDT shares (approximately 7% of PLDT's issued shares) owned by NTT Com for approximately ¥52.1 billion. In addition,

DoCoMo and PLDT would form a comprehensive business tie-up, including the launch of i-mode service in the Philippines.

3.2.5.3 Guam Cellular & Paging and Guam Wireless Telephone Company

In March 2006, DoCoMo wholly acquired Guam Cellular and Guam Wireless for US\$71.8 million. Both companies provide mobile services in Guam and the Northern Mariana Islands. DoCoMo also provides additional funds up to approximately US\$6.5 million to strengthen the newly merged company's facilities and infrastructure. The acquisitions enable DoCoMo to better serve many Japanese travelers who visit Guam and the Northern Mariana Islands, and enable the islands' residents to benefit from DoCoMo's world-leading mobile technology.

3.3 Global Alliance Strategy

3.3.1 i-mode Licensing Agreements

When DoCoMo began its overseas investments, it recognized the strong possibility of wireless phone Internet service based on the success of i-mode in Japan. DoCoMo also believed that i-mode would be another means of increasing corporate value for investees. DoCoMo entered into i-mode licensing agreements with the investees and supported the introduction of i-mode into those foreign markets. The i-mode licensing agreement is independent from the investment/shareholding agreement. It grants the right to use the i-mode business model and it provides for support and maintenance by DoCoMo. DoCoMo can share a small percentage of its i-mode sales revenue as a licensing fee. However the licensing fee itself is too small to contribute to DoCoMo's business performance.

Although DoCoMo entered into contracts with Taiwanese KGT and KPN Mobile's operating company (which includes KPNM Netherlands, E-plus of Germany and BASE of Belgium) after acquiring minority shareholding, DoCoMo did not achieve its original purpose, which was to enhance the corporate value of its investees. In particular, it could not repair the impaired value of those investees because of the telecom bubble burst. After the impairment, DoCoMo entered into contracts with wireless operators that it did not have shareholding.

3.3.2 i-mode Alliances

DoCoMo has now decided to make i-mode alliances the centerpiece of its global strategy given the stumbling of its investment strategy, largely because such alliances do not require a cash investment. Table 3.2 provides information about these alliances.

Because i-mode is widely perceived to be better than other wireless phone Internet services at all points, many wireless operators are interested in i-mode and have decided to adopt it. Moreover, European wireless telecom operators have become concerned about Vodafone's aggressive global strategy, these operations believe such an alliance with DoCoMo is needed to promote economies of scale in procurement in order to remain competitive with Vodafone.

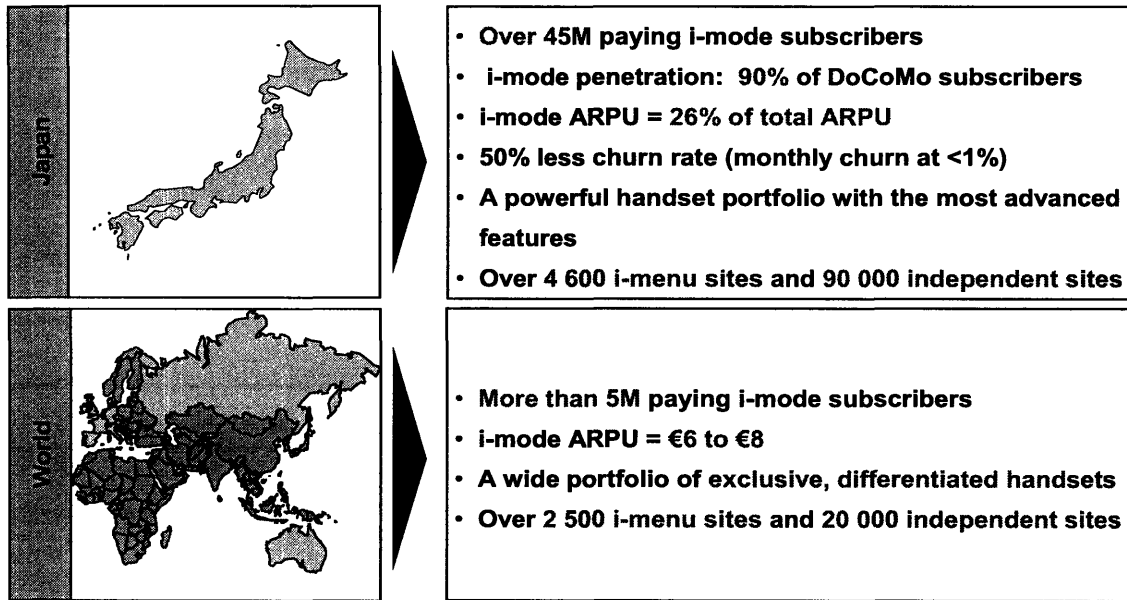
DoCoMo has concluded i-mode licensing agreements with 14 operators to date, as shown in Figures 3.4 and 3.5. The number of i-mode subscribers outside Japan already exceeds five million, raising the total number of subscribers to approximately 50 million worldwide. i-mode's addressable subscriber base as a result of these alliances has reached 200 million, surpassing the outreach of Vodafone Group.

Operator	Country	Licensing	Service launch
Far EasTone	Taiwan	Jun. 2001	Jun. 20 2002
KPN Mobile	Netherlands	Nov. 2001	Apr. 18 2002
E-Plus	Germany	Feb. 2002	Mar. 16 2002
BASE	Belgium	Nov. 2001	Oct. 15 2002
Bouygues Telecom	France	Apr. 2002	Nov. 15 2002
Telefonica Moviles	Spain	Jul. 2002	Jun. 26 2003
Wind	Italy	Jun. 2003	Nov. 19 2003
Cosmote	Greece	Nov. 2003	Jun. 3 2004
Telestra	Australia	Jun. 2004	Nov. 10 2004
Cellcom	Israel	Nov. 2004	Sep. 6 2005
Mobile TeleSystems	Russia	Dec. 2004	Sep. 15 2005
O2 UK	UK	Nov. 2004	Oct. 1 2005
O2 Ireland	Ireland	Nov. 2004	Oct. 7 2005
StarHub	Singapore	Jan. 2005	Nov. 19 2005

Source: NTT DoCoMo

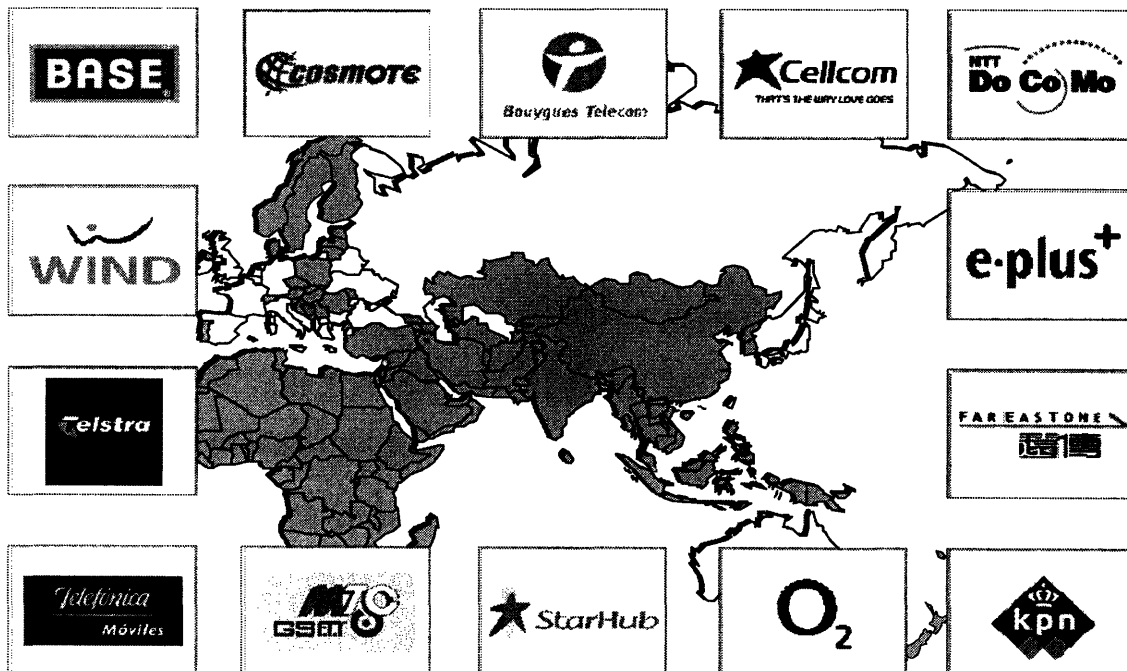
Table 3.3 i-mode licensing with partners

Alliance member operators, including DoCoMo, are expecting to enjoy numerous economies of scale, including joint procurement of handsets and other equipment. Cost reductions for procurement, which help maintain profit levels, are the most important challenge facing wireless telecom operators in developed countries, especially those where revenue growth is declining owing to market saturation. In June 2005, DoCoMo's eight i-mode alliance partners announced the first joint procurement tie-up for i-mode handsets, in a



Source: NTT DoCoMo (2005)

Figure 3.4 Snapshot of key i-mode results



Source: NTT DoCoMo (2005)

Figure 3.5 Expanding i-mode global alliances

deal with Korean vendor LG Electronics. Other joint procurement deals will be more active in the future.

3.4 Summary





















DoCoMo acquired a minority stake of wireless telecom operators in developed countries in order to expand W-CDMA and i-mode, which DoCoMo developed. However, most of the investment deals occurred during the telecom bubble. Consequently, when the bubble burst, DoCoMo and other major operators were forced to write down their investments—something no one could have predicted. DoCoMo decided to withdraw from major investees that had lost their investment attractiveness, and instead shifted to i-mode alliance strategies that did not require cash injections.

Fourteen wireless operators have launched i-mode service. This has created an i-mode addressable subscriber base of 200 million, surpassing that of Vodafone Group. In addition, W-CDMA was adopted by most European wireless telecom operators (see Figure 3.6). In the United States, Cingular, which acquired AT&T Wireless, has also adopted W-CDMA.

Although the burst of the telecom and economic bubbles forced DoCoMo to change its global business strategy, the company is still on the path to achieving its initial target—expanding W-CDMA and i-mode to as many overseas wireless telecom operators as possible. Therefore, it can be said that DoCoMo's global strategy was successful from the technological perspective.

However, the piece of its global strategy that depended on a favorable return on investment has not been successful. Moreover, the investment targets were limited to one category—wireless operators in advanced countries—because DoCoMo sought to widely

diffuse its advanced technologies. I believe that such non-diversified investments pose a serious financial problem. As stock exchange rules for investment purposes were not adopted in Japan, all investments were done in cash, which could cause even worse damage.

Major Countries		Up to 2002	2003		2004	
			First Half	Second Half	First Half	Second Half
Asia-Pacific	Japan	<ul style="list-style-type: none"> NTT DoCoMo (10/01)  Vodafone (12/02)  				
	Korea			<ul style="list-style-type: none"> SK Telecom (12/03)  KTF (12/03)  		
	HK			<ul style="list-style-type: none"> Hutchison 3G (1/04)  	<ul style="list-style-type: none"> SmarTone (12/04)  	
Europe	UK		<ul style="list-style-type: none"> Hutchison 3G (3/03)  		<ul style="list-style-type: none"> T-Mobile (2/04)  Vodafone (4/04)  Orange (7/04)  	
	Germany				<ul style="list-style-type: none"> Vodafone (5/04)  T-Mobile (5/04)  e-Plus+ (6/04)  O2 (7/04)  	
	France				<ul style="list-style-type: none"> SFR (2004.6)  	
	Italy		<ul style="list-style-type: none"> 1773G (3/03)  		<ul style="list-style-type: none"> Vodafone (3/04)  TIM (5/04)  Wind (10/04)  	
	US				<ul style="list-style-type: none"> Cingular Wireless (7/04)  	

Source: NTT DoCoMo (2005)

Figure 3.6 W-DCMA worldwide

It should also be noted that Vodafone minimized the damage it suffered as a result of the economic bubble burst by using stock exchanges in most of its M&As.

As described in Chapter 2, wireless telecom operators cannot expect to enhance their corporate value by relying solely on existing domestic telecommunication traffic, because the

market is saturated and competition in the market is intensifying. Therefore, DoCoMo has begun to implement new growth drivers, such as a credit card business, that does not depend on existing telecommunication traffic. Cross-border investments could also be a driver for securing future growth. DoCoMo should work on global investments as a means of enhancing sustainable corporate value, and set a premium on a *finance-driven policy* in addition to a *technology-driven policy* as it becomes increasingly involved in cross-border investments.

DoCoMo still generates a high level of cash flow from its existing businesses, as shown in Table 3.3, even though its growth rate as decelerated. Moreover, the accumulated

	(¥ million)			
	2002	2003	2004	2005
Free cash flow	215,995	713,180	862,934	603,256

Source: NTT DoCoMo

Table 3.4 DoCoMo's Free Cash Flow

treasury stocks that have been purchased to boost stock market prices now exceed ¥510 billion. DoCoMo should reinvest these abundant investment resources effectively to augment and increase its corporate growth.

I will describe DoCoMo's future global investment strategy in Chapter 5.

CHAPTER 4

Vodafone's Global Business Strategy

In this chapter, I will examine the global business strategy of Vodafone, which is NTT DoCoMo's major rival in the global wireless telecommunication market. While DoCoMo's global strategy was based on minority investment for DoCoMo technology, Vodafone pursued a strategy of M&As to construct a global wireless telecom empire.

In Chapter 3 I defined DoCoMo's global business strategy as a "technology-driven policy." In contrast, Vodafone's basic philosophy for globalization can be defined as a "finance-driven policy." I will focus on Vodafone's global deals, which the firm pursued with the support of this policy.

4.1 Overview

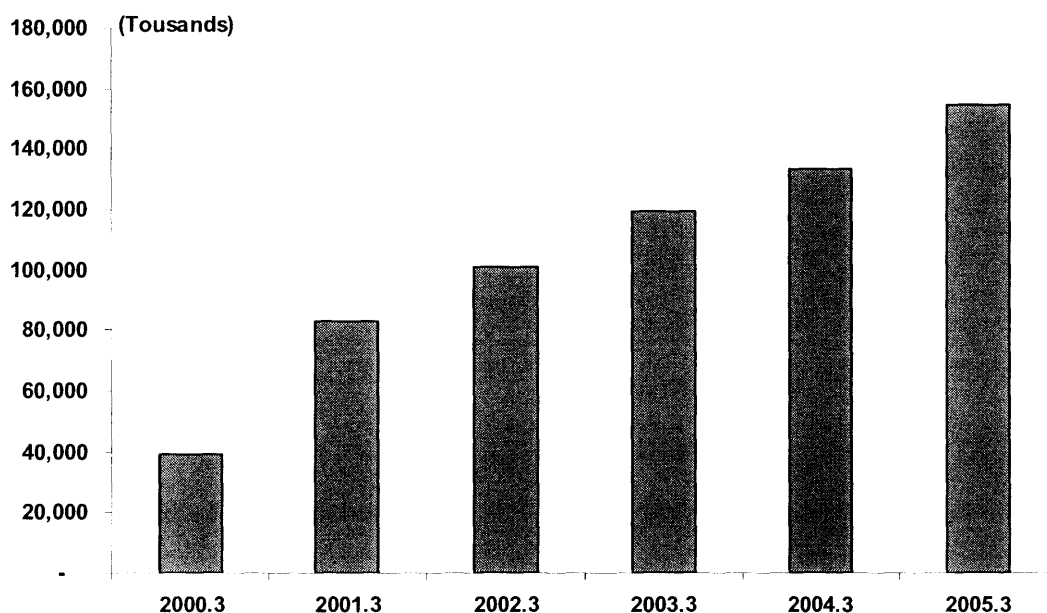
4.1.1 Company Profile

Vodafone is the largest mobile telecommunications network company in the world, with equity interests in 27 countries and partner networks in 31 additional countries. As of 31 December 2005, Vodafone had approximately 179.3 million customers worldwide. Details of Vodafone's global presence are shown in Table 4.1, and Figure 4.1 illustrates the upward trend in the growth of Vodafone customers.

Country	Percentage ownership (%)	Proportionate # of Customers At 31 Dec 2005 (000s)	Acquiring initial stakes
Principal Markets			
Germany	100.00%	29,165	2000
Italy	76.90%	18,208	1999
Japan	97.70%	14,767	1999
Spain	100.00%	12,923	1994
UK	100.00%	16,325	1984
		91,388	
Other Subsidiaries			
Albania	99.90%	748	2001
Australia	100.00%	3,126	1992
Czech Republic	99.90%	2,140	2005
Egypt	50.10%	3,068	1998
Greece	99.80%	4,429	1992
Hungary	100.00%	2,038	1999
Ireland	100.00%	2,047	2000
Malta	100.00%	177	1999
Netherlands	99.90%	3,976	1998
New Zealand	100.00%	2,024	1998
Portugal	100.00%	4,119	1991
Romania	100.00%	6,132	1996
Sweden	100.00%	1,573	1991
		35,597	
Other Joint Ventures			
Fiji	49.00%	95	1994
India	10%	1,633	2003
Kenya	35.00%	1,221	2000
Poland	19.60%	1,774	1996
South Africa	35.00%	7,043	1993
		11,766	
Associates & Investments			
US (Verizon)	44.40%	22,785	1999
Other		17,780	
		40,565	
TOTAL		179,316	

Source: Vodafone Group (2005)

Table 4.1 Vodafone's global presence



Source: Vodafone Group (2005)

Figure 4.1 Subscriber trend for Vodafone Group

In March 2005, Vodafone Group had operating revenues of £34,133 million (US\$64,470 million) and operating profit of £10,904 million (US\$20,595 million). Because of its large goodwill amortization—UK£14,700 generated from past M&As—net losses were UK£7,540 million (US\$14,242 million), which was equivalent to net loss per share of 11.39p (21.51c).

4.1.2 Business Strategy

Vodafone’s strategy is to mobilize these markets and, through this process, grow its voice and data service revenue. In particular, Vodafone seeks to leverage third-generation (3G) mobile technology in order to develop enhanced, new service offerings for consumers and business customers. The Group’s strategic roadmap identifies six key goals:

1. delight its customers;
2. build the best global Vodafone team;
3. leverage its global scale and scope;
4. expand its market boundaries;
5. be a responsible business; and,
6. provide superior returns to shareholders.

Vodafone has built a network of mobile operations and is leveraging this to provide cost and time-to-market advantages. A new program called “One Vodafone” is designed to leverage this global scale by identifying solutions to be designed and deployed. Vodafone marketing delivers a wide range of services to its customers while combining the benefits of global scale and scope with the advantages of local market understanding and responsiveness.

4.2 Global Footprint

4.2.1 First Phase of Development

The company was incorporated in July 1984 as Racal Strategic Radio Ltd., as a subsidiary of Racal Electronics Plc. In September 1988, it became Racal Telecom Ltd., then re-registered as Racal Telecom Plc, a public limited company. In October 1988, approximately 20% of the company’s capital was offered to the public. The company was fully detached from Racal Electronics and became an independent company in September 1991, at which time it changed its name to Vodafone Group Plc. Between 1991 and 1999, the Group consolidated its position in the UK and enhanced its international interests through a series of transactions. At the end of March 1999, the Group had mobile operating subsidiaries

in six countries, as well as equity interests in a further seven countries, and a mobile customer base of 10.4 million.

4.2.2 Second Phase of Development

The Group completed a number of business transactions between 1999 and the end of March 2002, which transformed it into the world's leading international mobile telecommunications company. At that time, the Group controlled mobile operations in 16 countries and held equity investments in mobile operations in a further 12 countries. The mobile customer base was 101.1 million.

During this period, Vodafone executed large-scale M&As in leading markets, such as the US (AirTouch), Germany (Mannesmann), and Japan (J-Phone), and greatly expanded its business. This expansion trend is shown in Table 4.2. Vodafone's operating revenue/ EBITDA expanded as a result of the M&As, which in turn strengthened its operations. Operating losses/net losses at the end of FY 2000 were caused by amortization of goodwill paid when the M&As were complete. Although the amortization process followed UK generally accepted accounting principles (UK GAAP), the losses indicate the size of the goodwill paid when these assets were acquired.

(£ million)

Fiscal year	1999	2000	2001	2002	2003	2004
Operating Revenue	7,873	15,004	22,845	30,375	33,559	34,133
Operating Income/(Loss)	796	(6,998)	(11,834)	(5,451)	(4,230)	(4,111)
Net Income (Loss)	487	(9,763)	(16,155)	(9,819)	(9,015)	(7,540)
EBITDA	2,443	4,939	8,031	11,217	12,640	13,041
EBITDA margin (%)	31.0%	32.9%	35.2%	36.9%	37.7%	38.2%
CAPEX	1,848	3,698	4,145	5,289	4,508	4,890
Free cash flow	(3,718)	14,177	2,365	5,171	8,521	7,847

Source: Vodafone Group (2005)

Table 4.2 Vodafone Group's historical financial data

4.2.3 U.S. Operations

In June 1999, Vodafone merged with US-based AirTouch Communications, which created Vodafone AirTouch Plc, one of the largest mobile communications companies in the world in terms of number of subscribers. The company issued approximately 3,046 million ordinary shares to transferring AirTouch shareholders, in addition to paying out UK£3,477 million.

Verizon Wireless was formed through the merger of four U.S. wireless operators: Bell Atlantic Mobile, GTE Wireless, AirTouch, and PrimeCo Communications. The merger followed an agreement made in September 1999 by Bell Atlantic and Vodafone to combine their wireless operations in the U.S. In April 2000, Vodafone contributed AirTouch and its interest in PrimeCo, while Bell Atlantic contributed its U.S. wireless operations and its interest in PrimeCo. In July 2000, after Bell Atlantic and GTE merged to form Verizon Communications, GTE's U.S. wireless operations were added to Verizon Wireless. The formation of Verizon Wireless resulted in net proceeds to Vodafone of approximately

US\$2,500 million relating to the assumption of debt. Further proceeds of US\$2,000 million have been realized since then, relating to the disposal of overlapping properties in the U.S.; such disposals were a condition for regulatory approval.

4.2.4 German Operations

Vodafone announced its intention to acquire Mannesmann AG in November 1999. Vodafone had already acquired 34.8% of Mannesmann when it merged with AirTouch. As of March 2000, Vodafone had transferred 30,141 million ordinary shares to the transferring Mannesmann shareholders. In April 2000, it received conditional consent from the EC to acquire Mannesmann. Vodafone acquired 98.62% of Mannesmann's issued share capital and 99.72% of its convertible bonds. Mannesmann AG was subsequently renamed Vodafone AG. The Group later increased its shareholding in Vodafone AG to 99.6%. Following the transaction, Vodafone disposed of Mannesmann's non-telecommunications businesses, including its engineering, automotive, and watch businesses.

One important condition of the EC's approval of Vodafone's acquisition of Mannesmann was the disposal of Orange plc, a UK mobile network operator owned by Mannesmann. Orange was sold to France Telecom in August 2000 for a cash payment of approximately €21,400 million, a €2,200 million France Telecom loan note, and 113,846,211 France Telecom shares. France Telecom also assumed Orange's existing debts, which totaled UK£4,100 million. Vodafone no longer holds any shares in France Telecom.

4.2.5 Japanese Operations

In October 1999, Vodafone increased its stakes in nine regional mobile companies in Japan. It already had interests in the nine companies ranging from 4.5% to 15%; it increased its interests to more than 20% in each company to become the second-largest shareholder, behind Japan Telecom, in each venture. Total consideration for the increased ownership in the three digital phone and six digital Tu-Ka companies was UK£342 million.

Following this transaction, Vodafone entered into an agreement with its partners, Japan Telecom and BT, to restructure its ownership interests, resulting in the formation of J-Phone Communications Co Ltd, in which Vodafone held a direct 26% stake, acquiring a controlling interest of approximately 50% in each of the nine companies. Japan Telecom and BT held interests of 54% and 20%, respectively.

In April 2001, Vodafone completed the acquisition of a 15% equity stake in Japan Telecom from two existing shareholders, West Japan Railway Co. and Central Japan Railway Co., for a total of ¥125.1 billion. Vodafone first invested in Japan Telecom in January 2001 when it made an initial payment of ¥124.6 billion. In addition, Vodafone acquired a 10% stake in Japan Telecom from AT&T for approximately US\$1,350 million, bringing its stake in Japan Telecom to 25%. In May, Vodafone agreed to acquire, for a cash consideration of approximately UK£3,700 million, BT's ownership interests in the J-Phone Group and Japan Telecom, comprising UK£3,100 million for BT's combined shareholdings of 20% in Japan Telecom and 20% in J-Phone Communications, with a further UK£600 million for BT's aggregate interest of approximately 4.9% in the J-Phone operating companies. The transaction was completed in June 2001, except for the acquisition of BT's interests in the

operating subsidiaries of J-Phone Communications, which was completed in July 2001. As a result of these transactions, Vodafone had a 46% direct interest in J-Phone Communications.

In August 2001, it was announced that J-Phone Communications and the J-Phone operating companies would merge to form a new company, J-Phone Co Ltd. The merger became effective in November 2001 and, as a result, Vodafone held a 39.67% direct ownership interest in the new company. In September 2001, Japan Vodafone announced an agreed tender offer by its subsidiary, Vodafone International Holdings BV, to acquire 21.7% of the ordinary shares of Japan Telecom, for a cash consideration of up to ¥312 billion. The offer was completed in October 2001, bringing the group's total interest to 66.7%.

In August 2003, Japan Telecom Holdings Co agreed to sell its wholly owned fixed-line subsidiary, Japan Telecom Co Ltd, to an affiliate of Ripplewood Holdings. Under the terms of the agreement, Japan Telecom Holdings was to receive total proceeds of ¥261.3 billion (approximately US\$2.21 billion), consisting of ¥228.8 billion in cash and ¥32.5 billion of redeemable preferred equity. The cash received was to be used to reduce Vodafone's consolidated net debt. The transaction was completed in November 2003. In October 2003, Japan J-Phone changed its name to Vodafone KK (Vodafone Japan) and adopted the Vodafone brand and service names.

In May 2004, Vodafone Holdings KK and Vodafone KK jointly announced that their respective boards had agreed to merge the two companies. Vodafone Holdings KK would be the surviving entity and would be renamed Vodafone KK after completion of the merger. It was stated that the boards of directors of Vodafone Holdings KK and Vodafone KK believed that the reorganization of the existing structure would enable the merged company to operate with increased efficiency and stronger management focus. Under the terms of the merger, the

merger ratio would mean that Vodafone KK shareholders would receive 7.5898 Vodafone Holdings KK shares for every share of Vodafone KK held. Following the merger, the former shareholders of Vodafone Holdings KK and Vodafone KK would own approximately 58.9% and 41.1% of the merged company, respectively. In connection with this agreement, Vodafone bid £2,600 million pounds to buy out minority investors in Japan and promised to buy back stock valued at UK£3,000 million.

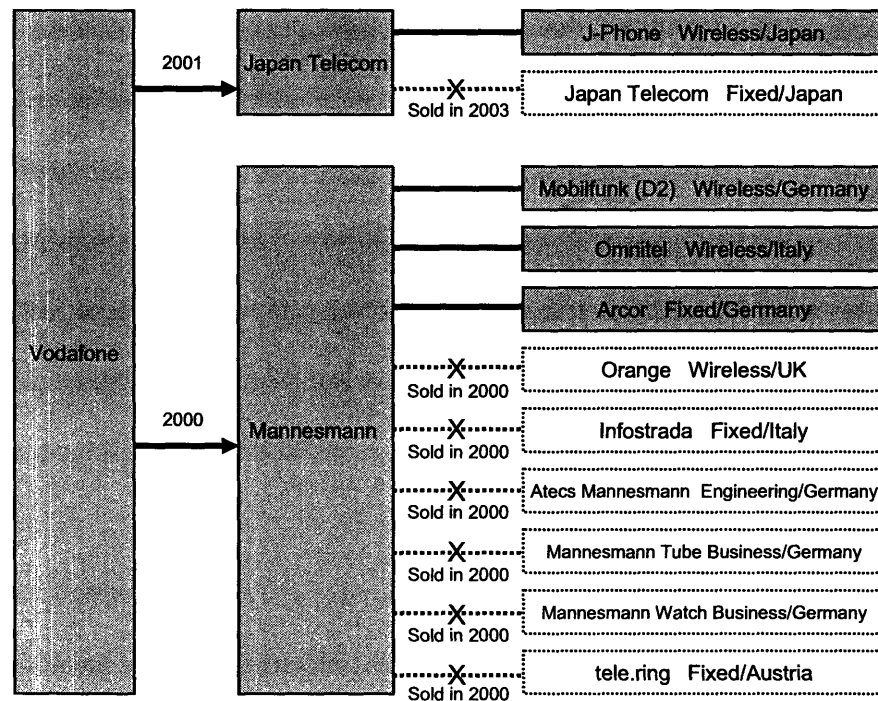
In June 2004, Vodafone plc acquired 96.1% of its Japanese subsidiary, Vodafone Holdings KK. Vodafone paid ¥300,000 per share of Vodafone Holdings KK, or a total of around ¥281.6 billion, to raise its ownership in Vodafone Holdings KK from 79.6% to 96.1%. Vodafone Holdings was delisted from the Tokyo Stock Exchange at the end of March 2005.

4.2.6 Findings

Vodafone not only expanded its global footprint but also restructured the group, its UK headquarters, and its investees, in order to establish a new management structure for pursuing global synergies. Its strategy in the first development phase was to expand the company's business scale. Then Vodafone leveraged the skilled human resources it had acquired through various M&As. For example, the current CEO, Arun Sarin, came from the former AirTouch. The organization that promotes Vodafone's global business in the UK was started with staff acquired from Mannesmann.

After acquiring control rights of its investees, Vodafone separated and sold the non-core assets, such as the fixed-line telephone business, to concentrate on the core business of wireless telephones. Vodafone did not intend to pursue portfolio-type investment, but instead

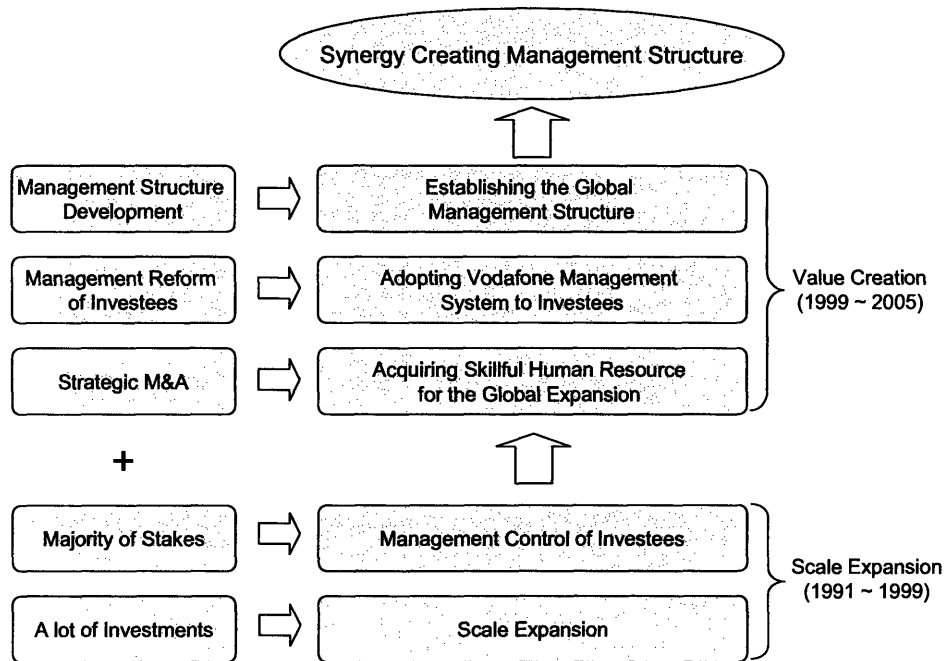
to focus on the wireless telephone business. However, it chose a finance-driven policy to accomplish this purpose. Figure 4.2 shows the sequence of Japanese and German acquisitions.



Source: Vodafone Group / adapted by the author

Figure 4.2 Disposition of non-core assets in Japan and Germany

Vodafone introduced its management system to all of its acquired companies, changed their names to Vodafone, and eventually assimilated them into the Vodafone culture. At the same time, it shifted the headquarters organization from a regional management structure (regionally independent management) to a synergy-creating management structure with corporate functions centralized in the UK (see Figure 4.3).



Source: Vodafone Group / adapted by the author

Figure 4.3 Development phases for Vodafone's synergy-creating management structure

4.3 Turnaround

Vodafone's 2005 announcements of interim financial results drew attention to a sharp slowdown in the European and Japanese markets. Several European countries posted growth that was slower than GDP. APRU in most of these countries also decreased compared with the previous period, e.g., Germany: €25.7 / €24.4; Italy: €30.3 / €30.1; Japan: ¥6,279 / ¥5,983; UK: £26.6 / £24.9; US: \$53.2 / \$51.6.

Like the Japanese market, the wireless telecommunication markets in Western European countries are close to saturation and suffer severe tariff reductions. It will be difficult for Vodafone to increase its corporate value if it continues to pursue existing

markets. In 2005 Vodafone revised its M&A strategy to achieve sustainable growth. How is it reacting to the current slowdown? It chose strategies such as buying assets in emerging markets and disposing of assets that were not expected to grow (Vodafone had never disposed of assets before). This reaction is totally different from DoCoMo's strategy in the mature Japanese market. Vodafone has consistently chosen a strategy based on a finance-driven policy. All the listed companies maintain their respective levels of EBITDA margin and increase their free cash flow to meet investor's expectation. A stock price is theoretically decided by net present value (NPV) of free cash flow that a company or an asset generates. Vodafone has begun to change its asset portfolio composed of wireless phone operators that create corporate value.

4.3.1 Emerging Markets

As sustainable growth in the core market is not expected, emerging markets, as Vodafone's new growth driver, will matter more and more. After a period of relative quiet, with no M&As over the last two years, 2005 saw a flurry of transactions. These were concentrated on increasing Vodafone's presence in emerging markets

Eastern Europe (Czech and Romania)

In March 2005, Vodafone entered into agreements with Telesystem International Wireless Inc. of Canada to acquire approximately 79% of the share capital of MobiFon S.A. in Romania (this increases Vodafone Group ownership to approximately 99%) and 100% of the share capital of Oskar Mobil a.s. in the Czech Republic for a cash consideration of

approximately \$3.5 billion (£1.8 billion) to be satisfied from Vodafone Group's cash resources. The principal benefits to Vodafone Group are:

- Expansion of its footprint into two attractive European markets.
 - adjacent to existing Vodafone Group markets
 - combined population of around 32 million
 - strong growth economies

- Control of MobiFon, a leading operator in Romania
 - mobile penetration of approximately 47%
 - 4.9 million customers, equivalent to 48% market share
 - revenues of US\$723 million, delivering 30% growth year-on-year
 - EBITDA of US\$345 million with 48% EBITDA margin

- Control of Oskar, the fastest-growing operator in the Czech Republic
 - 1.8 million customers, equivalent to 17% market share
 - revenues of US\$552 million, delivering 35% growth year-on-year
 - EBITDA of US\$162 million with 29% EBITDA margin

India

In October 2005, Vodafone agreed to acquire an economic interest of 10% in Bharti Tele-Ventures Limited for a cash consideration equivalent to Rs.66.56 billion (£0.82 billion). Vodafone has entered into an agreement to acquire a 4.39% economic interest in BTVL through Bharti Enterprises Private Limited and a 5.61% direct interest in BTVL from

Warburg Pincus LLC. The principal benefits of the transaction to Vodafone are that it provides:

- Expansion of Vodafone's footprint into India, a large and under-penetrated market of global importance with significant growth potential
 - 4th largest economy in the world with a population of 1.1 billion
 - 3rd largest mobile market in Asia with 65.1 million customers currently
 - Mobile and fixed line penetration currently at approximately 6.0% and 4.4%, respectively
 - 53.3% year-on-year mobile market growth, representing 22.6 million additional customers
- Investment in the fastest-growing mobile operator in India
 - 14.1 million mobile customers as of September 2005, equivalent to 21.8% customer market share
 - One of only three Indian mobile operators with a nationwide footprint
 - In the six months ended September 2005, BTVL's mobile business delivered year-on-year growth of 62% in customers, 58% in revenues and 64% in EBITDA
 - In the six months ended September 2005, BTVL's fixed line business delivered year-on-year growth of 39% in customers, 30% in revenues and 34% in EBITDA
- Active role in the partnership
 - The transaction delivers material rights in BTVL as a result of which Vodafone is expected to proportionately consolidate BTVL
 - Vodafone will have the right to appoint two directors to the BTVL Board

South Africa

In November 2005, Vodafone has entered into agreements with the Rembrandt Trust Limited to acquire up to an additional 15% economic interest in Vodacom Group Limited for a net cash consideration of up to R16.0 billion (£1.35 billion). This increases Vodafone's effective shareholding in Vodacom from 35% to 50%. An increased interest in Vodacom is consistent with Vodafone's strategy of increasing its exposure to growth markets. The principal benefits to Vodafone would be:

- Increased exposure to the attractive and growing South African market
 - market penetration approximately 57% with further growth potential
 - population of approximately 47 million
 - largest economy in Africa with forecast GDP growth of 9%
- Increased exposure to other African growth markets including Democratic Republic of Congo, Tanzania, Lesotho and Mozambique
- Increased exposure to Vodacom, an attractive asset with:
 - 17.2 million customers, 14.3 million in South Africa as of June 2005
 - revenue growth of 20% in the 12 months to 31 March 2005
 - EBITDA growth of 24% in the 12 months to 31 March 2005
 - implied 3.2% historic dividend yield

Turkey

In December 2005, Vodafone agreed to acquire Telsim, the number two mobile operator in Turkey, from the Turkish Savings Deposit and Investment Fund, for a consideration of \$4.55 billion. The acquisition of Telsim represents a unique opportunity to gain control of a mobile business in one of Europe's largest markets and is consistent with Vodafone's strategy of increasing its exposure to growth markets. The principal benefits to Vodafone are:

- Exposure to the attractive and growing Turkish market
 - Population of 72 million people, the fourth-largest market in which Vodafone controls an operator
 - Market penetration of approximately 53% with significant further growth potential
 - Fast growing and young population, forecast to grow at 1.4% CAGR until 2010 and with approximately 47% under the age of 25
 - Population expected to be greater than Germany's by 2017
- Full control of a fast-growing number two mobile operator
 - 43% revenue growth in the first seven months of 2005 compared to the same period in 2004
 - Customer growth of 53% and 2.8 million net additional customers in the 12 months to 30 June 2005
 - Approximately 9 million total customers
- Uniquely positioned to capture the benefits of a turnaround of Telsim
 - Business has historically been under-managed and suffered from under-investment in its network and customer services

- Vodafone to leverage its position in GSM networks, branding, and successful customer propositions to turn the business around.

4.3.2 Sale of Vodafone Japan

As mentioned earlier, it took three years for Vodafone to acquire a majority portion of its Japanese assets. Previously, Vodafone KK (Vodafone Japan) held a strong second position in the market by being the first to introduce camera phones to the Japanese market. However, the launch of 3G service was considerably delayed compared to its competitors such as DoCoMo and au, because it saved CAPEX for 3G. Therefore, Vodafone KK is ranked lowest in the Japanese wireless telecom market. Although Vodafone KK earned 15% of the total revenues for Vodafone Group, its EBITDA margin was the lowest among the other operators in the group. Some analysts speculate that this Japanese arm of Vodafone may be disposed of to third parties.

In March 2006, Vodafone Group agreed to sell its 97.68% interest in Vodafone Japan to SoftBank. The sale values Vodafone Japan at an enterprise value of approximately ¥1.8 trillion (£8.9 billion), of which £6.8 billion will be received in cash on closing. Subsequently, Vodafone will distribute £6 billion in cash to shareholders. Highlights of the deal are as follows:

- While the nominal enterprise value derived from the cash proceeds and the face value of the non-cash instruments is ¥2.0 trillion (£9.8 billion), Vodafone estimates that the fair value of the transaction on an enterprise-value basis is ¥1.8 trillion (£8.9 billion).
- SoftBank intends to acquire 100% of the common equity of Vodafone Japan through its wholly owned SoftBank subsidiary, Bidco.

- As a result of the transaction, Vodafone will receive three principal components of value:
 - Approximately £6.8 billion of cash payable on closing
 - Preferred shares in Bidco with a face value of ¥300 billion (£1.5 billion) carrying zero dividend. The preferred shares will be redeemable at Bidco's option. After June 2013 the preferred shares will carry a coupon of 12%.
 - A subordinated loan with a face value of ¥100 billion (£0.5 billion) repayable to Vodafone. This loan will be subordinated to Bidco's acquisition debt, carries a coupon of 5%, and is repayable after 30 September 2013.

Vodafone estimates the combined fair value of the preferred shares and the subordinated loan is approximately £1.1 billion.

- In addition Vodafone has been granted warrants with the right to subscribe to equity representing 10% of Bidco exercisable after 31 March 2013 subject to certain minimum cumulative levels of EBITDA being generated between 1 April 2006 and 31 March 2013.
- Vodafone presently intends to retain the preferred shares and the warrants in the short to medium term.
- SoftBank will assume approximately £0.8 billion of external debt and other liabilities outstanding from Vodafone Japan.
- The preferred shares confer the right for Vodafone to appoint one director to the Boards of both Bidco and Vodafone KK.
- Vodafone and SoftBank have entered into discussions regarding the formation of a joint working relationship involving participation in the supply and distribution of

data and content. The purpose of the relationship is also to provide knowledge and information sharing between the two parties and to ensure that Vodafone continues to have access to the ongoing technological and service developments in the mobile industry in Japan.

4.4 Summary

Compared with NTT DoCoMo's global strategy, Vodafone has taken a completely different strategy. As described in Chapter 3, DoCoMo acquired a minority stake of wireless telecom operators in developed countries in order to expand its W-CDMA and i-mode products, which DoCoMo developed. In contrast, Vodafone acquired a majority stake of wireless operators to expand the scope and scale of its business in order to pursue synergy effects afterward.

Vodafone's global strategy is continually focused on financial matters, irrespective of its development phases. Global expansion led by M&A has been the engine for Vodafone's growth. In the first phase, it concentrated mainly on enlarging its assets (scale of business). Vodafone tried to cover Europe by acquiring its own infrastructures because there were strong demands from Europeans who move around the continent. After Christopher Gent became CEO, he began to pursue large-scale M&As, such as AirTouch in the US, Mannesmann in Germany, and J-phone in Japan. The acquisition of Mannesmann was a hostile takeover, and the deal is the largest ever among M&As in the telecom industry.

Vodafone's global expansion strategy is finance-driven, similar to private equity funds. It can be said that its expansion strategy was dependent on the CEO's ambition during the European telecom bubble. Vodafone's management is trying to enhance its share price by

a finance-driven policy. It seeks a balance between its financial scale and financial productivity, which is measured by the EBITDA margin.

The recent slowdown of growth in the major markets has had impact on Vodafone's global strategy. Vodafone has shifted its investment target to emerging markets such as India, which has a high potential for growth. It also decided to sell its Japanese subsidiary, which was not expected to grow further, to SoftBank in a sale valued at £8.9 billion with a distribution to shareholders of £6 billion in cash. It is rumored that Vodafone might sell its share of the U.S. firm, Verizon Wireless, in which it holds a 45% stake, which does not give Vodafone control. Given such a sale, it would also distribute the gains from the sale to its shareholders.

I personally like Vodafone's global strategy, which challenges the firm to maximize its corporate value through its *finance-driven policy*. I think Vodafone's global management system makes optimal use of its assets and the resources of acquired companies. On the other hand, I worry about Vodafone's strategy, which is highly dependent on financial issues in the technology-driven telecommunication business arena. For Vodafone, critical wireless technologies are supplied by major European manufacturers, such as Nokia and Ericsson, rather than being developed internally. As already mentioned, the balance between a *technology-driven policy* and a *financial-driven policy* is important for maximizing the value of any wireless telecom operator.

CHAPTER 5

Global Investment in Emerging Markets for Sustainable Growth

In this chapter I will discuss global investment as a strategic option for sustainable growth in a saturated wireless telecom market. As described in Chapter 2, wireless operators in developed countries cannot expect to grow sustainably if they continue to rely solely on the existing market, because it has become mature and saturated, and competition is intensifying. Therefore, DoCoMo, with its *technology-driven policy*, has begun to implement a financial business based on a new innovation known as “Mobile Wallet” which is expected to be a successful new revenue source. In contrast, Vodafone, with its *finance-driven policy*, is now reassessing its global portfolio.

I believe DoCoMo should consider global investment as another strategic option for enhancing its corporate value.

5.1 Philosophy

As a first step, DoCoMo must clarify its philosophy for a global investment strategy. I believe that global investments triggered by today’s mature domestic market are very different from past investments by DoCoMo, which were done mainly to diffuse W-CDMA and i-mode based on its *technology-driven policy*. In addition, investments in the operators who function in the mature markets are undesirable from the viewpoint of risk diversification. An i-mode alliance among operators at the same level of market maturity (see section 3.3.2),

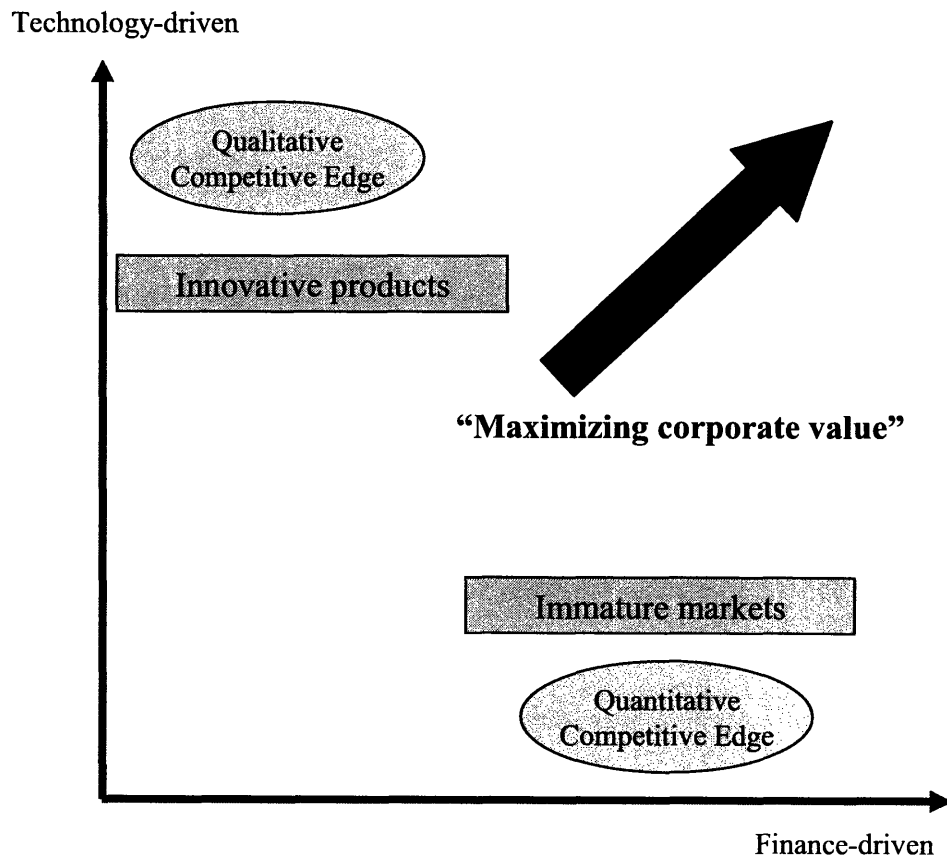
which DoCoMo has promoted in Europe, is effective without requiring large investments. Each member of the alliance can enjoy economies of scale, such as joint procurement of handsets and other equipment.

In my opinion, the possibility of achieving sustainable growth in the future depends on the quality and quantity of *competitive edges* that can generate future cash flow. I define the development capability of advance technologies or innovative business models as a *qualitative competitive edge* (technology edge/innovation creativeness). For example, we can say that DoCoMo's decision to implement an innovative financial service business based on "Mobile Wallet" already has a *qualitative competitive edge* for sustainable growth in the future.

I also define a market that has high potential for growth as a *quantitative competitive edge*. For instance, the wireless telecom industry in developed countries has experienced rapid growth in the past ten years. That growth depended primarily on market potential, although it was also promoted by the operator's endeavors. Investment in immature markets that have a high possibility for growth means acquiring the *quantitative competitive edge*.

Up to this point, DoCoMo's basic strategy has been defined as *technology-driven*, while Vodafone's strategy focused on financial matters has been defined as *finance-driven*. As mentioned earlier, entering into a financial service business and expanding its i-mode alliance are part of DoCoMo's *technology-driven policy*. Investment in immature markets with high-growth potential is a strategy based on a *finance-driven policy* that DoCoMo has never tried because the market does not need DoCoMo's advanced technology or innovative business model. Instead, an immature market needs basic products and services for a 2G platform, since the immature market has not yet advanced to the 3G platform.

With its advanced technological creativity, DoCoMo could maximize its investors' value by providing technological assistance at every stage of development. I believe that wireless operators in developed countries should pursue a blended strategy that includes both the *technology-driven policy* and the *finance-driven policy* in order to maximize the possibilities for enhancing future corporate value (see Fig. 5.1). In a word, maximization of corporate value in the wireless telecom industry could be realized by the evolution of both a *qualitative competitive edge* and a *quantitative competitive edge*.



Source: Author

Figure 5.1 Maximizing corporate value in the wireless telecom industry

5.2 Methodology

DoCoMo needs to develop a method for acquiring *quantitative competitive edges* by investing in immature markets that have high growth potential. Key issues that should be taken into consideration are:

- (1) the growth potential of the wireless telecom market.
- (2) government regulation
- (3) the country's economic growth, and
- (4) country risk factors (economic and political).

It is more effective for DoCoMo to obtain initial investment candidates from emerging Asian countries because they are geographically and culturally close to Japan.

According to a research report from Business Monitor International, the Asia-Pacific business environment for the telecommunication industry can be split into three divisions:

- developed markets (Australia, Japan, South Korea, Hong Kong, Taiwan);
- emerging markets (Malaysia, India, Philippines, China, Indonesia and Thailand); and
- two least-developed markets (based on penetration rates and regulatory structure: Pakistan and Vietnam).

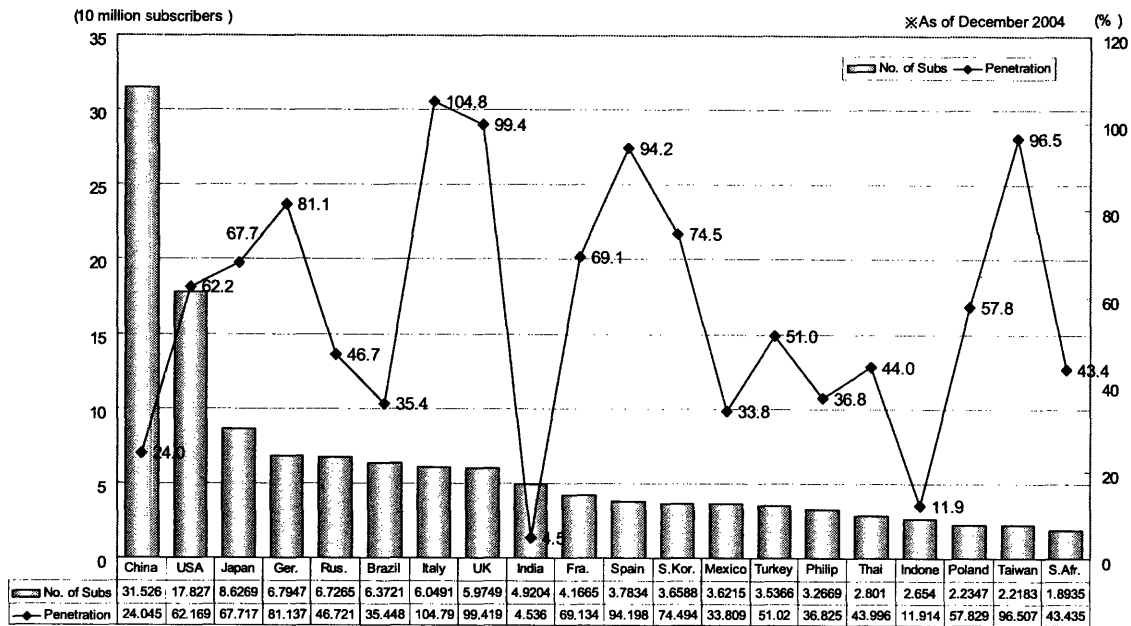
A ranking of the telecom industry in Asia-Pacific is shown in Table 5.1. India may be another option for investment to acquire a *quantitative competitive edge* because its telecom market maturity is lowest and its telecom growth potential is highest according to the ranking table. In fact, India is quite possibly the fastest-growing telecom market, with the highest potential among Asian emerging countries. India's risk factors (economic risk and political risk) and its level of government regulation are better than other Asian emerging countries. However, even if the market is excellent, foreign investors hesitate to invest in the assets of a

	Economics - LT risk	Politics - LT Risk	Telecom Market Maturity	Telecom Growth Potential	Competitive Environment	Licensing/ Regulation	Composite Score	Regional Rank
Australia	8 (8)	8.5 (8.5)	10 (10)	4 (3)	8 (8)	9 (9)	49.5 (47.5)	1 (2)
Japan	7 (7)	9 (9)	9 (10)	6 (6)	9 (9)	9 (9)	49 (49)	2 (1)
South Korea	8 (7.5)	6 (6.5)	10 (9)	5 (4)	8 (8)	9 (9)	46.5 (44.5)	3 (3)
Hong Kong	6 (5)	5.5 (5)	10 (10)	3 (3)	9 (9)	10 (10)	44.5 (43)	4 (4)
Singapore	8.5 (8.5)	7 (7.5)	9 (8)	3 (2)	8 (8)	8 (8)	43.5 (42)	5 (5)
Taiwan	7.5 (7.5)	7 (6.5)	10 (10)	3 (3)	8 (7)	6 (6)	41.5 (40)	6 (6)
Malaysia	7 (5)	5 (5.5)	6 (4)	4 (4)	8 (8)	8 (8)	40 (36.5)	7 (9)
India	6 (6.5)	7 (7)	1 (1)	10 (10)	7 (7)	7 (7)	38 (38.5)	8 (7)
Philippines	5 (5.5)	5.5 (5.5)	2 (2)	8 (8)	8 (9)	7 (7)	35.5 (37)	9 (8)
China	7 (7.5)	4.5 (4.5)	4 (3)	10 (10)	5 (4)	4 (4)	34.5 (33)	10 (10)
Indonesia	6.5 (5.5)	5 (5)	2 (1)	9 (9)	6 (6)	5 (5)	34.5 (32.5)	10 (11)
Thailand	6.5 (5.5)	6 (6)	3 (3)	6 (5)	5 (5)	6 (6)	34.5 (32.5)	10 (11)
Pakistan	6 (5.5)	4.5 (7)	1 (1)	9 (8)	5 (5)	4 (4)	27 (28)	13 (13)
Vietnam	6 (5.5)	4 (4)	2 (1)	8 (8)	3 (3)	2 (2)	25 (23.5)	14 (14)

Source: Business Monitor International (2006)

Table 5.1 Asia-Pacific business environment ranking for the telecom industry

perceived risky country. India already is the ninth-largest market with the lowest penetration rate (see Figure 5.2). I believe that India could be a candidate of the *quantitative competitive edge* for the wireless operators in the developed countries with mature markets.



Source: EMC World Cellular Information / NTT DoCoMo (2005)

Figure 5.2 Wireless phone subscribers in the world's top 20 markets

The primary driver of telecom growth in India is consumer demand. However, growth is also helped by a generally favorable regulatory climate, falling tariffs, and rising finance among a larger portion of the population. Wireless phone tariffs have fallen rapidly, from a peak of \$0.5 per minute in 2003 to around \$0.02 per minute. The Indian telecom market, especially the wireless sector, has great potential for growth. Earlier in the decade, some international players, including TeliaSonera and France Telecom did sell, but more recently strategic investors such as Vodafone, Hutchinson, Telekom Malaysia and Maxis have taken steps to enter the Indian market.

5.3 India's Wireless Telecommunication Industry

I have chosen India as a good candidate for global investment for sustainable growth. I will analyze its market from several perspectives to ascertain whether in fact it is a good candidate for such investment.

5.3.1 Macroeconomic Forecast

India's economy should continue to exhibit strong growth over the forecast period, supported by solid gains in manufacturing and a optimistic service sector. The agricultural sector is also expected to recover after recent relatively weak output. However, downside risks remain, with escalating oil prices or an outbreak of bird flu both having the potential to slow growth.

According to 2005 figures, India's economy grew 8% y-o-y in the third quarter of 2005, bringing real GDP growth to 8.1% for the first half of FY 2005, one percentage point higher than the previous year. Growth in Q3 2005 was largely driven by strong expansion in the industrial and service sectors, which grew 7.5% and 10.1%, respectively, while the agricultural sector grew just 2%. With a robust industrial sector, growth in FY 2005 rose to 7.9%, up from 7.0% in FY 2004.

Examining each sector in turn, the industrial sector appears set for strong growth, largely based on impressive growth in manufacturing, which was up 9.5% in the first half of FY 2005. With the industrial production index showing an 8.3% increase for the first eight months of the fiscal year, there is continuing confidence in the outlook for this sector. The construction boom in south India, driven by the expansion of Indian IT companies, is a further boon, as the sector slowed in Q3 2005 due to heavy rainfall that affected coal mining

and the decline in crude oil production following an oilfield fire in July. The shortage of coal caused a slowdown in electricity supply during the same period. With oil prices expected to remain high, there was some constraint on growth and the industrial sector slowed slightly to 7% in FY 2005, down from 8.2% in FY 2004.

Meanwhile, the service sector continued to make strong contributions to the economy. In Q3 2005, services contributed 5.5% to GDP growth, led by financial services and communications, making services the main driver of overall growth. Strong domestic consumption continued to boost demand for houses, thereby expanding construction activity. Increasing demand for wireless phones and broadband connections also added to growth in the communications sector. With stronger world growth expected to sustain high levels of tourism and raise demand for financial services in the country, growth in the service sector grew 9.9% in FY 2005 from 9.5% the previous year.

Agriculture recovered by the end of FY 2005, despite a relatively weak first half growth of just 2%. Growth in the agricultural sector fluctuates depending on the weather, and with the rainfall higher than average during in Q3 2005, agricultural production improved during the harvest season in Q4 2005. Thus there was growth of 4.1% in FY 2005, up from 0.1% the previous fiscal year.

With sustained growth in services and industry, and a revival in agriculture, it is expected that growth will remain relatively resilient for the foreseeable future. The service sector will account for just over half of the expansion, with industry comprising just under 30%, and agriculture just under 20%.

Fiscal Year	2003	2004	2005	2006	2007	2008	2009
Population (million)	1,068	1,083	1,098	1,113	1,127	1,141	1,156
Nominal GDP (US\$billion)	550	631	737	841	945	1,016	1,082
GDP per capita (US\$)	515	583	671	756	839	890	936
Real GDP growth (%)	8.0	7.0	8.0	7.0	7.0	7.0	7.0

Source: Business Monitor International (2006) / Central Statistical Organization of India

Table 5.2 GDP and population forecasts for India

5.3.2 Risk Factors

5.3.2.1 Political Risk

Relations between India's Congress Party and its numerous allies in the United Progressive Alliance (UPA) continue to shape politics in the world's largest democracy during the forecast period. Dr. Manmohan Singh, an economist who became Prime Minister in 2004, will need all of his political skills to keep the ruling alliance together. Congress competes with many of its coalition partners at the state level, and state elections are bound to strain relations. The UPA will also have to maintain close ties with the Left Front, led by the Communist Party of India.

5.3.2.2 Economic Risk

The Congress-led government has vowed to continue with the economic liberalizations of the 1990s. The Indian economy, Asia's fourth largest, grew by 7% during the year ending March 31, 2005. However, the country's service-led boom has yet to have a significant effect on raising the living standards of the poor, with more than one-third of

India's one billion-plus population still living on less than one dollar per day. A key task for the Finance Minister will be to strengthen public finance.

The consolidated fiscal deficit of the central and state governments stands at over 8% of GDP. Reforms are aimed at boosting revenues, although the planned privatization of profit-making, state-owned enterprises will face political difficulties.

5.3.2.3 Business Environment Risk

India has a skilled workforce, but its business environment is crippled by excessive government interference. Foreign investment remains in many sector, with greater liberalization by the left. Hiring and firing procedures are governed by rigid labor laws under which companies employing more than 100 people need permission from the chief minister to lay off staff. Other concerns include: the 670-plus industries reserved for small-scale procedures; high import tariffs levied on foreign made goods; failing infrastructure, especially poor power supplies; and a corrupt bureaucracy which must approve permits for even the most routine tasks. India is working quickly to create Chinese-style "special economic zones" aimed at overcoming some of these bottlenecks.

5.3.3 Wireless Telecom Market in India

5.3.3.1 Growing Market Trends

A key move in the Indian wireless telecom industry occurred in November 1994 when the government issued eight licenses to eight different companies for wireless phone services in the four major metropolitan cities of Mumbai, Delhi, Chennai, and Calcutta. The Telecom Regulatory Authority of India (TRAI) reported in November 2004 that wireless

phone services had outstripped fixed-line services. The regulator noted that the country had 44.5 million wireless subscribers and 43.9 million fixed-line subscribers at the end of October 2004, for a total telephone subscriber base of 88.5 million. The TRAI said almost 25% of the wireless subscriber base, or 11 million subscribers, had been added during the previous seven months. During the same period, around one million fixed-line subscribers were added, indicating the comparative pace at which wireless phone service was growing in India.

India had 77.5 million wireless phone subscribers across the country by the end of 2005, up from 28.5 million a year earlier, after the national subscriber base grew by 58.1% in 2005. A total of 28.4 million wireless phone subscribers were added in 2005, compared with 19.2 million in 2004. GSM operators added 21.1 million subscribers in 2005 to end the year with 58.5 million subscribers. CDMA operators had 19.0 million subscribers at the end of 2005, up from 11.6 million at the end of 2004 (see Table 5.3).

(as of 12/05)

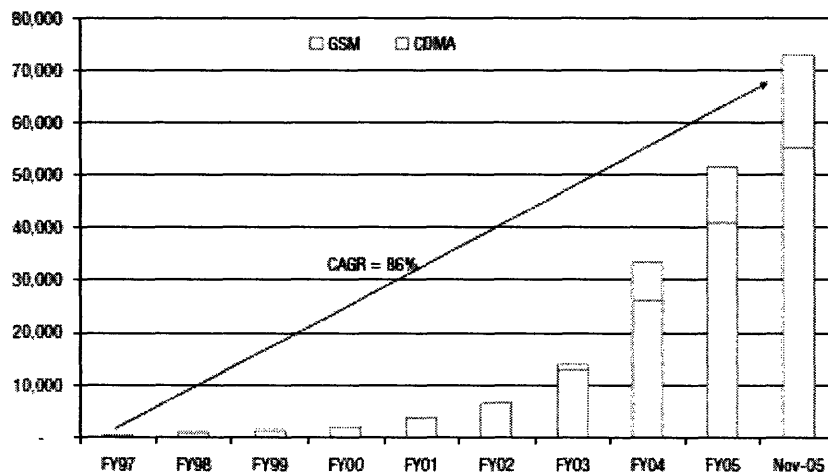
	# of Subscribers (000)	Y/Y Growth (%)	M/M Growth (%)	Market Share (%)
Bharti	16,327	66.2	5.9	21.1
Reliance Infocomm	13,015	42.8	6.4	16.8
BSNL	14,299	69.5	7.6	18.4
Hutch-Essar	11,413	59.0	6.8	14.7
Tata Tele	3,681	356.7	14.7	4.7
Idea	6,494	37.8	4.2	8.4
Other	12,281	-	-	15.9
Total	77,510	58.1	6.8	100.0

Source: AUSPI, COAI, Citigroup Investment Research (2006)

Table 5.3 Indian wireless subscribers

India's wireless sector has grown robustly since competition began in 2004. The overall subscriber base grew at a compound annual growth rate (CAGR) of 86% to over 75 million from 0.3 million at the end of FY97 (see Figure 5.3). Morgan Stanley reported that India's wireless telecom market was expected to grow at a compound average rate of 40% until 2007. Another industry survey predicted that at least 110 million new wireless phone subscribers would be added by 2007. The Cellular Operators Association of India (COAI) also said that the country was well on its way to reaching 250 million fixed and wireless subscribers by the end of 2007.

The COAI warned that some measures would need to be implemented before this goal could be achieved, noting that around 80% of the 250 million connections would need to be wireless. The association believes that to achieve 200 million wireless subscribers by the end of 2007 it will be necessary to introduce measures, such as shared infrastructure to reduce costs, a more viable interconnection regime, the removal of obstacles to pre-paid subscriber acquisition, and the earliest possible introduction of 3G services.



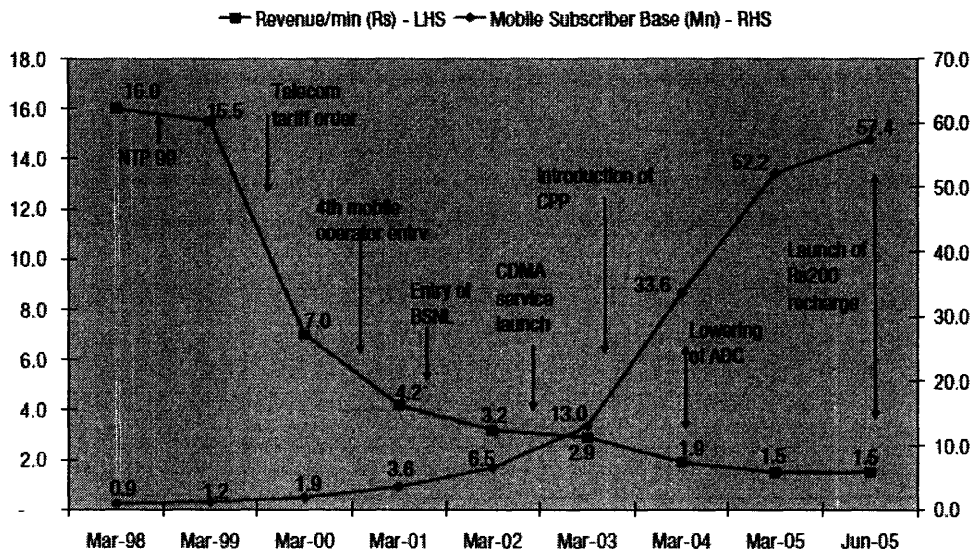
Source: AUSPI, COAI, Citigroup Investment Research (2006)

Figure 5.3 Growth Trend of Indian Wireless phone subscribers

5.3.3.2 Key Drivers of the Wireless Boom

When wireless phones were first introduced, the market was heavily regulated, license fees were prohibitive, and call charges and handsets were too expensive for all but the wealthiest people. However, the sector has grown rapidly in the last few years as a result of spiraling income, and falling prices for licenses, phone tariffs, and handset prices, making it one of the fastest growing markets in the world. According to Citibank Investment Research, this growth is driven by four factors that will sustain positive growth.

The first driver of continued high growth in India's wireless phone market is falling tariffs in a sector where wireless telecom operators are prepared to lose money in order to keep or win market share and have consequently been fighting a fierce price war. India's monthly fee is thought to be the lowest in the world: the average per-minute charge for wireless telecom services fell to 1.20 rupees (US\$0.027) by December 2005, compared to 1.90 rupees (US\$0.043) the previous quarter (see Figure 5.4). With more than six players

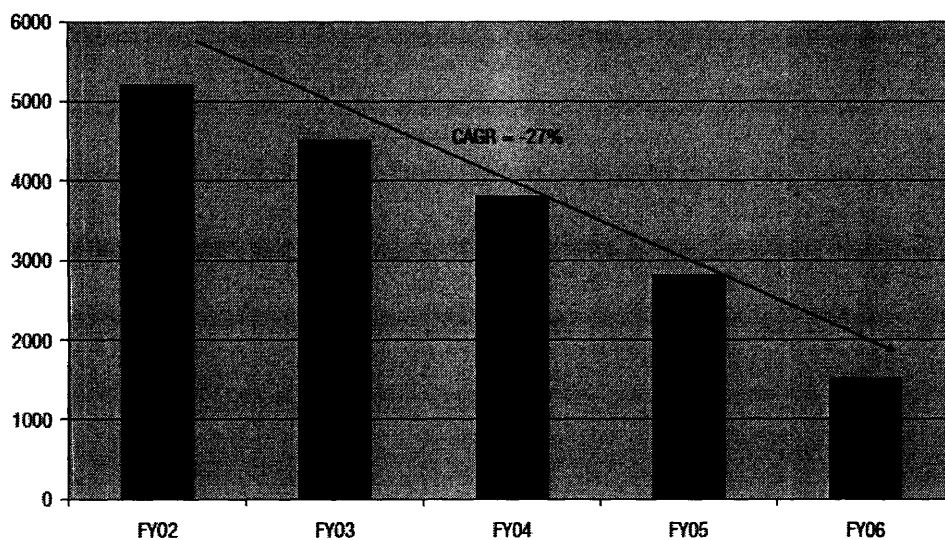


Source: Company, Citigroup Investment Research (2006)

Figure 5.4 Wireless revenue per minute and subscriber growth in India

competing for market share in most provinces, it is expected that tariffs will continue to slide. Potential regulatory concessions on license fee revenue share and spectrum fees are key issues, and revisions in these concessions would be passed on to consumers as lower tariffs.

The second driver is low handset prices, which makes wireless phones more affordable. Motorola has introduced handsets that are currently retailing for 1,700 rupees (US\$38), and other vendors have new handsets at US\$40 or so. Furthermore, India has a thriving second-hand handset market. Used GSM handsets are available for as little as US\$20 in many parts of the country. The trend in handset prices is shown in Figure 5.5.



Source: Citigroup Investment Research (2006)

Figure 5.5 Trends in handset prices in India

The third driver is the operators' expanding footprint. Wireless operators have expanded their footprint significantly over the past two years (see Table 5.4). With the decline of handset prices and tariffs, affordability has increased, and operators have worked hard to capture this growth. Bharti, for instance, plans to cover 4,500 towns by March 2006, more than double its coverage in March 2005. BSNL, Reliance Infocomm, and Hutch-Essar

have also widened their coverage (see Table 5.5). Faced with the prospect of subscriber growth reaching saturation in the larger cities, India's wireless telecom operators are now eyeing the vast rural market as the next place for boosting wireless phone growth.

	FY2004		FY2007 planned	
	Number	Population (million)	Number	Population (million)
Towns	1,700 out of 5,200	200	5,200 out of 5,200	300
Villages	Negligible	Negligible	350K out of 607K	450

Source: Telecom Regulatory Authority of India

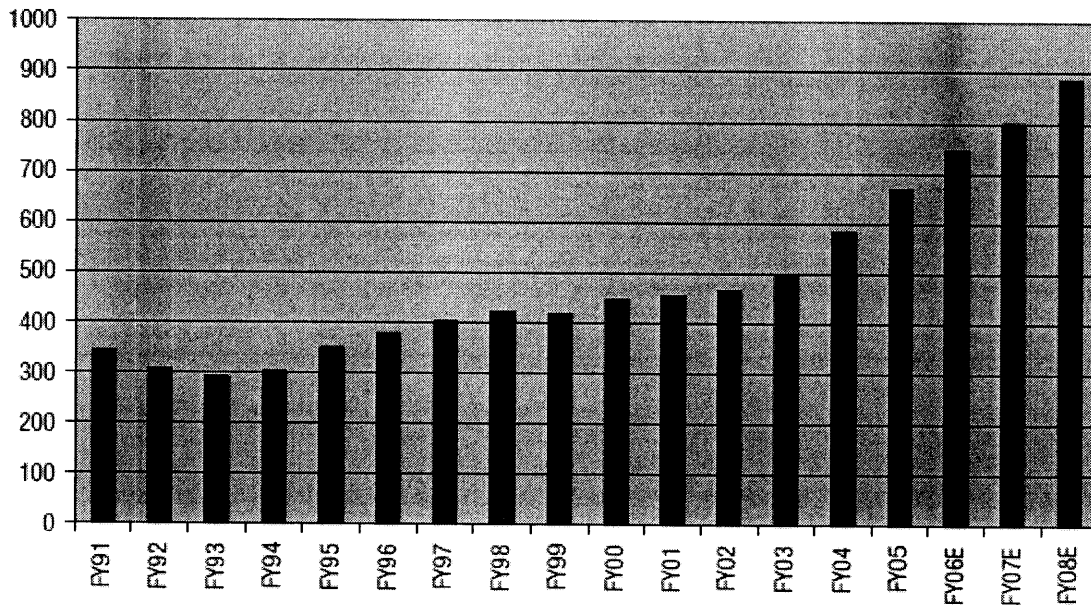
Table 5.4 Urban and rural wireless coverage plan

	FY2005	FY2006-target
Bharti	2,000	4,500
Reliance Infocomm	1,800	5,200
BSNL	800	1,400
Hutch-Essar	2,000	5,000
Tata Tele	200	1,500

Source: Citigroup Investment Research (2006)

Table 5.5 Coverage by wireless operators, by towns

The fourth driver of wireless phone penetration is the prospect of robust economic growth. It is expected that high GDP growth (see Fig. 5.6) will be driven by nearly double-digit growth in the services segment and high single-digit industrial growth, as mentioned previously. This robust economy will drive wireless phone penetration by bringing more people into the affordability bracket.



Source: Central Statistical Organization of India

Figure 5.6 Trend of per capita GDP in India (US\$)

5.3.3.3 Market Competition

Competition in the Indian wireless market has been intense for the past two years, and is increasing, with players such as Tata Tele continually expanding its coverage. Five players (Bharti, BSNL, Reliance, Infocomm, Hutch-Essar and Tata Tele) compete in almost every province in India. However, given the size of the market, it is likely that each operator can be profitable despite the intense competition. Four operators (Bharti, BSNL, Reliance, Infocomm, and Hutch-Essar) currently have over 10 million subscribers each.

As the operators achieve critical mass and scale, the focus is on increasing profitability. None of the operators appears to be sacrificing market share for profitability, which is a positive sign for the wireless market. Currently, only five of the 23 circles have double-digit penetration.

5.3.3.4 Foreign Investors

Large global operators have shown interest in India as a fast-growing markets with considerable potential. Global operators already in India include SingTel and Hutch, while newer entrants include Vodafone and Orascom. Vodafone recently took a 10% stake in Bharti, while Orascom's 19% stake in HTIL gives it an indirect ~10% holding in Hutch-Essar. Meanwhile, Maxis recently announced that it has acquired a stake in Aircel. Other players such as Telekom Malaysia, SK Telecom, Systema, and Telenor have been reported to be scouting entry points into the Indian wireless market.

According to Citigroup Investment Research, strategic opportunities exist for three of the six large operators (see Table 5.6). Bharti and Hutch already have strategic partners. Moreover, CIR estimates the chances of the Indian government finding a strategic partner in BSNL are low. Partnerships with Idea Cellular, Tata Teleservices, and Reliance.

	Promoter / Foreign partners	Possibility of entry of new foreign partner	Circles of operation	Subs (million)
Bharti	Singtel (31%), Vodafone (10%)	Low	23	16.3
Hutch-Essar	HTIL (45%), Orascom (10%)	Low	16	11.4
BSNL	Government of India (100%)	Low	21	14.3
Reliance Infocomm	RCVL (65.25%) Ambani Family (34.75%)	Possible	21	13.0
Tata Tele	Tata Group (100%)	Possible	21	3.7
Idea	Biria Group (50%), Tata Group (48%)	Possible	8	6.5

Source: Citigroup Investment Research (2006)

Table 5.6 Possibility of foreign partners taking a stack in Indian wireless operators

Infocomm are the only opportunities left for helping foreign telecom majors to gain entry into the Indian cellular market. If foreign operators fail to gain a foothold into the market through existing players, their entry would be restricted by spectrum constraints. Already, in

most of the large circles, existing operators face spectrum constraints. Moreover, the regulator has stated that it would first allocate spectrum to existing players before making it available to new operators.

5.3.3.5 Regulation of Foreign Investment in the Telecom Sector

In October 2005 the Indian government raised the cap on foreign direct investment in basic, wireless, and value-added telecommunications services and for global mobile personal satellite communications—from 49% to 74%. This move was first announced in July 2004 and reiterated in February 2005, but its implementation was deferred owing to opposition from Leftist partners in the government. To placate these partners, the government said resident Indians would have to hold at least 26% of shares at all times, that the company's top management would have to be Indian, that calls made within India could not be routed through other countries, and that no foreign company could repair or maintain networks within the country. The 74% cap will include shares held by foreign institutional investors, non-resident Indians, depository receipts (ADRs and GDRs), foreign currency convertible bonds, and convertible preference shares. Foreign investment in holding companies will also be taken into account when calculating the foreign-investment limit. Companies will have to disclose their holdings half-yearly and certify that foreign investment is within the 74% cap.

Several foreign investors in telecom projects have structured their equity holdings in joint ventures through holding companies: they own 49% of the joint venture outright and also own a 49% stake in the Indian joint-venture partner. Telecom investments enjoy tax incentives as infrastructure projects.

5.4 Summary and Recommendation

Wireless operators in developed countries should pursue a strategy of blending both a *technology-driven policy* and a *finance-driven policy* in order to enhance corporate value in the future. In other words, the maximization of corporate value in the wireless telecom industry could be realized by evolving both *quantitative competitive edge* and *quantitative competitive edge*.

As DoCoMo already has Mobile Wallet as its *qualitative competitive edge* for future sustainable growth, I believe DoCoMo should invest in immature markets that have high growth potential in order to acquire a *quantitative competitive edge*. As explained in Chapter 3, DoCoMo still generates a high level of cash flow, even though its business growth rate has decelerated. Moreover, accumulated treasury stocks purchased to boost stock market prices now exceed ¥510 billion. DoCoMo should reinvest these abundant investment resources effectively to augment and increase its corporate growth.

When selecting candidates, the key issues that are taken into consideration are: (1) the growth potential of the wireless telecom market; (2) government regulation; (3) the country's economic growth; and (4) the country risk factors (economic and political).

After I reviewed emerging Asian markets following the above criteria initially, my strong impression was that India could be an option for investment to acquire the *quantitative competitive edge*, because its telecom market maturity is lowest while its telecom growth potential is highest.

Thereafter, I researched the Indian wireless telecom industry in detail. Indian GDP continues to grow steadily by around 7%. Such high GDP growth is driven by nearly growth in the services segment including telecom. The politics and economics of India appear to be

more stable compared with other developing countries, although there are still major country risk factors. The wireless telecom market has grown rapidly, driven by strong economic growth and lowering service/product prices, which happened early in the growth period.

As the Indian government remains positive about easing telecom and foreign capital restrictions, I believe the telecom market will be very attractive to foreign investors. In fact, global major operators such as Vodafone, SingTel, and Hutchison have already invested in Indian wireless telecom operators. The Indian wireless telecom market is expected to grow continually, and the market will be attractive to foreign investors as a result of research and analysis based on the above four criteria

Although it is my personal opinion, DoCoMo, which has abundant investment resources, should invest in wireless operators in emerging markets such as India in order to acquire the *quantitative competitive edge* and establishing a scheme for obtaining increased financial return. It would ensure that DoCoMo could grow sustainably and enhance its corporate value if it acquires the *quantitative competitive edge*.

If DoCoMo decided to invest in an Indian wireless operator, further research and analysis would be needed. It is my judgment (based on limited information) that Reliance Infocomm of Reliance Group, and the government-owned BSNL, would be good candidates for investment. It is not probable that Bharti, the top operator whose shareholding is owned by SingTel (31%) and Vodafone (10%) would be candidates. Hutch-Essar, the fourth operator whose 45% shareholding is owned by Hong Kong's Hutchison, will not be a candidate.

There is a problem with Reliance Infocomm, however. It provides digital wireless telecom service (2G service) by CDMA, which has no affinity with W-CDMA, DoCoMo's 3G standard. However, it could become an investment candidate if it agrees to adopt W-

CDMA in the near future. CIR reported that the chances of the Indian government getting a strategic partner were low, but the reasons were unclear.

The Indian government is preparing to accept foreign investment in its telecom industry because it raised the foreign direct investment cap on basic, wireless, and value-added telecommunications services from 49% to 74%. BSNL provides telecom service to most of the country except Delhi and Mumbai. MTSL, whose majority shareholder is the government, covers those two cities. The two operators use GSM that has an affinity with W-CDMA.

I have developed a scenario for investment in government-owned operators:

- (1) Merge MTSL with BSNL,
- (2) Spin off wireless phone service; and
- (3) Invest in the new wireless operator by foreigners

It will have a positive effect on Indian government finance if stocks are sold to foreign investors. It is also possible that the government will authorize the merged operator to issue new shares for financing its future capital expenditures.

CHAPTER 6

Conclusions and Recommendations

I believe that the global wireless telecommunication market is becoming an oligopoly. In the near future, wireless telecom operators throughout the world will become members of four major groups.

It has been 22 years since the old AT&T monopoly was split apart in 1984, but recently the U.S. telecommunication industry has reverted back to an oligopoly between two major operators: new AT&T (Cingular) and Verizon Communications (Verizon Wireless).

Vodafone expanded its global footprint, and recently began to shift its investment target to emerging markets, such as India, which have high growth potential. Spain's Telefónica, which already owns operators with high potential growth in Latin America, acquired O2, a British wireless operator that was spun off from British Telecom. Telefónica added other markets in the UK, Ireland, and Germany through acquisition. As a result of these acquisitions, it is clear that the European telecommunication industry has also become an oligopoly on the initiative of three major operators—UK's Vodafone, Deutsche Telekom (T-mobile), and Spain's Telefónica.

It is also clear that in Asia, China's mobile industry is the largest operator in the world based on number of subscribers. However, Japan's Ministry of Internal Affairs and

Communication gave licenses to new entrant in the Japanese wireless telecom market, flying in the face of the current global trend toward oligopoly.

In my opinion, the two U.S. operators, the three European ones, one Chinese, and Japan's NTT DoCoMo, will lead the global market toward oligopoly. In particular, operators in advanced countries that are becoming saturated will seek to maintain or increase sustainable growth and to secure positions comparable to the global major operators by expanding their scale of economy or acquiring new growth markets.

Share price is the generally accepted standard by which to measure a company's sustainable future growth. Stock price is theoretically decided by net present value (NPV) of free cash flow that a company or an asset generates. Free cash flow should keep expanding at a certain fixed rate in order to improve corporate value, according to assumptions of stock pricing theory. Perpetual growth of free cash flow is decided depending on the quality and quantity of its *competitive edges*, as described in Chapter 5.

Although I explained that Vodafone's basic strategy focuses on acquiring a *quantitative competitive edge* that depends on its *finance-driven policy*, other major operators' growth strategies focus on securing a *quantitative competitive edge*. They have never focused on a *technology-driven policy* for basic growth. It is common that major global operators have committed their research and development to manufacturers and concentrate on developing strategies for their business expansion.

On the other hand, DoCoMo has maintained its growth by continually developing competitive-edge technologies and creative innovations, such as wireless Internet service (i-mode), 3G standardization (W-CDMA), and Mobile Wallet service—in other words, accumulating a *qualitative competitive edge* that depends on a *technology-driven policy*.

Furthermore, DoCoMo developed its basic strategy of global investment to focus on expanding i-mode and W-CDMA to as many overseas wireless telecom operators as possible. DoCoMo's growth strategy is an exception in the global telecom industry. In the wireless telecom industry that is becoming an oligopoly and is expected to form into four major groups in the future, if DoCoMo wants to lead one of the groups, the following would be presumptions: (1) maintain sustainable growth, (2) become more influential in the global wireless telecom market and (3) maintain its technology/innovation creativity.

DoCoMo has faced slow growth in its business because the Japanese market is nearly saturated and tariff reduction battles occur repeatedly among competitors. However, DoCoMo still has the resources to generate more than ¥600 billion in free cash flow, and accumulated treasury stocks that have been purchased to boost stock market prices now exceed ¥510 billion. However, institutional investors are not satisfied with DoCoMo's capital management policy, and they question whether DoCoMo is using its investment resources effectively. Although DoCoMo invested in both domestic and foreign assets in 2005 and 2006, the amount of each investment is small compared with its capital power. DoCoMo should reinvest its abundant investment resources effectively to increase its corporate growth and influence in the global wireless telecom industry. Such investments would secure the company's position as a global major operator.

Previously I stated that DoCoMo's growth strategy would be exceptional in the global telecom industry. I believe that DoCoMo should develop a global investment strategy based on a *finance-driven policy* by immediately putting to use its abundant capital resources. Such a strategy is based on a philosophy and methodology totally different from DoCoMo's prior investment strategies.

Emerging countries with high economic growth potential and established political and economic systems are the most likely candidates for a finance-driven investment strategy. In Chapter 5 I discussed an investment strategy for the emerging market in India, which I believe would be the one of the best candidates for DoCoMo's growth strategy. I have stressed repeatedly in this thesis that a balance between a *technology-driven policy* and a *finance-driven policy* is an indispensable part of the growth strategy of wireless telecom operators. I believe that wireless operators in developed countries should blend both policies in order to maximize every possibility of enhancing corporate value in the future. In other words, the maximization of corporate value in the wireless telecom industry can be realized by evolving both a *qualitative competitive edge* and a *quantitative competitive edge*.

I believe DoCoMo is uniquely able to exercise such a blending strategy among the global wireless telecom giants because it has both the technology/innovation creativeness and abundant capital resources. This blending strategy will bring DoCoMo sustainable growth for the future. Furthermore, investors and other stakeholders expect that DoCoMo will implement such a strategy.

BIBLIOGRAPHY

- ABN AMRO. *Mobile revolution accelerates/India*. January 2006.
- AT&T website. < <http://www.att.sbc.com>>. Retrieved information on March 1, 2006.
- Beck, J. and Wade, M. *DoCoMo, Japan's Wireless Tsunami*. New York: Amacom, 2003.
- Bharti Televentures website. < <http://www.bhartiteleventures.com>>. Retrieved information on March 1, 2006.
- BSNL website. < <http://www.bsnl.co.in>>. Retrieved information on March 1, 2006.
- Business Monitor International. *India Telecommunications Report Q1 2006*. March 2006.
- Business Week. *Softbank-Vodafone Deal Has Promising Ring*. March 2006.
- Cingular website. < <http://www.cingular.com>>. Retrieved information on March 1, 2006.
- Citigroup. *Asia Connect/Focus India: Growth and Reasonable Profits*. January 2006.
- Citigroup. *Vodafone/Twenty Years Old and All Grown Up?* January 2006.
- Credit Suisse. *NTT DoCoMo/Downgrading rating on prospects of continued rate-cutting competition*. February 2006.
- Deutsche Bank. *Indian Cellular Update*. January 2006.
- Deutsche Telekom website. < <http://www.deutschetelekom.com>>. Retrieved information on March 1, 2006.
- Economist Intelligence Unit. *EIU Country Profile 2005/India*. 2005.
- Espicom Business Intelligence. *Vodafone group Executive Briefing*. August 2004.
- Financial Times. *DoCoMo Looks Long Distance*. August 2, 2005.
- Gawer, A. and Cusumano, M.A. *Platform Leadership*. Boston: Harvard Business School Press, 2002.
- Hax, A.C. and Majluf, N.S. *The Strategy Concept and Process, Pragmatic Approach*, Second Edition. New Jersey: Prentice-Hall, 1996.
- Joo, H. and Honkanen, P.D. *A Study of Two Wireless Telecommunication Companies' Globalization Strategies – An Analysis of Vodafone's and NTT DoCoMo's Foreign Investments*. MIT, 2003

- InfoCom Research. *Information & Communications Outlook 2006*. Tokyo: NTT Publishing, 2005.
- InfoCom Research. *Information and Communications Handbook 2005*. Tokyo: InfoCom Research, 2004.
- InfoCom Research. *Information and Communications Handbook 2006*. Tokyo: InfoCom Research, 2005.
- Ishikawa, T. *The Whereabouts of Thirty Trillion Yen in the Japanese Wireless Industry*. Tokyo: SoftBank Publishing, 2005.
- JP Morgan. *India Wireless Sector*. January 2006.
- KDDI website. <<http://www.kddi.com>>. Retrieved information on March 1, 2006.
- Lessard, D. "Frameworks for Global Strategic Analysis," *Journal of Strategic Management Education 1 (1)*, 2003.
- Matsuki, A. *The Paradigm Shift in Wireless Platforms: From Traffic Business to Transaction Business*. MIT, 2005
- Merriden, T. *Rollercoaster: The Turbulent Life and Times of Vodafone and Chris Gent*. Oxford: Capstone Publishing, 2003.
- Mitsubishi UFJ Securities. *NTT DoCoMo*. October 2005.
- Mitsubishi UFJ Securities. *SoftBank acquires Vodafone Japan*. March 2006.
- Mobile Content Forum. *Japanese Wireless Telecom White Book*. Tokyo: Impress, 2005.
- Morgan Stanley. *India Telecom/Acceleration Continues*. December 2005.
- Morgan Stanley. *NTT DoCoMo/F3Q05: Higher Burden from Subscriber Retention Costs*. January 2006.
- Morgan Stanley. *NTT DoCoMo/We Upgrade Our Rating: Positive Signs*. May 2005.
- Morgan Stanley. *Vodafone Group/Turning Around*. March 2006.
- Natsuno, T. *a la i-mode*. Tokyo: Nikkei Business Publishing, 2002.
- Natsuno, T. *i-mode strategy*. Tokyo: Nikkei Business Publishing, 2000.
- Nikkei Business. *The Illusion of Keitai (Wireless Phone)*. *Empire*. January 2006.

- Nikkei Communications. *Prelude to the Japanese Wireless Telecom Industry Breakdown*. Tokyo: Nikkei BP, 2005.
- Nikkei Communications. *The Fusion of Telecommunication and Finance*. November 2005.
- Nikko-Citigroup. *The Future Outlook of the Japanese Wireless Market*. September 2005.
- Nomura Research Institute. *What will happen in Japanese Information and Telecommunications?* Tokyo: Toyo Keizai, 2005.
- NTT DoCoMo website. <<http://www.nttdocomo.co.jp>>. Retrieved information on March 1, 2006.
- NTT DoCoMo. *A Decade of NTT DoCoMo, 1992 – 2002*. Tokyo: NTT DoCoMo, 2002.
- NTT DoCoMo. Annual Report, 1999 – 2005.
- NTT website. <<http://www.ntt.com>>. Retrieved information on March 1, 2006.
- O2 Website. <<http://www.o2.co.uk>>. Retrieved information on March 1, 2006.
- OECD. *OECD Communications Outlook 2005*. OECD Publishing, 2005.
- Paul Buddle Communication. *India – Mobile Communications – Market Overview*. March 2006
- Porter, M.E. *The Competitive Advantage of Nations*. New York: The Free Press, 1990.
- Porter, M.E. *The Competitive Advantage*. New York: The Free Press, 1985.
- Reliance Industries website. <<http://www.ril.com>>. Retrieved information on March 1, 2006.
- SG. *Vodafone Group/Margins to weaken but not break down*. February 2006.
- Standard & Poor's. *Industry Surveys Telecommunication: Wireless*. May 2005.
- Takagi, K. *Globalization at NTT DoCoMo: Implementing Global Business Management Strategies*. MIT, 2004
- Telefónica Website. <<http://www.telefonica.es>>. Retrieved information on March 1, 2006.
- UBS. *Asian Telecom Themes & Strategy*. March 2006.
- UBS. *Mobile Number Portability*. September 2005.

Verizon website. < <http://www.verizon.com>>. Retrieved information on March 1, 2006.

Verizon Wireless website. < <http://www.verizonwireless.com>>. Retrieved information on March 1, 2006.

Vodafone Group website. <<http://www.Vodafone.com>>. Retrieved information on March 1, 2006.

Vodafone Group. Annual Report, 1999 – 2005.

Wall Street Journal. *Slower Growth Hits Cellphone Service Overseas*. May 23, 2005.

Yankee Group. *NTT DoCoMo's i-mode provides Competitive Edge for Second-Tier European Mobile Operators*. June 2004.