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Japanese Banks**

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## **Recent Development of Information Technology in Japanese Banks**

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## **Recent Development of Information Technology in Japanese Banks**

### **ABSTRACT**

Although Japanese banks have suffered from huge non-performing loans since the burst of the bubble, they have invested as much as possible in information technology. However, due to the shortage of available funds, each bank has felt that its investment was not high enough to compete with leading U.S. and European banks. This is one important reason why major Japanese banks have been merging with each other in recent years. Information technology has now become a key issue in the Japanese banking business.

This chapter discusses the recent development of information technology in Japanese banks in detail. The section titled **THE CHANGE IN THE BUSINESS MODEL** provides a brief explanation of the current Japanese banking environment. In **THE STEADY PROGRESS OF NEW INFORMATION TECHNOLOGY IN FINANCIAL INSTITUTIONS**, we discuss how Japanese financial institutions, mainly banks, have dealt with new information technology. The section on **INTERNET BANKING** provides a detailed discussion of new Internet banks and the Internet banking services of existing banks. As information investment has an external effect, the market will fail without government assistance. Therefore, in **GOVERNMENT EFFORTS: E-JAPAN STRATEGY**, we explain what the Japanese government has done in terms of IT usage in financial services. Finally, the **CONCLUSION** section concludes this chapter.

### **KEY WORDS**

(1) Internet, (2) Internet Banking, (3) Japanese Banks, (4) Soft information, (5) e-Japan, (6) Japanese Economy, (7) Regional Banks, (8) Information Technology, (9) Relationship Banking.

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## **INTRODUCTION**

It is commonly agreed that financial transactions are inevitably accompanied with so-called asymmetric information problems. For example, lenders are not sure whether applicants are honest and will do their best to pay back their loans. Because information issues may make transactions in the financial markets impossible, financial institutions play a crucial role in solving these issues.

As pointed out in the literature, there are two kinds of information, hard information and soft information (see Boot, 2000; Berger and Udell, 2002; Onega and Smith, 2000; Petersen and Rajan, 1995; Scott, 2004; and Stein, 2002). Soft information, such as considering an owner's motivation, is important in small business loans. Usually, loan officers who maintain daily contact with borrowers are able to produce soft information. Soft information is difficult to quantify and verify to a third party. In contrast to soft information, hard information includes verifiable figures, such as financial ratios calculated from firm's financial statements and stock market prices. These figures are easy to quantify and verify by using a computer, and due to the rapid development of information technology, the usage of hard information has become highly advanced. For example, money market mutual funds require daily interest payments. Huge calculation tasks have become possible by using high-performance computers, and financial institutions recognize that information technology is a key technology for their business, because strategic technology investment reduces costs, increases efficiency and enables institutions to offer value-added and competitive products and services.

Leading international banks have spent a great deal of money on information technology. For example, CELENT (2002), a consulting and research firm, pointed out that the largest commercial banks in the United States spent as much as 25% of their total

expenses on information technology, and certain specialist banks spent even higher percentages<sup>1</sup>. In addition, CELENT (2002) reported that U.S. banks spent over US \$34 billion on technology in 2002. Citigroup's IT budget for 2002 was US \$5.1 billion. JP Morgan Chase followed Citigroup, with an IT budget of US \$4.7 billion. Bank of America with an IT budget of US \$3.3 billion was third, fourth was Wells Fargo with an IT budget of US \$2.0 billion, and fifth Bank One with an IT budget of US \$1.9 billion. Furthermore, CELENT (2005) indicated that IT spending in the North American banking industry will continue to rise at a moderate rate from US \$42.6 billion in 2004 to US \$47.9 billion in 2007.

Regarding European banks, CELENT (2004) estimates that they spent EU44.6 billion in 2004. The largest IT investor among European banks was HSBC Holdings, which spent EU 3.05 billion as an IT investment, followed by Deutsche Bank (EU 2.64 billion), UBS (EU 2.63 billion), ABN Amro (EU 2.26 billion), the Royal Bank of Scotland (EU 1.68 billion), Credit Suisse (EU 1.44 billion), ING (EU 1.41 billion), and BNP Paribas (EU 1.37 billion).

Although Japanese banks have suffered from huge non-performing loans since the burst of the bubble (see Figure 1), they have also invested a huge amount of money on their information facilities. However, due to a shortage of available funds, every bank has felt that its investment was not high enough to compete with leading U.S. and European banks<sup>2</sup>. This is reported to be one of the main reasons why large Japanese banks chose to

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<sup>1</sup> See the CELENT's homepage at <http://www.celent.com>.

<sup>2</sup> Actually, many Japanese banks have recorded net losses since the late 1990s. Concretely speaking, the net current profits or losses of Japanese banks as a whole were +908 billion yen for fiscal year 1999, -176 billion yen for FY2000, -4,199 billion yen for FY2001,

merge with other banks<sup>3</sup>. CELENT (2003) estimated that Japanese banks would spend US \$11.9 billion on technology in the fiscal year 2004. Mizuho Holdings spent US \$1,940 million, followed by Sumitomo Mitsui Banking Corporation (SMBC) (US \$1,065 million), Mitsubishi-Tokyo Financial Group (US \$930 million), UFJ Holdings (US \$895 million), and Resona Holdings (US \$735 million). The recent mega-mergers in Japan have enabled Japanese banks to spend as much on IT as major U.S. and European banks.

This chapter discusses the recent development of information technology in Japanese banks in detail. This chapter is organized as follows. The section **THE CHANGE IN THE BUSINESS MODEL** provides a brief explanation of the current Japanese banking environment. In the section titled **THE STEADY PROGRESS OF NEW INFORMATION TECHNOLOGY IN FINANCIAL INSTITUTIONS**, we discuss how Japanese financial institutions, mainly banks, have dealt with new information technology. In **INTERNET BANKING**, a detailed discussion on new Internet banks and Internet banking services of existing banks is provided. As information investment has an external effect, the market will fail without government assistance. Therefore, in **GOVERNMENT EFFORTS: E-JAPAN STRATEGY**, we explain what the government has done to encourage IT usage in financial services. Finally, the **CONCLUSION** section concludes this chapter.

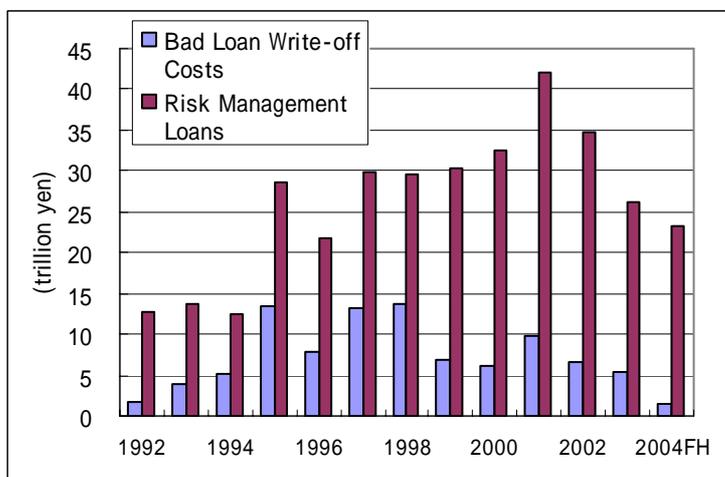
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-4,851 billion yen for FY2002, and -780 billion yen for FY2003.

<sup>3</sup> In 1990, there were 13 city banks. In 2005, there were five city bank groups; four mega bank groups and Resona Holding. The four Japanese mega bank groups are Mitsubishi-Tokyo Financial Group, Sumitomo Mitsui Financial Group, UFJ Holdings, and Mizuho Financial Group. All five city bank groups were established in the 2000s.

**Figure 1**

Non-performing Loans and Write-off Costs of Japanese Banks



(Note) Figures from FY 1992 to FY1994 cover only major banks (i.e., city banks, long-term credit banks, and trust banks). Figures since FY 1995 cover all banks (i.e., the first and second-tier regional banks as well as major banks). The figures for FY 2004 are those as of the end of the first half of FY2004. Data source is Financial Services Agency.

### **THE CHANGE IN THE BUSINESS MODEL**

The traditional business model of financial institutions such as banks and Shinkin banks (credit associations) is that they collect funds as a form of deposits, which are usually protected by government-supported deposit insurance, and extend loans to those who need funds. During the rapid economic growth period of the 1980s, Japanese households were net savers, and non-financial corporations were borrowers. Therefore, Japanese banks intermediated funds between households and non-financial corporations during that period. As there were a lot of profitable investment opportunities in the fast-growing economy, a number of firms wanted to borrow as many funds as possible, and it was easy for Japanese banks to find promising borrowers. As the amount of loans that banks could extend were restricted by their ability to attract customers to open savings accounts and therefore amass savings during the rapid economic growth period,

the most important consideration for financial institutions was how much money they could amass savings. Therefore, the ability to amass savings was the most critical source of competitive advantage in financial industries. In that circumstance, the larger a bank was, the more profitable and stronger it was. Naturally, the hierarchy of Japanese banks was dependent on the amount of deposits.

However, the economic environment has changed since the 1980s. The Japanese economy has grown at lower rates than during the rapid growth period. Furthermore, as large Japanese firms have grown and accumulated their own funds, they have not needed to borrow funds from banks as often as before. In addition, the development of financial markets has accelerated the disintermediation of large firms, which means that large firms are increasingly less dependent on bank loans for financing and actively use financial markets. Thus, financial institutions do not always find prospective customers even if they have the ability to absorb funds. Therefore, the ability to absorb deposits does not necessarily mean the ability, anymore, of making profits. In summary, the source of the competitive power of financial institutions has changed from the ability to absorb deposits to the ability to create lending (i.e., find good borrowers).

Unfortunately, because the tendency to absorb as many deposits as possible was an established practice by Japanese banks, some financial institutions could not adapt themselves to the new economic environment. They did not change their business model, and were recklessly active in absorbing deposits during the bubble period (i.e., in the late 1980s). As these institutions faced difficulties in finding traditional industrial borrowers, they were forced to increase loans to real estate companies and construction companies, which seemed prosperous during the asset price appreciation period. Yamori (2004) finds that financial institutions that went bankrupt after the burst of the bubble economy had

increased their deposits during the bubble period more rapidly than sound financial institutions. Furthermore, the stagnant deflation and the Bank of Japan's substantial credit relaxation in the 1990s made the ability to create loans even more important. In sum, the ability to absorb deposits that is not accompanied by a decent ability to create loans is not a source of competitive power, and may in fact be a cause of bank failure.

While funds in the money market were superabundant in the late 1990s and financial institutions claimed that it was increasingly difficult for them to find good borrowers, many small and medium-sized enterprises (SME) ironically had serious trouble with banks' reluctance to lend (i.e., credit crunch). In the extreme, several small firms suffered because banks peeled off their loans. In other words, Japanese financial institutions have not been able to perform an essential role (intermediary role), and Japanese financial institutions might lose their roles in financial business in the future.

In March 2003, the Council on Financial Services, which is the advisory council of the Financial Services Agency (FSA), released its report, "In preparation for reinforcing the function of relationship banking." This report recommended that regional financial institutions, such as regional banks, Shinkin banks, and credit unions, develop the ability to give loans to regional customers. That is, the report suggested that regional financial institutions have no other choice but to do relationship banking; a banking business model in which banking with customers is conducted using soft information accumulated through long-term and close relationships. Previous studies found that a closer relationship between banks and borrowers leads to lower interest rates on loans (e.g., Berger and Udell, 1995; Harhoff and KoÈrting, 1998), more favorable collateral requirements (e.g., Berger and Udell, 1995; Harhoff and KoÈrting, 1998), smaller dependency on expensive trade credits (e.g., Petersen and Rajan, 1994, 1995), less

volatile interest rates on loans (e.g., Berlin and Mester, 1998), and larger credit availability (e.g., Cole, 1998; Elsas and Krahnert, 1998).

Berger and Udell (2002) pointed out that small institutions are more suited to provide relationship banking services than large banks, because small institutions can handle soft information more efficiently than large institutions. Therefore, whether small regional financial institutions can adequately assess credit risks regarding local businesses through bank-firm relationships is a key condition for their survival. Of course, the importance of relationships in regional banking services was well recognized before the Council's report was published, but the Council on Financial Services stressed that the ability of many regional institutions to establish such relationships was not satisfactory, and that financial institutions should develop this ability immediately.

One of the reasons that Japanese banks are poor at screening loan applications and judging the credit risks of borrowers is that these functions have often been routinely performed based on each staff member's personal experience, and that the "know-how" to screen applicants and to judge each applicant's risk has not been adequately shared in the organization. Of course, soft information is not easily shared, but if hard information that can be shared easily is used to make loan decisions, a poor outcome is more likely to result. Therefore, banks should construct an information system to enable all officers of the institution to use common "know-how." Whether regional financial institutions can use information technology better or not in terms of loan creation is critical.

## **THE STEADY PROGRESS OF NEW INFORMATION TECHNOLOGY IN FINANCIAL INSTITUTIONS**

After the burst of the bubble economy, Japanese financial institutions became

preoccupied with the disposal of bad loans. As Figure 2 shows, banks' capital investments were considerably curtailed and the amounts of investments in 2002 were below the 60% level of fiscal year 1995. However, this decrease of capital investments of Japanese banks does not necessarily mean that there were no forward-looking investments. In this regard, it is notable that many banks sold off real estate, such as branch offices and employees apartments. As these restructuring sales were regarded as negative capital investments, the total capital investments in the late 1990s tended to be small or even negative.

We would like to emphasize the fact that banks' mechanization investments, which are almost the same thing as IT investments nowadays, remained unchanged until the fiscal year 1999 and significantly increased after the fiscal year 1999. For example, the Financial Information System Center (2003) studied the implementation circumstances in terms of Internet banking services. According to the Financial Information System Center (2003), only 11.1% of surveyed financial institutions as of March 2002 reported that they had already provided Internet banking services to business customers, while as of March 2003, 36.8% of them reported either that they had already provided Internet banking services to business customers or that they were planning to start the services in 2003, and 40.0% of them reported that the matter was "under study." That is, the introduction of Internet banking for business customers has been proceeding smoothly. However, the following issues must be considered.

First, the IT implementation rates for corporate businesses vary substantially across bank categories. For example, while the IT implementation rate for city banks, which are the largest banks and play an important role in the Japanese Keiretsu, is 100%, that of the first regional banks is 18.3%, that of the second-tier regional banks is 6.5%, and that of the Shinkin banks is 9.6%. It is generally said that many regional financial institutions

start Internet-banking services for corporate businesses not because regional banks want to curtail expenditures by using Internet banking, but because they are afraid that major commercial banks and pure-Internet-play banks could deprive regional banks of settlement services (Nikkei Kinyu Shimbun, December 12, 2003). Financial institutions that cannot introduce these minimum IT services will find themselves in increasingly tight spots.

Second, IT implementation in financial industries for corporate customers is far behind that in other industries. The Ministry of Economy, Trade and Industry (METI) conducted a research survey on the market size of electronic commerce. According to the METI's report, the size of the e-commerce market, which is defined by how many business enterprises purchase raw materials and partly-finished goods through the Internet, namely the so-called electronic B2B market (business enterprises to business enterprises), increased to 43.6 trillion yen for the fiscal year 2002. In contrast, the size of electronic B2B financial transactions (including insurance) was only 4 billion yen. The electronic transaction rate in B2B financial transactions has stayed at just 0.01%, while the electronic transaction rate of the entire Japanese economy is 6.99%. It is apparent that IT implementation in financial industries lags far behind that in other industries.

Third, while banks have invested substantial funds into information technology in order to reduce expenditures, future IT investments should be used to enhance the loan creation ability, which is the *raison d'etre* of regional financial institutions. For example, the report of the Council on Financial Services mentioned above demands that every financial institution set interest rates on loans at the level reflecting the borrower's true credit risk. Financial institutions have to prepare a reliable statistical database and then set the interest rates on loans at the level that is derived from the data analysis. If financial

institutions set interest rates on loans without a satisfactory explanation and a statistical base, customers will not be convinced that the interest rate is fair.

Finally, small and medium-sized enterprises (SME) want a rapid decision to be made on their loan applications. According to “The special questionnaire on functions and roles of financial institutions that industrial firms expect,” conducted and released by the Nagoya branch of the Bank of Japan in December 2003, SME regarded ‘the expeditious offer of money’ as the third most important service and function of financial institutions, while a “lower borrowing rate of interest” and a “stable supply of money” were the first and second. If financial institutions can speed up loan screening by developing an IT system, they can accurately accommodate these SME’s needs. Moreover, if a loan contract is computerized, borrowers do not have to pay the documentary stamp tax. Actually, UFJ Bank is already making use of this fact, and is using it as an advertising tool to attract new customers (Nikkei Kinyu Shimbun, October 28, 2003).

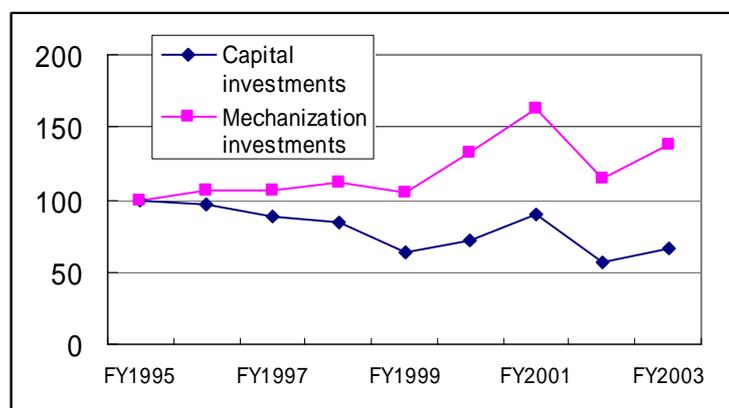
Regarding banking services for individuals, convenient access is particularly important. The Postal Services Research Institute, a division of Japan Post, has been conducting “a survey on the way households use financial institutions” every two years since 1989. The June 2004 result shows that 21.0% of surveyed persons (multiple answers allowed) answered, “Internet banking is convenient because we can use it for 24 hours,” and 20.4% of them answered, “We can enjoy the services without visiting branch offices.” Information technology surely enhances the convenience for individuals in terms of using financial services.

However, we should recognize that 52.8% of persons answered that they do not need Internet banking services, 25.6% answered that they were worried about settlement only through the Internet, and 22.0% answered that they were worried about Internet security.

Therefore, to encourage the spread of Internet banking services for individuals, banks should make efforts not only to make their services safer, but also to convince individual customers that they are well protected when they use Internet banking services.

**Figure 2**

Trend of Capital Investment and IT Investment of Banks



(Note) The figure is based on the Bank of Japan’s “short term economic observation.(*Tankan* in Japanese).” In *Tankan*, the amounts of investments of financial institutions are reported. We drew up this figure by setting the fiscal year 1995 as the base year, and using annual rates of change to calculate each year’s relative level. All values except for fiscal year 2003 were actual ones, but we had to use a planned value for fiscal year 2003 because the questionnaire was changed after 2004.

## **INTERNET BANKING**

### **Pure-Internet-play Banks**

Although almost no banks except foreign subsidiary banks were established in Japan after the Second World War, several new banks recently began operation due to deregulation. Even though these new banks do not necessarily specialize in providing settlement services on the Internet, they share common management attributes. For example, they do not have physical branch offices, but offer the same kinds of services as

existing banks through the Internet<sup>4</sup>. In the following paragraphs, we will compare existing banks with these new banks.

Table 1 summarizes the basic management figures of new entry banks at the end of March 2004. The Financial Services Agency (FSA) required these banks to obtain net profits within three years from their establishment. March 2004 was the time limit for this requirement for these four new banks. However, as shown in Table 1, the only bank out of the four to achieve net profits was the IY Bank. Despite the fact that the other three banks failed to fulfill the requirement, the FSA did not take any actions against them because they significantly reduced deficits for this fiscal year, which indicates that they will obtain profits in the near future.

The IY Bank's main service is its settlement operation through the ATM network that is installed in affiliated convenience stores (i.e., Seven-Eleven Japan). Seven-Eleven is the largest convenience store chain and an owner of IY Bank. The number of IY Bank ATMs has increased by 49% compared to the previous year, and these ATMs have substantially contributed to IY's black-ink balance. The others are pure-Internet-play banks, and the number of accounts at these banks has been increasing steadily. This shows that pure Internet banks have become popular, and Internet banking services are widespread among individual customers.

Here, we further scrutinize the details of each pure-Internet-play bank, because each bank has business attributes that are significantly different from the others, even though

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<sup>4</sup> An exception regarding existing banks is Orix Trust and Banking, which has been operating through Internet transactions without a branch office network. Orix Trust and Banking was established by purchasing stocks of the now-defunct Yamaichi Trust and Banking.

they are all pure-Internet-play banks. As Table 1 shows, Japan Net Bank and Sony Bank actively engage in extending loans and eBank specializes in settlement operations over the Internet. In particular, Sony Bank positions the offer of asset management services to individuals as its main business, and Sony Bank holds home mortgages of 60.4 billion yen in its portfolio, which corresponds to 95% of its loan portfolios. However, Sony Bank's deposit-loan ratio is just 16.6%, far lower than the average of all banks in the same year (i.e., 73.4%). With regards to asset management, Japan Net Bank and Sony Bank commonly invest substantial funds into marketable securities. The deposit-security ratios for Japan Net Bank and Sony Bank are 99.2% and 88.2%, respectively. However, the deposit-loan ratios for IY Bank and eBank are 17.9% and 6.3%, respectively. These two banks have been operating with a focus on settlement services. Therefore, they hold most assets in cash and deposits, because they need their assets to be safe and liquid<sup>5</sup>. In summary, a big difference between the "Japan Net Bank and Sony Bank" and the "IY Bank and eBank" can be seen.

Compared with traditional banks, we find that the labor productivity of new entry banks is extremely high. Even though deposits per bank clerk at the IY Bank, which employs over 100 persons, is 840 million yen, those of the other three banks are more than 2 billion yen, which are comparable to those of seven city banks in the same year. With respect to the first regional banks and the second-tier regional banks, only the Bank of Yokohama records deposits per bank clerk of over 20 billion yen (i.e., 26.6 billion yen) and all other regional banks are lower than the three new banks in terms of deposits per bank clerk.

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<sup>5</sup> For instance, IY Bank's cash and deposits paid are 203.7 billion yen in total, which is 53.7% of IY Bank deposits received.

New banks can absorb huge deposits by paying higher interest rates and charging lower commission fees to their customers<sup>6</sup>. They can pay higher interest rates on deposits because they do not have expensive branches. With respect to the settlement operations, a larger number of accounts and large balances in those accounts naturally lead to larger commission incomes, resulting in higher profit performance. Thus, it is natural for these new banks to actively attract new customers by paying higher interest rates on deposits and charging lower commission fees to customers.

**Table1** Basic Figures of New Banks (for fiscal year 2003)

	Japan Net Bank	IY Bank	Sony Bank	eBank
Inaugural date	October, 2000	May, 2001	June, 2001	July, 2001
Current income (billion yen)	6.8 ( 4.0 )	29.1 ( 11.5 )	7.4 ( 4.0 )	2.8 ( 0.6 )
Profits and losses for this term (billion yen)	-1.7 ( -2.7 )	5.0 ( -8.1 )	-2.2 ( -4.4 )	-2.9 ( -4.2 )
The number of accounts ( thousand accounts )	840 ( 650 )	160 ( 100 )	260 ( 190 )	710 ( 480 )
The number of workers	63 ( 65 )	145 ( 140 )	78 ( 72 )	70 ( 72 )
Operating cost (billion yen)	4.5 ( 4.7 )	23.0 ( 18.4 )	5.8 ( 5.3 )	4.1 ( 4.6 )
Deposit ( billion yen )	153.4 ( 119.3 )	122.4( 75.9 )	378.8 (248.7)	158.0 ( 11.6 )
Loaned money ( billion yen )	16.2 ( 17.4 )	0.0 ( 0.0 )	63.0 ( 22.4 )	0.0 ( 0.0 )
Marketable securities ( billion yen )	152.3 ( 94.8 )	22.0 ( 22.6 )	333.4 ( 211.5 )	10.0 ( 0.0 )
Total assets ( billion yen )	203.7 ( 169.7 )	259.6( 159.9 )	489.4 ( 320.4 )	169.4( 15.5 )

(Note) Figures in the parentheses indicate figures for the previous year.

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<sup>6</sup> For example, the interest rates on large denominated time deposits for one year for eBank, Sony Bank, and the Japan Net Bank were 0.35%, 0.22% and 0.10%, respectively, while all city banks offered the same deposits with interest rates of 0.03%.

### **Internet Banking Services Provided by Existing Banks**

Of course, not only pure-Internet-play banks but almost all banks are offering banking services through the Internet. Actually, the emergence of new banks into the market has spurred existing financial institutions to increase capital investments in IT. An article published in the Kinzai Institute for Financial Affairs (December 13, 2004) says that the basic services offered via Internet banking in Japan are various reference services, such as confirming deposit balances and withdrawal history, and money transfer. In addition, customers of some advanced banks can buy fixed-period deposits, foreign currency deposits, and mutual funds over the Internet. While city banks offer wide kinds of services through the Internet, most regional banks offer only basic services such as remittance and money transfer.

It is notable that there are many differences in commission services, interest rates and business hours among different banks. We have to take these differences into account when comparing the quality and prices of services that different banks offer. For example, as of December 2004, the Bank of Tokyo-Mitsubishi, UFJ Bank and Resona Bank set their commission fees on money transfers through the Internet at lower levels than those applied to ATM card transfers, while Mizuho Bank and Sumitomo Mitsui Banking Corporation set Internet transfer and ATM transfer commission fees at the same level. Almost all city banks offer Internet banking services without any accounting management charges, while more than half of regional banks offer Internet banking services with some charges. Moreover, even regional banks that offer only basic banking services such as remittance and money transfer charge management fees for Internet banking. Regional banks are inactive in offering Internet banking services, partially because most regional banks, except those in metropolitan areas, do not have a large

potential demand for Internet banking services, while the costs involved in offering various services through the Internet are not negligible for these banks.

### **The Future of Internet Banks and Internet Banking in Japan**

As mentioned above, Internet banking services have become increasingly common, and pure-Internet-play banks has grown. In this sub-section, we would like to point out several remaining issues that have to be overcome in order to make Internet banking services more convenient and reliable.

First, in terms of settlement operations, it is expected that if new entry banks obtain an additional number of accounts, the competition between traditional banks and new entry banks will accelerate. Some observers point out that the number of accounts at pure-Internet-play banks will exponentially increase because many firms offering electronic commerce to consumers (B2C) select these pure-Internet-play banks as settlement service providers. However, we expect that new entry banks that have no, or at best a very weak, relationship with commercial firms will face difficulties once mega banks that have strong relationship with commercial firms through loans and stock holdings actively offer Internet settlement services to these firms. If this occurs, the high growth trend for new entry banks might be slowed. In this regard, the strategy of mega banks for consumer loans markets is suggestive. That is, mega banks do not provide consumer loans by themselves, but purchase consumer finance companies. Likewise, mega banks may not expand their own Internet banking services, but instead purchase new entry banks or establish a subsidiary bank to strengthen the Internet services in their financial group<sup>7</sup>.

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<sup>7</sup> The largest shareholder of Japan Net Bank has been Sumitomo Mitsui Banking

Second, we do not know how fast and how much the cashless society will progress. Above all, new entry banks will not offer all settlement services that are necessary for daily life. For example, the installation of IY Bank's ATMs depends on local circumstances and therefore varies significantly across regions<sup>8</sup>. It is conceivable that regional financial institutions will keep their dominant role in a regional society, especially in areas in which Internet banking will not be important in the future. It might be said that pure-Internet-play banks play an important role only in urban areas, even though Internet transaction is referred to as a borderless service. Thus, this difference between metropolitan areas and rural areas will remain.

#### **GOVERNMENT EFFORTS: E-JAPAN STRATEGY**

As we mentioned above, it is essential for financial institutions to put IT into practice to survive. Financial institutions may introduce and improve IT because of their own self-interests. However, as IT accompanies significant externality, it often happens that the effort of only one financial institution will not contribute to the improvement of its operating effectiveness as a whole. That is, the private market may fail. In this case, governmental efforts are desirable and necessary.

In fact, the Japanese government set up a "Strategic Headquarters Forming Advanced Information and Communications Network Society," and has been developing an "e-Japan Strategy" to make Japan the world's most advanced IT nation. The "e-Japan

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Corporation from its establishment. In addition, Sumitomo Mitsui Banking Corporation also has substantial shares of Sony Bank.

<sup>8</sup> IY Bank, which is installing ATMs in convenience stores, does not necessarily install ATMs in all affiliated convenience stores.

Priority Policy Program” published in August 2003 clearly declared that the use of IT should be widespread, especially in such fields as healthcare, food, daily life, small business financing, knowledge, employment/labor and administrative services.

In this chapter, we will focus on small business financing as e-Japan policy objectives. The above government document maintains that diversifying credit sources and streamlining procedures improve financing environments for small and medium-sized enterprises (SMEs), and also reduces the risks of collecting trade credits. The government expects that a society in which SMEs actively operate their businesses will emerge as a result. That is, the government believes that information technology is a promising tool to improve SMEs’ financing environment.

The following aims are specified in the e-Japan program.

**a) Computerized Credit Accommodation**

Loan and guarantee contracts and other credit-related services (e.g., computerized bill services) can be processed electrically through the Internet. By developing this computerized credit accommodation, the clerical burden on SMEs for providing financial contracts will be substantially reduced.

**b) Establishing Procedures regarding Credit Guarantees Online**

In Japan, many small and medium-sized enterprises obtain credit guarantees from public credit guarantee corporations. According to the National Federation of Credit Guarantee Corporations, approximately 2 million SMEs, or about half of all existing SMEs in Japan, used public credit guarantees in 2003. Small firms can ask the Credit Guarantee Corporation to guarantee their borrowings by paying insurance premiums<sup>9</sup>.

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<sup>9</sup> Maximum guaranteed amount of standard program is 280 million yen.

Currently, the basic premium rate is 1.25% for no-collateral loans and 1.35% for collateral loans. Although this public guarantee scheme alleviates the economic difficulties experienced by SMEs, many SMEs complain that the procedures involved are burdensome. The government has found it necessary to reduce the procedures required for financing. The government plans to make it possible for the application for public credit guarantee to be processed online by 2005.

**c) Standardized and Computerized Credit Information regarding SMEs**

The government plans to develop an infrastructure for standardizing and computerizing credit information, contract information, and monitoring information for SMEs. Standardized and computerized credit information will enable financial institutions to make the right decisions about whether they should lend or not based on appropriate and accurate information.

**d) Establishment of Electronic Receivable Market**

The government will establish a new market where receivables can be sold and purchased online. Small and medium-sized enterprises and financial institutions will obtain necessary funds through the electronic receivable market.

After the e-Japan Priority Policy Program was released, several related advisory bodies of the Ministry of Economy, Trade and Industry advanced various efforts to materialize this program. The financial industry is also engaging in several activities to support this program. For example, Shinkin Central Bank actually began offering online payment services in January 2004. In summary, the infrastructure for e-Japan has been steadily developing under the government's initiatives.

## **CONCLUSION**

Now, financial institutions have to change the out-of-date business model in which banks collect money as deposits and lend it to large industrial firms, even though this business model worked very well during the rapid growth period. Only a bank that efficiently collects and processes soft and hard information can gain prosperity. In other words, nowadays the financial industry can be considered one branch of the information industry. However, financial institutions do not necessarily have a comparative advantage as an information industry. Other industries can deprive financial institutions of the roles they have played, if the financial institutions do not make immediate changes. In fact, general trading companies (*Sogo-Shyosha* in Japanese) and leasing companies have actively entered this field.

Of course, the authors believe that it is highly probable that financial institutions that have accumulated customer information and experiences regarding financial technology can survive. As we have reiterated in this chapter, the immediate key condition is whether banks can successfully take measures to achieve progress in making use of information technology.

Finally, we should note that if the use of information technology becomes widespread, then a competitive advantage can only be obtained through those services that cannot be computerized, namely, relationship banking functions. Therefore, although financial institutions should advance the use of IT, fostering personnel who can produce valuable soft information is vital for making regional financial institutions strong.

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