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Digital Divide in Banks

Kazuo Fukui
Board Director
Fujitsu Research Institute

It is my honor to have the opportunity to speak in front of such distinguished guests. Especially as an IT engineer, I am overwhelmed by the chance to hear the opinions of representatives of central banks in respective countries.

Before I start my presentation, I would like to give you the perspectives on which I will base my discussions. First of all, finance, needless to say, does not represent the entire economy of a country. I will be speaking from the viewpoint of the financial industry or, at times, of individual banks. Secondly, although I will mention terminology used in economics and business administration, they will remain in the context viewed through IT, or information technology.

1. Characteristics of IT in Japan's banking system

(1) Operation-centric

Banks in Japan started to take full advantage of IT in the 1960s. For 40 years since, banks have worked to improve and upgrade their systems. To summarize the features in a few words, banks utilized technology for their operations. Forty years of vigorous efforts materialized as a highly sophisticated banking system. Japanese banks were able to pursue IT until the extreme limit, although in a limited scope.

Three points can be mentioned when you look at the features of the sophisticated banking system in detail.

First, it is high speed, real-time processing. Even at before the New Year Holiday when there is a concentration of transactions, banks are required to keep the response time of the terminal within three seconds. This is because Japanese people can only tolerate three seconds of waiting in front of an ATM.

The second point is high-volume processing. Top-class banks have more than 10

million depositors, but are required to offer the same, equitable services to them all. This promoted the development of advanced technologies that control terminals, networks, and large computers.

The third point is the large volume of files needed to store information and data, including account information for the 10 million customers. When the number of files stored in the magnetic disks soars, the technology that efficiently controls them becomes an art. In other words, you can see that Japanese banks have high qulity computer systems that cannot be matched by anyone.

(2) Background

You probably noticed that what I have explained so far did not have sound of strategy. The background against which Japanese banks invested heavily in operations was attributable to the environment they were in.

First of all, at that time, banks were guaranteed of their profits by Japan's financial environment. A financial system centered on indirect finance generates infinite demand for funds in a rapidly-growing economy. As long as banks were able to attract depositors, their profits were secured. So there were two objectives to utilize IT, one was to increase the number of depositors, and the other was to enhance efficiency by reducing costs for bank tellers through automation.

(3) Pending issues

At the same time, however, the past experiences of success based on expansionary policy delayed the progress of Japan's financial businesses. Several points can be raised from an IT perspective.

First was the lack of a managerial system to take advantage of IT. Data compiled and analyzed using IT was not used for strategic purposes, but were mainly used for internal control.

Next was the lack of effort directed to develop new products. Since the advent of the modern portfolio theory by Harry M. Markowitz in 1956, financial engineering saw a rapid theoretical development. This, combined with computer technology in the 1980s, drastically changed the character of finance. But Japanese banks neglected making R & D investments in this area.

Thirdly, the delay in developing proper risk management can be pointed out. In general, Japanese people lack the sensitivity toward risks. Instead of taking a scientific approach toward credit risks, which exist in almost all forms of asset management, banks tried to evaluate risks based on experiences. This caused the outbreak of the bad debt problems of

bank, which I will discuss later.

Lastly, there is marketing. Simply put, pursuing IT means eradicating the asymmetry of information, thereby allowing the buyer and the seller to do business on a equal-footing basis. But banks were not able to give up their mindset of being the big guy, and ignored marketing activity for individual clients.

(4) Areas of decisive delays

In concluding this part of my presentation, I will mention three areas where Japanese banks were left behind, viewed from a managerial perspective. They are issues that must be tackled starting today.

First is the lack of progressive dynamism. Banks believed their conventional business models to remain effective forever. In other words, banks lost the dynamics which enable them to continuously innovate their business models.

Second is innovation. The source of added value is innovation. But the simple structure of “more deposits equals greater profits” suppressed investments in research and development. Technology is accumulation. Rapid catching up would be difficult.

Lastly, I want to point out the outsourcing of technology. Although this has been improved dramatically in recent years, the financial industry is still comprised of people who are purely bred in the industry. As a result, the momentum for introducing technology from other industries has been weak.

2. From the burst of the bubble, the big bang, to financial realignment

(1) The dark age of IT

Japan’s 1990s is often referred to as the lost decade. The ten years have been the era of struggle for Japan. The financial industry was no exception. Let me compare the situation of Japan with the United States.

In the 1990s, US banks underwent tremendous change of character. The development of financial engineering theories coincided with the advancement of personal computers, workstations, and other forms of IT. By efficiently utilizing capital, banks were able to broaden their profit opportunities. And, as a result, they transformed from being financial intermediaries to become financial manufacturers and information intermediaries. They were able to add new values, such as investment banking, to their conventional businesses. In this way, US banks combined financial engineering with IT, and leaped to become a high-tech industry.

In contrast, Japanese banks had to waste their energy on backward issues. On the surface, there were bad debts accumulated as a result of the burst of the bubble economy,

and the mutual entry with the securities industry.

But internally, there were faced with problems that were far more deep-rooted – the conflict between existing corporate culture and internal reforms to become a new bank. It was a conflict between the existing forces, which have long years of successful experiences, despite the deep wounds from the bubble economy, and new forces, which became wary after seeing their rivals in Europe and the United States.

To be more precise, while the former wanted to continue expanding as in the past, the latter urged more efficient use of capital. This is a conflict that cannot be avoided during the era of reform. The past ten years have been the era of turmoil and search.

(2) Stagnant progress of IT vendors.

It is not impartial to blame all the delays in the progress of IT on the financial industry. Because during this time, IT vendors in Japan were also unable to do away with their volume-oriented expansionary policy. It was around 1970 when the role of personal computers increased, and the Internet became an academic network in the United States. While witnessing such changes, IT vendors continued to focus on large, general-purpose computers. Although I have so far discussed the lack of innovation on the part of the financial industry, Japan's IT industry also retained the same structure.

3. Advancing into the 21st century

Next, I would like to identify the problems concerning financial institutions and explore the possible countermeasures.

(1) Shortage of investment facilities

In a mature economy such as Japan, attractive borrowers are scarce. City banks are currently trying to address their state of over-lending by loan collection, loan-deposit ratio for regional financial institutions is somewhere between 60 and 70 percent. Indirect financing is diminishing in volume due to the development of the capital market, and improvement in balance sheets of corporate businesses. Another problem is the extremely-low return on investment for existing businesses.

To counter this, banks have been making effort to increase lending and reduce costs. Needless to say, increasing lending enlarges risks. For this reason, banks have adopted credit management systems based upon risk management to realize an adequate portfolio composition. For examination functions, the costliest operation in a bank, they introduced an automatic scoring system and workflows to reduce costs by automation and expediting responses.

Some banks have actively entered into the securities business, an area where they

traditionally lacked in expertise. Japan is finally catching up with Europe and the United States in financial engineering, enabling sophisticated asset allocation. They are gradually turning their eyes once again on the overseas markets.

The third countermeasure is slimming the balance sheet. Some banks that decided to give up on quantitative expansion has shifted from excessive funding to efficient use of capital, aiming to improve return on assets. This was realized by securitization of real estate and loan credits. IT has become indispensable for forming adequate composition and pricing model.

(2) Adding new values

The source of added value is innovation, in almost anything. Because of new technological innovation, newly added values can be produced. But in finance, new theories have not emerged since the 1950s and the 60s. This suggests a high probability that new technological innovation will not be seen from now on.

With the changing times, a variety of alternatives have emerged for the added values of traditional financial functions, such as financial intermediation and settlement. Banks adhering to conventional business models will find their added values destined to dwindle.

At the floors of branches, the volume of financial intermediation is decreasing, and settlement is losing an advantage on a stand-alone basis. Banks are therefore trying to produce new values by forming alliances with other industries. In the process, Internet becomes an effective weapon.

(3) The advent of the Internet

It is a well-known fact that Internet originated as a network for the military. It then evolved into an academic network, and then transformed into a business network. And today, it is about to become a social infrastructure. Infrastructure is not a simple tool for economic measurement. It is something that is used by everyone, and is taken for granted. The Internet, therefore, is believed to have an impact on all corners of society. This can be viewed from many angles, but I would like to categorize them into three.

The first impact the Internet will have is on intangible goods, namely books, music and broadcasts. It is not difficult to imagine intangible items changing forms through digitalization and networking. But that's not all. Napster of the United States, which has been the focus of media attention lately, established a system for copying music CDs at free of charge. This violates copyright laws, but it can be considered to reflect the displeasure of consumers for the closed music industry. In other words, it was a move to expedite closed groups to practice disclosure and equity.

The second impact involves tangible goods. At first, the two may seem unrelated, but that's not true. For example, clothing are made of fabrics, and people preferred to touch clothes before making a purchase. But with technological advancement, the quality of the fabric can be guaranteed, and the design and brand names become more important.
This applies to restaurants as well. They must serve good food, but ambience and reputation are important elements too. This means that even for tangible items, the significance of surrounding information is also important.

And lastly, there is finance. This is essentially a difficult area, as in the case of medical care, because it cannot be evaluated accurately by the public in general. In this field, new businesses are expected to emerge, where professional agents will serve individuals and companies.

4. Digital divide in banks

'IT' is no longer a mere tool, but it is being integrated into management. Let me now focus on how IT will change banking management by using examples. Generally, IT will find its way into banking management through the following process.

(1) Banks will introduce IT solutions for their direct needs. Direct objectives may be cutting costs, enhancing convenience, and starting new businesses.
(2) Adopting IT solutions change the style of related businesses. When business processes change, different types of organizations will be in need.
(3) Changes in business processes and organizations will eventually contradict with existing management styles. Eventually, old styles will transform themselves into new management system.
(4) Under new management, new needs will be generated, which, in return, will lead to adopting the next IT solution.

The four steps are repeated, developing into a spiral.

(1) Holding company

Let me give you some examples. First is a holding company. Today, financial entities are required to specialize more than before. This can be in asset management, cash management service for corporate businesses, or customer relationship management for individual clients. They all require specialized skills. Pursuit of specialization works in such a way to promote organizations become independent. On the other hand, the economies of scope is a vital element for banking operations. In other words, a holding company is

required to realize two trade-off propositions – being an independent entity with mobility, and being a comprehensive organization that can take advantage of the economies of scope.

Several IT solutions will be needed for this. First is knowledge management, which is a communication tool. The purpose of knowledge management is not simply sharing information. Groups of people speaking in different languages, such as frontline sales representatives and engineers who specialize in product development, need a tool to mutually understand each other. Something like a translation machine will be needed. Although such a technology is not available yet, this is the goal of knowledge management.

The next technology is that of hub and spokes. When two banks merge, or several organizations access the same server under the umbrella of a holding company, differences according to clients will have to be removed and converted into the same interface. This sounds simple, but in the past, terminals and ATMs were renewed across the board following a merger. This is an epoch-making technology which reduces costs and saves time.

Federated database is a technology for data treatment. Specialized databases are no longer by accessible by everyone in a bank, because each department chooses a database that best suits its operational requirements. But on the other hand, different departments may want access to the same database. Federated database is an IT solution that enables this. Although efficiency of access deteriorates somewhat, it is an indispensable technology to ensure flexibility towards environmental changes.

(2) Increasing transparency in accounting

The capital adequacy ratio of the Bank for International Settlements was originally intended to secure stability of financial systems. But the attempt to measure credit risks has had unexpected effects on banks. It clarified cost per transaction. And cost management using activity-based costing method clarified operational costs. Furthermore, introduction of management accounting promoted the development of an IT system for valuation based on market price on a monthly, or even daily basis. These measures are about to secure transparency of costs and profit structures, which had been obscure until now. This is about to trigger the following steps;

(a) identifying unprofitable operations, and

(b) focusing of operations and clients.

The ramifications will not remain within individual banks. Instead, they are expected to lead to;

(c) mutual in-sourcing and outsourcing among banks,

(d) specialization and labor division in the industry, and the entire industry will shift towards optimum allocation of resources.

The process will cause the entire financial industry to carry out optimum allocation of resources, which would increase efficiency of finance, and ultimately, Japan.

(3) Retail business

The use of 'customer relationship management' and the Internet is crucial in the retail business. 'Customer relationship management' is a means that allows, for the first time, to build relationships with individual customers who had been mistreated until now. The Internet is an important access channel for that. Individual customers are the most stable source of revenue for banks. They account for the bulk of their business volume.

On the other hand, information changed the behavior of individual customers, by letting them have individual preferences. Banks therefore must make them feel that they are "your bank." 'Customer relationship management' is an important IT solution for this. Moreover, Internet is not just a channel. It can be considered as a powerful tool when banks join hands with retailers in electronic commerce, for example. In other words, it can be understood as an IT solution that adds values to individual customers.

Now, I would like to show you how banks can take advantage of 'customer relationship management'. This diagram shows the actions in the course of time from left to right. As you can see, banks offer seamless services through providing not only banking transactions, but also information and simulation services. 'Customer relationship management' is what continues to support this.

Next, I would like to present to you a form of retail banking that is customer oriented. This is based on research results in the United States, but they best represent what we have in mind. The left half represents traditional banking businesses. In contrast to this, please take a look at the right half. It is natural that customers will be using PCs or the Internet, but there are several nodes that exist between them and the bank.

In the far left is an example of a person who is well versed in finance, who is searching for the most suitable site for him. This will be the style for people with financial skills. In the center is a person who uses a third-party advisory. An advisory is an agent of customers who give advice and acts as an agent.

On the right is a style in which a bank plays the role of the agent. This is the only way banks are guaranteed to retain their individual customers.

Next example uses an Internet portal site. Finance alone is difficult to enhance added

value. For this reason, banks tie up with other industries to improve customer convenience. But there is no guarantee that the infusion of new capital would yield matching returns.US and European bank are currently exploring the possibilities here. But undoubtedly, individuals need some kind of a portal site to obtain necessary information for their daily lives.

(4) Outsourcing

More and more financial institutions in Japan are depending on outsourcing. Outside support is usually required for accounting systems. Banks outsource traditional but non-strategic businesses with the hope to reduce costs by concentrating managerial resources to the forefront.

In Japan, big information technology vendors are the providers of such support for financial institutions. There is a tendency for these vendors to lock in their customer banks. As a result, joint development has started not only in outsourcing, but also in various fields of advanced technology of banks. In few years time, this is believed to become the core of realignment of regional financial institutions. In other words, it is outsourcing that will be encouraging restructuring in the industry.

Conclusion

At the root of the changes I discussed today lies a strong trend of shift towards the era of information. The era of information works to reduce or eradicate the asymmetry of information. Simply put, the world that was centered around companies, including banks, is about to be replaced by that of personal values. This results in the loss of excess profits enjoyed by companies. Now, the true value of their products and services will be tested.

Under these circumstances, companies have two options to choose from. They can pursue added value by focusing on innovation, or remain complacent with low profits by choosing to stay within their traditional business scope. Banks will develop into these two types.

For the former, advanced technology, including IT, will be the key. These companies need to check whether the high levels of technology are maintained, and whether they have a framework in which research and development will be carried out in the medium to long term. They also need to see whether their capital is being spent in a way that yields profits effectively, and whether they are not over-investing. Advanced technology entails complex risks. A system to check this aspect will also be important.

For the latter type, retention of customers would be vital. Because they will lack in decisive competitiveness, providing services and care with a human touch or thorough

streamlining would be their only available paths. Because they will most likely maintain these two features, they will have to conduct careful screening when making investments.

This concludes my presentation. Thank you very much for your attention. I welcome your comments, and would be pleased to entertain any questions you may have.

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