

IT-Driven Business Innovation

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Business innovation refers to a reform to completely change products/services, organizations and/or business processes, whereby providing new value for customers and enhancing a company's business value. IT (information technology) can provide powerful tools for achieving such business innovation. However, companies have been focusing their IT utilization themes on improving existing business operations for which the effect attained can be readily perceived. Now is the time that they should be redefining the objectives of IT utilization. We propose that these new objectives should be to foster relationship assets, knowledge assets and process assets, and to create platforms that enable the integration of these three types of intellectual assets in pursuit of business innovation.

These three types of intellectual assets are the source of business innovation. Companies must sow the seeds of innovation by continually evolving these intellectual assets as well as IT assets in which such intellectual assets are incorporated.

In the surveys conducted by Nomura Research Institute (NRI), we found that while many companies are implementing reforms to create intellectual assets, they have not yet been successful in producing the desired effects.

The measures leading reforms to success include those related to strategic alignment, governance, methods, use of IT, corporate culture and human resources. While many responding companies have been implementing measures to ensure strategic alignment and those related to the use of IT, only a limited number of companies have actually been applying the development of methods and the training of human resources.

Great expectations are given to the CIO (chief information officer) as the promoter of business innovation. Of course, in the true sense of the word, the innovation officer is the CEO (chief executive officer) and the person responsible for each business unit plays the role of effective utilization of intellectual assets. IT-driven business innovation should be promoted by the trinity configuration involving these three parties, i.e., CEO, CIO and the person responsible for each business unit.

I Use of IT to Achieve Business Innovation

1 Why Is Business Innovation Necessary?

To attain a competitive edge in the growing world market and to maintain a significant presence in the matured Japanese market, companies must repeatedly implement business innovations.

Through business innovation, whereby products/services, organizations and/or business processes are completely changed, a company creates new value for customers and enhances a company's business value (i.e., the cash flow to be generated by the company in the future).

Changes in the following six areas constitute the background factors explaining the necessity for business innovation.

(1) Changes relative to employees

With the population beginning to decline and many baby boomers starting to reach their retirement age, many companies have long limited the number of new recruits. The result is the appearance of a distorted pattern of age-based employee composition, which had the shape of a pyramid or a cylinder in the past. This trend predicts the arrival of an age where a limited number of core employees will support the business. At that time, a major issue will be how to best utilize employees working in varied work formats as well as inside/outside human resources (management resources) to ensure efficient business processes.

(2) Changes relative to customers

With the popularization of the Internet, power has been shifting to consumers. Consumers equipped with the ability to send and receive information and who have an eye for determining service quality have started to seek services that are tailored to their individual preferences and are convenient, comfortable and safe. Consumers will avoid service providers that cannot meet these needs. In the worst case, such a service provider may be forced to withdraw from the market because of bad reputation built through the Internet. These circumstances require companies to have the ability to quickly and accurately identify customer needs and to provide carefully tailored responses. A major point is whether a company can win customer support and whether a company, together with its customers, can create value.

(3) Changes relative to market

While the Japanese market has been seeing a demand for increasingly higher grade products and/or services by customers who are skilled at choosing good products/services, significant growth cannot be expected with respect to the scale of the market itself. For compa-

nies to ride the wave of growth, the main arena is the Asian market, which has a huge potential for the expansion of consumption. In contrast with Japan, however, carefully customized but expensive products and/or services are unlikely to be accepted in the Asian market. The key to success in this market is whether services with local specifications can be offered at internationally competitive prices by controlling the grade without affecting the required level. This requires separating the intellectual assets that compose high value-added services offered in the Japanese market to create intellectual asset components, and making it possible to utilize only the needed components according to the actual situation of the market in question.

(4) Changes relative to capital

In the Japanese capital market, which is seeing an accelerated trend towards globalization, non-Japanese investors have been increasing their presence, and mergers and acquisitions (M&A) involving other countries have often been taking place. As a result, Japanese companies are becoming exposed to the evaluation of corporate value based on international standards. In such a new capital market, management transparency, management accountability and internal controls constitute underlying factors that ensure business continuity.

(5) Changes relative to society

While an accelerating trend is seen in the concentration of population in major cities, local areas are increasingly distressed with their population getting older ahead of other areas. Because of the hollowing out of local industry, some local governments are about to see their funding fail. This is a situation that once again reminds us of the importance of the revitalization of local society that has an abundance of unique local characteristics and is equipped with industrial and living infrastructure enabling the coexistence of three generations.

In addition to promoting offshore production (overseas outsourcing), companies should also focus on nearshore areas (local sites in Japan) by making the best use of social infrastructure, including the ubiquitous network that anyone can access at any time and anywhere. These efforts will help realize an environment that provides services for living and intellectual work in local cities without any gaps as compared to urban areas.

(6) Changes relative to the environment

Looming global environmental destruction and global warming have been accelerated to such an extent that we can no longer take a wait-and-see approach. The time has come that a company must pay for environmental regeneration in an amount greater than the damage that it caused. To deal with such a period, information must be efficiently utilized to replace services that consume a large amount of materials and resources with those that efficiently use energy from nature.

2 Changes in Roles Played by IT

IT can play a major role in helping companies achieve business innovation to successfully address these changes. This is because IT can be effectively utilized in the following areas:

- IT is useful for standardizing and automating business processes.
- IT is useful for visualizing and sharing information and wisdom that people have.
- IT creates venues where people with varied backgrounds can collaborate by transcending organizational and spatial barriers.
- IT promotes the transparency of risks and performance of business activities and enables their control.

Since 2003, Nomura Research Institute, Ltd. (NRI) has been conducting the annual “Survey on IT Utilization by User Companies” for leading companies in all industries in Japan. In 2006, the survey was conducted in November and 519 companies responded. Based on the survey results, this paper introduces the responses related to IT and business innovation.

Since the start of the survey in 2003, investment in IT by companies has been increasing year by year. The number of companies raising their IT investment as compared to the preceding fiscal year has been increasing although the increases are not so large. In fiscal 2007, nearly half of all responding companies expect to see their investment increase (Figure 1).

Each time the survey is conducted, we ask what the major objectives of IT utilization are (Figure 2). In the past, the primary purpose of the use of IT was to reduce

costs by improving business efficiency. Recently, however, we see a stronger tendency to clearly focus on the effects of improved efficiency.

In 2006, responding companies giving either “greatest importance” or “importance” to improved efficiency accounted for 41 percent (hereafter, both “greatest importance” and “importance” are collectively referred to as “importance”). Coupled with this trend, interest in the standardization of business processes has also been increasing year after year. In 2006, 36 percent answered that they give importance to this theme.

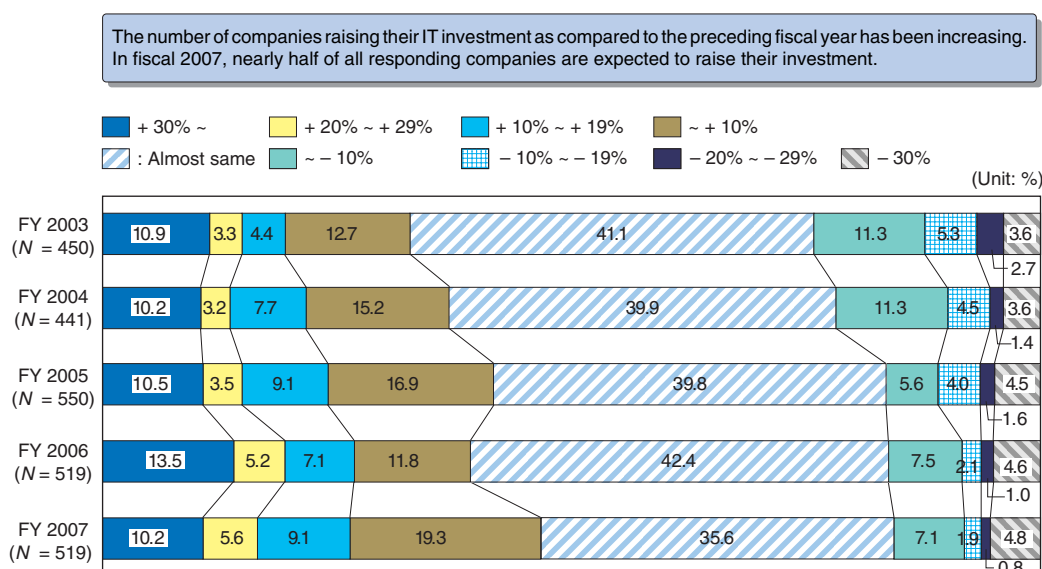
Another major theme is the strengthening of the functions of corporate management, which is required under the Financial Products Exchange Law, and 24 percent consider this theme important.

The theme of the creation of business/service by IT, which was selected by a large number of responding companies during the period of the IT bubble, seems to have reached its peak in 2004. In 2006, the percentage of responding companies giving importance to this theme decreased to 16 percent. Similarly, while the general, somewhat vague theme of support for information utilization continues to be selected by many responding companies, the percentage of such companies has been declining year by year. In 2006, the rate was only about 26 percent.

These results suggest that companies are currently focusing on themes that are highly likely to lead to the creation of effects.

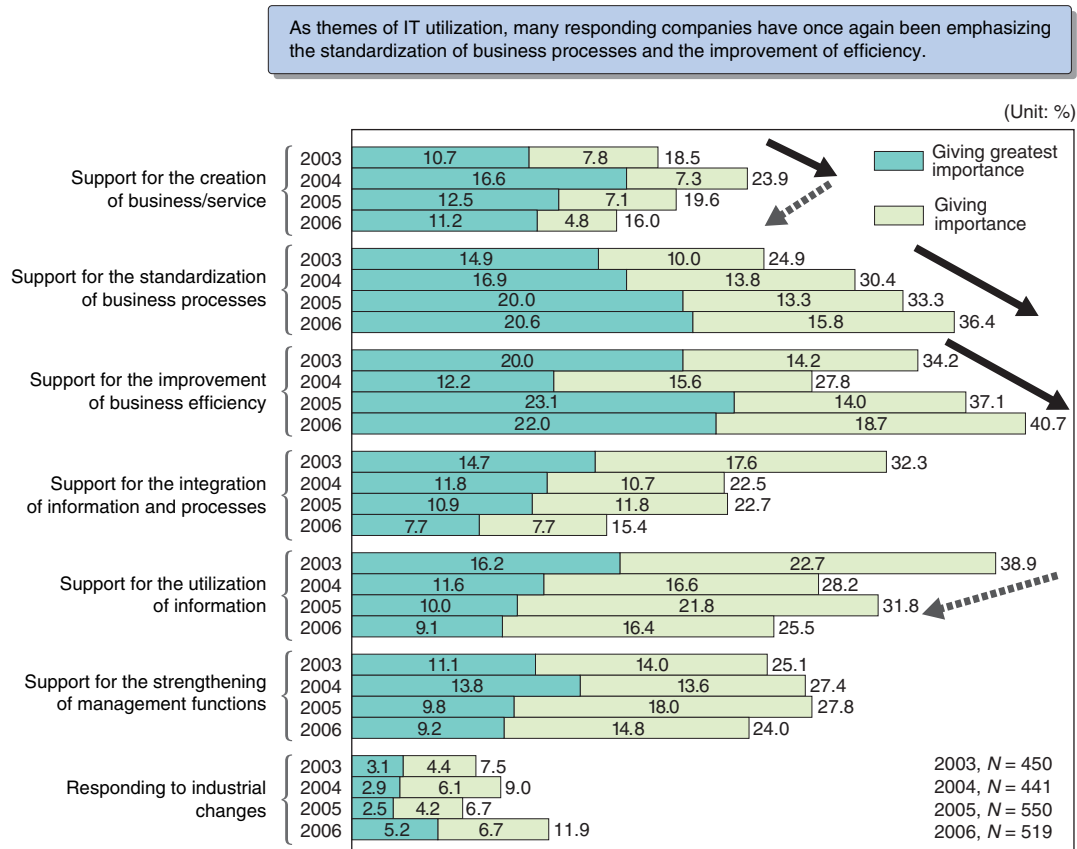
While companies can relatively easily perceive the effects of improving business efficiency and standardization, it appears that it is not easy for many of them to achieve the purposes of IT utilization such as the creation of business/service, the utilization of information and the strengthening of management functions (Figure 3).

Figure 1. IT Investment by Japanese Companies (Year-on-Year Change)



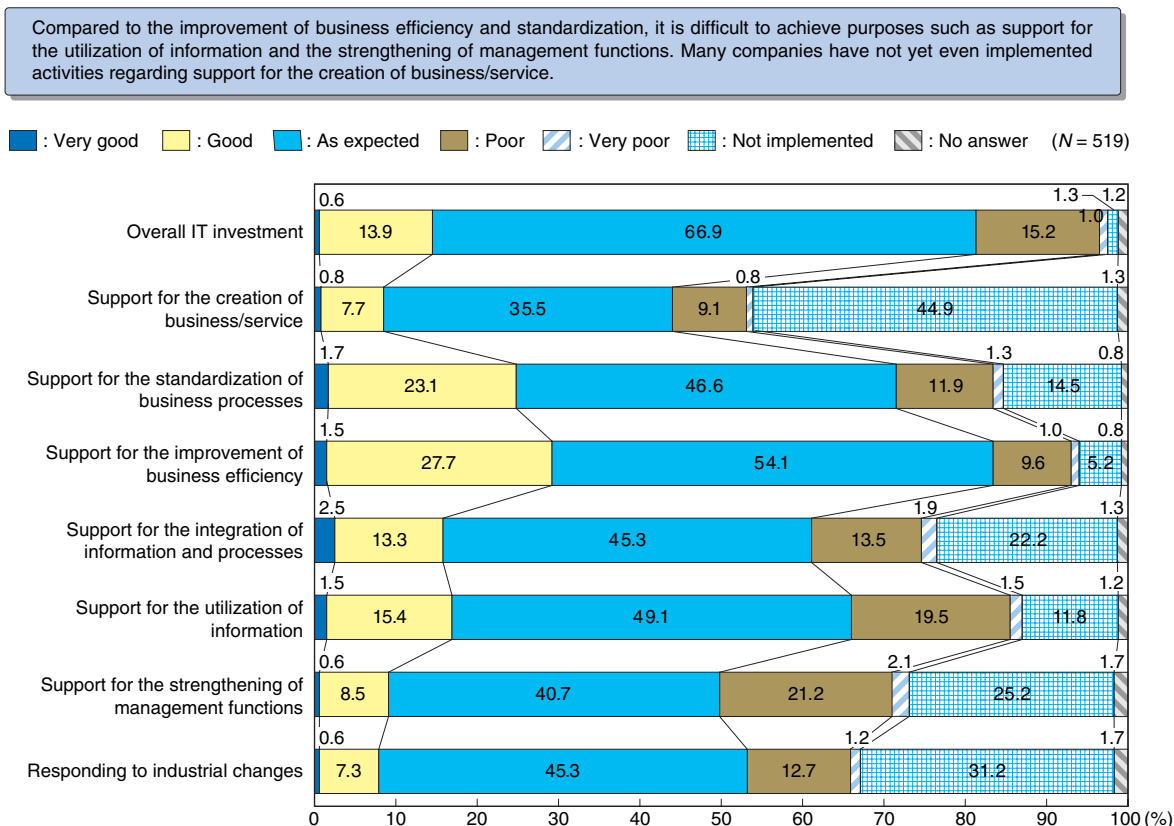
Notes: (1) Figures for fiscal 2007 are estimates. (2) IT = information technology.
Source: “Survey on IT Utilization by User Companies” by Nomura Research Institute, Ltd. in 2003, 2004, 2005 and 2006.

Figure 2. Changes in Roles Played by IT



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd. in 2003, 2004, 2005 and 2006.

Figure 3. Extent of Achievement of the Purposes of IT Utilization



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd. in 2006.

Actually, to the question of “Was the purpose of IT utilization achieved,” many companies responded in the affirmative with respect to the purposes of standardizing business processes and improving business efficiency. However, a greater number of companies responded negatively with respect to support for the utilization of information and the strengthening of management functions. The largest number of responding companies (45%) answered that they have not even implemented activities regarding the theme of “support for the creation of business/service.”

3 The Evolution of IT Utilization is Needed Now

Despite the fact that companies must overcome the status quo by business innovation, it appears that most of them have been currently focusing on themes that can best be described as improvement of the status quo, whose effects can be easily seen. Of course, simply introducing innovative IT does in no way guarantee the achievement of business innovation. However, the ultimate purpose of raising a company’s business value by creating new services and sharing value with customers would not be achieved simply by separately addressing individual themes such as improving business efficiency, augmenting employee ability by making better use of information and strengthening management functions.

I believe that now is the time for comprehensively redefining the objectives of IT utilization. I have attempted to define the new objectives of IT utilization by likening a company’s business activities to the growth of a tree.

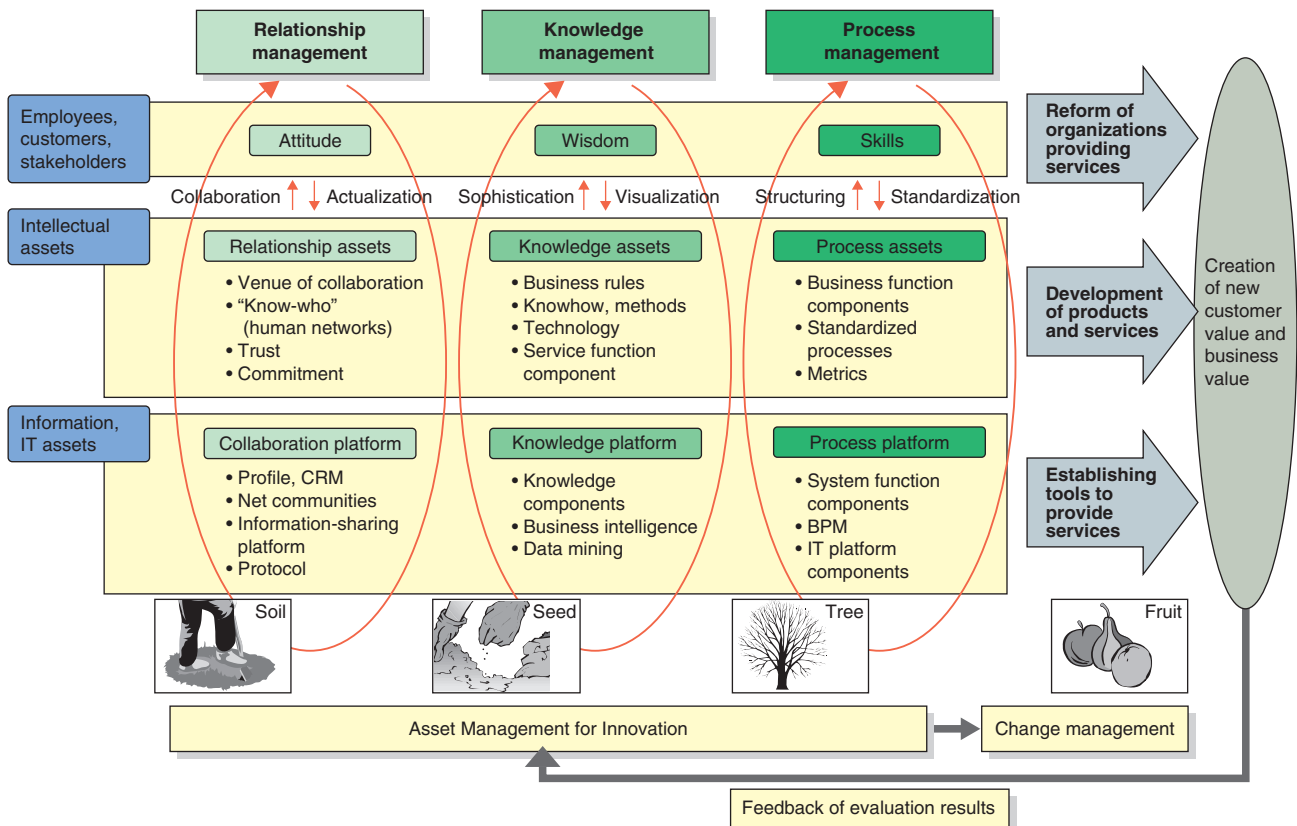
A company is surrounded by various kinds of stakeholders, such as customers, investors, suppliers, employees and consultants. The beneficial relationships to share value that are built by their close communication can be regarded as the soil that gives birth to new businesses.

The knowledge specific to a company that is accumulated through exchanges with people both inside and outside the company who have different backgrounds and abilities can be considered as the seed, i.e., sources of unique value.

Trees grow on excellent soil and from seeds in the same way businesses grow by combining standardized business processes. In offering new services by quickly responding to environmental changes, a company can provide a unique value to customers ahead of other companies, thereby harvesting the fruit, i.e., a positive business value.

I believe that the new objective of IT utilization is to foster the relationship assets (soil), knowledge assets (seed) and process assets (tree), and to serve as a platform to make use of these three intellectual assets on an integrated basis in pursuit of business innovation (Figure 4).

Figure 4. Business Innovation Driven by IT



Notes: BPM = business process management, CRM = customer relationship management.

II Relationship, Knowledge and Process Assets Form the Source of Business Innovation

1 What Are Relationship, Knowledge and Process Assets?

The term “relationship assets” refers to the positive relationships built over a long time, such as coexistence, cooperation, value sharing and mutual contribution, between a company and its various stakeholders, including its customers, investors, internal and external specialists, employees, suppliers, society and the environment. We can also say that these unspoken assumptions between both parties are actualized and take the form of collaborative venues, know-who (human resource networks), mutual trust, trades, contracts and/or commitments, all of which can be utilized within the organization.

“Knowledge assets” connotes wisdom, rules, expertise, methods, technology and experience that have been stored within the diverse intellectual activities of a company, and which have been visualized to enable circulation within the organization.

“Process assets” enable the reuse of standardized business processes. The work methods and procedures that rely on the skills of individual employees of a company are defined as standardized business processes, based on which the common components of business functions are developed and indices are created for the purpose of management.

High-quality products and services can be developed through a collaborative system that is based on relationship assets and by making the best possible use of knowledge assets. As the next step, each department designs business processes in which its own knowledge is incorporated in the standardized processes to enhance the value. Business innovation is achieved with all parties working together to the best of their respective abilities. For that reason, we can say that these three intellectual assets form the source of business innovation.

2 IT Provides the Common Platforms to Circulate, Reuse and Connect Three Intellectual Assets

These intellectual assets can be shared between people either by word of mouth or by writing them down. However, incorporating these assets in information systems (IT assets) will further improve their circulation, reuse and interconnectivity.

The knowledge and business functions that are transformed into components of an information system can

be utilized elsewhere by transcending the borders of a company and/or organization. Consequently, a company can accelerate its own business innovation by procuring such components from outside sources.

Furthermore, because IT provides an interface between people, it further promotes the evolution of intellectual assets. Examples are given below.

- Internet communities offer more opportunities for collaboration.
- The use of IT enables the systemization of business rules by making the best use of business intelligence technology in which business knowledge is incorporated.
- Data mining technology facilitates the acquisition of knowledge.
- The use of BPM (Business Process Management, which is a business process improvement tool) promotes the structuring of business processes.

To achieve business innovation, three intellectual assets are combined to develop new products and/or services, and an organization to provide such services is established by internal and external human resources. In parallel with these activities, the IT assets in which intellectual assets are incorporated are used to develop equipment/tools to provide services before the start of the actual services.

III Required Asset Management

1 Management Cycle of Intellectual Assets and IT Assets

In pursuit of business innovation, a company must constantly strive to evolve the three intellectual assets as well as the IT assets in which the said three assets are incorporated to sow the seeds of innovation. As part of asset management for this purpose, a company must keep an improvement cycle of intellectual assets moving in synchronization with the IT assets. This improvement cycle consists of the following stages (Figure 5).

D (Define): Defining problems and setting goals; defining the issues requiring improvement and setting objectives.

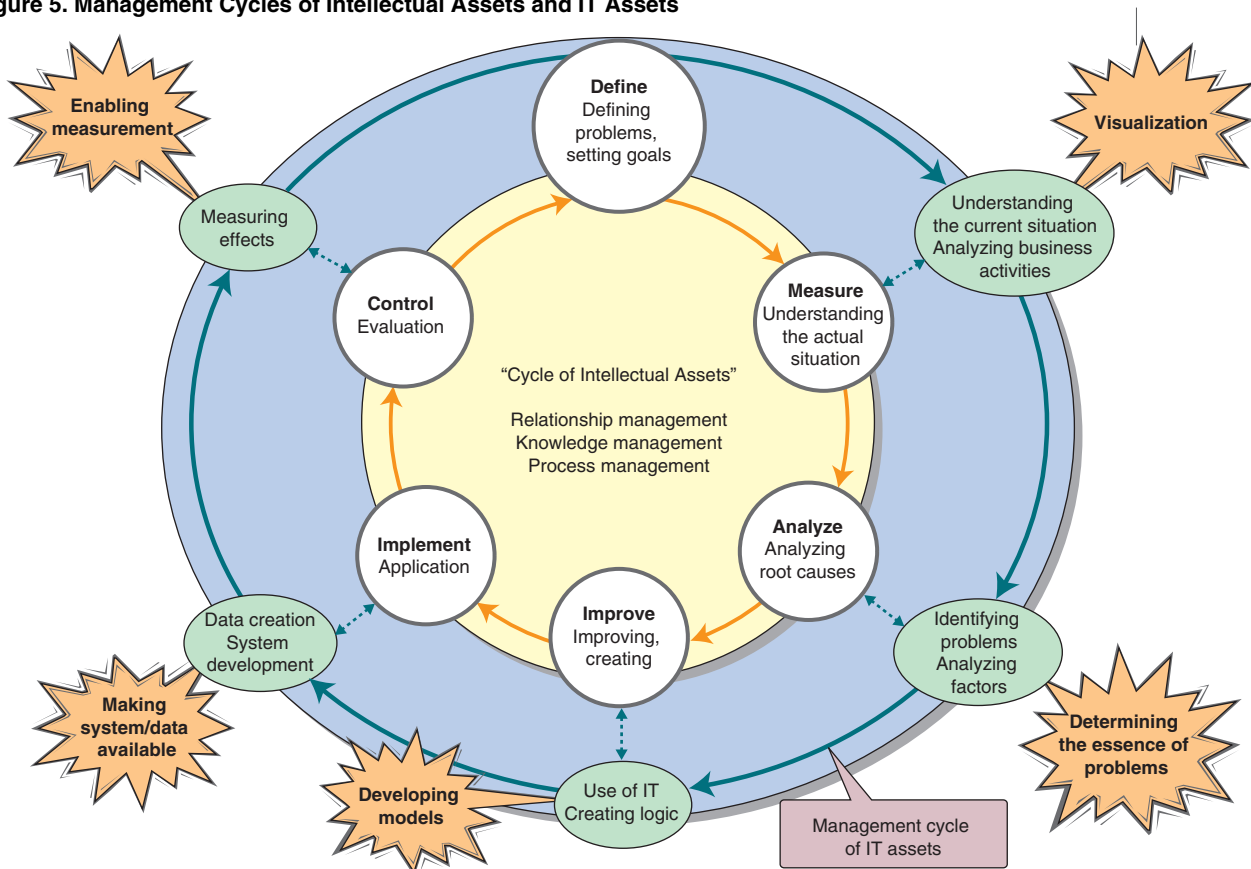
M (Measure): Understanding the actual situation; making the status quo (AS IS) of the intellectual and IT assets visible.

A (Analyze): Analyzing root causes; identifying the primary factors behind a given problem by repeating the “5 whys.”

I (Improve): Improving, creating; developing a model of the framework or logic of the ideal situation (TO BE).

I (Implement): Application; creating practical techniques, procedures, system functional components, data components, etc.

Figure 5. Management Cycles of Intellectual Assets and IT Assets



Source: The Six Sigma framework enhanced by Nomura Research Institute.

C (Control): Evaluation; enabling measurement by defining indices for measuring the effects and by providing a means of measurement.

The result obtained through this evaluation is used as the starting point for the next improvement cycle.

The above cycle is a variation of the well-known Six Sigma DMAIIC cycle business process improvement methodology, which is enhanced for application to all three intellectual assets.

To date, the creation and improvement of intellectual assets have usually been performed under the responsibility of someone other than the person responsible for the maintenance of information systems as separate projects. However, the integration of these activities performed in synchronization with each other enables the rapid spread of improved intellectual assets throughout an organization as part of system flow. In addition, because this system-based method enables a company to accurately understand the current situation and measure achieved effects, the improvement of intellectual assets can be further accelerated. This will also facilitate the reuse of intellectual assets in developing new services.

2 Methods for Achieving Business Innovation

In implementing business innovation, the intellectual assets and IT assets that have been accumulated in such

a way as described above should be utilized as the strength of a company. Drawing on such accumulated assets, the concepts of innovation should be identified based on the opportunities offered as well as the threats encountered in the external environment. Among these identified concepts, an innovation concept that is compatible with management strategy should be selected to establish a project. The following activities should be implemented concurrently.

- Design of products and/or services by combining knowledge assets.
- Definition of business processes by combining process assets.
- Organizational design that makes the best use of relationship assets.
- Design of a system by combining IT assets.

The results of a project are evaluated, and then added to a company's intellectual assets.

3 Company Approaches to the Creation of Each Intellectual Asset

(1) Relationship assets

In the survey, we asked companies about their approaches to the creation of intellectual assets. First, with respect to the establishment of relationships with

customers, which are the most important relationship assets for companies, we found the following:

- Responding companies that have been implementing so-called customer relationship management in their respective ways, in which customer needs and dissatisfactions are identified by personnel having direct contact with customers in front-line operations and shared by all personnel to provide consistent and appropriate responses to customers, accounted for 36 percent (Figure 6).
- Responding companies that have been implementing customer participation marketing, whereby products and/or services are developed based on customer feedback, accounted for 27 percent (Figure 7).
- Responding companies with a management cockpit in place, whereby customer opinions, evaluations and complaints are continually disclosed to management, and then reflected in management policy, accounted for 28 percent (Figure 8).
- Regardless of the type of activities implemented, we found that a greater percentage of responding companies with larger sales have been implementing the activity in question. In particular, among responding companies with sales in excess of ¥1 trillion, 61 percent were found to have adopted customer relationship management and 46 percent conducted customer participation marketing, while 41 percent implemented a management cockpit.
- However, to the question of whether these activities have led to an enhanced reputation and an increase in sales, more than half of the responding companies answered “can’t say either.” Less than 20 percent were able to say that they achieved some effect (Figure 9). Companies with larger sales also face the same situation in that it is difficult to achieve effects such as increased sales by implementing these activities.

For the past several years, these fields have been bundled and promoted under the framework of CRM (customer relationship management). Even so, these activities have not brought about any sizable effect. I think this is because companies have confined themselves to taking only a stereotypical approach to dealing with customer information.

For example, companies might lack the perspective of value from the customer standpoint by focusing on customer information from the perspective of service providers, such as profitability per customer. Otherwise, the quality of customer information collected might be low, or a long time is taken from digesting information to providing appropriate responses. Actually, many companies face situations where the information collected has been inaccurate, only partial information has been collected or quick responses have been lacking. Besides,

there are many cases in which centralized management of information does not lead to appropriate actions toward customers.

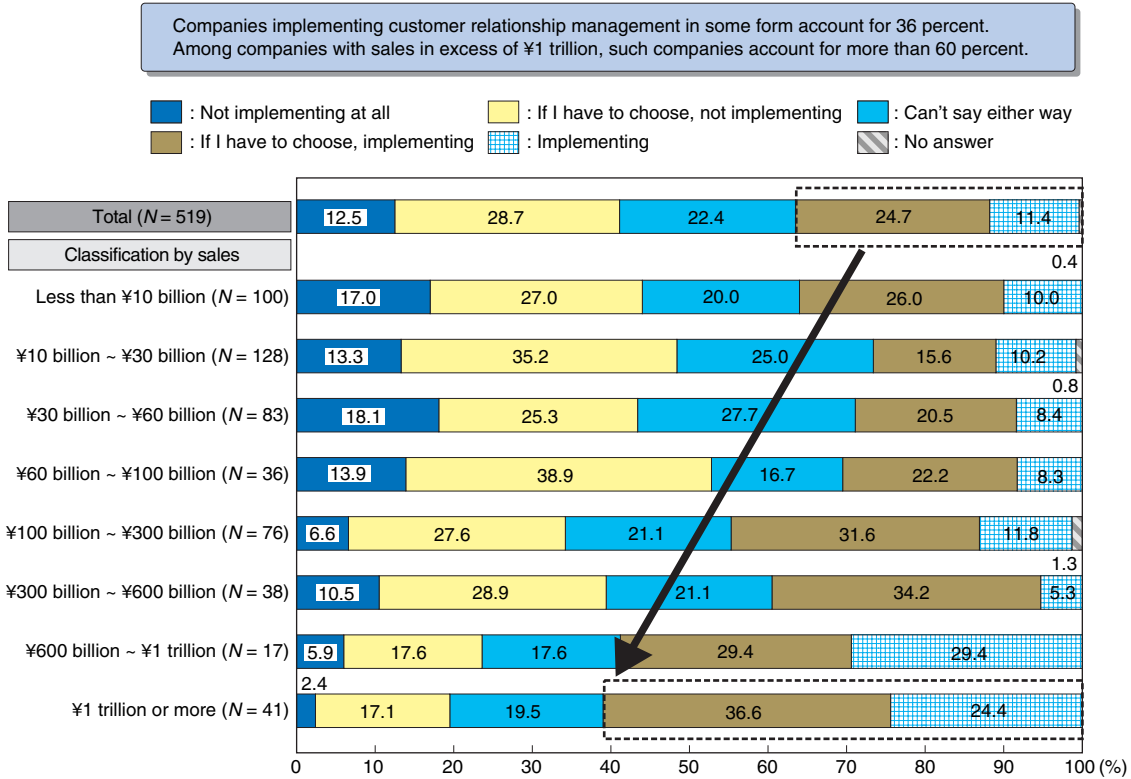
(2) Knowledge assets

From the perspective of how knowledge assets are used, more than half of the responding companies have adopted a system whereby their work methods are documented and are made accessible throughout the company (Figure 10). The survey also revealed the following information.

- More than half (52%) of the responding companies use databases to store and search for information and knowledge.
- Twenty-nine percent of the responding companies have established electronic networks to make the expertise available throughout the organization.
- Responding companies with larger sales have more advanced environments for utilizing information, such as databases and networks. Among companies with sales in excess of ¥1 trillion, 80 percent have databases that enable the sharing of information, while 48 percent have networks that enable the sharing of knowledge.
- However, responding companies quantitatively assessing knowledge creation, circulation and application account for a mere 4 percent. Accordingly, we can say that while a larger number of companies have introduced systems for sharing information, the DMAIC cycle has not yet been fully implemented because the effects are not measured.
- With 13 percent using some form of automated decision making logic and only 7 percent using knowledge-based navigation, the survey also reveals that a majority of companies have yet to adopt some form of business intelligence technology.
- To the question of whether the use of knowledge assets has led to the improvement of organizational abilities such as the ability of employees to utilize information and the ability of an organization to make the best use of knowledge, companies achieving some effects account for more than 30 percent. This value is larger than the percentage in the case of customer assets (enhanced reputation among customers). Nevertheless, companies that “cannot say either” account for 46 percent (Figure 11).

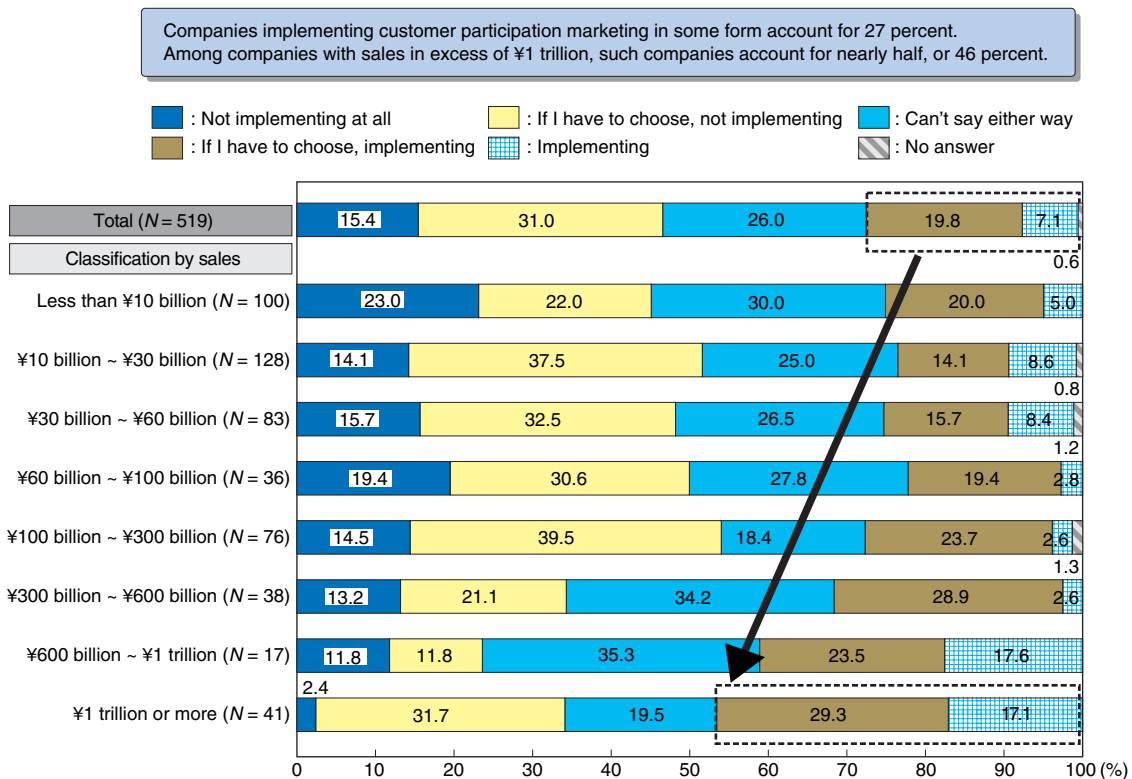
Because the successful use of information utilization mechanisms such as databases for sharing information and networks for distributing knowledge depends on the will or ability of each user, users will not use these mechanisms if their will or ability to use information is low, resulting in failure to achieve the anticipated effects. In the future, measures must be taken to encourage

Figure 6. Activities Using IT: Customer Relationship Management



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

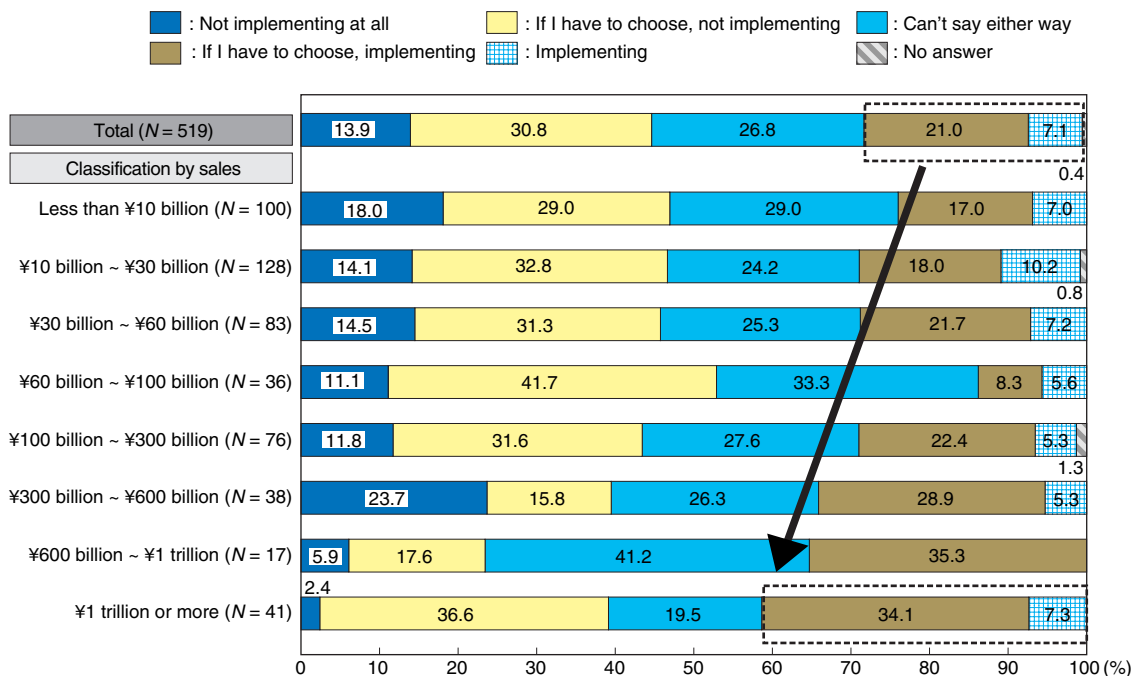
Figure 7. Activities Using IT: Customer Participation Marketing



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

Figure 8. Activities Using IT: Management Cockpit

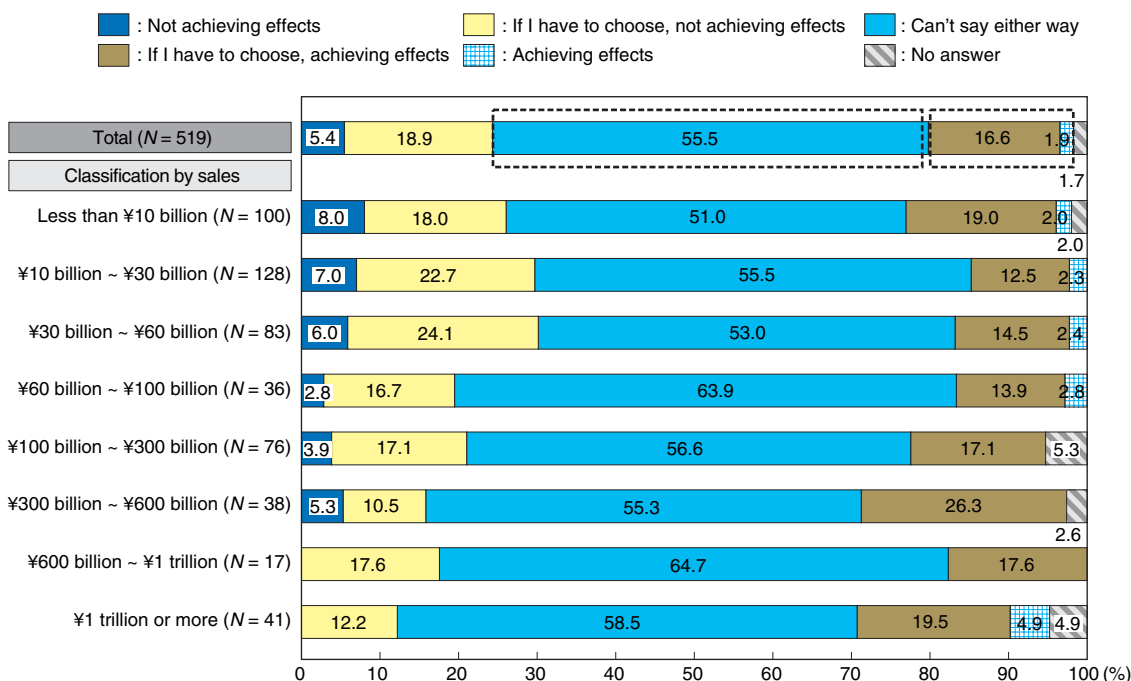
Companies continually disclosing customer information to management and reflecting such information in decision making in some form account for 28 percent. Among companies with sales in excess of ¥1 trillion, such companies account for 41 percent.



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

Figure 9. Activities Using IT: Enhanced Reputation among Customers

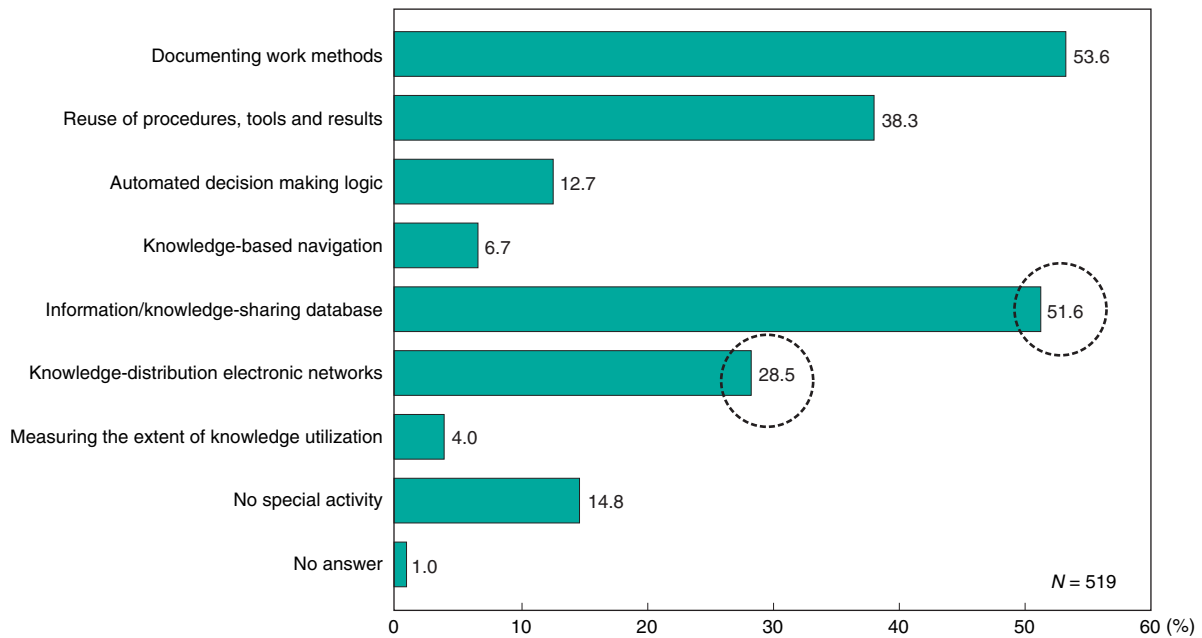
Companies achieving some effects based on increased customer evaluation, such as the expansion of the customer base and an increase in sales account for slightly less than 20 percent. At the same time, companies not achieving such effects also account for more than 20 percent. Companies that answered "can't say either way" accounted for the largest percentage, or 55 percent.



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

Figure 10. Activities Using IT: Improvement of Employees' Intellectual Activities

Companies using information/knowledge-sharing databases account for more than 50 percent.
Companies using knowledge-distribution electronic networks account for nearly 30 percent.

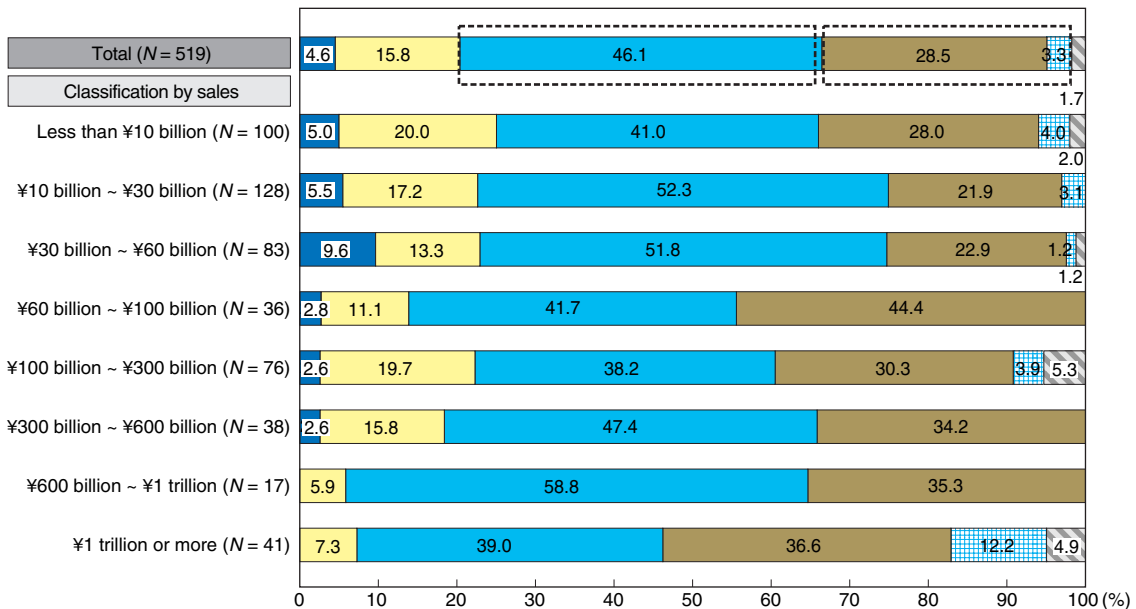


Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

Figure 11. Effects of Reforms: Improvement of Organizational Abilities

Companies achieving some effects of improving organizational abilities such as abilities to utilize information and/or knowledge account for slightly more than 30 percent. The largest number of companies (46%) answered "can't say either way."

■ : Not achieving effects
 ■ : If I have to choose, not achieving effects
 ■ : Can't say either way
■ : If I have to choose, achieving effects
 : Achieving effects
 : No answer



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

employees to use such mechanisms for example by establishing a company-wide system whereby the extent of the distribution and/or utilization of knowledge is evaluated or by incorporating knowledge into daily business procedures.

(3) Process assets

When we look at process assets, we find that the number of companies implementing reforms of and/or improving business processes is much greater as compared to other assets, with more than 90 percent of responding companies engaged in such reforms. However, 44 percent answered that they implement such reforms “only when necessary and only so far as to resolve an immediate problem.” Only a limited number of companies have been implementing such reforms on a continuous and company-wide basis covering all departments (Figure 12).

I have attempted to call process assets as “assets” with the following intentions:

- Improving the possibility of reusing processes through continuous improvements.
- Enabling the use of processes for other purposes as well through company-wide improvements.

- Facilitating the sharing of processes through across-the-board improvements covering all departments.

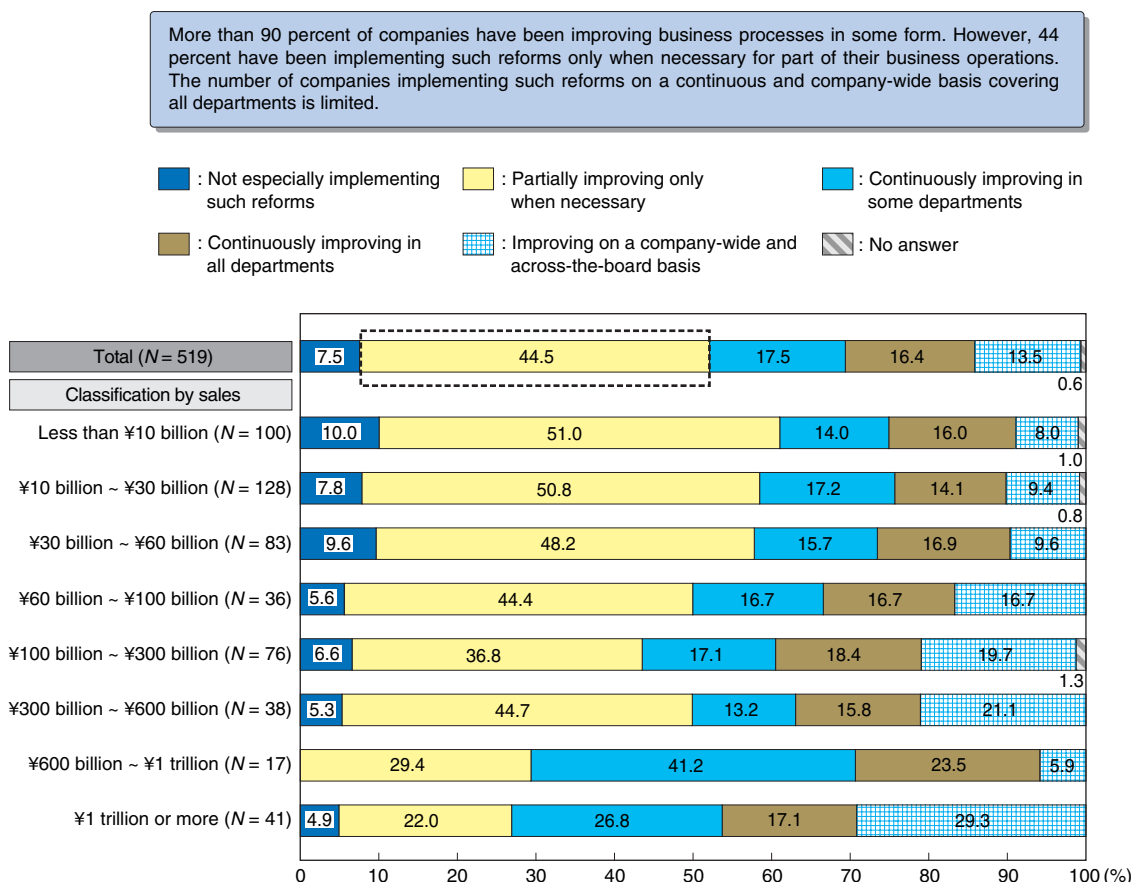
In view of these intentions, the current level of progress in making processes a company’s assets is slightly behind the anticipated objectives.

When we asked companies whether they had achieved any financial benefits such as increased revenues or reduced costs as a result of these activities, around 30 percent responded that they “had achieved some effects,” while 50 percent said that they “could not say either way” (Figure 13).

By repeatedly improving the three intellectual assets, we might be able to achieve continuous financial benefits. In addition, by combining the three intellectual assets, we might be able to attain radical innovation and generate excellent effects.

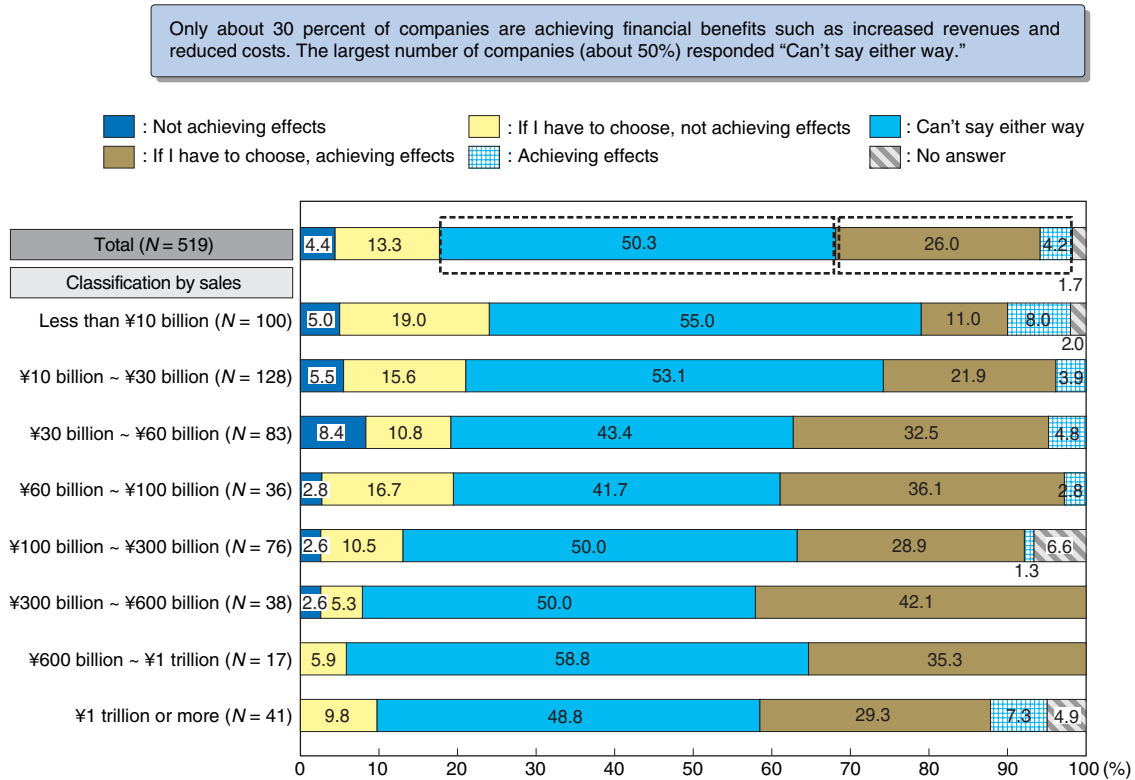
In any case, achieving financial benefits is the ultimate goal of improving and utilizing intellectual assets. From an overall perspective, the activities of Japanese companies toward creating intellectual assets are still on the way and the effects are yet to be produced. Nevertheless, it is true that some companies responded with “achieving effects” for all aspects of the enhanced reputation among customers, improved organizational abilities and

Figure 12. Activities Using IT: Reforms/Improvements of Business Processes



Source: “Survey on IT Utilization by User Companies” by Nomura Research Institute, Ltd., 2006.

Figure 13. Effects of Reforms: Financial Benefits



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

financial benefits, although they account for only a few percent.

IV Critical Success Factors for Business Innovation

1 Top-Down, Bottom-Up and Methodology Approaches Are All Important

To continue to create and improve intellectual assets as part of the efforts to implement business innovation, it is effective to establish, on a company-wide basis, the methods on which reforms rely as well as IT systems as the tools for such methods, and to commonly use such methods and tools for reforming and improving activities within a company.

However, the development of such methodology alone is unlikely to bring about major innovation.

First, management executives who allocate funds for innovation must understand the importance of reforms, indicate the direction of such reforms by their own words, clarify the priority, provide management resources and align management strategies with the reforms. This requires a top-down approach under which corporate governance is established. In this case, the details of governance could include establishing a system whereby a decision for innovation is made on a company-wide basis, the process is controlled and the results are evaluated, as well as the methods for making decisions.

A bottom-up approach is also important in which individual employees who implement innovation improve their abilities and skills in that area, employees who can lead the reforms are developed and a positive attitude towards reforms at each work site is fostered as part of corporate culture (Figure 14).

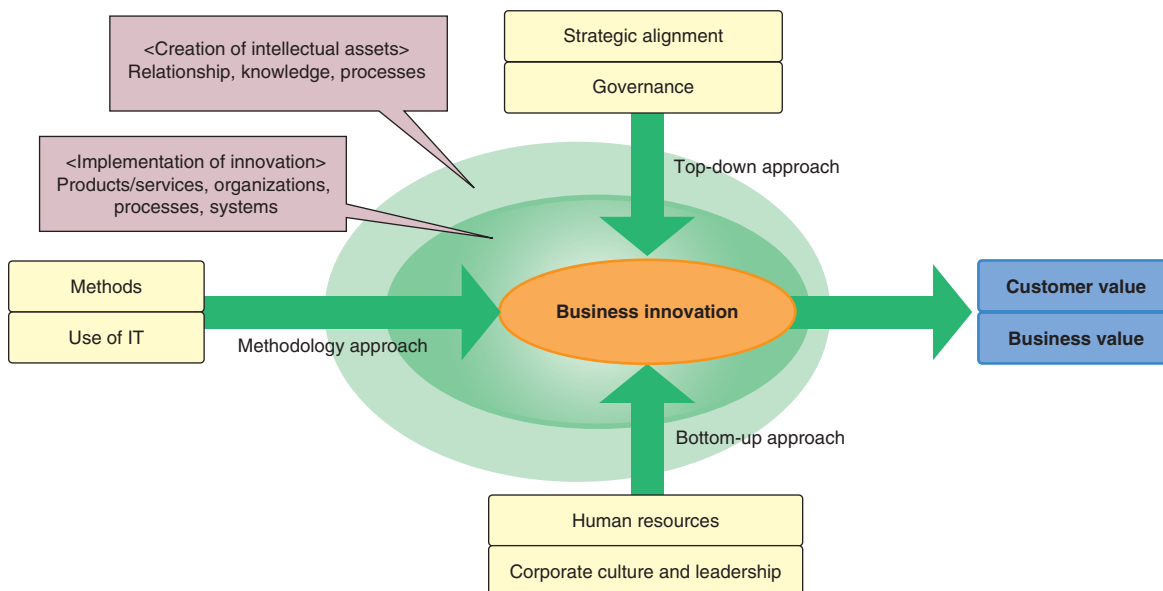
2 Implementation of Promotional Measures for Innovation at Companies

Professor Brad Power of Babson College in the US has suggested that there are six main factors leading to successful process reforms, namely, ensuring strategic alignment, establishing governance, developing methods, utilizing IT, fostering corporate culture and developing human resources. In this paper, I would like to go further by considering that these six factors can not only be applied to process reforms, but also to business innovation as a whole.

When we look at the extent to which these six factors are actually applied to the promotion of business innovation, we find that 51 percent of responding companies have been ensuring strategic alignment, while 47 percent are relying on IT. As such, a relatively large number of companies are implementing these measures in some form.

On the other hand, a mere 24 percent have been developing methods, and only 27 percent have been fostering human resources. These low percentages suggest that while IT tools have been introduced under the initiative

Figure 14. Critical Success Factors for Business Innovation

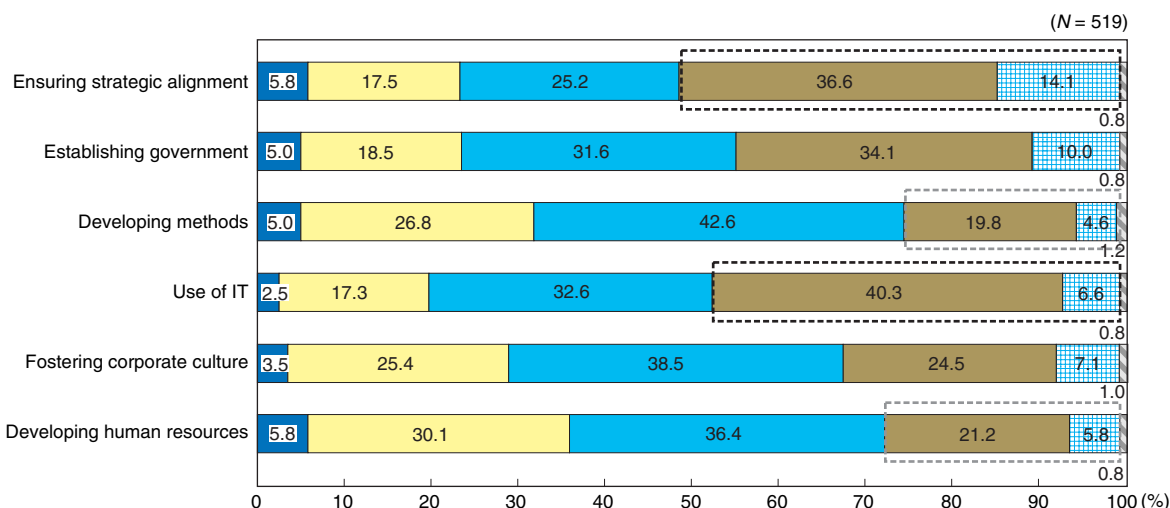


Source: Compiled based on the Business Process Maturity Model created at Babson College.

Figure 15. Measures Implemented for Promoting Business Innovation

Nearly half of the companies are implementing the two factors of ensuring strategic alignment and utilizing IT in some form. However, only a small number of companies (at the level of 20 percent) are implementing the factors of developing methods and fostering human resources.

■ : Not implementing at all ■ : If I have to choose, not implementing ■ : Can't say either way
 ■ : If I have to choose, implementing ■ : Implementing ■ : No answer



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

of top executives, the practical capability for implementing reforms has not yet been able to catch up with such advanced systems (Figure 15).

3 Which Measures Are Effective for Achieving Effects by Reforms?

This section analyzes the measures focused on by companies achieving effects by reforms.

Figures 16 to 18 indicate the average values of the extent of the implementation of six reform measures at

companies using a five-level ranking system from "achieving effects" to "not achieving effects," respectively, for the effect of enhanced reputation among customers, the effect of improving organizational capabilities and the effect of achieving financial benefits.

For the companies that answered "achieving effects" with respect to enhanced reputation among customers, we can say the following:

- With the exception of "developing methods," the extent of implementation is high for all measures,

with the ranking for the establishment of governance being 4.50 on average and for the development of corporate culture being 4.60 on average.

- A large difference between companies “achieving effects” and “not achieving effects” in the extent of implementation is seen for developing human resources (difference of 2.44) and fostering corporate culture (difference of 2.24).

These results suggest that it is important to establish a cycle on a company-wide basis that uses customer-related information to improve customer services, and to

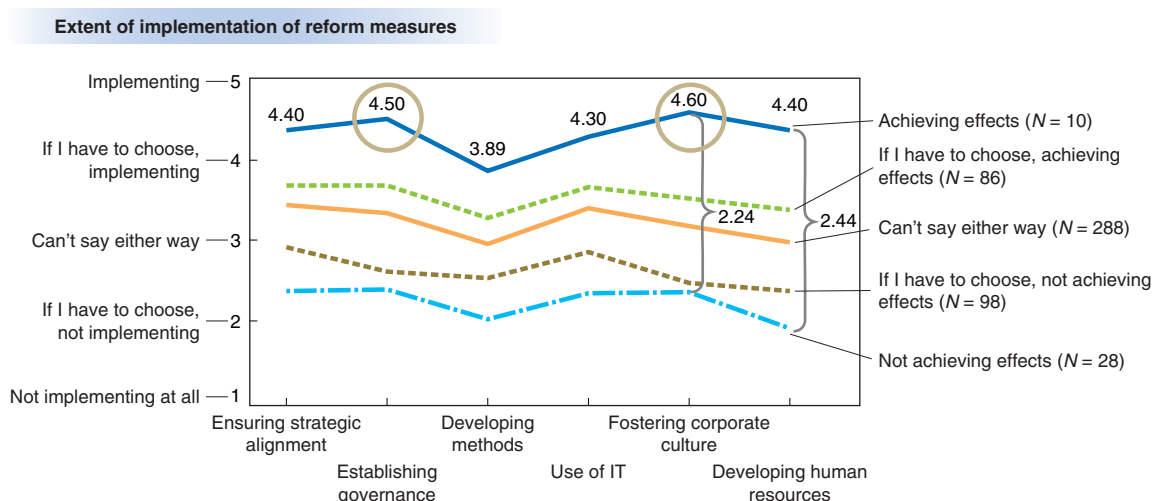
ensure that each organization and each employee focus on customer-oriented attitudes and actions.

With respect to the improvement of organizational capabilities, we noticed the following points for those companies that answered “achieving effects:”

- The extent of implementation is high with respect to ensuring strategic alignment (4.41 on average) and the use of IT (4.47 on average).
- A large difference between companies “achieving effects” and “not achieving effects” in the extent of implementation is seen for developing human resources

Figure 16. Status of Measures by the Effect Achieved: Effect of Enhanced Reputation among Customers

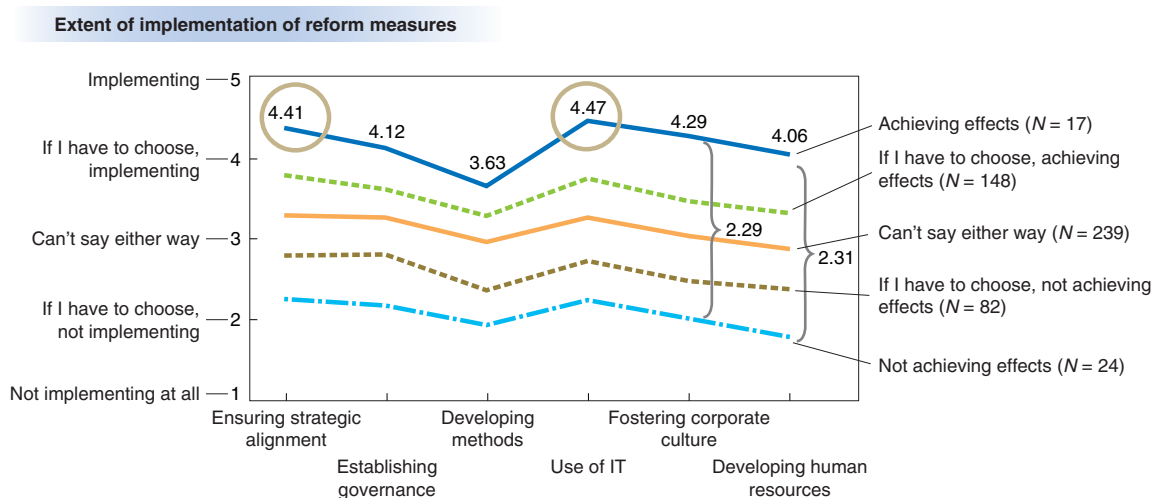
For companies achieving effects, the extent of implementation is high for establishing governance and fostering corporate culture. A large difference between companies achieving and not achieving effects is seen for developing human resources and fostering corporate culture.



Source: “Survey on IT Utilization by User Companies” by Nomura Research Institute, Ltd., 2006.

Figure 17. Status of Measures by the Effect Achieved: Effect of Improved Organizational Capabilities

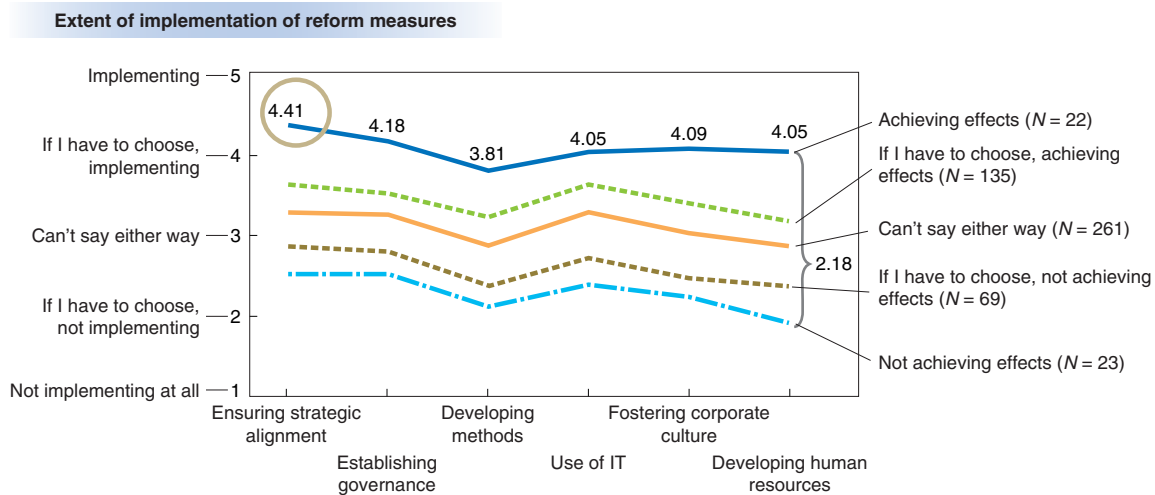
For companies achieving effects, the extent of implementation is high for ensuring strategic alignment and the use of IT. A large difference between companies achieving and not achieving effects is seen for developing human resources and fostering corporate culture.



Source: “Survey on IT Utilization by User Companies” by Nomura Research Institute, Ltd., 2006.

Figure 18. Status of Measures by the Effect Achieved: Effect of Achieving Financial Benefits

For companies achieving effects, the extent of implementation is high for ensuring strategic alignment. A large difference between companies achieving and not achieving effects is seen for developing human resources.



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

resources (difference of 2.31) and fostering corporate culture (difference of 2.29).

These findings indicate that if management executives demonstrate the policy on strengthening the specific organizational capabilities and IT systems are firmly in place, such efforts will lead to achieving effects. These results also suggest that a difference in effects occurs depending on whether organizations and/or employees can circulate and make the best use of information and knowledge.

For those companies that answered "achieving effects" with respect to producing financial benefits, we found the following points:

- The extent of implementation for ensuring strategic alignment is high (4.41 on average).
- A large difference between companies "achieving effects" and "not achieving effects" in the extent of implementation is seen for developing human resources (difference of 2.18).

These results indicate that financial benefits can be achieved only if reforms are implemented to address priority management issues, and that a difference in effect occurs depending on how many people who implement reforms are available.

Overall, companies that answered "achieving effects" have been better at dealing with all six factors (measures) than companies that answered otherwise. For the use of IT as well, companies that responded "achieving effects" have been making more progress than other companies, suggesting that IT is effective for reforms. However, it is a matter of course that IT is not the largest success factor as compared with other factors (measures).

Even for those companies that answered "achieving effects" for the development of methods, the extent of implementation is not very high. Accordingly, this measure must be further strengthened to generate reform effects continuously in the future.

V Trinity of CEO, Business Units and IT Divisions to Promote Reforms

1 Future CIOs to Promote Innovation and Intellectual Assets

With the purpose behind the use of IT shifting to becoming the common platform to evolve intellectual assets and drive business innovation, the role of the chief information officer (CIO) will also be expanded beyond being merely the person responsible for providing IT services.

CIOs are also expected to assume a major role in the area of intellectual asset management in which intellectual assets are created, distributed and continuously improved by incorporating feedback through the application of such assets to reforms. There is also a very good chance that a company will look to the CIO to promote and achieve the business innovation that the company is seeking. In addition to "information," the meaning of "I" in the CIO could also connote "intellectual" and "innovation."

Of course, because innovation is a high priority issue for any company, the true innovation officer ought to be the chief executive officer (CEO). Furthermore, the effective use of intellectual assets is a responsibility that

the person responsible for each business unit must assume. Accordingly, these three people should form a trinity to promote business innovation driven by IT (Figure 19).

2 Who Makes the Decisions Related to IT?

To the question of who makes the ultimate decisions related to IT, more than 40 percent of responding companies answered that the CEO is involved in the determination of the overall policy for the use of IT. To make IT investment decisions, the CEO is involved in 60 percent of responding companies. To define the business requirements for a system, the person responsible for each busi-

ness unit decides such requirements in 40 percent of responding companies.

In more than half of all responding companies, decisions are being made for all of these matters with the participation of the CIO or the director responsible for IT. Accordingly, a general trend is appearing in which the CEO, the person responsible for each business unit and the CIO jointly assume responsibility (Figure 20).

As explained in Chapter IV, where measures to promote business innovation are discussed, the recognition that IT is an essential element to implement a major business reform has also been making its way into management executives other than the CIO. The framework of governance, in which management executives

Figure 19. Trinity Configuration to Promote Business Innovation

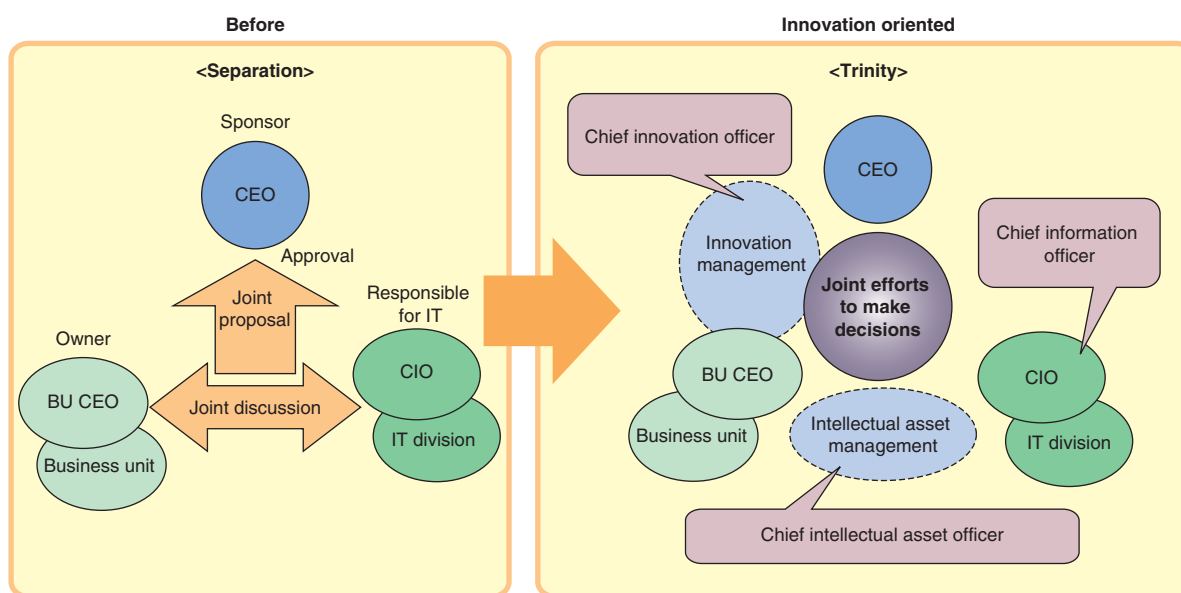


Figure 20. Who Makes the Decisions Related to IT?

The CIO plays a major role in making decisions on the use of IT. To make decisions on investment, the CEO participates, and to determine business requirements, the person responsible for each business unit participates. The trinity configuration has gradually been realized.

(N = 519)

	Policy on use of IT	IT investments	Policy on IT platforms	Business-related system requirements
CEO	45.5%	61.5%	33.3%	13.7%
CIO	62.6%	54.9%	71.3%	54.3%
Person responsible for each business unit	17.7%	17.7%	9.1%	38.0%
Person responsible for IT in each business unit	8.5%	7.7%	10.8%	30.8%
Unclear	3.9%	0.8%	1.7%	1.3%

Note: CIO = chief information officer.

Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

participate in making decisions in order to implement reforms and use IT in alignment with management strategies, is being established in many companies.

However, even if all three parties (the CEO, a person responsible for each business unit and the CIO) get together, the problem remains as to who actually plays the roles of “chief innovation officer” and “chief intellectual asset officer.”

3 Roles Expected of the CIO

The president assumes the role of CIO in only few companies. In more than half of the responding companies, the CIO remains no more than a director in charge of IT.

At the same time, the CIO is not only the head of the IT division, but is also the person who supervises the use of the information systems in the capacity of a management executive (Figure 21).

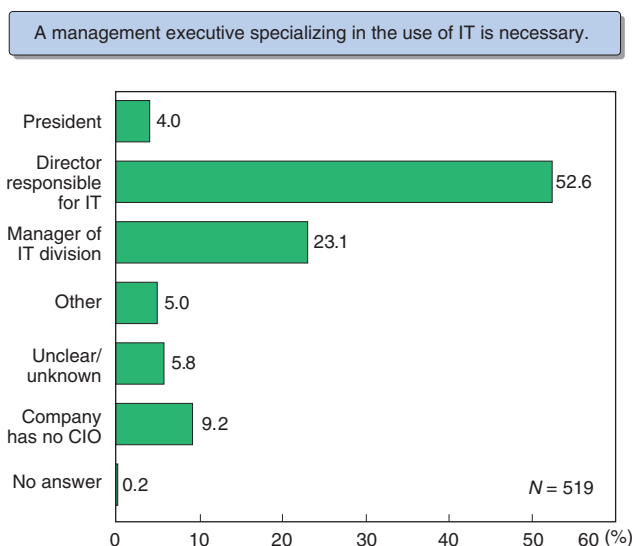
Accordingly, the roles expected of the CIO are not limited to providing IT services. To the question of what are the roles expected of the CIO, more than half of the responding companies selected realization of a company-wide optimal IT environment (63%), the proper management of IT investments and costs (59%) and the appropriate control of IT risks (51%). In addition, 49 percent expect the CIO to go further by playing the role of linking management and IT as well as business and IT (Figure 22).

Because of these expectations, a larger number of companies are assigning CIOs from among personnel having careers in fields other than IT. While 21 percent

assign CIOs from personnel having IT backgrounds, 23 percent assign CIOs from personnel in corporate planning departments who are well versed in management and business, 17 percent from those in financial and accounting departments and 15 percent from those in front-line business units (Figure 23).

A company that can assign a leader who can consider overall optimization of business operations and IT utilization from a multilateral perspective to the position of CIO might be able to go one step further to spell out that the “I” in CIO also implies the “I” in “innovation” and in “intellectual.”

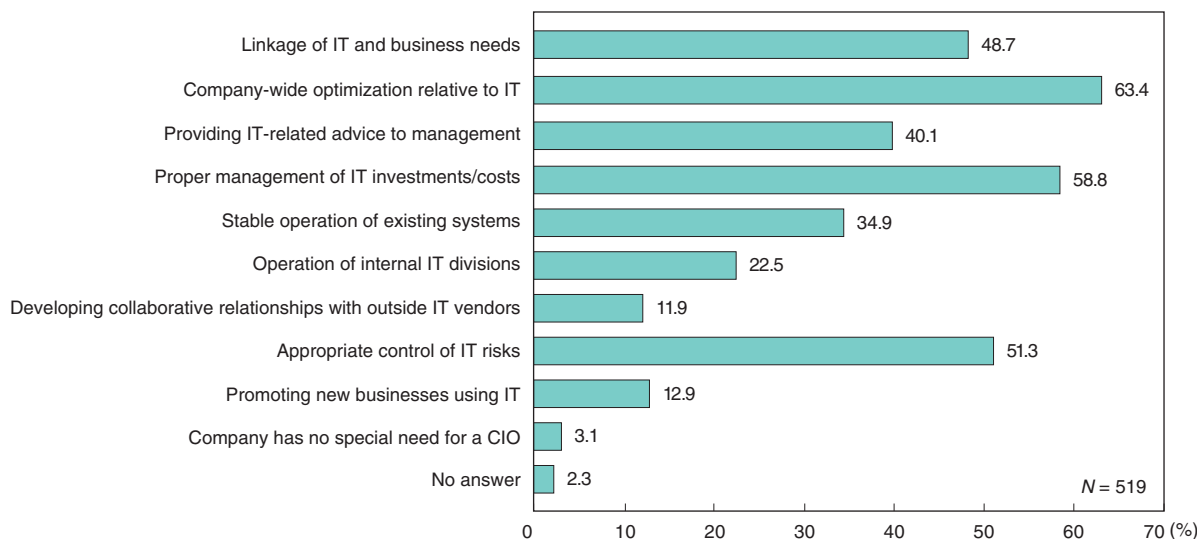
Figure 21. Who Is Actually the CIO? (Multiple Choices)



Source: “Survey on IT Utilization by User Companies” by Nomura Research Institute, Ltd., 2006.

Figure 22. Roles Expected of the CIO (Multiple Choices)

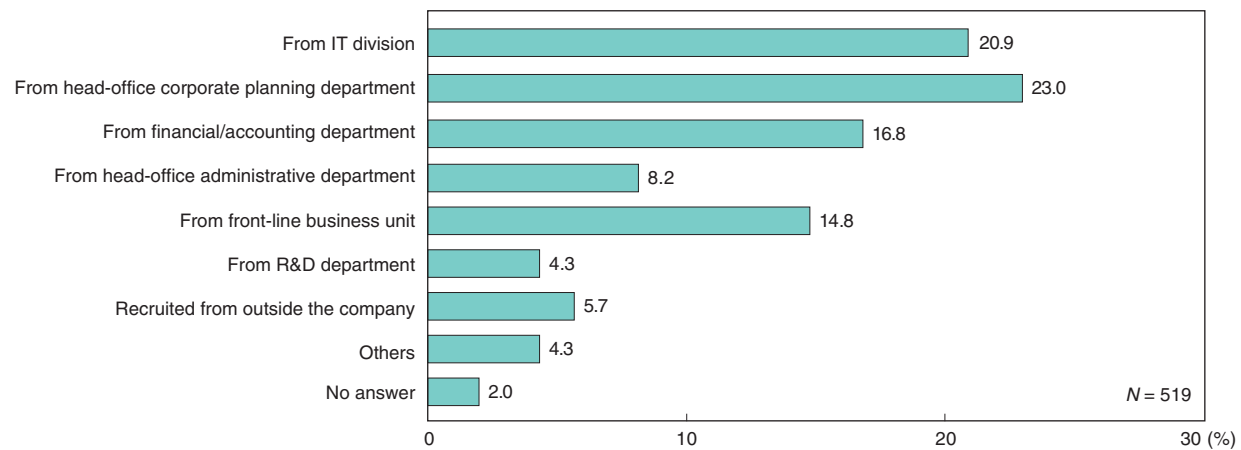
Many expectations are given to CIOs to play roles in the overall optimization of IT utilization, the management of IT investments/costs and the control of IT risks. In addition, it is also vital that CIOs link management and IT as well as business and IT.



Source: “Survey on IT Utilization by User Companies” by Nomura Research Institute, Ltd., 2006.

Figure 23. Past Careers of CIOs

The percentage of companies assigning a CIO from personnel having careers in the fields of corporate planning departments (personnel well versed in management and business operations), financial/accounting departments or front-line business units, rather than those with IT careers, is increasing.



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

4 Bridging Gaps between Intellectual Assets and IT Assets

Even in those situations where the CIO is assigned to lead business innovation, the practical use of IT that can lead to business innovation must be promoted with a joint structure involving business units and the IT division under the sponsorship of the CEO and CIO. However, it should be pointed out here that, as mentioned in Chapter IV describing the reform measures, most Japanese companies lack the methods and personnel that can support the actual implementation of business innovation, and such a shortage may constitute a weakness of Japanese companies.

When we examine who is working to bridge the gaps between business processes/knowledge and IT utilization, we find that in many responding companies this work is done jointly by business units and the IT division or implemented under the leadership of the IT division (Figure 24).

- For planning system projects, 46 percent are implementing joint work and the IT division takes the lead in 35 percent.
- For determining business requirements, 50 percent are implementing joint work and the IT division takes the lead in 30 percent.
- For training end users, 47 percent are implementing joint work and the IT division takes the lead in 25 percent.
- For promoting system utilization, 44 percent are implementing joint work and the IT division takes the lead in 31 percent.

Leaving such work to bridge gaps entirely up to the IT division is unacceptable. However, "joint implementa-

tion" is, in fact, treacherous. The actual situation behind "joint implementation" is likely to be that who is actually responsible is not really known or that those who are capable are personally implementing such work on a haphazard basis.

Designing reforms and implementing appropriate change management require clear-cut demarcation of responsibilities, implementation methods and skills and the commitment to implement such work. In addition, the ability to accurately understand the respective values of relationship assets, knowledge assets and process assets is also necessary.

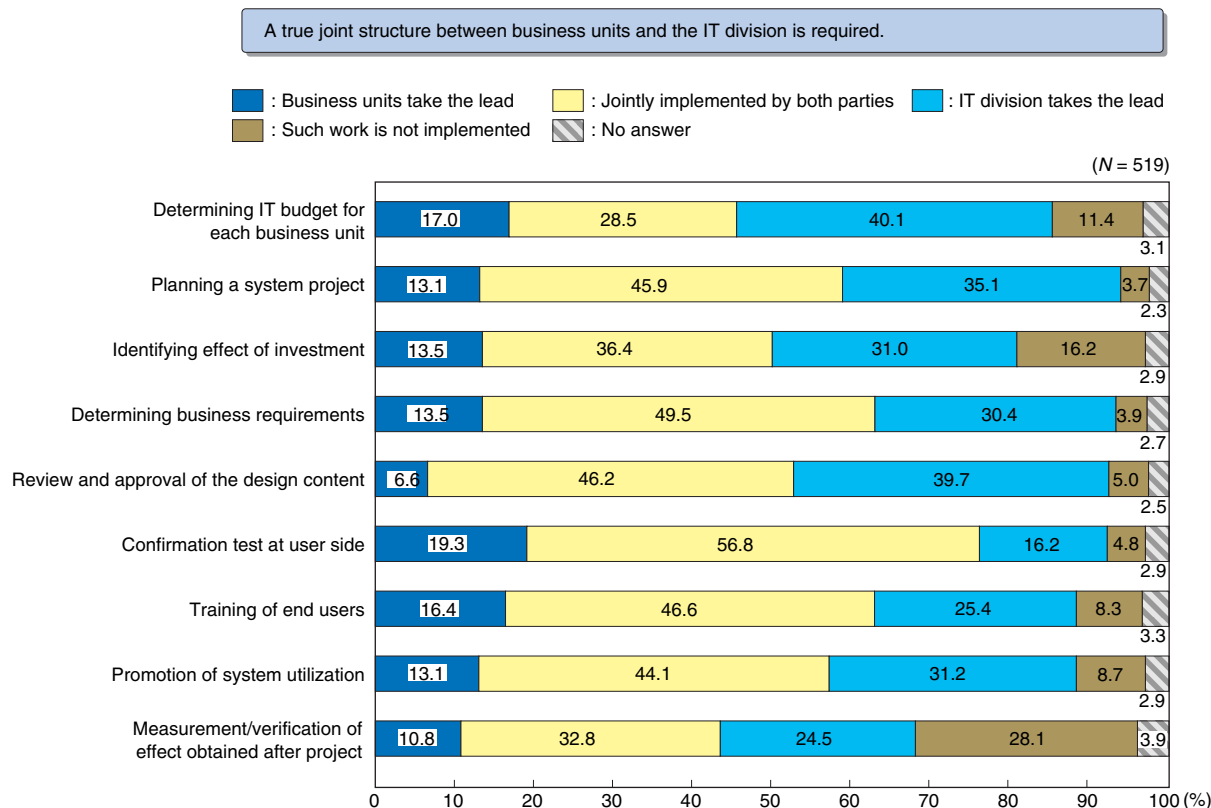
It is too much to unilaterally leave all these activities up to specialists who design and build IT systems. It is also unreasonable to expect employees engaged in front-line operations to implement such activities as side work simply because they know the actual business operations.

As we approach the stage where business innovation becomes the major theme of daily business operations as a vital part of a company's main business, specialists having the specific mission of promoting reforms must be developed. Actually, many companies consider it necessary to increase the number of the following specialists in the IT field (Figure 25).

- Company-wide IT supervisor: A person who establishes the company-wide IT strategy and overall IT plans (44%)
- IT analyst: A person who plans IT-based business reforms (60%)
- IT business leader: A person who leads the implementation of IT-based business reforms (54%)

Regardless of whether these specialists come from the IT division or from a business unit, they must have good

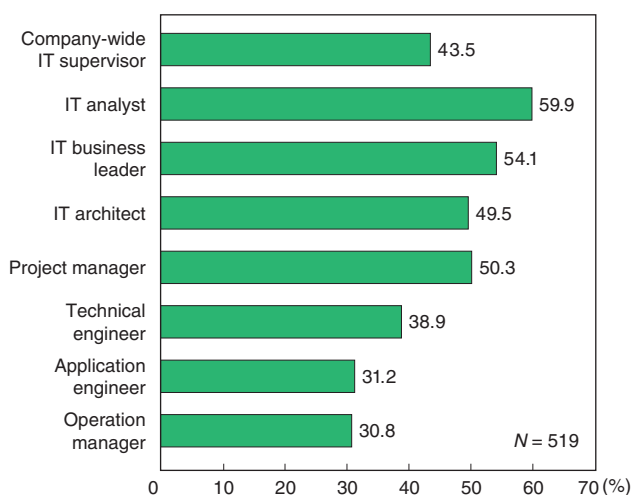
Figure 24. Who Bridges the Gaps Between Business Processes/Knowledge and IT?



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

Figure 25. Types of IT Specialists to Be Increased (Multiple Choices)

In the future, it is necessary to increase the number of employees as company IT specialists who are engaged in planning business operations and systems, and who promote business reforms and system development projects.



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

business sense, creative ideas to apply IT and multilateral capabilities as underlying basics. These specialists should be assigned to leaders to implement reforms by being provided with the necessary training as staff mem-

bers directly under the CIO and being acquainted with appropriate methods.

However, when we look at the current situation of personnel training, we find many companies with no established career path or where specialists are trained as personnel exclusively assigned to the IT division. Rotation of personnel between the IT division and business units has not been implemented at 70 percent of the responding companies. A company-wide approach is required if success is to be achieved (Figure 26).

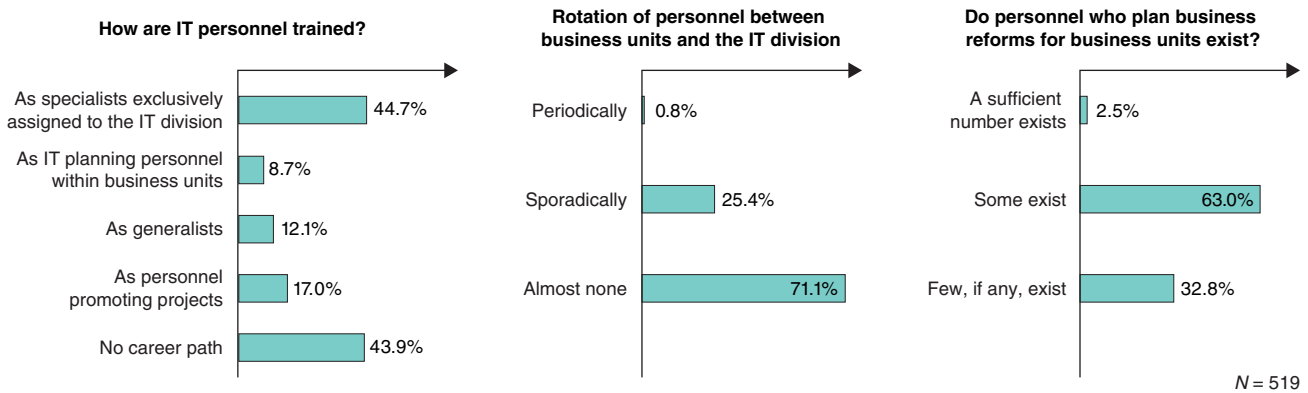
5 Aiming at Sustainable Innovation

Because increasingly intense changes have been occurring in the company environment, companies must continue to reinvent themselves in response to such changes. Even if a company is able to take the lead over its competitors for a while by developing epoch-making technology or products based on the originality of a highly talented employee, other companies will quickly catch up so that the resulting success is short-lived. The only way that a company can remain successful is to promote sustainable innovation.

A company must repeat improvement cycles for intellectual assets and IT assets that are the source of innovation, so that it can continue to enable those chances that can lead to innovation to create new value. However, to this end, many issues remain to be resolved. Starting from changing the attitude of management executives,

Figure 26. Company-Wide IT Personnel Training System Yet to Be Established

In order to secure on a company-wide basis personnel engaged in planning business operations and systems, the current personnel training system is limited because it is confined within the IT division.



Source: "Survey on IT Utilization by User Companies" by Nomura Research Institute, Ltd., 2006.

these issues include assigning reform leaders and CIOs, fostering multifaceted specialists promoting reforms and securing IT providers that can act as partners.

Only those companies that can overcome these issues with the firm commitment of the CEO, make the best use of inside and outside specialties and execute IT-dri-

ven sustainable business innovation will continue to be successful.

Koki YODOKAWA is chief consultant at NRI's Center for Knowledge Exchange & Creation. His specialties include business innovation by IT.

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