

**Columbia-Yale Project: Use of Software to Achieve Competitive Advantage**

## **FOOD RETAILING: ITO-YOKADO GROUP**

**Gaining and Sustaining Long-term Advantage through Information  
Technology**

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## **Executive Summary**

Information technology (IT) enables food retailers to respond more effectively to fluctuating consumer demand caused by changing demographics and taste. One particularly important result is to reduce inventory costs dramatically. Such progress motivates retailers and suppliers to form strategic alliances in order to realize more profit from introducing new IT systems. Together with the introduction of such IT systems, however, it is also critical to establish a well-functioning delivery system between retail stores and suppliers is also critical if both retailers and suppliers are to actually achieve lower inventories. Such a delivery system needs to be very well managed in terms of ordering and stocking all merchandise on an item by item basis. In other words, the IT system by itself will not return real benefits to both parties without a good physical delivery system. The following cases for leading Japanese and U.S. retailers prove this point.

This type of strategic alliance inevitably causes some “lock-in” effects that create potential conflicts among the parties. This is especially true if the retailers aggressively pursue a higher level of sales by introducing Private Brand (PB) merchandise because they are not fully satisfied with the performance of Nationally Branded (NB) merchandise. Therefore, good incentive reward systems, supporting supplier's merchandise under certain market conditions, are needed for both parties to continue the strategic alliance. Since E-commerce should flourish across the world in the 21<sup>st</sup> century, the effect of E-commerce on food retailing is also discussed, though it is expected that its penetration of food sales will be slower than in other sectors.

## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
<b>INTRODUCTION: OBJECTIVES OF THIS BENCHMARKING PROJECT .....</b>	<b>4</b>
<b>APPROACH: METHODOLOGY AND QUESTIONS.....</b>	<b>11</b>
<b>INTRODUCTION TO THE CASE STUDY.....</b>	<b>11</b>
<b>1 FOOD RETAILING INDUSTRY IN JAPAN: AN OVERVIEW .....</b>	<b>11</b>
<b>1.1 Japanese Retail Industry .....</b>	<b>12</b>
<b>1.2 General Merchandise Supermarket (GMS) .....</b>	<b>11</b>
<b>1.3 Convenience Stores (CVS).....</b>	<b>19</b>
<b>2 ITO-YOKADO (IY) GROUP'S IT STRATEGIES .....</b>	<b>26</b>
<b>2.1 Overview of IY Group's Efforts Using Information Technology (IT).....</b>	<b>26</b>
<b>2.2 President Suzuki's Philosophy and Approach to IT .....</b>	<b>29</b>
<b>2.3 Strategies of Seven-Eleven Japan on Using Information Technology .....</b>	<b>35</b>
<b>3 SUPPLIER RELATIONSHIPS: THEORY AND PRACTICE IN JAPAN AND U.S. ....</b>	<b>40</b>
<b>3.1 General Theory.....</b>	<b>40</b>
<b>3.2 The Concept of ECR (Efficient Consumer Response) .....</b>	<b>42</b>
<b>3.3 The Case of IY Group .....</b>	<b>46</b>
<b>3.4 The Case of H.E. Butt.....</b>	<b>49</b>
<b>3.5 Some Conclusions .....</b>	<b>52</b>
<b>4 EMERGING STRATEGIES FOR THE FUTURE: HOW WILL E-COMMERCE     CHANGE FOOD RETAILING? .....</b>	<b>54</b>
<b>REFERENCES .....</b>	<b>56</b>
<b>APPENDIX I: SUMMARY ANSWERS TO QUESTIONS FOR IY GROUP.....</b>	<b>58</b>
<b>APPENDIX II: SOME FIRM AND INDUSTRY DATA .....</b>	<b>67</b>

## **Introduction: Objectives of this Benchmarking Study**

**This food retailing case study for Ito-Yokado (IY) was completed under a three-year research grant from the Sloan Foundation. The project's purpose was to examine, in a series of case studies, how US and Japanese firms who are recognized leaders in using information technology<sup>1</sup> to achieve long-term sustainable advantage have organized and managed this process. While each case is complete in itself, each is part of the larger study.<sup>2</sup>**

This case for a leading Japanese food retailer, together with other cases,<sup>3</sup> supports an initial research hypothesis that leading software users in the US and Japan are very sophisticated in the ways they have integrated software into their management strategies. They use it to institutionalize organizational strengths and capture tacit knowledge on an iterative basis. In Japan this strategy has involved heavy reliance on customized and semi-customized software (Rapp 1995), but is changing towards a more selective use of package software managed via

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<sup>1</sup> In this paper and the overall study, the terms “software, information technology (IT) and systems” are used interchangeably. Further, when referring to the whole firm, the text uses “it”, but when referring to management, “they” is used. Food retailing in Japan covers food sales in convenience stores (CS) and general merchandise supermarkets (GMS).

<sup>2</sup> The industries and firms examined are food retailing (Ito-Yokado), semiconductors (NEC and AMD), pharmaceuticals (Takeda and Merck), retail banking (Sanwa and Citibank), investment banking (Nomura and Credit Suisse First Boston), life insurance (Meiji and Nationwide), autos (Toyota), steel (integrated mills and mini-mills, Nippon Steel, Tokyo Steel and Nucor), and apparel retailing (Isetan and Federated). Nationwide has replaced USAA, as the latter was unable to participate. These industries and cases were generally selected based on the advice and research of specific industry centers funded by the Sloan Foundation. These are the computer and software center at Stanford, the semiconductor and software centers at Berkeley, the financial services center at Wharton (University of Pennsylvania), the pharmaceutical and auto centers at MIT, the steel project at Carnegie-Mellon, and the food services project at the University of Minnesota. The case writer and the research team for this case thus wish to express their appreciation to the Alfred P. Sloan Foundation for making this work possible and to the Sloan industry centers for their invaluable assistance. They especially appreciate the time and guidance given by the food research center at the University of Minnesota as well as the staff at Ito-Yokado (IY) who were generous with their time. Still, the views expressed in this case are those of the author and not necessarily those of IY or its management.

<sup>3</sup> This refers to cases for which interviews have been completed. See footnote 2.

customized systems. This is seen for this case in Ito-Yokado's development of increasingly sophisticated systems to automate, manage, and integrate its different stores. In turn, US firms, such as Merck, who have often relied more on packaged software, are customizing more. This is especially so for the systems needed to integrate software packages into something more closely linked with the firm's business strategies, markets, and organizational structure.

Thus, coming from different directions, there appears some convergence in approach by these leading software users. The cases thus confirm what some other analysts have hypothesized; a coherent business strategy is a necessary condition for a successful information technology (IT) strategy (Wold and Shriver 1993).<sup>4</sup> These strategic links for Ito-Yokado and the Japanese food retailing industry are presented in the following case.<sup>5</sup>

This is because this case along with the other cases also illustrates that the implementation and design of each company's software and software strategy is unique to its

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<sup>4</sup> These and other summary results are presented in another Center on Japanese Economy and Business working paper: William V. Rapp, "Gaining and Sustaining Long-term Advantage Through Information Technology: The Emergence of Controlled Production," December 1998. Also see: William V. Rapp, "Gaining and Sustaining Long-term Advantage Using Information Technology: Emergence of Controlled Production," Best Papers Proceedings, Association of Japanese Business Studies, Salt Lake City, UT, June 1999.

<sup>5</sup> All the cases are being written with a strategic focus. That is, each examines a firm's IT strategy rather than the specific software or IT systems used. In this sense, they illustrate how IT is used to improve competitiveness rather than what specific software a firm is using. The latter is generally only noted to illustrate and explain the former. This emphasis was not specified when the project began but has evolved as research has progressed. There are three major reasons the cases have become focused this way. First, at a detailed level, all these firms have unique software and IT systems due to the way each weaves organization with packaged and custom software. There is thus little others could learn if a case just explained each firm's detailed IT system or systems. Further, the cases would be long and would quickly drown the reader in data since IT pervades all aspects of these very large corporations. This was apparent at an early stage in the study when the project team tried to develop IT organization charts for Takeda, Merck, and NEC. The second reason is that, at a general level, differences in firm IT systems can be almost trivial since there are only a limited number of operating system options, e.g. IBM mainframes, Unix workstations, and Windows or MAC based PCs. Third, information technology changes very rapidly and thus each firm is constantly upgrading and evolving its systems. So detailed descriptions of each IT system would rapidly become obsolete. For these reasons, focusing the cases on strategic principles developed as the best way to explain to readers something they could use and apply in their own situations. This reasoning has been confirmed when the material has been presented in different forums as discussants have commented favorably on the approach. Equally important, in the interviews and conversations with management, this is where they have focused their responses. That is, as the various cases illustrate, the firms manage their IT decision-making by following a set of strategic principles integrated with their view of their competitive environments. This is similar to Nelson and Winter's (1982) rules and routines for other kinds of management decisions and innovations, and illustrates these firms' evolutionary approach to IT use and development. Their basic reasons for this incorporate the points noted above, i.e. each firm's unique system, the limited operating system options, and IT's rapid technical change. Based on what the case study teams have learned, therefore, it is these firms' strategic approaches, including the concept of controlled production explained later, that seem to have the widest applicability and offer other organizations the most potential insights without becoming dated in how to use IT to improve competitiveness. The detailed strategy described here for IY, though, only applies to food retailing in Japan.

competitive situation, industry, and strategic objectives. These factors influence how each firm chooses between packaged and customized software options for achieving specific goals, and how each measures its success. Indeed, as part of each firm's strategic integration, Ito-Yokado and the other leading software users interviewed have linked software strategies with overall management goals. This is achieved through clear mission statements that explicitly note the importance of information technology to firm success.

Each has coupled this view with active CIO (Chief Information Officer) and IT (information technology) support group participation in the firm's business and decision making structure. Thus, for firms such as IY, the totally independent MIS department is a thing of the past. This may be one reason why IY had worked exclusively with Nomura Research (NRI) in developing its systems over the last 20 years. The company's very successful business performance in food retailing is not, however, based solely on software. Rather, as described below, software is an integral element of the firm's overall management strategy with respect to sourcing, distributing, and selling food and other convenience items to its customers throughout

Japan. It also plays a key role in serving corporate goals, such as enhancing store and employee productivity by improving supply scheduling, reducing inventories, and strengthening customer relations. These systems are thus coupled with an appropriate approach to marketing, sourcing, customer service, new product development, and constant cost reduction that reflects IY's clear understanding of its business, its industry, and the firm's competitive strengths in this context.

This clear business vision, especially the strategic emphasis on continued cost reduction, lower overheads, and higher turnover described below, has enabled IY's management to select, develop, and use the software they believe is required to assist IY's stores to operate at a higher and more consistent level of performance and customer satisfaction. In turn, IY has integrated this support to its stores into a total information system for the firm that is linked with the company's overall operations. Since this vision has also impacted other corporate decisions, IY seems to have good human resource and financial characteristics too. (See Appendices I & II on Strategy & Operations as well as Firm & Industry Data).

Ito-Yokado does, however, share some common concerns with other leading software users. An example of this is the creation of large, proprietary, interactive databases that promote automatic feedback between various stages of the order, supply, transport, delivery, and sales processes. IY's ability to use IT to economize on traditional delivery systems and inventory practices, such as the amount of food or other products that must be held to meet daily or even hourly demand, is also a common theme for other leading software users. In addition, IY has been able, organizationally and competitively, to build beneficial feedback cycles or loops that increase productivity in areas such as customer service and product availability, while reducing cycle times, improving supply channels and increasing customer sales.

IY's Management recognizes that better cycle times between anticipated customer purchases and product delivery reduce costs and improve business forecasts. This is because projections are for shorter and shorter periods, usually less than 24 hours. Customer satisfaction is therefore enhanced while inventories, lost sales, and wastage are held to a minimum. Therefore, software systems and inputs are critical parts of IY's and other leading users' overall business strategies. There are strong positive results for doing it well, and potentially negative impacts on competitors.

In this regard, IY appears to be a leader in a possible new production paradigm, "controlled production" ("CP"). It has developed an approach that uses IT to capture significant improvements in productivity via a "controlled" production system that requires it to monitor, control, and link every aspect of supplying and delivering its products and services, including its external environment. Indeed, IY seems to be at the very forefront in developing this approach for food and convenience store retailing, and "CP" is very much a part of its longer-term strategy. This is because controlled production requires actively using IT systems the way IY does, both to continuously monitor and control functions that are part of an organizational structure that responds to changes in expected or actual consumer demand and to then use IT to actually influence or stimulate those changes in demand. This can only happen when IT is integrated with the firm's total business environment, internal and external, from an operational and organizational standpoint, as is the case for IY. That is, this requirement very much reflects IY's overall business strategy and its clarity of competitive vision that seeks to actually impact its external environment to its competitive advantage.

Therefore, IT systems are integral to the way IY organizes, delivers, and supports its stores and its retail food and convenience item business in terms of product/service development,



ordering, and supply through to delivery and repeat sales support. This sequence is particularly critical in food retailing, where the demand and supply for particular products can shift according to the customer's situation, e.g. the weather, and where wastage as well as the opportunity cost of lost sales can both be expensive. That is, as daily conditions affect the demand for particular items or services differently, the mix of products and services demanded by IY's customers is constantly shifting. This is why predicting and efficiently supplying these shifting needs with the aid of IT has been critical to IY's competitive success.

In IY's case, as with the other leading software users examined in this case study series, the key to using software successfully is to develop a mix of packaged and customized software that supports the firm's business strategies and differentiates it from competitors. IY's management has done this by using IT to continually enhance IY's existing organizational strengths as an efficient provider of food and convenience items through its approximately 8000 outlets. At the same time, they have rejected the idea of trying to adapt its organizational structure to the software used.

They have also looked to functional gains to justify the additional expense incurred in customizing certain systems. These expenses include the related costs of integrating customized and packaged SW into a single information system while training employees to use it. This integration is done by first assessing the possible business uses of software within the organization and its operations. Particular focus is placed on IT's role in enhancing IY's core competencies: anticipating, sourcing, supplying, delivering, and selling several different types of prepared and packaged food, as well as other high turnover convenience items. Management, therefore, does not accept the view that IT systems are generic and are best developed by outside

vendors who achieve low cost through economies of scale and who can more easily afford to invest in the latest technologies.<sup>6</sup>

### **Approach: Methodology and Questions**

In undertaking this and the other case studies to assess the importance for each firm of the issues noted above, the project team sought to answer key questions while recognizing firm, country, and industry differences. These have been explained in the summary paper referenced in footnote 4. They are set forth in Appendix I as well, where IY's profile is presented based on interviews with the company and other research. Readers, who wish to assess how IY's strategies and approaches to using IT address these issues, may wish to review the summary prior to reading the case. For others, the profile summary may represent a useful outline.<sup>7</sup>

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<sup>6</sup> Ito-Yokado and the other cases have been developed using a common methodology that examines cross-national pairs of firms in key industries. In principle, each pair of cases focuses on a Japanese and American firm in an industry where software is a significant and successful input into competitive performance. Excepting Nationwide Insurance, the firms examined are ones recommended by the Sloan industry centers as ones using SW successfully. A leading securities analyst recommended Nationwide as a replacement for USAA. So all the firms are recognized by their industries as being good at using IT to improve competitiveness. To develop these "best-practice" studies, the research team combined analysis of current research results with questionnaires and interviews. Further, to relate these materials to previous work as well as the expertise located in each industry center, the team talked with the industry centers. In addition, it coupled new questionnaires with the materials used in a previous study to either update or obtain a questionnaire similar to the one used in the 1993-95 research (Rapp 1995). This method enabled the researchers to relate each candidate and industry to earlier results. The team also worked with the different industry centers to develop a set of questions that specifically relate to a firm's business strategy and software's role within that. Some questions address issues that appear relatively general across industries, such as inventory control. Others such as managing the IC manufacturing process are more specific to a particular industry. The focus has been to establish the firm's perception of its industry and its competitive position as well as its advantage in developing and using a software strategy. The team also contacted customers, competitors, and industry analysts to determine whether competitive benefits or impacts perceived by the firm were recognized outside the organization. These sources provided additional data on measures of competitiveness as well as industry strategies and structure. The case studies are thus based on extensive interviews by the project team on IT's use and integration into management strategies to improve competitiveness in specific industries, augmenting existing data on industry dynamics, firm organizational structure, and management strategy collected from the industry enters. Further, data was gathered from outside sources and firms or organizations that had helped in the earlier project. Finally, the US and Japanese companies in each industry were selected based on being perceived as successfully using software in a key role in their competitive strategies. In turn, each firm saw its use of software in this manner while the competitive benefits were generally confirmed after further research. In the case of food retailing, the team was particularly aided by presentations given by the University of Minnesota group at the annual Sloan Industry Center Meetings from 1997-99.

<sup>7</sup> The questions are broken into the following categories: General Management and Corporate Strategy, Industry Related Issues, Competition, Country Related Issues, IT Strategy, IT Operations, Human Resources and Organization, Various Measures such as Inventory Control, Cycle Times, and Cost Reduction, and finally some Conclusions and Results. The questions cover a range of issues from direct use of software to achieve competitive advantage, to corporate strategy, to criteria for selecting software, to industry economics, to measures of success, to organizational integration, to beneficial loops, to training and institutional dynamics, and finally to inter-industry comparisons. These are summarized for the Ito-Yokado Group (IYG) in Appendix I.

## **Introduction to the Case Study**

The general trends in Japanese retailing will be described first to set the context for this case study. The case will then analyze the (IYG) Ito-Yokado Group's general management strategies and its recent strategies on using information technology (IT). We will treat IYG's strategies for its Ito-Yokado stores (IY) separate from its Seven-Eleven Japan (7/11 or SEJ) convenience stores. The market size of Japanese retail sector has been about 143 trillion yen including the sales of automobiles and consumer electronic products, compared to about 450 trillion yen for Japan's GDP.

The focus here is on two major sectors of Japan's retail industry: general merchandise supermarkets (GMS) and convenience stores (CVS). GMS sales in Japan are estimated to be about ¥10 trillion while CVS sales are about ¥8 trillion. The following retailers are listed on the stock exchange. Six supermarkets are Daiei, IY, Jusco, Seiyu, Mickal, and Uni; Seven convenience store chains are Seven-Eleven, Family Mart, Circle-K, Sunks AA, Mini Stop, Kasumi Convenience Network, and Three F. In addition, we have one private CVS company, Lawson, which is the second largest in sales following Seven-Eleven (SE), and is affiliated with Daiei.

## **Food Retailing Industry in Japan: An Overview**

### **Japanese Retail Industry**

#### **General Merchandise Supermarket (GMS)**

Two leading indicators show the recent performance of GMS in Japan: 1) the rate of growth in GMS annual sales and 2) the annual rate of growth in their floor space. Sales growth in the 1980s was between 2% and 5%, while growth in floor space was stable, between 2% and 4%. Sales growth thus exceeded sales floor space growth. This clearly indicates that good economic

conditions existed during this period when GMS generally enjoyed high performance due to Japan's "Bubble" economy.

However, due to the Bubble's collapse, 1991 was the last year when GMS had such a positive margin between sales growth and sales floor space growth. Sales growth decreased very rapidly in 1992, and actually became negative, while sales floor space growth increased to over 4% in 1992, and then jumped further to above 10% in 1993. The result is that sales floor space growth in the 1990s has been exceeding sales growth. This indicates the excessive investments in store sites by GMS as well as the lower consumer demand, compared to the 1980s, for the food, clothes, and other daily products sold by GMS.

However, there is a reason why GMS invested so aggressively to expand their store sites despite a weak economy. This is because of the liberalization in the Large Scale Retail Store Law starting in 1990. Since then, this law has been gradually liberalized and was expected to be abolished in 1999. Under this law, large retail stores were classified by size into two categories: 1st and 2nd section. First (1<sup>st</sup>) section retail stores should have more than 1,500 square meters (or 3,000 square meters only for stores in specific large cities) until January 1992 and afterwards no more than 3,000 square meters (6,000 square meters only for ones in specific large cities). Second (2<sup>nd</sup>) section stores are relatively smaller stores. They should have more than 500 but less than 1,500 square meters (or less than 3,000 square meters only for ones in specific cities) until January 1992, and afterwards, more than 500 but less than 3,000 square meters (or 6,000 only for ones in specific cities). In the 1980s the annual number of registered large retail stores for both the 1st and 2nd category was very stable, between 400 and 700. The number jumped to above 1,500 in 1990, however, when the first stage of liberalization began. From then on, the number has been rising, reaching 2,269 in 1996. This is clear evidence that it was due to changes in the

law that Japanese GMS started to experience heavy competition in the 1990s from the much more rapid expansion in store sites than sales.

During the 1990s, in terms of demand, GMS have generally been impacted by Japan's depressed economic conditions. But, they have also suffered from the more competitive business environment due to the increased supply coming from the high growth in the number and floor size of large retail stores. Under this business environment, GMS have had to develop new strategies to struggle with the structural change in their market. There are four aspects to these strategies: 1) pricing and merchandising, 2) reducing operating costs, 3) using information technology, and 4) strategic site selection.

Pricing and merchandising strategies include efforts to sell more imported products, which are often not only cheaper and but also higher quality than domestic equivalents. They also include promoting more private-label goods, using the GMS name rather than the producer's. For example, imports accounted for 17.8% of IY's sales in 1996 and 19.5% at Jusco, while at Daiei, private-label products accounted for 12.8% of sales in 1995.

In comparison to CVS or discount centers in rural areas, it is more difficult for GMS to lower operating costs. This is because the GMS has to bear almost all the initial investment cost of opening new stores as well as the relatively higher level of inventories these stores require, especially of clothing and daily necessities. A GMS can adjust its cash flow requirements and its profit by leasing the equipment needed for its new stores, but this does not mean lower operating costs. Rather, the primary cost reduction strategy must be to find the best way for each store to perfectly control its inventory levels. Then it must keep to this desired amount, just avoiding the loss of any opportunity to sell something to a customer due to a lack of availability.

This is why IT strategies have recently become more and more important to these stores' profitability and success. While point of sales (POS) information has been easily available for several years, what is now most important for each GMS is how to design a complete system that covers all aspects of their business activities, using POS and other information to control inventories, making a contribution to corporate profits. A good command of IT systems can thus help avoid leaving unpopular merchandise on the shelves and can more correctly identify what kind of merchandise a consumer wants at a given time. For example, consumer demand and behavior at a given store can vary depending on the time of the day and the weather. This information can also be used to best time orders from producers or wholesalers. Combining anticipated demands with better-timed supply in turn achieves greater control over inventory levels. Indeed, the company can maintain and track on a constant real-time basis available data on sales, net profits, and other important figures, at all its stores. In other words, good information technology systems for a GMS are really competitively essential since they can help achieve the appropriate balance between two conflicting management desires: keeping inventory levels low and turnover high while a low loss of opportunity loss in selling products. These issues directly relate to a GMS firm's successful performance.

Before analyzing the site selection strategies of a GMS, one needs first to understand the recent population changes in Japan between rural areas and large cities. Population started flowing out of the large cities in 1986 when city land prices began to rise sharply, and this trend has continued into the 1990s. With this population movement, some GMS, such as Jusco and Uni, have expanded their new store sites in rural areas, rather than in the large cities. This strategy has had three distinct advantages. First, there was a scarce supply of large retail stores in rural areas, the competition there was not as intense as in the large cities. Second, the cost of

constructing new stores was lower because land prices were lower. Third, the demand for large retail large stores was increasing due to the population expansion in rural areas. Thus, between 1990 and 1995, the annual change in sales by stores in rural sites outperformed those in the large cities such as Tokyo, Yokohama, Osaka, Kyoto, Kobe, and Nagoya. Consequently, Jusco and Uni enjoyed higher performance than other GMS that were reluctant to expand into rural areas.

However, in 1996 this demographic change began to shift. In that year, the outflow of population from large cities ended; for example, the population of Tokyo has increased since 1996. There are two reasons the outflow stopped. First, there have been more employment opportunities in large cities than in rural cities during the recovery after the Bubble burst. This is because the recovery has depended more on the expansion of the large corporations located in large cities than on public works in rural areas. Second, there were more people who could now afford to stay in large cities and buy residences (“my home”) due to the collapse in residential real estate prices.

This new demographic shift has had a profound effect on the performance of the various GMS as one examines the details of their individual site selection strategies. If greater Tokyo, Nagoya, and Osaka are defined as large cities, then other areas are regarded as rural areas. Greater Tokyo includes Tokyo, Kanagawa, Saitama, and Chiba prefectures. Nagoya’s area is Aichi, Gifu, and Mie prefectures. Osaka’s area consists of Osaka, Kyoto, Nara, and Hyogo prefectures. The data on the distribution of store sites of the six listed GMS in each area, as of 1997, shows that the GMS concentrated in Tokyo are IY and Seiyu. IY has 60.8% of its GMS stores in greater Tokyo; Seiyu also has 63.0% there. On the other hand, Jusco is far different in its store distribution. It has 48.9% of its stores in rural areas, while only 5.9% are in the Tokyo area, 18.6% in the Nagoya area, and 26.6% in the Osaka area.

In turn, the monthly change in Jusco's sales has been stagnant since 1996, while it has been noticeably higher for IY and Seiyu between 1992 and 1995. The shrinking sales in retail stores in rural areas reflect the net outflow of population from rural areas, or at least its lack of growth. There are two other reasons related to this situation. First, there has been a rapid decrease in general construction because of declining public works and less new home construction in rural areas such as Hokkaido, Tohoku, Hokuriku, and Shikoku. Second, the competition among large retail stores in these rural areas has actually increased as a result of the continued expansion of store sites since 1990.

Other important aspects of the site selection strategies for each GMS can also be understood if one looks at the long-term prospects for population mobility in Japan. The period between 1986 and 1995 was a time of "outflow of population from large cities to rural areas". There was a similar pattern of population mobility between 1969 and 1976. From 1976 until around 1982, however, the reverse pattern occurred, that is, an "inflow of population into large cities". If a similar pattern occurs again now and the recent inflow into large cities follows it, the inflow could continue until around 2002. After 2002, the outflow of population from large cities might start again, though this is likely to depend on a recovery in urban real estate prices.

There is another important phenomena related to the recent inflow of population into large cities that needs to be considered. This is that population has been moving to the central city within each of the other rural areas that are not Tokyo, Nagoya, or Osaka. For example, Fukuoka has attracted population from its neighboring prefectures, such as Saga, Nagasaki, Oita, and Yamaguchi, while Miyagi has drawn many people from the adjoining prefectures in Tohoku. Further, both Fukuoka and Miyagi prefectures have core cities, i.e., Fukuoka City and Sendai City that have recently attracted several new high tech industries.



Consequently, GMS will continue to have to make very thoughtful and strategic site selection decisions in the future. They will have to anticipate potential changes in population mobility in order to benefit from them and they will have to project which region or city has the best prospect of being more prosperous than others. This means each GMS should develop new site selection strategies that differ from just concentrating in large cities or just emphasizing rural areas. One approach would be to try to use information technology and large databases to compare cities within each area or between areas. This would be used to identify core cities that are growing in industrial power and population, compared to other. The GMS would then focus on these cities in terms of expanding its store sites.

### **Convenience Stores (CVS)**

Convenience Stores in Japan have generally been enjoying relatively better performance, even in the 1990s, when GMS experienced minus growth in sales because of the increased competition and general economic downturn affecting demand as explained above. However, the sales of existing convenience stores in 1995 (excluding the sales of the newly opened stores in that year) dropped 0.4% compared to the previous year. This is because of the increasing competition within the CVS group and against other retail sectors. This situation does not mean, however, that individual CVS have been losing growth opportunities overall. Given the growing competitive business environment the time may have ended when the whole CVS sector could enjoy huge growth opportunities, but the better managed CVS still have a chance to grow faster than the CVS that lack good management. This can be seen in the fact that in 1996 sales of existing stores resumed their rise, partly because CVS could start to provide financial and other services to their customers, due to deregulation in those sectors. In turn, as Japan's Big Bang has continued, there have been several announcements in January 2000 that the CVS will use their

stores like automated, diversified bank branches. Seven Eleven (SE), in particular, will team up with NEC, Nomura (NRI), Sony, Mitsubishi/BOT, Sanwa and Bank of Yokohama to offer not only automated cash services but also access to on-line brokerage, and Sony's new life and auto insurance products.<sup>8</sup>

These kinds of initiatives, when combined with the liberalization of the Large Scale Retail Store Law and depressed economic conditions have caused a lot of trouble for small and medium-sized family retail stores. Therefore, these stores now have very strong incentives to join the franchise network of a CVS. The small family retail stores that are licensed to sell liquor have a particular advantage in this respect. The CVS that wanted to create more new franchise stores have been offering them good opportunities. The result is that more than half of the newly opened franchise stores have permission to sell liquor. With such a business environment, CVS chains have managed to continue to expand their franchise stores. In 1996, Seven Eleven increased its net number of franchise stores by 502. In the same year, the net increase in Lawson's stores was 569, and in Family Mart's 413. This level of net increases was a record.

With that recent surge in the number of CVS stores in Japan, the total number in 1996 was 48,567, with a population per store of 2,572. Before 1991, a population ratio of 3,000 per store was regarded as a critical competitive level: that ratio continued to fall ever since. Indeed, one CVS store in Tokyo has a population of 2,012, while one in Osaka only has a population of 1,819 per CVS store. In the U.S., 1984 was the first year when the population per CVS store dropped below 3,000. There the CVS then struggled to cover the decline in sales of existing stores by opening new stores in areas with relatively few CVS, resulting in even more intense

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<sup>8</sup> IY has indicated it may open this proposed banking business to insurance companies and foreign banks too, ultimately reducing its stake to 10%. The stated purpose is to engage in account settlement services and act as sales agent for insurance and investment trusts at no risk, effectively converting IY's roughly 1000 GMS and SEJ's 8000 CVS in automated branches of these

competition. Consequently, Southland Corporation (at that time owner of 7/11) and Circle K got into trouble in 1991, seven years after the number of persons per CVS first fell below 3,000.

However, in terms of the competitive situation in Japan illustrated by these numbers, one must distinguish between high quality stores, represented by the franchise stores under the control of the listed CVS companies, and lower quality stores, that are termed CVS just because they are open for 24 hours. That is, the total number of CVS stores, 48,567, includes every type that just satisfies the minimum CVS definition. Of these, only about 32,000 stores are estimated as actually providing the standard CVS service to its customers. Therefore, the population per high quality store may actually be around 4,000. So, in terms of quality operations, there may be an opportunity to add as many as 10,000 stores. At the current rate of expansion, Japan will almost reach that number in 2001, signaling the start of real competition between high quality stores.

At the same time, it is the low quality stores, most of which do not belong to a franchise network, that are on the verge of closing because of too severe competition. The number of such closures in 1996 was 1,486, equal to 45% of the 3218 newly opened stores. Though listed CVS companies are doing some scrap and build of their existing franchise stores, the number of scrapped stores per a listed CVS has only been about 100 per year, on average, or about 20% of new openings. Therefore, most closed stores have belonged to non-listed CVS chains that probably have only 200 stores, and have difficulty developing true niche strategies. As the following figures indicate, the share of the five listed CVS companies plus Lawson has been rising since the mid-1980s. It was 21.4% in 1985, 29.6% in 1990, 40.3% in 1995, and 42.8% in

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institutions. Its main strategic interest seems to be acting as a payment channel: that will create store traffic, that will generate payment fees to increase the return on its IT investment, and that will be a payment convenience for customers.

1996. Thus, their share in 1996 is almost twice that in 1985. So, the CVS market in Japan is now becoming an oligopoly, just as happened in the U.S. in the mid-1980s.

Given the above analysis, listed CVS chains are moving towards a new and more competitive business environment in the next century. In this situation, their performance will really depend on their strategies for the future. Examining the prospects for the CVS business from a similar perspective to the one used to analyze the GMS sector, the following strategies seem critical for any CVS. First, is its merchandising strategy; second, is its use of information technology; third, is its strategic site selection in terms of merchandise; and fourth, is owner selection for its franchise stores.

The process of deregulation in the coming century will definitely increase the kinds of merchandise and services CVS will offer on their shelves and in their stores. Sales of rice and stamps were allowed in 1996. Foreign exchange services started in April 1998, with the ongoing liberalization of the foreign exchange law. Furthermore, they may be able to sell pharmaceutical products in the near future. Reservation services for travel packages, including air, train, hotels, and so on, will also be available at a CVS. Many already have fax and copy services and act as outlets for delivery companies. In addition to payment services for electricity, gas and water started in 1987, more and more banking and financial services will be possible. This will be due to the rapid speed of deregulation combined with the demographic changes that make shoppers more receptive to using a CVS to meet their service requirements on a 24 hour basis. Indeed, working couples, needing financial services outside normal banking hours, have already been targeted by firms such as Sanwa Bank in terms of their expanded automated branch network (Rapp 1999a). Therefore, the potential opportunities for the large CVS in Japan look very promising.

The ability of individual stores and their personnel to handle this wide-range of new services is, however, not clear. For example, when game software was permitted to be sold at CVS in 1996, software producers selected them on the basis of their distribution power. This power, in turn, depends on how large the franchise network is, and on how well the distribution system works between the distribution center and individual stores. The implication is that, although a CVS may be able to offer many more items and services in the near future, not all chains may be able to offer them, due to limited management experience with such new products and services or the poor quality of some stores in the chain.

Further, many of these new products and services, especially financial products and services are very IT intensive. Therefore, with respect to information strategies, the same arguments hold true as for GMS, but with an additional emphasis on high speed internet connections to keep customer turnover flowing, while also increasing same store traffic. That is, the store wants the customer to buy lunch and a carton of milk while checking bank balances or trading stocks. Further, POS information, weather information, and event information in the neighborhood are even more critical to the sales of a CVS than for a GMS. This is because the number of items on the shelves at a CVS are much fewer than in a GMS (30,000 items versus over 100,000), and most of the items at a CVS are fast food and everyday products. So, the daily forecast of customer demand is much more important for the good performance of a CVS. Therefore, it is very important that the information center provide as much information as possible to each store to update its daily expectations, including expected weather conditions.

As for site selection, the best strategy for CVS site selection is to focus on a small area and have as many of its franchise stores within each area as possible. This strategy is called “area-dominance.” It can bring a CVS the following advantages. First, the distribution system

between the distribution center and each store will be more efficient because each store is located not too far from another store. Second, the name of the CVS chain will be better recognized in a small area. Third, the support services for each franchise store by the advisory CVS staff is more efficient because each advisory staff supervises a smaller area. Fourth, the dominance by one CVS chain in a small area can prevent the entrance of the other CVS into the same area.

Related to site selection, the selection of the franchisee is considered to be more important than any other aspect of CVS strategy. The recent increased competition among CVS firms for new franchise stores in promising areas has reduced the average quality of the franchisees and the CVS stores. Furthermore, the staffs of some CVS chains, which are responsible for developing new stores and advising new franchise owners on store management, are not always competent. For example, each CVS chain investigates new sites and franchisees in terms of many risk factors, but the number of these risk factors ranges between 5 and 120 for the listed CVS companies. Therefore, it is likely that some portion of new storeowners are not as qualified as franchisees as existing storeowners. These stores are more likely to have difficulties in the near future, if the business environment becomes unfavorable, given the new competitive environment. This will constrain the management of these CVS companies because the cost of closing a franchise store is much heavier than the cost of opening one.

CVS firms will also have to pay more attention to the content of the contract between the CVS and the franchisee. The presumed sales volume in the contract varies substantially with each CVS company. Indeed, one listed CVS company and its franchisees have been struggling in court over the content of the franchise contract since the summer of 1996. The franchisees have insisted that the prospect of sales the CVS indicated to them, before signing the contract, was wrong. They have also criticized the CVS for not having enough provisions in the contract in

terms of the on the necessary advisory support coming from the CVS to the franchisees. In sum, if the sales of a franchise store do not rise smoothly, any gaps in the initial contract between the CVS and the storeowner will often become problematic. If this kind of situation is extensive, it can adversely affect the whole franchise system of a CVS. So, all CVS will need to increase their efforts to clarify every provision in their standard franchise contracts to prevent such problems. This will also be necessary to clarify responsibilities as they enter new products and services, especially in such financial areas as ATMs, on-line banking and brokerage, and life and auto insurance.

## **Ito-Yokado (IY) Group's IT Strategies**

### **Overview of IY Group's Efforts Using Information Technology (IT)**

While IT is not the sole strategic criteria needed for success as a GMS or CVS, it is clearly one of the major critical elements needed for inventory control, supply ordering, and customer profiling. It will become even more important as the large CVS companies move into IT-intensive areas, such as financial services or web access. Further, because IT directly ties each store or franchise owner with corporate management, it is the link between different strategic elements impacting the company. Ito-Yokado has realized this fact from a very early period, and believes that maintaining and improving this advantage will be key to its competitive success against other large GMS and CVS firms in the emerging more competitive environment described above. In this sense, IT and its corporate group strategy are closely tied.

The company has been far ahead in the information game since 1982. At that time it decided to eliminate slow-selling goods from its shelves, using an inventory-control system pioneered by Seven-Eleven Japan. Using technology developed in the U.S., the company read bar codes at the cash register and constantly checked the popularity of every item in the store.

This detailed, item-by-item information was then downloaded to help the company decide whether to continue stocking an item or to cancel an order. This data was also sent to wholesalers, distribution centers, and manufactures who supplied IY's stores.

For this information system to function well, wholesalers needed to invest in their information infrastructure, too. Therefore, Ito-Yokado, in its push for profitability, has been trying to drop inefficient wholesalers and has requested that the ones that remain invest in new information systems, capable of meeting the needs of Ito-Yokado's system. The objective is to enable IY to constantly raise its IT standards and their effectiveness in meeting corporate goals, such as lower inventories and fewer lost sales in order. It was tough for many wholesalers to make such huge investments to upgrade their IT systems to supply Ito-Yokado. However, they could not refuse, since, otherwise, they would have been dropped as suppliers and gone out of business. However, once they had invested and met IY's high standards, the wholesalers soon appreciated the feedback they received from the quick and precise sales data supplied automatically via their links to IY's system. Manufacturers also benefited, improving their understanding of what customers wanted. They could instantly find out which goods were selling, and how well they were selling, through connecting their systems to Ito-Yokado's information network.

Since this system could presumably prevent the accumulation of large inventories, Ito-Yokado in 1990 declared it would no longer return unsold merchandise to wholesalers, a move unprecedented in Japan. Mr. Suzuki, Ito-Yokado president, thus took the risk of keeping unsold products and sometimes offering discounts; his strategy then gave good incentives for the company to sell everything it received from wholesalers or manufactures. Further, he could demand and receive lower prices, since wholesalers and manufacturers no longer had to bear the



risk and expense of returned goods. Since part of its strategy has also been to sell more proprietary or private-label products, IY has also tried to improve its ability to develop new products. The precise data gathered by its information system has been very helpful in this regard by both excluding products not likely to sell and indicating potential new products that should become popular.

In addition, the company wants to take further steps to develop brand new merchandise for itself, or in cooperation with foreign counterparts, using the wealth of information it has about Japanese consumer tastes and their consumption habits, by type of store and time of day. For this purpose, Ito-Yokado teamed up with Wal-Mart of the US, in 1993, and Germany's Metro, in 1994, to exchange information on retailing, products, and markets.

Seven-Eleven (7-11) Japan was of course the first to succeed in this kind of strategy with fast food and lunch box manufactures, but IY has now extended this to its GMS. In the case of 7-11, the company would meet with those producers once a week to discuss its next new products, for example, three varieties of a chicken lunch box. It would then share information on how to make it with all producers, requesting all food producers to create the same menu, and providing the lunch box for all 7-11 retail stores. (Mr. Suzuki's sense is that Seven-Eleven Japan has been dominating IY in terms of how to use IT systems, including developing new merchandise.)

Other strategies of 7/11 Japan that are critically supported by its IT systems are: frequent deliveries of fresh food; use of different trucks for frozen, chilled, warm and room-temperature goods; and reviewing and revamping product lines. Mr. Suzuki appears to have in mind very similar structures for both Ito-Yokado (GMS) and 7/11 Japan (CVS). That is, in cooperation with outside parties, such as manufacturers or other suppliers, each store can provide unique products and services to a consumer market that is changeable and often rushing to new attractions.

Indeed, it is not just goods that require extensive IT support, but also some services. For example, delivery services such as the affiliation with Yamato (Black Ca), care-giver meals with Nichii, NEC and Sony, or financial services such as the tie-up announced with Nomura Research, Sony, NEC, Sanwa, and Mitsubishi/BOT require sophisticated IT both to track deliveries and access financial networks.<sup>9</sup>

### **President Suzuki's Philosophy and Approach to IT**

Mr. Suzuki, the president of the IY Group, has always had a clear vision concerning how the retail business should be managed and knows well that IT is indispensable to realizing his business goals for IYG. His important strategy decisions always entail the need for some IT, as the previous overview of IY's information strategy reveals. In this sense, his management decision is often equivalent to a decision on what IT should be introduced. Indeed, the series of information technologies the IY Group has been introducing since 1982 has exactly corresponded to its business needs, and the level of IT introduced has tracked its business requirements. Thus, to understand IY use of IT to achieve competitive advantage, it is important to look closely at his thoughts on retailing and information technology. This assessment will also provide a good introduction to a detailed analysis of the IY Group's information system.

Mr. Suzuki regards the retail business as a system-dependent industry. Thus, he does not agree with the public impression that IY Group's companies are too aggressive in introducing hardware and computer related systems. Rather he wants the IY group to be considered as

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<sup>9</sup> In addition to the banking relationships discussed earlier, IY via SEJ is also expanding into the "care-giving" market to service Japan's rapidly aging population. Currently 22.6 million Japanese are over 65. SEJ will enter this nursing care business with 3 other companies via a joint venture beginning in April 2000. The service will deliver food and other items to the elderly on request through a portable terminal to be made by NEC. The partners are Nichii Gakkan, Japan's largest provider of hospital clerical staff, Mitsui and NEC. Someone from Nichii will go to the local 7/11 store, pick up the items and take them to the customer's home. So no additional 7/11 staff will be needed. According to the Japan Times, this strategy may "cement Seven-Eleven's dominance in the retail market as it takes advantage of its convenience store network, which provides strong

excellent at using computer systems to meet the needs the group, its suppliers, and its customers face every day. In other words, he senses that the IY Group should capture very changeable customer demands in a very precise way by using its sophisticated information system. His emphasis is clearly on helping the retail business benefit from the computer system, and not on making retailing a function of the computer system itself.

This view is highly reflected in the way IY has designed the group's information system. Mr. Suzuki always stresses that the staff responsible for advisory support to store owners, for example, not the computer system specialist, should propose what he wants the next computer system to do for his activity. Mr. Suzuki reasons in the following way. The computer systems specialist is less likely to know about how the actual operation is performing. He therefore should not propose a plan for the next computer system. Also, the staff assigned to manage daily operations should not rely on a system specialist to make a plan. Otherwise, the staff managing operations would give up their responsibility to solve their own problems. In this way, IY is coupling their functional retailing expertise with their IT expertise to get the best resulting vertical application software and supporting hardware that meets their retailing business goals.

Mr. Suzuki's approach to achieving this integration of expertise in order to get a positive business result is to force the managers to make their own plans. He then outsources every single operation for making the hardware and software for the computer system, though this effort is contained in a dedicated unit within Nomura Research Institute (NRI) with NEC providing the terminals. People in the IY Group therefore always have to discover what kind of computer system is needed to implement their plans and make their operation more effective. They then must exactly explain their needs to the outside technocrats in NRI or NEC, who actually work on

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infrastructure for on-line services." Further, as the terminal can be expanded functionally, SEJ can easily extend the items and services to include new offerings such as banking and package services.

making the integrated hardware and software system. Mr. Suzuki arrived at this outsourcing decision, as one aspect of IY's IT strategy, partly because the IY group was short of talented staff in computer technology. But, as it has evolved, the strategy has brought a lot of benefits to the IY Group, as well as to NRI, where IY is now the second largest client after Nomura Securities itself.

Mr. Suzuki has also emphasized the importance of sharing, among all members of the Group, the business challenges facing it as well as possible solutions. Each staff member in each section, should, therefore, have the same insights with respect to specific business issues as top management. Otherwise, Mr. Suzuki feels, the company would be in trouble due to a lack of congruence between urgent issues facing IYG and their possible solutions and the development of an IT system that reflects what was really needed to support the Group's operation. Thus, once a week, Mr. Suzuki gathers 1,000 operation field counselors who are engaged in advisory support for the franchise stores to IY's Tokyo headquarters. He believes the benefit of this meeting definitely exceeds the cost, because he senses that sharing information among every member of IYG is a prerequisite to realizing the solutions needed at that moment.

From this perspective, he understands that the issues IY really needs to know and manage are the ones that arise in everyday operations. His primary focus, in this regard, is on how IY should control each store's daily inventory level. He constantly questions why the inventory per store exceeds the value of ¥10 million, while daily sales per store are about ¥0.4 million. To answer this question, IY has to know a lot of things about what is happening in each store. For example, how many and which goods on the shelves are sold each day? How and when is the merchandise delivered to each store? At the next stage, IY feels it should know, simultaneously, what services and merchandise and how many of each is sold at each store, each day, and,

further, at what time each is sold out, or when does it remain on the shelves. In the effort to answer this series of questions, IY's computer information system has been developed with constant and detailed discussions with its outside specialists, primarily NRI and NEC. Still, the driving force for the information system development always remains the needs of the retail business itself.

Additionally, Mr. Suzuki thinks the retail business should respond much more quickly to changes in or the increasing variety of customers' demand. For example, he feels young adults' preference rice balls is different from that of middle-aged people. Thus, customers' age, the weather, neighborhood events, and many other factors have an impact on consumer choice. Thus, each store should have a different story about what is likely to happen tomorrow. Each store will, therefore, need to estimate which items customers will want to buy in the next twelve or twenty-four hours and order them according to its estimation. Afterwards, they will review the results to continuously revise the data used to make these demand forecasts. IY believes this constant process of revising, updating and analyzing its database, that is, estimation, ordering, and reviewing, is the only way to respond to customers' changeable demands. However, IY prefers to do this retrospectively, that is to just catch up to changes in consumer demand rather than trying to forecast their future demand in a larger context. From Mr. Suzuki's viewpoint, the latter resembles a gamble, whereas the former is based on solid evidence. Furthermore, his confidence in this strategy is fully supported by actual results, because, by just following this strategy, approximately 70% of the items on IY's shelves have changed in a year. At the same time, this strategy never suggests that ordering should be based only on past data. This is why they are constantly assessing consumer demand based on inputs from the stores concerning customer requests as well as items that are selling. Further, they are constantly exploring new

services they can offer that will fully utilize store space. This is the origin of the payment and delivery services as well as the new initiative into financial services. Importantly, in his words, ordering is the most constructive and most critical part of the retail business.

Therefore, Mr. Suzuki is very suspicious of supplementary or automatic ordering systems, which have been regarded as effective in the U.S. He feels this kind of ordering system cannot respond to rapid changes in consumer demand. From his experience in managing Southland Corporation, he concludes the IT system in the retail business in the U.S. has actually lagged behind the system of Seven-Eleven Japan. Although the hardware and software in the U.S. retail business looks better equipped than its Japanese counterpart, he sharply observes that nobody in U.S. retailing has an interest in solving excess inventory problems or trying to develop a more efficient ordering systems, as he has been doing in Japan. That is why, from his view, the automatic or supplementary ordering system that has been so highly regarded in the U.S. will not address the issues faced by IY Japan.

In addition, Mr. Suzuki really wants to avoid losing opportunities to sell merchandise when customers want to buy them, if they are available. This philosophy requires some aggressiveness in ordering practices. Avoiding such opportunity losses leads to customers' appreciation of the value of IY's stores, because the items they want are always available. His thoughts on retailing and information systems thus appear to be very clear. The next section will detail how these views have been manifested in Seven-Eleven Japan's recent strategy for its information systems. Indeed, it appears that the information strategy of Seven-Eleven Japan may have outpaced any other company in the IY Group, as well as any retail business in the U.S.

## **Strategies of Seven-Eleven Japan on Using Information Technology**

Since 1978, Seven-Eleven Japan has had five phases in upgrading its IT system. The latest phase, i.e. the fifth stage, started in November 1997. So this section will present an overview of the system's evolution, with a focus on the latest stage, and will include an assessment of these systems' contribution to the efficiency of Seven-Eleven Japan's operations. As its basis, the system makes extensive use of POS data for efficient ordering practices and control of inventory. The POS data in each store are carefully processed and are then provided in several forms available on the computer. There are, in turn, three forms for analyzing information for each store.

First is the analysis of the sales of each item or service in a group of merchandise or services for the past 24 hours. Take as an example the sales of rice balls. Assume there are seven different varieties of rice balls available at a store. A graphic analysis screen has accumulated the quantity of sales of all those different rice balls on the vertical axis, and the time of their sales in the past 24 hours on the horizontal axis. The quantity of sales of each rice ball item can thus be graphically distinguished in terms of accumulated quantity. This graphic analysis makes it possible to detect the time of peak sales for the rice ball group. This graph also indicates the number of customers who visit the store at particular time, so one can see any possible relationships between rice balls sales and the number of customers visiting at a given time.

Second is the analysis of individual items belonging to the same group for longer time periods. Again, take rice balls as an example. Assume, this time, that the store has 12 different types of rice balls. These items are displayed in rank order, according to their sales for the past single week or four weeks. This screen also displays the relative amount sold of each item within

the group. This kind of information is very useful for the store staff to select and order items during one week from all the items available to be ordered within the group.

Third is the analysis of the change in the quantities of individual items sold during the past 24 hours, noting that, to retain freshness and minimize wastage, fast foods like rice balls are delivered to each store three times a day. This graph displays the sales quantity, the time an item is sold out, and the quantity that must be thrown away if an item is not sold out for each delivery. This data also suggests how long it takes each item to sell. The visual graphics of item-by-item sales and the delivery times are very helpful in avoiding opportunity loss to sell each item and keeping wastage to a minimum. Both criteria are important, as lost sales mean lost profit, but wastage is a cost that can substantially reduce food retailing operating margins.

In addition to such processed POS data, headquarters provides information on the weather, neighborhood events and other external situations to increase the ordering efficiency of each store. The fifth phase and newest of the system has introduced multi-media in order to make this kind of information even more visually accessible at each store. These two types of data, that is, processed POS data and external information, enable the estimating, ordering, and reviewing process at each store. This process makes the following efficiently possible. First, stores can eliminate slow-moving items on their shelves. Second, stores can narrow down the items and services they offer to those that their customers really want to buy, maximizing the use of limited floor space. Third, stores are better able to introduce more new products, because the two effects just mentioned make more shelf room for new items. The end is that the shelves always look attractive to customers.

Furthermore, because of faster data processing by the latest information system, it has been possible for IY to extend the deadline for ordering from 10 o'clock to 11 o'clock in the



morning. This gives the staff at each store more time to analyze the available information and thus improve the accuracy and precision of its ordering practices. This is an illustration of the impact of improved cycle times on forecasting, inventories, and customer satisfaction, as noted at the beginning of this IY case. In addition, since Mr. Suzuki emphasizes the importance of sharing information between top management and the franchisees, the latest information system has also enabled all operation field counselors, about 1,500 staff members, to have laptop computers. These advisory staff people can then advise storeowners in a more convincing and detailed way as to how to solve their managerial problems.

The benefits, since 1977, of this evolving and increasingly sophisticated information system, are clearly shown in Seven-Eleven Japan's outstanding business performance in terms of : average gross profit margin per store (in %), average daily sales per store (¥), and average inventory turnover time per store (days). The average daily sales per store were ¥669,000 in 1997, compared to ¥356,000 in 1977. It almost doubled in 20 years. The average inventory turnover time per store was 7.7 days in 1997, compared to 25.5 days in 1977. It tripled efficiency over the same period. Finally, the average gross profit margin per store rose to 29.9 % in 1997, compared to 24.0 % in 1977. The improvement in these figures is clear evidence of the business enhancement effects of Seven-Eleven Japan's information systems on its business performance.

At the same time, the average inventory turnover per store has been relatively stable since 1991, even though the fourth stage information system was introduced in 1990 and the fifth stage in 1997. Average daily sales per store have been almost unchanged from 1992 until now, as well. Therefore, the IT strategy of Seven-Eleven Japan with respect to merchandise may be almost complete, and could be regarded as no longer effective in improving general performance. But it would be premature to reach such a conclusion. First, one must recognize

that other factors have influenced the company's overall performance. These factors include the adverse macro-economic conditions, due to the collapse of the Bubble, combined with the micro-industry effects of increased competition within Japan's CVS business sector. Thus, just maintaining sales and turnover may have been a major strategic accomplishment. Nevertheless, it is clear that IY intends to increase utilization of its IT system, in combination with its 6,000 outlets, by offering a range of services in addition to its merchandising strategy. This is the reason for moving into such activities as financial and delivery services.

In this sense, IY understands the economics of software systems and IT-based competition that depends on user economics (Rapp 1995a). In this situation, the high cost of developing and installing an IT system are subject to increasing returns to scale, as the system's high fixed costs are spread over more users in terms of products and services. That is, each additional user reduces the cost of delivery to others, by spreading the fixed systems costs over more and more users. Success is then subject to a beneficial loop of increasing returns and greater profits. Thus IY's management's approach to IT is in fact a dynamic process in that they are constantly adding to the number of products, functions, and services that their stores can handle on a 24-hour basis. This is part of the constant strategic upgrading and development of IY's IT and store delivery system that has allowed it to increasingly shift its offerings and to enter new product and service areas.

From this perspective, IY's top management should consider external economic and industry factors as given in pursuing better performance. Then the solution to the puzzle of improving average store performance will be to make the new information strategies more helpful in enhancing the new merchandise and service strategies, site selection strategies, and franchisee selection strategies. As explained above, IY has already taken advantage of IT

systems for some of these strategies, such as expanded services and merchandise ordering. The latest phase of its information system, however, does not yet seem to put emphasis on the relatively new latter two strategies, site and franchisee selection. But, this may be coming.

## **Supplier Relationships: Theory and Practice in Japan and U.S.**

### **General Theory**

The previous section described the IY Group's basic philosophy and strategy towards the application of cutting-age information technology to its business. While IY is probably at the forefront in this respect, in general, all retail stores should probably be willing to adopt some IT strategy, because they would enjoy many competitive benefits from them (Supermarket Technology 1999). One caveat to this dictum, however, is that retailers still need to construct some kind of inter-organizational form with respect to their merchandise suppliers in order to realize the full benefits of their IT systems.

The relationship structure between the two business organizations (retailers and suppliers) as posed by Williamson (1979) can be positioned in a continuum from predominantly market-mediated transactions to predominantly hierarchy-mediated transactions. That is, retailers and suppliers may agree to have some inter-firm relationship, in either an explicit or implicit way, as long as they believe potential gains can be larger to both parties. There are also examples based on power relationships between the two organizations due to relative economic size, e.g. Wal-Mart and its suppliers or IY and its suppliers (Pfeffer and Salancik 1978). Who controls such inter-organizational forms can then be a key question in terms of using and implementing an IT strategy.

Therefore, both these perspectives can provide useful analytical dimensions for analyzing retailer and supplier relationships. Reve and Stern (1986) point out three of these:

- 1) *Vertical interactions* are the activity, resource, and information flows that take place between two organizations linked together in a distribution channel. Smooth progress and cooperation requires both to share a belief that potential gains can be larger than before cooperating.
- 2) *Formalization* refers to the degree to which rules, fixed policies, and procedures govern inter-organizational flows. It is how formal or informal contract rules on sharing possibly excessive returns can give each party enough of an incentive to keep the cooperating.
- 3) *Centralization* of inter-firm decision-making refers to the extent to which the power to make and implement inter-organizational decisions is concentrated in one of the two interacting organizations. In our case, either retailers or suppliers may be more powerful in inter-firm decision-making than the other, but the power relationship can change, depending on the parties as well as the progress and performance of the inter-firm relationship.

These three dimensions are very useful in evaluating various situations involving retailers and suppliers, including IY and its suppliers.

### **The Concept of ECR (Efficient Consumer Response)**

With the recent development of information technology and its application to retail businesses across the world, the relationships between retailers and suppliers have been transformed. We can say that the epoch-making event representative of the change was the cooperation between Wal-Mart and P& G that started in 1987. From then on, "strategic alliance" between retailers and suppliers, on the basis of sharing information on consumers, has been focused on in the retail sector. Retailers provide POS data to suppliers through the network of computers, and then suppliers deliver goods for retail stores in a timely and automatic fashion. This cooperation and sharing of consumer information avoids both inventory accumulation and the loss of opportunity to sell goods consumers would buy if they were on the shelf. Retailers

and suppliers, therefore, can enjoy a "win-win" situation as a result of this type of alliance. The U.S. Food Marketing Institution conceptualized this strategy and suggested its possible gain, using the key term, ECR (Efficient Consumer Response), and developed a general structure of ECR that can be applied to broader cases between retailers and suppliers (Supermarket Technology 1999). King and Phumpiu (1996) defined the following key characteristics of the ECR system. First, ECR focuses on reengineering activities and linkages in four processes that run through the entire supply chain: 1) selection of product assortment; 2) product replenishment; 3) product promotions; and 4) new product introductions. Product replenishment, out of the four processes, is the most important element of the ECR system. Computer assisted ordering (CAO), Continuous Replenishment Practices, and other enhancements in the merchandise ordering and delivery process are based on the flow of information from the retail stores to their suppliers.

This ECR concept is very similar to what Seven-Eleven Japan has been doing for several years. However, there are also several different characteristics between ECR and the practices of Seven-Eleven Japan. In the ECR, ordering is done automatically by suppliers when the POS data indicates that specific goods on the shelf in a retail store are short. But Seven Eleven Japan authorizes clerks in its retail store, even below the store manager, to predict near-term consumer demand and to order merchandise, even if this means a change in the type of goods ordered. The reason for this may be due to a change in weather or a special neighborhood event. Therefore, this is not an automatic procedure, but requires some judgement by store employees that needs some level of rationality, training, and experience.

Further, there can be a dark side of this type of strategic alliance if it is based on relatively inflexible, automatic ordering systems. A conflict between retailers and suppliers can

appear as a larger and larger percentage of the supplier's sales flow through the particular retailer with which the supplier has a strong relationship. In the case of Wal-Mart and P&G, for example, 20% of P&G's domestic sales are through Wal-Mart. So following the actual "win-win" situation<sup>10</sup> in which they linked information systems, Wal-Mart proposed a co-marketing strategy to P&G. Such co-marketing strategies generally include manufacturing and marketing PB (Private Brand) goods. But manufactures such as P&G that have strong NB (National Brand) merchandise are, generally, unwilling to provide PB merchandises to retailers. This is because they believe it is a better strategy to provide their products to as many retailers as possible, across the board, to increase the sales of their branded products.

This is especially true for P&G, since many of their products are ranked as the number one national brand in their category of everyday necessities. So P&G had no real reason to provide PB products to Wal-Mart. Hence, P&G has tried to become more powerful in its negotiations with Wal-Mart after the initial success of their alliance in terms of information sharing. Their approach has been to try to develop cutting-edge products, which would be so popular among consumers that retailers could not be without them. Also, in 1994 it established several distribution centers to make it easier to supply its products to small and medium sized retailers. Along with these efforts to provide more products to small and medium sized retailers, P&G started to strengthen its relationships with the other large retailers, such as K-Mart. All these strategies were focused on reducing its dependence on Wal-Mart for retailing P&G products. At the same time, Wal-Mart's continued expansion, both domestically and globally, has continued to make them P&G's biggest retail outlet. So the potential frictions continue in this large mutually dependent relationship.

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<sup>10</sup> In a "win-win" situation, both parties benefit after the retailer and supplier are allied as sales increase and inventory is pared. It is generally true, however, that the retailer is in a relatively weaker position than the supplier when the item sold is a higher

A similar situation can be found in the relationship between Seven-Eleven Japan and Yamazaki, the top bread maker in Japan. Yamazaki's sales through stores of Seven-Eleven Japan are estimated to be about 10% of all its sales, while Seven Eleven Japan receives about 80% of all bread sold in its stores from Yamazaki. In 1993, Seven Eleven Japan proposed a PB brand project "Just Baked Bread" to Yamazaki. From the viewpoint of Seven Eleven Japan, the purpose of the project was to provide high quality bread at lower prices in Seven Eleven's stores than in Yamazaki's in-store bakery shops. The plan was that 7/11 itself was going to establish several new factories, each of which would cover Seven Eleven stores in the neighboring area near the factory's location. It then requested Yamazaki to co-invest in these factories and produce bread there. The production of a smaller quantity in each of several factories for a smaller number of retail stores would have enabled the quick provision of high quality baked goods. However, Yamazaki's policy and position is similar to that of P&G. Yamazaki's share in the domestic bread market is over 30% and it has never made any PB merchandise for a specific retailer. This is because the new distribution of PB baked goods in a strong network like Seven Eleven's could put the high market share of its NB merchandise at risk. It also threaten its existing technology and established distribution network. Yamazaki, therefore, rejected Seven Eleven Japan's proposal.

Since the cooperation between the two companies did not work out, Seven Eleven Japan started a similar project in Hokkaido, in December 1993, without Yamazaki. Yamazaki then started providing NB merchandises to Lawson, the second largest CVS next to Seven Eleven Japan, through its own distribution network and from its existing factories. In this way Yamazaki's response has been somewhat similar to P&G's towards Wal-Mart. On the other hand, when 7/11 announced its entrance into financial services in cooperation with Nomura Research,

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proportion of the retailer's sales than the retailers' sales are of the supplier's. In the converse situation, relative power is reversed.

Sony and NEC, BOT/Mitsubishi and Sanwa soon afterwards agreed to invest in the venture. They saw 7/11's 6,000 outlets as an easy way to extend their user base by linking IT systems with IY's. At the same time, neither of these banks dominates either Japanese banking or finance, and so has little to lose by supplying PB financial services to IY's customer base.

### **The Case of the IY group**

Despite the situation with Yamazaki, 7/11 Japan has actually been quite successful through its remarkably strong cooperation with suppliers in providing attractive fast food, such as lunch boxes, rice balls, and sandwiches as well as fresh foods and fruits, even though all of these items are perishable during a day. Indeed, they are currently the number one fast food outlet in Japan, even ahead of MacDonalds. The key to this success lies in how the company has overcome possible conflicts between with its suppliers in establishing this type of cooperation.

An important fact is that most of the suppliers of fast and fresh daily food to Seven Eleven Japan are small and medium sized companies that don't supply national brand fast food items. Thus, there is less risk of conflicts similar to the Yamazaki situation in cooperating with these food producers. Still, while such small and medium size fast food suppliers may have less concern over joining with a specific retailer, some other conditions are nevertheless required to have the cooperation work well in practice. This is because 7/11 requires timely delivery of these products to its stores nationwide as well as the maintenance of quality and taste. Yahagi (1994) has described some of the conditions needed for this system to function well, and calls the type of arrangement between Seven Eleven Japan and its suppliers "the closed system." Such closed systems are characterized by: relation-specific investments by the suppliers, a high rate of concentration of the suppliers' business with buyer (i.e. Seven Eleven), and an open and fair reward system that shares the benefits flowing from the cooperation.



Although information technology has been one driving force spurring strategic alliances between retailer and suppliers, as explained above, for both the U.S. and Japan, a well-functioning delivery system between suppliers and retailers is also indispensable for the alliance to achieve a "win-win" situation for both parties. In the case of IY and its suppliers, small and medium sized fast food producers are required by IY to build delivery centers and organize delivery networking systems only for their business with Seven Eleven Japan. They have to bear the cost of building a center and a delivery system themselves, and the delivery system should pertain to Seven Eleven's strategic goals in terms of the area and the product. From 7/11's standpoint this not only keeps their investment in bricks and mortar to a minimum, improving their asset turnover, it also firmly commits and ties the supplier to 7/11's strategy, stores, and system. Since SE Japan rents IT apparatus to its suppliers, whether suppliers decide to join an alliance with Seven Eleven Japan or not really depends on whether the relationship specific investment into a delivery system will pay or not, relative to potential gains from cooperating with 7/11.

Through natural selection, both sides appear to have gained their strategic objectives. The rate of dependency of daily food suppliers on sales to Seven Eleven stores has been really high. According to Yahagi (1994), almost one third of 7/11's suppliers sell 100% of their output to Seven Eleven. On the other hand, large NB brand makers like Yamazaki and others do not depend on Seven Eleven to such a degree. The daily food suppliers have, in turn, been organized in a formal way, so they can supply the same quality of food daily nationwide. When a new lunch box menu is introduced, they gather to determine how to produce it. Such meetings are periodic, and there is a strong inter-firm relationship among SE and its suppliers.

The reward system for participating suppliers is clear and stable. For a certain daily food product, the rate of margin for suppliers is specified as more than 18% of the retail price, which is applied to all suppliers, regardless of the size of transaction and the area. Such reliance within the system on rewards based on a high degree of formalization gives strength to the cooperation between the retailer (IY) and its suppliers. For a similar purpose, IY also has made a greater effort to team merchandise with large makers, especially in apparel for its GM stores. Indeed, team merchandising has actually developed several popular products, such as polo shirts and 100% cashmere sweaters. However, the overall performance of the team merchandising strategy has not been so good, for the reasons noted above, when the producers of well-known NB goods are involved. Thus, Ito-Yokado's approach to cooperate with the apparel or material makers that are the really top brand in each category, has again confronted these makers' desire to sell their own NB products. They have less incentive to cooperate with IY than the fast food suppliers or service providers such as Yamato (Black Cat), NRI, Sony, Sanwa, or Mitsubishi/BOT do with SEJ.<sup>11</sup> Also, given the rapid changes in IY's product selection and the fact that team merchandising is often only a spot transaction for a specific merchandising project, IY cannot promise to continue buying such merchandise on a long-term basis from one particular maker, as is true for fast food. This situation reduces a supplier's incentive to make the required

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<sup>11</sup> Complementing this approach was IY's Internet strategy reported in February 2000 that it had joined with 7 other companies to form a joint venture to supply merchandise services over the Internet, which ultimately could tie with their care-giver program too. Services will include travel, music, mobile communications, publications and automobiles. Capitalized at 5 billion yen, "7 dream.com" is owned 51% by SEJ, 13% each by NEC and NRI, and 13% Sony (split between Sony Corp and Sony Marketing Japan) plus 2% each JTB and Kinotrope. The website opens in June 2000. Multimedia terminals will be installed in SEJ's 8000 convenience stores starting in October and all 7/11 outlets will have terminals by spring 2001. Customers will be able to order over their mobile phones, which Sony and NEC both make. Since there are 60 million mobile phone users now in Japan, this is potentially a big market, but is also culturally driven as Japan is still a cash society and consumers don't like to use credit cards over phones. So the convenience store acts as a delivery and payment mechanism via cash, ATM or direct account debiting via in-store terminals. Customers pick-up items at the store while SEJ shares payment fees currently going to post office or banks. This initiative also expands IY's on-line book venture with Softbank. In addition, terminals will give high quality instant photo finishing for digital cameras. Eventually IY hopes to expand these service to stores in Asia and U.S. but as yet there is no announced timetable.

investment or to possibly impact their own brand. So strong inter-firm relationships in apparel may be problematic.

### **The Case of H.E. Butt**

As a possible comparison case to IY, the University of Minnesota food industry center suggested H.E. Butt (HEB). However, as a privately held company, they declined to participate in the project. Nevertheless, their approach to using IT to improve competitiveness offers some interesting comparisons and contrasts with IY's approach in both Japan and the U.S., the latter through SE's ownership of Southland Corporation, which controls Seven-Eleven in the U.S.

HEB currently operates over 200 full-service supermarkets throughout central and south Texas, with average sales per store of approximately \$300,000 per week. Information technology has long been an important part of the company's strategy for controlling costs and keeping prices low. HEB has definitely been a leader in adopting POS (Point of Sale) scanning. Having started in the 1970s, it installed scanner systems in its all stores during 1980s. With the introduction of POS scanners and the data they provided, the use of information system became essential to its store operations. In addition, HEB was one of the first companies to team up with P&G in a Continuous Replenishment (CRP) relationship, starting in 1989. As explained above for ECR, the logic of CRP was that P&G would supply HEB with products based directly upon the data of warehouse shipments and inventories, rather than upon the receipt of purchase orders from HEB. Using HEB-provided warehouse and inventory data, P&G could determine the quantity needed, assemble the delivery, and notify HEB electronically that the shipment was coming. This process of ordering, delivery, and shipment contrasts with SEJ's procedure, because, as explained above, HEB does not need to do any ordering. At the same time, they have

less flexibility to not order or to change what they order in response to particular circumstances or events.

The information on retail store product demand is electronically transmitted to the manufacturer (P&G) daily. This continuous demand information then provides much quicker and more accurate feedback on actual consumer demand to P&G than the traditional ordering process. Further, by directly coupling their information systems, HEB and P&G eliminated six to ten days from the previous order cycle. In addition, P&G agreed to give HEB the average deal-price paid during the prior year for all products. This long-term, net-price deal eliminated the incentive for forward buying and facilitated the adoption of the CRP innovation. It also assured HEB that it would share the benefits to P&G of system cooperation and coordination, and that its competitors would not receive a better price. That is, this is a mutually beneficial reward system.

Other very important benefits for HEB were a dramatic reduction in inventory levels and reduced ordering and logistics costs in routinely supplying its warehouses. The benefits to P&G included more predictable demand and smoother manufacturing processes, in addition to reduced logistics costs. The success with P&G encouraged HEB to initiate similar relationships with other vendors. Negotiating and establishing such CRP relationships with new vendors required as long as one year for vendors without prior CRP experience, but less than two months for those with prior experience. HEB sometimes provided coaching to ease the transition for new CPR vendors to its systems and processes, often by installing new software ordering programs or forecasting tools.

The Electronic Data Interchange (EDI) system was initially developed only for CRP partners to link with HEB. However, using a mainframe system, HEB was able to expand EDI for transmitting purchase orders to over 500 non-CRP vendors within eight months, and at little

additional system's cost. The shift to EDI now covered 80% of purchase orders issued by the company and simplified the ordering system. Further, 96% of their grocery purchase orders were transmitted via EDI or via EDI-enabled CPR linkages by mid-1994. HEB has also tried to expand new vendor's use of the CRP approach to product replenishment, and by August 1994, almost 60% of all grocery replenishment volume used CRP. In spite of this rapid expansion of vendors using CRP, though, HEB still intentionally limited CRP use to only those suppliers willing to cooperate with it to reduce the total channel costs it had to bear. This is similar to IY's requirement that its suppliers bear the cost of establishing their physical supply centers and that their IT systems to be linked to IY's. One example of HEB's intentionally limiting CRP adoption was its decision not to allow a vendor to become a CRP partner until they had resolved the possibility of problems with damaged products through improper pallet loading. Thus, both firms have used IT linkages to affect supplier behavior and to tie suppliers more closely to their business strategies and information systems.

### **Some Conclusions**

Using various vendors and some packaged systems offered by firms such as Symbol, BA Merchant Services, BuyPass, Inter-Act, DataSage, and Systech (Supermarket Technology 1999), it is possible for retailers to introduce cutting edge IT if they believe it can return high benefits. However, to retain these benefits and not have them competed away by others doing the same thing, they have to manage at least two obstacles. First, they need to have well-functioning inter-firm relationships with their suppliers (Reve and Stern 1986). The performance of such inter-organizational forms relies on two dimensions. One is the relationship between the retailer and its suppliers. SE Japan and its daily food suppliers is an ideal one from this perspective and is a "closed system" (Yahagi 1994), or controlled production paradigm (Rapp 1999). Second,

retailers must manage an efficient delivery system for the merchandise and services sold. This now requires using IT as a prerequisite. However, even if a perfect IT system is introduced both for intra-firm and inter-firm transactions, it will be useless unless the delivery system matches the IT system. For example, unless there is a physical and personnel organization match to technology, there will be inefficient delivery and warehouse use. So, the second obstacle retailers and their suppliers must manage, in order to realize a reduction in inventory costs from introducing sophisticated IT systems, is efficient delivery and good warehousing organizations. In addition, they need well-managed stores that feed the appropriate information to the system. IY's success has been due to its ability to dynamically couple and link these physical and personnel requirements with its IT systems.

There are many similarities between efficient retailing practices in Japan and the U.S. Two main differences are who controls the ordering. SE Japan applies "micro-merchandising" in that the retail shops can order goods, while H.E. Butt or Wal-Mart is subject to automatic ordering in which suppliers directly replenish merchandise on the basis of information received from the retailer's store. The second difference is in how to control and allocate shelf space. SEJ watches the merchandise on shelves or the services offered in its stores on an item-by-item, service-by-service basis, while U.S. ECR system assumes category management. These differences may or may not matter for the performance of particular retailers, but they probably do affect how inter-firm relationships with suppliers are designed, depending on the constraints affecting individual retailers. A possible mapping of inter-firm relationships is given below for the cases explained and analyzed above.

**The Relationship Dimensions between Retailers and Suppliers**

	7/11 & daily food suppliers	7/11 & large food producers	IY & apparel makers	H.E. Butt & its suppliers
Benefit to retailers	strong	strong	relatively strong	strong
Benefits to suppliers	strong	weak	relatively weak	strong
Formalization	strong	weak	very weak	weak
Centralization	strong	relatively weak	none	weak

**Future Oriented Strategies: How will E-commerce Change Retailing?<sup>12</sup>**

Even though its manifestation in Japan may evolve differently from that in the U.S., E-commerce will definitely change retailers' business strategies in Japan, as it has in the U.S. It may bypass the function of retailers, because, in the near future situation, it might be that consumers will directly order food and other merchandise over the net, and then the merchandise will be directly delivered to consumers. It is already popular to order some items such as books and CDs through the Internet. The IY group has already started to respond to this change. Seven Eleven Japan has established joint ventures such as E-Shopping Books with Softbank, Tohan, and Yahoo Japan or Car Points with Softbank, Microsoft, and Yahoo Japan in 1999. Seven Eleven Japan has also started providing clearing services for purchasing through the Internet jointly with Nomura Research Institute. As noted above, it has just applied for a banking business license to specialize in clearing and money transfer functions, so as to make most use of its strong network of stores. NRI, Sony, NEC, Sanwa Bank, and Mitsubishi/BOT have joined in this proposed joint venture. At the same time, they are also focusing more on businesses abroad, having begun in China, while changing their U.S. subsidiary's name from Southland to Seven-Eleven in April 1999. They especially intend to put more effort in the U.S., showing that Mr. Suzuki is willing to test the effectiveness of IY's "demand chain management" and CP strategy

there, against the "supply chain management" philosophy of ECR that has been dominating U.S. retail thinking.

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<sup>12</sup> H.E. Butt also set up an Internet shopping service with Microsoft, using Austin Central markets as a test case. Wal-Mart has embarked in a similar Internet shopping business.



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## Appendix I

### SUMMARY ANSWERS TO QUESTIONS FOR IY GROUP

QUESTIONS	YES	NO	NOT CLEAR
<b>A GENERAL MANAGEMENT &amp; CORPORATE STRATEGY</b>			
1 Has the firm integrated software into their management strategy, including using it to institutionalize organizational strengths and capture tacit knowledge on an iterative basis?	x		
2 Has the firm succeeded solely on the basis of its software strategy?		x	
3 Does the firm believe some customized software and its close organizational integration enables the company to capture and perpetuate on a more consistent basis certain tacit knowledge and unique corporate features, i.e. core competencies, that account for its continued success in the marketplace with reliability and repetition important elements in their thinking?	x		
4 Is the firm's software strategy successful because it is a well managed company that introduces software innovation when it serves corporate goals for enhancing productivity, inventory management or customer relations within its industry?	x		
5 Does the firm generally meet established criteria as a quality organization such as: effective organizational self assessment, use of project and especially cross functional teams, improving quality outcomes through reducing uncertainty, rapidly diffusing learning throughout the organization including the use of software and information technology, effective implementation of organizational and technical change, facilitating change via evolution rather than revolution or reengineering, emphasizing participatory management, having process excellence, using value added analysis, actively doing benchmarking, constant organizational improvement, commitment to concrete	x		

realistic goals, effectively managing a dynamic iterative experimental process through goal setting, training and constant consultation?

- |    |  |   |
|----|--|---|
| 6  | Does the firm plan in detail for world class operational excellence including the contribution of software and information technology to the allocation of resources?  | x |
| 7  | Do their planning systems enable management to make better business, operating and resource allocation decisions, including those related to software and IT, with a link to resource valuation techniques?    | x |
| 8  | Do they focus on a small number of priorities, usually three or fewer, with a well-defined, cascaded system reaching from the commitment of senior management to the department level with associated metrics? | x |
| 9  | Is the firm a “high performance” workplace for services?   | x |
| 10 | Is there a heavy emphasis on improving process through using software?   | x |

**B                    INDUSTRY RELATED QUESTIONS**

- |    |  |                         |
|----|--|-------------------------|
| 11 | Are industry economics and competitive dynamics important strategic drivers for the firm and for its use of software and information technology in that IT has been adapted to the firm’s particular industry and competitive situation? | x                       |
| 12 | Do industry paradoxes exist such as: declining stock prices, manufacturing improvements that create product improvement difficulties, or employees’ active product use that retards improvements?  | x<br>market<br>cap high |

**C                    COMPETITION**

- |    |  |   |
|----|--|---|
| 13 | Is software a significant and successful input into the firm’s competitive performance?  | x |
| 14 | Does the firm explicitly and consciously perceive the implications of their software strategies and use on their competitiveness and business success?   | x |
| 15 | Are there direct links between SW strategies & firm goals?   | x |
| 16 | Do customers, affiliates, competitors, industry analysts, government officials, industry associations and suppliers perceive the competitive benefits or impact of the firm’s use of information technology? | x |

- 17 Has the firm gained first mover advantages through successfully introducing software-related innovations? X

**D INFORMATION TECHNOLOGY STRATEGY**

- 18 Is firm a sophisticated software user that consciously designs and implements a software strategy to achieve competitive advantage? X
- 19 Does the firms utilize several types of software input alone or in combination to achieve competitive advantage? X
- 20 Does the firm’s system work to rapidly uncover barriers to implementation, including using new or improved software, while generating cross-functional and hierarchical consensus so measured goals can be achieved? X
- 21 Is leadership at different levels actively involved in driving software planning, assessment and deployment with regular progress reviews that link plans, goals, benchmarks, metrics, milestones, resources and responsibilities? X  
CEO is CIO
- 22 Does the system allow for flexibility and innovation as well as change and individual efforts provided they meet goal, planning and metric criteria? X
- 23 Is there a clear vision making project and new product software selection straightforward and closely related to strategic goals and processes? X  
user initiated
- 24 Does this software strategy involve a conscious and clearly defined reliance on customized and semi-customized software in addition to packaged software with specific criteria and goals for selecting each type, and do they have ways to measure this so that the firm knows customized software achieves functional or market gains that justify the additional expense, including related costs of integrating customized and non-customized software into a single information system? X  
stores set criteria
- 25 Does the firm use option valuation methods to manage uncertain and random outcomes since this appears to be at the software implementation frontiers even among very well managed companies? X  
cost lost sales
- 26 Does their strategy include increased use, development and integration of industry and company specific vertical application software and embedded software in its production and delivery processes to improve competitiveness? X

- |  |  |                                  |  |
|--|--|----------------------------------|--|
| 27   | If the firm has an embedded SW strategy, is this integrated or interactive with their other software and overall business strategy in ways affecting production, product design or service that improve quality and costs long term?   | X<br>suppliers<br>tied IT        |  |
| 28   | Do they favor increased outsourcing of software design and development?  |                                  | X, only<br>use NRI<br>& NEC  |
| 29   | Does the firm believe large-scale outsourcing by many US companies assumes those firms' information systems development need not be integrated with their business organization and that they view their information systems as generic products best developed by outside vendors who can achieve low cost through economies of scale?  |                                  | X, view is<br>integration<br>IT and<br>operations<br>critical but<br>others<br>may use<br>packages |
| 30   | Do they in turn believe this is a mistake by their competitors that gives them a long-term and sustainable competitive advantage over such companies because they believe outsourcing surrenders a firm's strategic software options since systems service companies have an incentive to develop increasingly standardized products and are one step removed from the company's customers and business? |                                  | X, though<br>US<br>initiative<br>sees IY's<br>custom-<br>system as<br>being<br>superior            |
| 31   | Has the firm established a software strategy that is open and interactive with its customers and/or suppliers?   | X                                |  |
| 32   | Has this enabled it to capture information or cost competitive externalities?  | X, order<br>system,<br>suppliers |  |
| <b>E INFORMATION TECHNOLOGY OPERATIONS</b> |  |                                  |  |
| 33   | Do participants own goals and are then committed to implementation strategies?   | X                                |  |
| 34   | Does the firm embed software into its production and delivery processes with competitive market implications?  | X                                |  |
| 35   | Is software technology tied to high speed telecommunications technology, allowing the firm to track, receive and deliver shipments or services directly or on-line without further handling or processing?   | X                                |  |
| 36   | Does it manage potential risks of extensive use of SW or open systems?   | X                                |  |
| 37   | Do they work to ensure consistency and reduce programming errors?  |                                  | X, NRI's<br>role   |

38	Is informal interaction key part planning & implementation?	X, user contact NRI	
39	Is firm's system institutionalized & self-reinforcing with good communication and consensus building while SW and IT play a role, including preventing retrospective justification or target reduction?	X	
<b>F HUMAN RESOURCE &amp; ORGANIZATION ISSUES</b>			
40	Does the firm pay close attention to systems training and organizational integration for all employees, reducing errors through improved consistency and staffing efficiencies across the firm since software can confound even routine operations?	X, role field reps with laptops & CEO meetings	
41	Does certain software require special HR competencies or education?	X	
42	Does the firm try to change human behavior to use software?	X	
<b>G PARAMETER METRICS (INVENTORY, CYCLE TIMES, &amp; COST REDUCTION)</b>			
43	Are goals or targets tightly linked to regularly reviewed metrics with inputs coming from all levels that are often cross-functional affecting large parts of the organization, e.g. cycle times, on-time delivery, and customer satisfaction?		X
44	Does the firm have standard agreed ways to explicitly organize or manage this software selection process?	X	
45	Does the firm have agreed ways to measure and evaluate success in using software to promote business objectives such as unit cost, inventories, lower receivables, market share, model development times, or product pipeline?	X	
46	Are IT costs balanced against long-term productivity gains?	X	
47	Does the firm have methods to ensure increased customization costs result in lower costs downstream so that developing and using customized software makes sense?	X	

- |    |  |        |
|----|--|--------|
| 48 | Has the firm created large interactive databases to allow automatic feedback between stages or players in the production and delivery process? And are these databases constantly being refined and updated on an interactive basis with actual performance results in a real time global environment? Are there competitive and metric impacts of this? such as reducing inventory costs and wastage while improving the quality of customer service? | x      |
| 49 | Has the firm used software to create beneficial feedback cycles that increase productivity, reduce cycle times and defects, and integrate production and delivery processes?   | x      |
| 50 | Do other firms or analysts have alternative measures of competitiveness or views on appropriate industry strategy?   | x, ECR |
| 51 | Has the firm achieved better than industry growth, superior on-time delivery, improved inventory control, reduced down-time or changeover cycles, reduced product or process defects, fewer recalls, lower warranty claims, an improved product development process, and/or any other definite and measurable progress relative to competitors?  | x      |
| 52 | Do the firm's metrics go beyond financial to areas like customer satisfaction, operational performance, and human resources?   | x      |
| 53 | Does their evaluation system apply to new product development and significant projects as well as to continuous operations?  | x      |

<b>H</b>	<b>SUMMARY AND CONCLUSIONS</b>	<b>Yes</b>	<b>No</b>	<b>Not Clear</b>
54	Can you summarize a mission statement on the role and impact of software as a tool of competitive advantage for these firms in this industry?	X, Mr. Suzuki clear		
55	Is it consistent with the strategies identified as successful or appropriate in the existing competitiveness research from Sloan's industry study center?			X
56	Are there important business or IT situations that require further research?	X		
57	Are intellectual property issues important in explaining the successful and sustainable use of software to achieve competitive advantage?		X	
58	Are beneficial cost impacts generally one important consequence of a successful software strategy?	X		
59	Does this company fit a profile where software seems most likely to contribute to enhanced competitiveness?	X		
60	Based on these studies is the market for vertical application and embedded software growing?			X
61	Since Japanese competitors normally do not outsource, do Japanese firms see themselves as benefiting from this US trend?			X, perhaps given US initiative
62	Does this leading Japanese firm assign positive value to improved integration and enhanced control through selective customization?	X		
63	Do general measures such as increased productivity, as evidenced by reduced cycle times and lower defect rates, reflect the benefits of a successful software strategy?	X		
64	Are the benefits of a successful software strategy also reflected in specific industry standards such as an expanded customer base, or improved yields?	X		
65	Does this leading IT user have criteria for selecting package vs. customized SW and semi-customizing SW packages?	X		
66	Does this firm closely integrate or couple its software and business strategies beyond mere alignment?	X		
67	Does this firm closely integrate its organizational and HR policies with its software systems?	X		



68	Has IY reorganized in order to successfully use software and information technology?	X, has changed store layout & supplier relations	
69	Has IY's software codified or built on existing organizational strengths or core competencies including HR alignment with business and IT strategies?	X	
70	Has IY embraced and integrated IT as part of its business strategies and core competencies?	X	
71	Is IY's MIS department integrated with the rest of the firm in terms of organization and decision making?		X, close relations with NRI, which acts as MIS group, NRI has good contact with users

**Appendix II**  
**SOME FIRM AND INDUSTRY DATA**

**TABLE 1**  
**Summary of Recent Performance (unconsolidated)**  
**Ito-Yokado and Seven-Eleven Japan**

Year ended February 28	1994	1995	1996	1997	1998
<b>Ito-Yokado</b>					
Net sales (million of yen)	1,521,428	1,523,303	1,527,912	1,528,755	1,529,716
growth rate (%)	1.6	0.1	0.3	0.1	0.1
Net income (million of yen)	46,759	44,708	45,714	43,147	41,332
growth rate (%)	-14.7	-4.4	2.3	-5.6	-4.2
Earnings per share (yen)	113.1	107.9	110.2	103.9	99.5
growth rate (%)	-14.8	-4.6	2.1	-5.7	-4.3
<b>Seven-Eleven Japan</b>					
Net sales (million of yen)	1,281,931	1,392,312	1,477,126	1,609,007	1,740,960
growth rate (%)	7.3	8.6	6.1	8.9	8.2
Net income (million of yen)	46,555	49,525	52,562	55,317	58,254
growth rate (%)	3.4	6.4	6.1	5.2	5.3
Earnings per share (yen)	111.8	118.9	126.2	132.8	139.9
growth rate (%)	3.4	6.4	6.1	5.2	5.3

Source: Ito-Yokado Group, Investors' Guide (1998)

**TABLE 2**  
**Annual growth rate (%) of sales and retail floor space**

	Ito-Yokado Sales	Ito-Yokado Retail floor space	Seven-Eleven Sales	Seven-Eleven Retail floor space
1992	6.8%	1.8%	16.1%	9.7%
1993	3.2%	5.1%	10.4%	9.6%
1994	1.2%	5.3%	7.3%	8.6%
1995	2.0%	5.1%	8.6%	8.4%
1996	2.9%	6.9%	6.1%	8.6%
1997	-0.1%	5.1%	8.9%	8.6%
1998	0.1%	6.1%	8.2%	6.9%

Sources: Company Reports and Nikko Research Center (1998)

**TABLE 3-1**  
**Annual growth rate (%) of sales of the six GMSs**

	Ito-Yokado Sales	Daiei Sales	Jusco Sales	Seiyu Sales	Mycal Sales	Uny Sales
1992	6.8%	46.8%	5.0%	4.2%	9.3%	6.1%
1993	3.2%	-0.7%	2.9%	0.0%	2.8%	2.1%
1994	1.2%	2.5%	7.8%	-5.3%	-1.8%	1.5%
1995	2.0%	22.5%	11.9%	-0.8%	-3.4%	6.7%
1996	2.9%	-16.9%	5.8%	0.4%	9.5%	5.2%
1997	-0.1%	-2.9%	10.1%	-1.9%	6.1%	11.0%

Source: Nikko Research Center (1998)

**TABLE 3-2**  
**Annual growth rate (%) of retail floor space of the six GMS**

	Ito-Yokado Sales	Daiei Sales	Jusco Sales	Seiyu Sales	Mycal Sales	Uny Sales
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1992	1.8%	12.0%	1.6%	0.8%	4.1%	2.4%
1993	5.1%	5.9%	2.4%	2.7%	6.4%	3.0%
1994	5.3%	4.3%	11.0%	4.4%	5.4%	3.5%
1995	5.1%	47.1%	14.9%	5.3%	8.0%	1.4%
1996	6.9%	5.7%	11.5%	1.5%	9.4%	6.0%
1997	5.1%	7.6%	13.0%	1.0%	5.7%	13.6%

Source: Nikko Research Center (1998)

**TABLE 3-3**

**Annual sales growth rate (%) net of floor space growth of the six GMS**

	Ito-Yokado	Daiei	Jusco	Seiyu	Mycal	Uny
1992	5.1%	34.8%	3.5%	3.4%	5.1%	3.6%
1993	-1.9%	-6.6%	0.5%	-2.7%	-3.5%	-0.9%
1994	-4.1%	-1.7%	-3.2%	-9.7%	-7.2%	-2.0%
1995	-3.1%	-24.7%	-3.0%	-6.1%	-11.4%	5.3%
1996	-4.1%	-22.6%	-5.7%	-1.0%	0.1%	-0.9%
1997	-5.2%	-10.5%	-2.9%	-2.9%	0.4%	-2.6%

Source: Adapted from Nikko Research Center (1998)

**TABLE 4**  
**Summary of Performance of the 8 CVS as of 1998**

	Seven- Eleven	Lawson	Family Mart	Circle K	Sunkus AA	Ministop	Kasumi Conv.	Three F
Sales (million yen)	1,740,960	1,093,800	710,095	380,504	282,303	153,755	93,289	77,963
Net income (million yen)	58,254	-87,800	6,004	7,081	2,506	2,794	-152	388
Recurring profit margin (%)	6.4	3.2	3.5	3.4	2.0	3.6	0.3	1.1
SG&A cost ration (%)	7.9	N.A.	11.7	10.9	11.3	11.9	11.6	14.9
Number of stores	7,362	6,649	4,242	2,168	1,588	997	844	513
Daily sales per store (1,000 yen)	67.6	N.A.	48.6	50.7	51.7	45.5	35.3	50.6

Source: Nikko Research Center (1998)

**TABLE 5-1**  
**Number of Stores by Area of the six GMS (as of 1997)**

	Ito-Yokado	Daiei	Jusco	Seiyu	Mycal	Uny
Tokyo area	96	116	14	126	27	21
% of the total	60.8%	30.9%	5.9%	63.0%	19.0%	15.8%
Nagoya area	5	13	44	6	4	68
% of the total	3.2%	3.5%	18.6%	3.0%	2.8%	51.1%
Osaka area	2	102	63	28	65	-
% of the total	1.3%	27.2%	26.6%	14.0%	45.8%	-
Other areas	55	144	116	40	46	44
% of the total	34.8%	38.4%	48.9%	20.0%	32.4%	33.1%
Total number of stores	158	375	237	200	142	133

**TABLE 5-2**  
**Number of Stores by Area of five CVS (as of 1997)**

	Seven- Eleven	Family Mart	Circle K	Ministop	Kasumi Conv.
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Tokyo area	2,871	1,906	116	665	198
% of the total	41.5%	49.9%	6.4%	76.3%	23.0%
Nagoya area	0	369	1082	161	0
% of the total	0.0%	9.7%	59.9%	18.5%	0.0%
Osaka area	168	800	185	0	0
% of the total	2.4%	21.0%	10.2%	0.0%	0.0%
Other areas	3883	741	610	45	664
% of the total	51.6%	19.4%	33.8%	5.2%	77.0%
Total number of stores	6,922	3,816	1,806	871	862

Note: Tokyo area consists of Tokyo, Kanagawa, Saitama, and Chiba prefectures.

Nagoya area consists of Aichi, Gifu, and Mie prefectures.

Osaka area consists of Osaka, Kyoto, Nara, and Hyogo prefectures.

Source: Nikko Research Center (1998)

**Table 5-3**

**Stock Market Performance IY Group**

<b>June 1999</b>	Leading Retailer: P/E 62 compared low 30s for competitors due daily turnover per store of \$5800 versus \$4200 for competitors and profit margin 21% compared to 8% for competitors
<b>March 2000</b>	IY and SEJ account two-thirds market capitalization of retail companies listed 1 <sup>st</sup> Section of Tokyo Stock Exchange

Source: SmartMoney, June 1999 and Asahi Evening News, March 3, 2000

**TABLE 6-1**

**Top 10 Retailers in the World by Sales (as of 1996)**

	Sales (million US\$)	Sales CAGR(%)	Earnings (million US\$)	Earnings CAGR(%)
1. Wal-Mart (U.S.)	106,417	19.1	3,056	13.7
2. Sears, Roebuck (U.S.)	38,236	-7.8	1,271	-0.1
3. Metro (Germany)	36,568	-	406	-
4. Kmart (U.S.)	31,437	-2.1	-220	-
5. Carrefour (France)	30,277	11.2	610	23.3

6. Daiei (Japan)	28,281	8.4	-107	-
7. Ito-Yokado (Japan)	27,137	4.3	668	3.9
8. Dayton Hudson (U.S.)	25,371	9.5	463	9.0
9. Kroger (U.S.)	25,171	3.3	350	34.3
10. J.C. Penny (U.S.)	23,649	6.5	565	47.8
Seven-Eleven Japan (Japan)	14,464	12.1	497	10.2
Southland Corp. (U.S.)	6,869	-3.0	90	1.6

Note: CAGR: Compound annual growth rate of 1991-1996 (US\$ base)

Source: Ito-Yokado Group, Investors' Guide (1998)

**TABLE 6-2****Top 10 Retailers in the World by Market Value (as of 1997)**

	Market Value (million US\$)	EPS (US\$)	Sales (million US\$)	Net Income (million US\$)	Net Income / Sales (%)
1. Wal-Mart (U.S.)	114,120	1.33	104,859	3,056	2.9
2. Home Depot (U.S.)	49,471	1.30	19,536	938	4.8
3. Seven-Eleven Japan (Japan)	28,533	1.05	12,121	438	3.6
4. Marks & Spencer (U.K.)	28,217	44.89	13,136	1,268	9.7
5. Carrefour (France)	22,666	13.59	27,276	578	2.1
6. Sears, Roebuck (U.S.)	22,516	3.18	41,469	1,303	3.1
7. Ito-Yokado (Japan)	22,487	1.34	22,631	557	2.5
8. Tesco (U.K.)	21,854	40.37	23,261	871	3.7
9. Dayton Hudson (U.S.)	19,233	2.09	25,371	474	1.9
10. J.C. Penny (U.S.)	18,917	3.32	23,471	793	3.4

Source: Ito-Yokado Group, Investors' Guide (1998)



**TABLE 7****Seven-Eleven Japan: Five-year financial statistics**

Year ended February 28	1994	1995	1996	1997	1998
<b>For the year</b> (millions of yen)					
Total store sales	1,281,932	1,392,312	1,477,127	1,609,007	1,740,961
Revenue from operations	195,668	214,560	231,227	254,617	277,186
Net income (loss)	46,555	49,525	52,563	55,317	58,255
<b>At year-end</b> (millions of yen)					
Total Assets	395,431	443,347	489,299	546,040	603,307
Total shareholders' equity	278,864	316,648	356,440	397,744	439,411
Per share of common stock (yen)					
Net income	111.8	118.9	126.2	132.8	139.9
Cash dividends					
Adjusted	26.3	28.9	31.8	38.0	42.0
Unadjusted	35.0	35.0	35.0	38.0	42.0
Stock price					
High	6,975	7,074	7,000	7,760	9,500
Low	4,718	5,427	5,236	6,450	7,050
Number of stores					
Franchisee operated	5,324	5,720	6,179	6,644	7,076
Corporation operated	199	232	241	278	286
Number of employees	2,182	2,364	2,538	2,718	3,037

Source: Seven-Eleven Japan, Annual Report 1998.