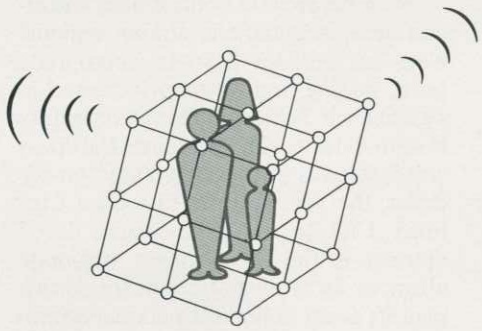
Strategic Management and Information Technology —Asian Forum Looks at Japanese Cases—

By S.K. Subramanian and Shuji Aoyama

Information technology, born of the marriage of computers and telecommunications, is now recognized as an indispensable management tool. It is bringing forth multipronged development of business activities, their fusion and amplification of their synergistic effect. Information technology is no longer an instrument of management rationalization, but a powerful vehicle for management innovation and enhancement of value added. Strategic application of information technology is enabling enterprises to narrow down the gap between business functions and customers, and to successfully meet diversified market demands and challenges arising from the shortened life cycle of products.

With the expansion of the "borderless economy" and the world becoming a "global village," no country can afford to ignore or remain immune to the emerging opportunities. Though the relative impact of information technology could vary among developing countries, it could be wrong to assume that emerging productivity dynamics in developed countries and some NIEs will be of little relevance to countries in earlier phases of productivity development. Rather, skillful management of the new business dynamics using information technology could provide countries in the region with an opportunity to catch up in the development race.

In order to share Japanese experiences in coping with the strategic application of information technology in business, the Asian Productivity Organization (APO) organized a Top Management Forum, the fifth in the series, in collaboration with the Japan Productivity Center and the government of Japan. The forum, held in Tokyo from March 6 to 10, was attended by 24 top management personnel from 14 APO member countries. The forum included presentations by top management personnel from selected Japanese enterprises, management consultants and academic experts, panel discussions, observational visits and group discussions among participants to exchange experiences in the region. The following are excerpts from presentations made by participating Japanese enterprises.



Strategies to cope with changing markets

Yasuhiro Kishimoto, vice president of Corporate Directions, Inc., dealt with experiences of the private sector in Japan in developing detailed information technology-based strategies to cope with changes in the market. With a slowing down of overall economic growth, the corporate growth game in Japan has been changing from a struggle for a piece of the total market "pie" to one of a struggle for the other's pie.

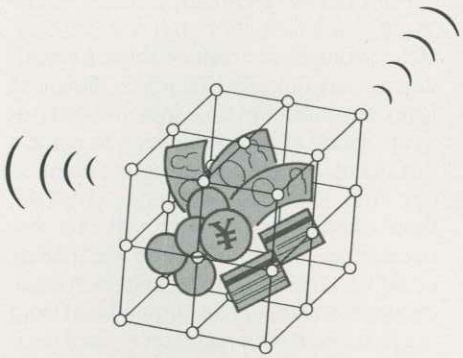
The consumer market is diversifying with changing lifestyles, individualization, shortened product cycles, and rapid expansion of selected new markets of specific groups like the young, old people and the unmarried. Unlike in the past, new products attain a very high diffusion rate within a very short time, necessitating a rapid response to changes in the market. In other words, there is a "time compression" due to the shortening of a company's market growth period.

Competitive factors change with time and the factors countributing to change differ with each business. Manufacturing technology and production costs are critical elements during the initial phase of introducing a new product. During the period of growth, marketing and sales channels assume importance. With the onset of maturity, however, information systems and strategic management of competitive factors become crucial. Without a long-term strategy, profits could be a temporary phenomenon. The basis of management strategy would be to formulate a plan with which a company could develop and maintain a marketable differentiation.

In a mature market for synthetic detergent, Kao Corporation succeeded in increasing its share from 28.9% in 1985 to 40.5% in 1987. This was achieved through the introduction of a biodetergent, changes in distribution channels, and other sales innovations using information networks, such as information system (Kao LIS), marketing intelligence system (Kao MIS), wholesaler management support system (Kao KAP), point-of-sale information management system and value-added network (VAN). Having started a network system internally, Kao expanded it to cover supermarkets, chain stores and subsequently, with changes in the market, to small retail convenience stores. Further, to differentiate itself from competitors Kao placed emphasis on building human relationships. In short, Kao believes in "distribution as a profit center."

Yamato Transport group is another exemplary case of a trucking firm succeeding in integrating transportation and information systems. From regional trucking, the company innovated to make itself a "scale business," and then on to a high value-added business. Another successful example is a sash window maker, Toyo Sash, which increased its market share from 25% to 35% in a span of two years. In a matured market with little product differentiation, the company innovated an information system for quick feedback and delivery in just two days.

Success in the future would call for organizational adjustments and systems integration to establish as well as to make effective use of information systems. Business may be defined more in terms of users than by product.



Information technology in the banking business

Eiichi Ueda, vice president of the Mitsui Bank, described past and present trends in the application of information technology in banking from four different angles, i.e., computer access points, computer networks, modes of payment and objectives of information technology usage.

In terms of computer access points, information technology was first applied in the teller windows of bank branches as a window access, where tellers entered all account transactions into an on-line terminal (1965–1971). Thereafter it was applied in the form of cash dispensers (CDs) installed in the lobby of the branches, as a lobby access which could be operated through a cash card (1971~). The lobby access has further progressed to automatic teller machines (ATMs) since 1977 and then to automatic transfer machines since 1984. Cash card holding in the largest 13 city banks in Japan, as of March 1988, amounted to 69.5% of the ordinary savings accounts.

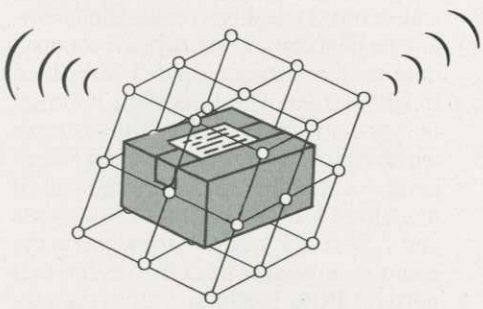
The third computer access point in banking is an external access which is in public areas (such as stations, department stores, large hospitals and hotels) and company offices. While CDs in the public places may accept cash cards issued by over 50 different banks jointly participating in Nippon Cash Service Ltd., CDs installed in company offices have been linked since 1980 with a computer center of a specific bank through an ordinary telephone circuit. Employees can stay in their offices and make withdrawals from their accounts instead of going to their banks. Since the installation of in-company CDs provides a bank with the opportunity to develop banking business with all employees of the customer company, competition among banks for CD installation in companies is intensive. Further, the companies have been able to link up with their banks using personal computers for transfer of transmittance data, balance enquiries and account activity enquiries. Within 1989, individual households are likely to conduct transactions with their banks through video game machines linked with telephone circuits.

In terms of computer networks, the application of information technology in banking has been developed from an interbranch network to an external (the firm-bank) network. The interbank system is the world's largest banking network system, covering 42,303 branches of 5,298 domestic as well as foreign banks, for real-time interbank remittances.

Due to the rapid application of information technology in Japanese society, modes of payment which have been used for long periods have begun to change, i.e., electronic money transfers instead of checks or promissory notes between firms, the same instead of cash payments from the firm to individuals, and credit cards/bank POS/inter-account settlement instead of cash payment from individuals to retailers. In other words, information technology application is persuading Japanese society to change from a cash settlement society to an inter-account settlement (card) society, while skipping the practice of check settlements altogether.

Corporate operations are in principle based on sales revenue and its associated costs. The phrase rationalizing application means to reduce the costs while strategic application refers to expanding sales. Initial usage of information technology in banking was aimed at rationalization when it started in around 1965. Mitsui Bank greatly succeeded in rationalization in terms of such things as reduction of personnel costs. But most Japanese banks are now concentrating huge amounts of computer investment in strategic application of information technology. The investment has reached ¥10 billion for a year or one-quarter to one-third of their net income.

Finally, Ueda pointed to the necessity of joint use of information technology facilities to avoid duplication of large amounts of investment through software standardization and common-use systems; and the importance of nationwide information technology personnel development. Investment in compatible hardware for joint use should be made for future potential business; software can either be developed by a bank and shared with others or can be supplied at a low cost by outside software houses.



Home delivery system and information technology

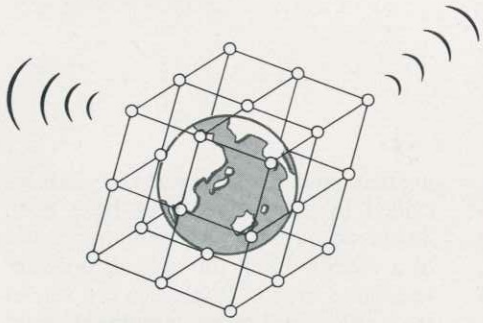
In a presentation entitled "Home Delivery System and Information Technology," Hiroo Kawata, managing director of Yamato System Development Co., stressed that the trucking business is no longer mere cargo transportation but a system industry supported by information networks. The market for parcel home delivery services initiated by Yamato Transport Company, in imitation of the similar services in the U.S., has been expanding at an annual rate of 20% since 1980. According to some research institutes it still has growth potential,

while market competition continues to be fierce. Kawata described how Yamato Transport was able to create such a prospective market in Japan and sustain the largest market share amid intense competition.

The 1973 oil crisis seriously affected Japan's high economic growth. It caused a shift of economic emphasis from secondary to tertiary industry, and trucking companies had to pay more attention to terminal delivery services for individual consumers rather than to highway transport services for industry. In other words, to survive in the drastically changing environment, trucking companies had to pursue effective transport yielding higher value added rather than mere efficiency.

Yamato Transport at that juncture developed the new concept of "Express Home Delivery Service" for individual consumers, along with an integrated information system. The new business concept has been guided by the convenience of the consumer, namely operation from 8 a.m. to 8 p.m. every day all year round; collection on telephone request and delivery the next day anywhere in the country; door-to-door service; and a simplified freight system. The integrated information system has several unique features which contribute to the company's competitive edge. These include a high-speed digitalized VAN, which links 1,300 agents and 2,511 work stations throughout the country; linkage of truck drivers through portable POSs facilitating quick data input; renewal of database every 30 minutes and quick response to inquiries; and connection of the domestic network with an international VAN through the company's affiliate in the U.S.

Yamato Transport and its business group have proliferated, along with its information network, multifarious services such as radio systems for trucking operation control "on the road," a non-store (catalog) sales support system, a management information system, an international express service, and home delivery of publications and books. In short, the Yamato group has developed new businesses by differentiating them from those of competitors, using an information system as a competitive edge.



Role of telecommunications services

Kunji Maeda, senior manager of the International Affairs Department of Nippon Telegraph and Telephone Corporation (NTT), explained the important role of telecommunications services as a basic infrastructure.

Telecommunications services in the information age represent the nerve system of the nation. Diversification of telecommunications services by NTT to improve quality followed the achievement of having one telephone per household. Building-up an information communication system and its efficient operation are now synonymous with good business management. The ups and downs of competition would be decided by the competence of strategic information systems. To be receptive to the needs of customers, a flexible network which can satisfy a constantly changing policy of top management is necessary.

The traditional pyramid-type command system will not be able to cope with the changes, and a "bionics function organization management" is required. The age of information communication systems pursuing rationalization of management and efficiency is over. New systems well-integrated with management will be driven by three objectives: creation of new value; dealing with changes; and harmony between decentralization of power and its integration. With increasing internationalization, a number of Japanese firms are adopting global multi-head office systems. Lately, the use of AI (artificial intelligence) has been becoming extensive in finance, medicine, education and transport.

While the telecommunications service firms in Europe are essentially engaged solely in operations, AT&T in the U.S. is involved in operations, R&D and manufacturing. NTT in Japan is engaged in operations and R&D, but not in manufacturing. Its subsidiary, NTT Data, undertakes development of software. In the future, it will be involved in development of tailor-made networks and expert systems.

Information technology helps in the sharing of information, but this could affect existing power relationships. In introducing technological changes, Japanese firms are careful to take into account human aspects. There is no need to make a distinction between information technology and human capabilities. Instead, there should be a greater interface between the two. Information technology could be time-saving and help in average decisions that could be extrapolated from the past. Even with AI systems, final decisions have to be made by humans.

Regulation of telecommunications services by the government, its poor quality and high cost are some of the major problems of developing countries in promoting information technology applications. A few enterprises have constructed their own internal communication networks, but most others depend on the public network. Alternative approaches like the "customer contributed fund" are not likely to succeed, as only a few can afford them. Joint developments by NTT and equipment manufacturers, and persuading large firms to install their own systems with the provision of leasing for utilization by others, could be tried. But these may require appropriate policy and legal support.

Information of itself does not lead to creative ideas. Accumulation of information and its quick retrieval, however, and the use of information technology for complex processing of data, could assist in creative achievements. New ideas often result from bringing together that which is already known.

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