PLANET Inc.

At the beginning of 1997, PLANET Inc. approached its 12th year in business on an upbeat tone powered by a sharp upsurge in its corporate membership base. This appeared to be a major turning point in the eyes of President Hiromasa Tamanyu, a man who had devoted himself tirelessly to PLANET's prosperity from its earliest days.

PLANET is specialized in the business of value-added network (VAN) administration. It was established in 1985 as a joint-venture with financing from eight manufacturers in the Japanese toiletries industry, and from the company INTEC Inc., a VAN service provider (non facility based carrier). PLANET's debut was driven by a shared awareness of the need for advances in distribution-related information technology industry-wide. As such, it was designed to rival the proprietary information network architecture that industry-leader Kao Corp. had set up to serve its own exclusive distribution chain. As an information network, per se, PLANET enlisted INTEC's VAN infrastructure for the exchange of manufacturer and wholesaler data on product orders, purchases, billing, and sales. As a VAN administrator, it has championed concepts for the adoption of new information technologies throughout the industry at large, engineered and promoted the standardization of transaction systems that are easier to use, and provided an array of system consulting services for clientele on both the wholesaling and manufacturing sides.

The manufacturers and client wholesalers participating in the PLANET network steadily multiplied, until practically all the leading manufacturers and wholesalers in the toiletries industry were represented. Though many VAN operators in the distribution sector have been wallowing in red ink, PLANET by contrast has posted steadily improved business results atop the growth in its client base; it closed out its fourth year in business with an operating profit, and by its eighth year had completely erased its accrued debt. Furthermore, steady profit growth has allowed the company to share the returns with its clientele by lowering its service fees, attracting more new clientele in the process. When PLANET first went into business, many companies were still resistant to the idea of exchanging valuable business information over a network that also handled information from their rivals. However, PLANET adopted a clear hands-off policy by leaving the daily affairs of system

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Yoko Takeda prepared this case with assistance of Prof. Jiro Kokuryo of the Graduate School of Business Administration, Keio University as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. (June 1997) Copyright © 1997 by Keio Business School. English version was made in February 1999.

administration to INTEC. In effect, it was PLANET's impressive business record, along with the corporate trust it amassed by guaranteeing the confidentiality of client information, that allowed it to accelerate the growth of its membership base. One of the more notable features of recent years is the uptrend in corporate membership not only from the toiletries industry, but also from such disparate manufacturing sectors as batteries, pharmaceuticals, and pet foods.

One event in the spring of 1996 effectively highlighted a major shift in PLANET's significance to the industry: the submission of an application for PLANET network membership by Kao, traditionally the archrival of practically every other participating manufacturer. The fact was that conventional wholesalers outside the exclusive Kao supply chain were responsible for about 25 percent of Kao's net sales. Kao had been urged to enter the PLANET fold by these wholesalers because they wanted to utilize the PLANET network for all their transactions, including those involving Kao merchandise.

To be sure, given the factors leading to PLANET's very incarnation, it should have come as no surprise that certain member-manufacturers were openly hostile to the idea of allowing Kao in the door. From a wholesaler's perspective, though, any network that did not include Kao would clearly be handicapped. Also, it should be noted that several member-manufacturers welcomed Kao in recognition of the trend toward open information networks.

Whatever the final outcome of the Kao issue, PLANET Inc. President Tamanyu was convinced that business conditions for his company had changed significantly from the early days, and that perhaps the time had come to reassess PLANET's own basis for existence. Market demand had leveled off, prices were falling, and the distribution system was undergoing major structural changes from the bottom up. In particular, many of the major merchandising chains had begun downsizing their store operations and consigning their multi-vendor distribution operations to upstream intermediaries. These trends in turn had an impact on traditional business arrangements and information network architectures. In the meantime, an accelerating cycle of change began altering the technologies and standards that formed the foundations for network infrastructure. Confronted by this wave of change in industrial structure and fundamental technologies, PLANET had no choice but to come up with a new vision for the future.

Toiletry Product Distribution

The Toiletries Industry and Wholesale Distribution

"Toiletries" is not a strictly defined term. In Japan, it essentially refers to a broad range of items: from soaps, household detergents, toothpaste, and cosmetics (excluding the luxury variety usually limited to counseling-based sales) to hair shampoos, hair rinses, body shampoos, and other personal cleansing agents; insecticides, aromatic air fresheners, and other chemical products for household use; and a variety of disposable paper-based products, including sanitary napkins and diapers. The industry itself comprises around 1000 manufacturers, the top-100 of which by some estimates account for most of total output in value terms. In market share, Kao Corp. is the industry leader (with 696.3 billion yen ($5,803 million, translated approximately at the rate of ¥120 =U.S.$1.00) in sales for the year to March 31, 1997,), and Lion Corp. is ranked second (324.6 billion yen ($2,705 million) in sales for the 1996 calendar year). Both companies have developed extremely broad categories of merchandise, and are close to being termed full-line manufacturers. The other relatively large-scale manufacturers include several Japanese outfits that have become highly competitive in specific product categories (e.g., the cosmetics firms Shiseido Co.,Ltd.. and Kanebo Home Products Marketing Co.,Ltd.., the toothepaste manufacturer Sunstar, Inc, the disposable paper-products manufacturer Uni-charm Corp., and household chemicals manufacturer ST Chemical Corp.) as well as the Japanese subsidiaries of various full-line manufacturers now renowned worldwide (e.g., P&G Far East Inc. and Nippon Lever Co.,Ltd..). (Appendix 1 Market-share Breakdown for the Toiletries Industry)

Wholesalers have traditionally been one of the principal links in the chain of distribution for toiletry products. Each manufacturer appoints specific wholesalers to serve as its exclusive agents; individual wholesalers in turn serve as agents for multiple manufacturers, and seal contracts with retailers for the provision of merchandise from each of the manufacturers with which it has agent ties. (These contract arrangements are termed "choai" in Japanese.) Despite their relatively inexpensive unit price range, toiletry items tend to be bulky, a factor that adds to the associated physical distribution costs. On top of that, in terms of scale, it is often necessary to deliver small orders of merchandise from many manufacturers to many retail stores dispersed over a wide geographic area. Wholesalers play an instrumental role in this respect because they are capable of maintaining accounts with multiple manufacturers, are prepared to break open cases of merchandise from manufacturers to fill orders from client retailers on an item-by-item basis, control the flow of business information on orders issued and received, and buffer manufacturers from the risk of nonpayment for goods delivered. By some accounts, as many as 300,000 retail stores across Japan now handle toiletry items. They range from superstores and supermarkets to convenience stores, drug

stores, cosmetics outlets, and home-goods centers. Furthermore, an estimated 2000 wholesalers handle the distribution of toiletry products to these retailers. Including top-ranked Paltac Co. (with net sales of 178.9 billion yen (1,491 million)) and second-ranked Daika Corp. (63.1 billion yen ($526 million)), only 30 or so have net sales above the 10 billion yen range, and very few conduct their operations on an extensive geographical scale. Most wholesalers, in fact, tend to be highly localized in their operations. At one time, wholesalers were categorized by the type of merchandise they specialized in; for instance, they were identified as paper wholesalers or detergent wholesalers. Recent years, though, have seen the larger wholesalers handle an increasingly diversified range of merchandise. Furthermore, more and more of those traditionally known as toiletry wholesalers in the strict sense have begun handling a wider range of nonfood general merchandise, including household plastic goods and batteries, cassette tapes, personal hygiene products, and stockings. (Appendix 2 An Overview of Wholesaler-Mediated Distribution in the Toiletries Industry)

Kao's Distribution Systems

In contrast with other manufacturers in the toiletries industry, top-ranked Kao Corp. has put together its own exclusive distribution chain. In the interest of holding down prices, Kao in the 1960s began the task of building its own national distribution network by transforming its agents into exclusive Kao vendors and having them merchandise its products directly to retailers. At present, 75 percent of all Kao merchandise is sold directly to retailers nationwide by nine exclusive Kao vendors. The rest is sold through about 2000 nonaffiliated wholesalers around the country on an agent contract basis.

In conjunction with the adoption of its new vendor-mediated supply chain, Kao also pushed ahead with work on a new physical distribution system and toward the goal of harnessing modern information technology. Today, it has nine domestic manufacturing facilities that supply merchandise in pallet (110 cm square) units to around 80 warehousing centers nationwide. Those centers sort and pick merchandise inventory to fill individual orders, and make deliveries to retail stores on the basis of efficient delivery schedules they have worked out for each district they serve. Kao maintains ownership of all warehouse inventory in its 600-product line. That ownership automatically shifts from Kao to the affiliated vendor and from the vendor to the end-retailer the instant the goods are delivered to the store.

Kao's physical distribution processes are supported by an information system that links company headquarters to all affiliated vendors. In 1974, Kao placed all its vendors online with headquarters, making it possible to gain a clear understanding of

sales to individual retail stores at a glance. By 1976, Kao headquarters had acquired the ability to control all inventory in the distribution pipeline. This was a pioneering achievement, considering that intercorporate communications was a technology still in its infancy. Kao was able to control the downstream flow of inventory precisely because it had its own exclusive supply chain and assumed ownership of all vendor inventory. (Appendix 3 Overview of Kao's Distribution Chain)

The Establishment of PLANET Inc.

The Concept of Industrial VANs

To compete with Kao's IT-driven distribution strategy, in 1980 one of its rivals, Lion Corp., installed online network terminals at 146 cooperating wholesaler outlets and began gathering data on product shipments to retail stores. However, wholesalers as a rule do business with a number of manufacturers. That presented a problem in that it meant they would actually have to follow two separate business routines: one for transactions with Lion, and one for their conventional, unautomated transactions with all the other manufacturers. Not only that, but if other manufacturers decided to adopt proprietary online transaction systems of their own, wholesalers would conceivably be compelled to install additional terminals for each, and face a steady decline in their overall business efficiency as a result.

In 1984, Uni-charm Corp. Vice President Tsutsumi approached Lion's system manager and requested that his company be allowed to share the terminal connections Lion had established with its wholesalers. Though Uni-charm was one of its rivals in the market for sanitary napkins and related products, Lion recognized that wholesaler-mediated distribution would suffer if wholesalers had to install separate terminals for each and every manufacturer they did business with. On that understanding, it worked out an agreement (Nov. 30, 1984) that allowed Uni-charm to utilize its terminals.

However, few wholesalers could expect a transaction network shared by only two manufacturers to bring any measurable gains in efficiency. As fate would have it, 1985 occasioned enactment of the new telecommunications law that broke up the old NTT phone monopoly and injected an element of competition into Japan's telecommunications sector. This development opened the door to a new class of telecommunications service provider (non facility based carrier) that could lease the phone lines controlled by NTT and other facility based carrier for their own business operations. In effect, the revised law sanctioned the establishment and operation of

VAN businesses that specialized in the provision of intercorporate data-exchange services.[1] Many players in the toiletry industry were strongly interested in VANs. Lion itself had earlier set up an internal team to explore the potential offered by industrial VANs. Lion's industrial VAN research team was a key proponent behind the idea of building an open, industry-wide VAN capable of serving the needs of all manufacturers, not just two; its industrial VAN proposal was approved by a conference of Lion executives.

From late 1984 through early 1985, Lion President Kobayashi (now Chairman) and Uni-charm President Takahara approached other toiletry manufacturers and solicited their support for the establishment of an industrial VAN. Kobayashi assumed the task of contacting manufacturers in the Tokyo area while Takahara contacted those based in the Kansai area. This collaborative push by Lion (the largest manufacturer then relying on wholesaler-mediated distribution) and Uni-charm (at the time a fast-growing purveyor of sanitary goods) had a tremendous impact on the industry at large. That impact was amplified by the fact that VAN services in general were then booming in popularity. As a result of the swift-footed, energetic overtures made by Kobayashi and Takahara, six companies voiced support for the creation of an industrial VAN: Shiseido Co.,Ltd.., Sunstar, Inc, Johnson Co.,Ltd.., ST Chemical Corp., Jujo Kimberly (now Crecia Corp.), and Gyunyu Sekken Kyoshinsya Co.,Ltd..

A VAN Administration Company

Despite their interest in setting up an industrial VAN, most companies in the toiletries industry lacked the requisite information networks or operational know-how. Furthermore, the goal itself effectively demanded that a plurality of rival firms come up with a model that allowed them to utilize shared network resources with peace of mind. To address these issues, it was proposed that the industry's member-firms pool their capital and set up a VAN administration company as an "information organizer," while consigning the network architectural design work and information processing essentials to a professional communications service provider. Because the "organizer" would not have any direct access to the business data flowing through the network, the confidentiality of that data would be secure.

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[1] 1. After the new telecommunications business law went into force, Japan witnessed the establishment of around 2000 VAN service providers, about 80 of which catered to specific industries. (Appendix 4 Major Industrial VANs)

INTEC Inc. was chosen to serve as the partner VAN operator. INTEC at that point had yet to list on the First Section of the Tokyo Stock Exchange, and for that reason, it was not so well-known. Nonetheless, its president, Koji Kaneoka, was one individual who had been instrumental in urging the Ministry of International Trade and Industry (MITI) and the Ministry of Posts and Telecommunications (MPT) to move forward with deregulation and help open up the telecommunications market. Another reason INTEC was selected was the fact that other than NTT, it was the only company experienced in building packet-switching networks suited for the task of exchanging data between otherwise hardware-incompatible systems.

PLANET's Establishment

On Jan. 30, 1985, it was announced at a press conference that Lion, Unicharm, INTEC, and six supportive toiletry manufacturers would co-finance the establishment of a joint-venture for industrial VAN administration. The following August witnessed the formal launch of PLANET Inc., a VAN "information organizer" assigned the mission of working together with manufacturers in the toiletries industry who supported wholesaler-mediated distribution, and of strengthening the distribution apparatus for the industry at large by assisting in information network development and the systematization of wholesaler operations. The new venture was capitalized at 240 million yen ($2 million), with equity shares of 25 percent taken out by both INTEC Inc. and Lion Corp., and the remainder broken evenly among the other six firms. (Appendix 5 PLANET Inc. Corporate Timeline and Profile)

PLANET's Roles

PLANET, the Information Network

As an information network, PLANET enlisted ACE Telenet (an INTEC VAN) for the exchange of data by manufacturers and wholesalers on order placements, stock purchases, bill processing, sales, out-of-stock notifications, inventories, and settlements. From the earliest days of PLANET's operations, four types of data in particular--namely, on order placements, stock purchases, bill processing, and sales--have accounted for the bulk of information exchanged over its network. Order placements mark the initiation of a transaction, and are sent by wholesalers to manufacturers. Stock purchase information is transmitted by manufacturers to wholesalers on a day-by-day basis for sales tabulation purposes; wholesalers compute it into their accounts payable after making any adjustments, as necessary, upon

delivery of the actual merchandise. These types of data are critically important to the task of streamlining accounts processing, especially if the wholesaler handles many different items. Bill processing information usually arrives from the manufacturer in the form of an invoice for goods delivered by a certain date each month. Wholesalers compare the data in these invoices with their own accounts payable records. Sales data include details on the products and volume that wholesalers sell to each client retail store; manufacturers consider such data crucial to a clear understanding of market trends. (Appendix 6 Network Connections by Data Type)

PLANET, the VAN Administrator

PLANET's initial VAN administration role involved formulating a vision for an industry-wide information network for all manufacturers and wholesalers, and putting together systems that everyone in the industry would find easy to use. Though most manufacturers and wholesalers were expressly interested in sharing various types of data in standardized formats, it would not be easy developing a single, open network for such purposes given that manufacturers as a group were engaged in competition with each other, just as were the wholesalers. PLANET fulfilled a role that no conventional telecommunications service provider could have undertaken at the time: namely, by building an easy-to-use system through close collaboration and contact with various companies throughout the industry.

Secondly, PLANET was instrumental in fostering network standardization. The intercorporate exchange of electronic business data demands that all parties comply with a standard set of rules, including those for the communications protocols that amount to technical conventions for signal transmissions; the data formats for business forms; product and customer codes; and the protocols utilized for error detection or correction during the transmission stage. In 1985, a year that saw numerous VANs go into operation, it was widely perceived that everything--from the communications protocols down to the product codes--would have to be translated in order for interbusiness data exchange to actually work. And in reality, no one was prepared to put up with the cost of converting everything. To most players in the industry, it seemed much more realistic to have VAN service providers themselves work out a standard set of conventions for interoperative transmission protocols, data formats, product codes, and so forth. As its communication protocols, PLANET adopted the J protocol, which had become the mainstream for data exchange between wholesalers and retailers, and the Zengin protocol, which was already widely utilized by many segments of the manufacturing sector. On the data format issue, it decided to develop and implement a standardized format capable of accommodating the

uniform business forms that the industry had already adopted. For product and customer codes (retail store codes utilized in sales-related data), PLANET chose formats that allowed participating manufacturers and online wholesalers to have codes verified on demand (for a fee) through a consolidated code management center that PLANET set up internally and tied into its own database. Furthermore, PLANET's code formats were compliant with the JAN codes and common customer codes already implemented by The Distribution Systems Research Institute, an organization affiliated with MITI. This consolidated approach to the management of customer codes was one of the features that set PLANET apart from rival VAN services. Standardized customer codes demonstrated their real power when manufacturers began collecting and processing sales data from wholesalers on a per-retail-store basis.

Third, PLANET worked to boost the number of participating manufacturers, invited in wholesalers that the networked manufacturers wanted online connections with, and provided all clientele consulting services in the arena of system installation. The benefits and conveniences of the PLANET network multiplied in tandem with growth in the corporate client base. Nonetheless, the task of persuading each and every desired wholesaler to join up, along with the support work involved in helping find solutions to the complex problems involved in linking everyone into its internal information system, saddled manufacturers with an enormous cost burden. Another difficulty was the resistance of certain manufacturers to network participation by their rivals. Had PLANET pursued a consolidated approach to the promotional and consulting-related services it offered wholesalers and manufacturers as a group, it would have reaped a tremendous savings in time and capital costs.

Progress

More Participants and Lower Service Fees

By the time its operations entered full stride in 1986, PLANET had 16 companies participating in its network, double the number of manufacturers supporting it when it went into business the year before. Furthermore, in 1997, P&G Far East Inc., a subsidiary of the world's largest toiletry manufacturer, also joined, effectively signaling that PLANET's prestige as an industrial VAN service provider had finally taken root. In 1990, Matsushita Electric Ind. also decided to utilize the PLANET network for the distribution of its battery, light bulb, and cassette-tape product lines. Though Matsushita already had its own VAN system, Pana-Van, it elected to rely on PLANET's VAN for distribution to the convenience-store chains and home-goods centers its own distribution network was unable to reach. This development essentially set the stage for a steady influx of new member-manufacturers from an

array of other peripheral industries. The new entrants included such firms as Omron Corp.and Termo Corp. (thermometers and blood pressure manometers), Risu Co.,Ltd.. (plastic products), Master Food Ltd. and Purina Japan K.K. (pet foods), Jex Co.,Ltd.. (latex products), Fukusuke Corp. (light apparel), Kashimura Co.,Ltd.. and Konica Sales Corp. (camera film), and many pharmaceutical companies. Since 1995, the pace of this uptrend in participation has demonstrated even stronger momentum, and it is apparent that various factors have contributed: e.g., a broader understanding of electronic data interchange (EDI: a standard for interbusiness data transmissions; explained in greater detail later), the attraction of service fee cuts, and reliable guarantees of corporate data security. At the start of 1997, the PLANET network comprised 110 participating manufacturers and about 400 online wholesalers (about 300 if wholesalers only placing orders with dedicated "P-8000" terminal equipment are excluded), and handled monthly volume of around 45 million online transactions. (Appendix 6 Network Connections by Data Type)

Business Performance and Earnings Structure

The steady expansion in its network-client base allowed PLANET to turn an operating profit by its fourth year in business, and completely erase its cumulative deficit by the eighth year.

PLANET's chief sources of income are as follows: a one-time startup fee for each new online connection established between a manufacturer and wholesaler; a fixed monthly service fee per connection; and a fee for the management of product codes and client codes. Through PLANET, INTEC is paid a communications processing fee for each network communications record (a single one-line field on a transmitted electronic business form).[2] These are fees that participating manufacturers are assessed. Wholesalers are only responsible for the public telephone charges to their nearest Ace Telenet access point, and for utilization of a fax delivery service (discussed later) that sends faxes to manufacturers they do business with.

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[2] The one-time startup fee a client wholesaler pays per connection is 30,000 yen ($250) for a connection that handles up to four types of data (excluding sales data; 75,000 yen ($625) for a connection that handles up to four types of data, inclusive of sales data; and 130,000 yen ($1,083) for a connection that handles from five to 10 types of data. The corresponding flat monthly service fees per connection are as follows: 4800 yen ($40), 5500 yen ($46), and 12,000 yen ($100), respectively. PLANET charges a monthly base rate of 30,000 yen ($250) for code management services, with an additional charge for the performance of individual queries and retrievals on request (e.g., 22 yen ($0.18) per transaction client code queried online). INTEC is paid a communications processing fee of 1.55 yen ($0.01) per record (a one-line field of business form data; 1.08 yen ($0.01) for batch-processed records). These were the rates after PLANET implemented its fourth rate cut in 1996.

Excluding the communications processing fees it pays INTEC, PLANET has a cost structure composed almost entirely of fixed costs: namely, personnel expenses and expenditures for systems development. It is guaranteed a steady incremental increase in its fixed earnings with every new client connection contract. This is the chief reason its earnings structure has improved in tandem with the expansion of its network client base.

PLANET was financed by nine companies when it was founded. Since then, its capitalization has been increased to 280 million through the equity participation of several additional firms, each of which provided equity capital of 10 million yen. The new shareholders include Kobayashi Pharmaceutical Co.,Ltd.., Kaijirushi Co.,Ltd.., Nissan Sekken Co.,Ltd.., and Nippon Lever Co.,Ltd..

Given the initial objectives underpinning the establishment of his firm, President Tamanyu did not believe it necessary to let the profit motive be PLANET's only guide. The rapid pace of advancement in the information technology field demanded that his company have the ability to make quick decisions. That was why PLANET was given the structure of a joint-stock corporation rather than that of an industry foundation or cooperative. Other than allocations for investments in future systems development, it would be PLANET's policy as long as its profits were rising not to retain anything for its own use, but to share the benefits with its client base. In 1995, PLANET became the first VAN service provider to pay a stock dividend. Furthermore, it has lowered its service fee structure four times since 1986.[3]
(Appendix 7 Financial Statement for the Business Year to July 31, 1996)

Vision

Product Orders Placed Entirely Online

PLANET was bound to run into problems with the drive to expand its network. The key problem was that many small-scale wholesalers and manufacturers were not prepared to build information systems even for the exchange of data with the network's host computers. In fact, that many of the manufacturers and wholesalers utilizing the PLANET network also had clients that could not be dealt with online, but who still mattered despite the relative insignificance of the transactions involved. This meant that network participants faced the task of performing two separate

[3] PLANET cut its use fees by 20 percent in 1986; communications processing fees by an average 40 percent in 1987; connection fees by 33 percent in 1992; and connection fees and use fees by 68 percent and 17 percent, respectively, in 1996.

transaction processing routines, something that was certain to hurt their business efficiency.

The placement and acceptance of orders accounted for the vast bulk of all transactions conducted over the network. As a realistic approach aimed first of all at putting those routines entirely online, PLANET opted to lend its client wholesalers P-8000 terminal units (hand-held computers with attached barcode scanners) for order-placement purposes. This enabled wholesalers to place orders to manufacturers simply by scanning the barcodes on products in inventory and inputting a specified amount. One new service that PLANET is slated to introduce involves the utilization of fax optical character recognition technology that will allow manufacturers to receive orders online even from wholesalers who have no computers or network terminal equipment at all. As of 1996, the top 10 manufacturers on the PLANET network in terms of online order volume received an average 43.5 percent of all their orders from wholesalers online (39.3 percent from host computers, 4.2 percent from P-8000 terminals). Orders placed by fax or telephone still accounted for 57 percent of the total. PLANET is targeting an online share of 60 percent within the next year.

PLANET has also developed its "Mekatan-21," a dedicated terminal that allows manufacturers without host computers to utilize the PLANET network for the acceptance of wholesaler orders and the transmission of stock purchase data to wholesalers. Manufacturers lacking either host computers or Mekatan terminals can still utilize a fax-based order-processing service that harnesses the PLANET network to deliver fax transmissions from wholesalers in electronic form. This service in particular has become extremely popular among wholesalers. A single fax order from a large wholesaler can be up to 200 pages long. In years past, it would have taken around four hours to send that order by conventional fax machine, and frequently enough, the sender was frustrated in the process by busy lines or receiving fax machines that ran out of paper. With the PLANET fax order-processing system, even large orders can be transmitted in only 15 minutes or so, thereby lowering the wholesaler's personnel expenses and exposure to potential transmission foul-ups. In effect, the fax order-processing system has made it feasible for wholesalers on the PLANET network to deliver all their orders to manufacturers in electronic form. (Appendix 8 100% Online Order Processing)

Total EDI Outline

Though PLANET started its network services initially for the electronic exchange of four types of data (order placements, stock purchases, bill processing, and

sales), by 1995 it was handling four additional types: data on out-of-stock notifications, inventories, settlements, and merchandise. That is not to say, however, that eight data types were enough to meet all the demands of data exchange between manufacturers and wholesalers. First of all, in the context of streamlining distribution processes, there were still many areas where efficiency could be improved through the utilization of online data exchange: delivery notifications, inspections of delivered merchandise, the billing and reimbursement of subsidies for promotional activities, and the processing of merchandise returns. Second, some types of data already released require additional data, depending on the pattern of the transaction involved. For example, conventional methods of sending data on stock purchases and bill processing are suitable if the manufacturer is large enough. However, if the manufacturer is small in scale and it is the wholesaler that has the extra capacity for systematization, it might be more realistic in practice for the wholesaler to send the manufacturer data on accounts payable and other payment details rather than have the manufacturer send data to the wholesaler. Third, if examinations of invoice data turn up inconsistencies with the wholesaler's accounts-payable data, transmissions of additional data notifying the other party of details on the potential computational error will be required.

In 1995, PLANET reviewed the data types required by manufacturers and issued its Total EDI Outline, a document analyzing current data exchange needs and defining 35 essential data types. (Appendix 9 Total EDI Data Types at a Glance) Driven by the objective of putting 35 different types of data within reach by the year 2000, PLANET has steadily added to the list of data types it handles. In early 1997, that list reached 13 with the inclusion of data on such factors as scheduled merchandise returns and payment verification.

PLANET Physical Distribution

By some estimates, physical distribution and warehousing costs account for about 6 percent of the total in distribution costs, whereas data-exchange costs account for only half a percentage point. One conclusion that can be drawn is that no matter how streamlined one's information network is, serious cost reductions will remain out of reach unless steps are taken to streamline the physical distribution-related processes as well. As one outgrowth of the quest to build a common physical distribution framework shared by manufacturers and wholesalers alike, PLANET Physical Distribution Co.,Ltd.. was established in 1989 as a joint-venture with financing from PLANET Inc. and a consortium of 10 toiletry manufacturers: Lion Corp., ST Chemical Corp., Sunstar, Inc, Uni-charm Corp., Gyunyu Sekken Kyoshinsha Co., Ltd., Johnson Co., Ltd., Kaijirushi Co., Ltd., Kobayashi Pharmaceutical Co., Ltd., Nissan Sekken

Co.,Ltd., and Nippon Lever Co.,Ltd. At present, 14 manufacturers are participating in PLANET Physical Distribution, including those just listed.

Under the PLANET Physical Distribution framework, participating manufacturers place their merchandise in the inventory of a joint distribution center that fills and delivers orders destined for wholesalers. In practice, when a manufacturer receives an order from a wholesaler, it transmits the required shipping instructions to computers at the joint distribution center. The center sorts out the information in the instructions it receives from each manufacturer, collects of the names of the designated wholesalers, and outputs warehousing picking lists for the shipments to be made to each wholesaler. The actual tasks of product picking and delivery have been contracted to Nippon Express, a major trucking service. Prior to the debut of this system, most manufacturers made their own deliveries. Now, though, it is possible to have mixed merchandise orders from a variety of manufacturers delivered in one truck. This approach both contributes to the efficient utilization of truck load capacity and, in the eyes of the wholesaler, limits the task of receiving merchandise deliveries to a single process. At present, PLANET Physical Distribution has its operations up and running in the Sendai, Nagoya, and Kyushu districts. However, unlike PLANET's data communications services, this physical distribution business cannot be expected to achieve dramatic growth for a number of reasons: notably resistance from existing physical distribution firms and the heavy initial investments involved. In any event, PLANET Physical Distribution has plans to expand into the Chugoku, Shikoku, and Hokkaido districts, and envisions eventually offering its services on a national scale.

Joint Account Services

In addition to its services in the information network and physical distribution arenas, PLANET also began a foray into the provision of joint settlement services. In 1990, it initiated a "joint account service" that allowed manufacturers to deposit lump-sum amounts for the payment of rebates and sales promotion-related subsidies to multiple wholesalers. For this purpose, PLANET opened four separate bank accounts in its own name for deposits by participating manufacturers. When a manufacturer makes a deposit, it electronically notifies PLANET of payment details. PLANET utilizes that information to organize batch payments to designated recipient wholesalers, places lump-sum deposits into their accounts, and accordingly provides them an itemized breakdown of settlement details.

The joint account service has been a boon in various respects. For manufacturers, it has significantly reduced the tedium involved in making payments of small sums into many separate wholesaler bank accounts. For wholesalers, it has eliminated the necessity of manually verifying what every single payment is for. Despite these advantages, though, the number of manufacturers utilizing the service remains limited. One potential reason for the lack of growth is that the corporate personnel responsible for disbursements are in accounting, not the information systems departments where PLANET has become a familiar name. Most accounting personnel apparently are not that knowledgeable of PLANET, and tend to be conservative by nature.

Another point worth noting is that wholesaler payments to manufacturers for delivered merchandise are far more extensive in their volume than the manufacturer-to-wholesaler payments PLANET's joint account service was designed to handle. Payments from wholesalers involve huge amounts of money; it is therefore essential that suitable mechanisms be in place to handle potential payment shorfalls or credit risk. PLANET has not amassed any experience in dealing with such issues to date. It could be that because the settlement of payments for goods delivered is generally a once-a-month affair, PLANET has not felt much need to expand or refine its services for that purpose. However, noting current trends in financial deregulation, it probably has an interest in providing services of some kind in the years ahead.

Changes in the Structure of Toiletry Product Distribution

Multi-Product, High-Frequency, Small-Lot Deliveries

In years past, the distribution of toiletries, processed foods, and other consumer goods was basically a manufacturer-devised framework, in that manufacturers had their own agent distributors handle the distribution and delivery of their merchandise to points nationwide. At one time, the physical distribution stage itself was synchronized with the manufacturer's production cycle, and involved the delivery of goods to the retailer either directly in case form, or to retail outlets in truckloads of merchandise assorted at the wholesaler's discretion. However, in the 1970s, distribution entered an age of structural change. Gone were the days when price cuts were somehow enough to clear out unsold inventory. Manufacturers had at last been thrust into an age where they had no idea what would sell unless they actually placed it on the market first. One symbol of the structural changes under way was the convenience store: a new small-scale retail format designed to sell only products that consumers would buy, and that would not tolerate defective merchandise. To accommodate the needs of convenience stores, wholesalers were expected to maintain

inventory in a wide mixture of merchandise from multiple manufacturers, be able to pick and sort through that inventory to fill orders on a broken-lot, itemized basis, and make high-frequency deliveries. They accordingly widened their ties in the manufacturing community and began maintaining exclusive inventories and distribution centers for selected retail chains. High-frequency, small-lot deliveries demanded that wholesalers be supplied with a smooth and capacious flow of order-related data. This requirement set the stage for the debut of electronic ordering systems (EOSes) between wholesalers and retailers. In 1985, the year PLANET debuted, high-frequency, small-lot deliveries were being made by wholesalers not only to convenience stores, but also to an increasing number of large retail stores. Furthermore, exclusive retailer distribution centers and EOSes were quickly becoming widespread throughout the distribution industry at large. PLANET's establishment signaled an interest in accommodating the mounting speed and volume of the EOS-based downstream flow of information (between wholesalers and retailers) while laying the infrastructure for the upstream flows (between manufacturers and wholesalers).

In-Store Efforts to Cut Distribution Costs

Since 1992, the Japanese economy has been in a protracted slowdown marked not only by faltering demand but also by a steep downtrend in commodity prices. Though sales turnover in the market for toiletry and food items has trended flat, prices have steadily fallen several percentage points with every passing year. (Appendix 10 Trends in Market Scale for Key Toiletry Products) By some accounts, this trend was not a transient manifestation of ups and downs in the business cycle, but rather, the product of flat population growth and a maturing marketplace, and likely to be long-lived. Market expansion could not be expected to fuel any new growth in sales. Many retailers accordingly began demanding not only that upstream suppliers maintain their high-frequency, small-lot distribution services, but also that they provide additional services capable of translating into cost reductions for retailers. In-store physical distribution cost reductions became a point of contention in this respect.

High-frequency, small-lot deliveries also place a heavy burden on retail stores, not just the supply side. With every truck arrival--often several times in a single day--retail store personnel face the task of inspecting, unpacking, and placing the delivered merchandise on sales racks. Stores that have business arrangements with multiple suppliers must also devote a substantial number of manhours to the task of processing separate receipts from each one. Once high-frequency, small-lot deliveries became commonplace, some of the large retail chains abandoned the routine of having each and every outlet handle truck deliveries. Instead, they contracted regional distribution

centers to accept and inspect deliveries for all the chain stores in their area, and then make the final deliveries. Several refined approaches have emerged for this purpose. One is for retailers to set up their own distribution centers, have them accept shipments from multiple manufacturers, and then make mixed-product deliveries to each outlet. Another approach is to contract specific wholesalers to run these distribution centers, and a third is for retailers and their supplying wholesalers to run such centers on a cooperative basis.

Several noteworthy trends in this area began taking shape around 1992. First, the idea of setting up distribution centers began catching on even among medium-scale and smaller retailers. Second, in the interest of streamlining the store routines involved in unpacking and displaying fresh merchandise, retailers increasingly expressed a desire to have distribution centers not only sort and fill orders for each outlet, but also to deliver those orders with the merchandise arranged by product category or sales area. Third, a growing number of retailers sought to outsource distribution center functions to selected wholesalers, or to set up and run distribution centers in collaboration with various wholesalers.[4] These trends compelled wholesaling businesses in turn to acquire and master a new arsenal of distribution expertise: in particular, the ability to handle merchandise from other wholesalers in addition to their own, as well as the ability to run distribution centers on a joint basis with other companies.

Cost Reduction of Sales Space Allocation and Ordering Procedures

In addition to store distribution costs, order placements and decisions concerning merchandise mix and sales-space allocation also account for a sizable share of the total in overhead costs. Large supermarkets must typically select, and place daily orders for, around 20,000 different items of merchandise. That is not a task that can be left to human experience or intuition alone. Many manufacturers and wholesalers have traditionally assisted their client retailers with the sales-space allocation and order-placement routines. However, this assistance was largely of a promotional nature, and usually had no systematic basis.

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[4] Retailer-operated distribution centers were considered expensive compared to their wholesaler-run counterparts because they had relatively less expertise in the distribution field and were burdened by higher labor costs. In particular, retailers were not very effective in keeping their centers stocked with inventory in anything other than their own private-brand merchandise. Whenever stores placed an order, the retailer-run centers essentially had to engage in a cross-docking exercise: that is, requesting shipments from wholesalers, breaking those open and sorting out the merchandise, then making the final delivery to client stores. To accommodate these retailer-run distribution centers, wholesalers in turn had to set up their own specialized distribution centers nearby. However, these moves merely added more stages to the entire distribution process and thus hurt its efficiency. Not only that, but upstream members of the distribution chain became increasingly discontent with the collection of distribution center management fees (from wholesalers) by retailers who claimed to be fulfilling a role once expected of wholesalers: the delivery of product orders to retail stores.

The late 1980s witnessed the formation of several full-fledged partnerships by wholesalers, retailers, and manufacturers in the U.S. Those partnerships were accompanied by rapidly expanding quick-response (QR) and efficient consumer response (ECR) movements, which sought to harness information technology and overhaul all stages of the distribution process from manufacturer to retailer. As a result, many companies succeeded in cutting their costs and improving the effectiveness of their merchandising strategies.[5] By 1995, most elements of the Japanese distribution sector had become familiar with QR and ECR concepts. Two core technologies in particular attracted special attention. One was vendor-mediated, automatic restocking, whereby manufacturers and wholesalers sought to keep inventories automatically replenished not so much in response to retailer orders, but rather on the basis of demand forecasts backed by analyses of retailer POS data. The other was category management, which explored the optimal merchandise category mix for retail stores--also on the basis of POS data analysis. Many manufacturers and wholesalers of toiletries and food products began studying automatic restocking and category management, and some eventually put their principles into practice.

Efforts by Food Wholesalers

In terms of business scale, most food manufacturers seemed small compared to their counterparts in the toiletries industry. For this reason, it was essential that food wholesalers take steps to fortify their own business foundations if they expected to satisfy the demands of the retailing community. The large retailers with nationwide reach and a wide assortment of merchandise displayed a selective tendency to do business with wholesalers who were capable of building distribution and information systems on demand. To accommodate these retailers, many processed-food wholesalers sought early on to expand their own scale through a series of mergers, acquisitions, and new affiliations. Currently, the processed-food industry is served by six wholesalers with national reach and annual sales of at least 300 billion yen ($2,500

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[5] QR campaigns became common around 1985 in the U.S. apparel and household goods industries, where they were aimed at building optimized supply lines from manufacturers to retailers. At the outset, they were chiefly concerned with the goals of quickly providing upstream elements with feedback on retail-store sales trends, and fostering distribution-related advances capable of reducing inventories and defective-merchandise ratios. With time, though, they gradually became oriented toward improvements in promotional strategies, pricing policies, costing methods, and merchandising-related issues concerned with harnessing sales data for product development, or so manufacturers and wholesalers could assist retailers with product selection. To put QR principles into practice, an array of new systems were devised for inventory control, order placement, production scheduling, distribution, sales-space allocation, product design, and settlements.

ECR principles are essentially an extension of the QR concept, and compelled food product manufacturers and wholesalers to collaborate on improved business processes with a view to the realization of optimized product mixes and strategies for inventory restocking, sales promotions, and marketing. They were proposed in 1993 by members of the supermarket industry who felt threatened by the then-new and increasingly competitive business formats embodied in supercenters and warehousing clubs.

million). Third-ranked Ryoshoku Ltd. in particular was one that began moving early to develop its distribution channel infrastructure and adopt information technologies.[6]

Eventually, more and more medium- and large-scale retailers in the food industry began contracting selected wholesalers to handle multi-vendor deliveries to their outlets. The assortment of merchandise handled by those wholesalers widened in the meantime, from processed foods to candy and pastries to toiletry goods and other nonfood items as well. In 1996, Ryoshoku Ltd. set up a physical distribution subsidiary, Best Logistics Partners, effectively dividing its physical distribution and merchandising operations into separate business units, and began aggressively peddling its multi-vendor distribution service offerings to retail stores. In the toiletries sector, four Kanagawa Prefecture-based wholesalers established Kanagawa Distribution Service Cooperative (Kanagawa Ryutsu Service kyodokumiai) in 1991. Though efforts were also made to provide joint delivery services to stores in the medium-scale Sotetsu Rosen supermarket chain beginning in 1995, the drive to outsource consolidated distribution services remained small in scale compared to trends in the food industry. (Appendix 11 Noteworthy Efforts to Consolidate Multi-Vendor Distribution, Joint Delivery, and Accounts Management)

On the merchandising front, several large food wholesalers began utilizing mergers as a means of widening the range of products they handled to include candies and pastries, pet foods, and various nonfood categories. Moreover, it seemed obvious that toiletries were one of the categories they had targeted, for toiletry products were also handled by most food retailers and subject to much the same distribution patterns. The big food wholesalers were indeed large-scale enterprises, and they had the ability to engineer their own logistics systems. As such, they were clearly a threat in the eyes of most toiletries wholesalers.

Changing Business Practices

It had long been common practice in the toiletries and processed-food industries for manufacturers to quote not only official prices for deliveries to wholesalers, but also the wholesale and retail prices to be paid by retailers and

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[6] Not only did Ryoshoku strive to accommodate the large retailers; it also forged close ties to medium-size retailers in an effort to corner more of the market, and from that footing advocated the creation of comprehensive systems for the exchange of business data, physical distribution, category management, and sales-space allocation. In 1993, the industry was astonished when Sotetsu Rosen, a medium-scale supermarket chain in Kanagawa Prefecture, consigned Ryoshoku to handle 75 percent of its unrefrigerated food distribution needs. Ryoshoku also pushed ahead with efforts to develop its information network infrastructure by equipping small retail clients with terminals for order placement. High-frequency, small-lot distribution also caught on and spread among small-scale retailers, to the point that broken-lot deliveries eventually accounted for 70 percent of the total in volume terms. Prompted by these developments, in 1990 Ryoshoku began building several regional distribution centers (RDCs) that were capable of picking and delivering broken-lot orders for clients dispersed over broad areas.

consumers, respectively. Though transactions are rarely if ever actually settled on the basis of these official price quotes, the price quotation system itself has continued to play a role. After stipulating the official prices for their goods, most manufacturers were ready to provide rebates and sales subsidies to retailers and wholesalers on a discretionary basis. This practice served two useful purposes. First, it helped manufacturers prevent steep price slides and in other ways exert a certain degree of price control. Second, it facilitated inventory clearance and the uniformity of production schedules. A clear picture of real product price levels at the intermediary distribution stages will not emerge unless one deducts the rebates and promotional subsidies that many manufacturers disburse.

However, this practice, too, was eventually impacted by a slowdown in sales volume and falling retail prices. In effect, many manufacturers sought to offset the slump in retail prices with rebates and subsidies, in the process inflating their own sales promotion-related expenses. Complicated accounting procedures confronted them with yet another serious burden. To cut their overhead and streamline their back-office processes, many companies in the toiletries and food industries decided to overhaul their traditional business practices. After food industry leader Ajinomoto Co. scrapped its rebate policies and abandoned the traditional practice of setting official prices in 1995, many other companies soon followed suit. In the toiletries industry, Lion simplified its rebate framework in 1991, and Kao in 1995 abandoned its practice of setting recommended retail prices for certain products. Some members of the manufacturing community seriously feared that putting an end to rebates, subsidies, and price quotations would hurt their sales, undermine their ability to regulate the flow of production, and encourage retailers to demand lower prices once the ambiguities in price structure had been removed. There was also the danger of a backlash from wholesalers deprived of their vested interests. In general, though, the prices bid and quoted in business transactions gradually moved closer and closer to real market prices.

Trends in Technological Standardization and PLANET's Response

EDI Trends in the Wholesaling Industry

The electronic exchange of data with other companies demands that everyone comply with a shared set of rules for the communications protocols, data formats, data codes, and various procedural details. If those rules applied only to specific cases, e.g., the type of transaction or the exchange of data between two organizations alone, it would be essential to utilize different communications or database software packages

and different work processes for each and every organization one intends to exchange data with. This, of course, would add substantially to the overall costs involved. However, if the objective is to foster the spread of intercorporate data exchange, one solution would be to share a set of standardized rules for the communications protocols, data formats, product codes, and so forth. Electronic data interchange (EDI) comprises a set of standard conventions for this purpose.

Uptrends in the number of products handled and in the frequency of order placements, along with pressure to cut overhead costs in the aftermath of the oil crisis, prompted many wholesalers and retailers in the Japanese distribution sector to adopt electronic ordering systems (EOSes) far sooner than was the case in other industrial sectors. This trend fostered the widespread implementation of the J protocol: a protocol defined and established by the Japan Chain Store Association in 1980. Data formats were another issue, however. By the time efforts to come up with a standardized format had begun in earnest in 1982, many retailers were already placing and accepting orders electronically with proprietary formats of their own. Eventually, the industry found itself confronted by a jumbled composite of as many as 1000 different data formats. At the product code level, it was also true that many retailers had implemented proprietary code sets. Nonetheless, a push was made to standardize on the JAN code set, which had been developed for POS terminals and was already in use on the labeling and packaging for practically all toiletries and food items. For some years now, JAN codes with a three-digit ITF code extension have become increasingly common as a standard for distribution industry purposes.

Whereas retailers were in a position to choose wholesalers who had the ability to develop information systems, manufacturers and wholesalers had to conduct their EDI communications activities on a reciprocal, many-to-many basis. PLANET and other industrial VAN services have been instrumental in promoting the standardization of EDI activities for this upstream layer. However, in contrast to the voluminous flow of data in the downstream layer, that is, between wholesalers and retailers, upstream demand for EDI was not that intense. This is one reason intercorporate EDI has been slow to take root in many industrial sectors.

PLANET's Response

The toiletries industry also faced the necessity of developing standardized formats for the downstream, wholesaler-retailer stages of communication, and thereby maintaining an uninterrupted flow of data from manufacturers to retailers. Although PLANET was not interested in assuming any direct role in the downstream exchange of data between wholesalers and retailers, it was supportive of the standardization

process for downstream EDI that had been put into motion by the National Federation of Toiletries Wholesalers. (Zenkoku Nichiyohin Keshohin Oroshi Rengoukai) Pilot EDI operations between wholesalers and retailers were slated to get under way in the spring of 1997.

Setting up an information network for the toiletries industry alone did not seem very realistic because toiletry goods constituted only one product category in the eyes of retailers. It was clear that retailers needed a network capable of accommodating the data on all the product categories they handled, including foods, consumer drugs, and light apparel. In 1992, the MITI-affiliated The Distribution Systems Research Institute established a unified set of business forms for transactions between manufacturers and wholesalers in various industries; companies from five sectors--household goods, cosmetics, consumer drugs, tissue products, and medical consumables--announced that they would adopt the new forms. The national wholesaler federation's forms, on which the PLANET system was based, incorporated six one-line fields per sheet for the input of product names, quantity, and other data. The new cross-industrial forms, however, incorporated eight fields per sheet, and on top of that, they were compliant with the ITF code set. PLANET released a new system adapted to the cross-industrial forms in 1996, and has been moving ahead with work to make a full system changeover.

In terms of streamlining supply frameworks for efficiency, its seems imperative that attention also be devoted to EDI for the material producers situated farther upstream than manufacturers. PLANET was scheduled to begin providing EDI services between toiletries manufacturers and producers of packaging materials in April 1997. As a future undertaking, it was also interested in starting up EDI links to suppliers of raw materials. Noting the difficulties involved in establishing product codes for intermediate materials, PLANET foresaw a need for a more flexible data format than those in use downstream, where standardized product packages had been defined.

Compatibility with international standards was another issue that warranted attention. At the international level, Europe was leading efforts to develop and refine UN/EDIFACT, an emerging data format standard. Though the U.S. already had its own domestic standard, ANSI X.12, it had decided to change over to UN/EDIFACT. Additionally, it was anticipated that many Asian countries were planning to lay new information network infrastructure geared to the new UN/EDIFACT standard. Although Japan's distribution industry had yet to adopt UN/EDIFACT, there was ample reason to believe that direct, EDI-based overseas purchases by the larger retailers would become less of a rarity as domestic retail prices continued to fall.

The Internet and Multimedia

Intercorporate networking in recent years has been under the heavy influence of the Internet, a medium that has enjoyed booming popularity in Japan since about 1995. Unlike traditional computer networks that were built around one central host computer, the Internet was designed to serve as a global mesh of connections allowing reciprocal communications by the computers on corporate and university LANs worldwide.

The Internet's impact has been twofold. First of all, it has set the stage for the creation of an array of technological standards, including the communications protocol TCP/IP, assorted file transfer protocols, and several file formats. Broad compliance with these standards obviated the need for proprietary networks driven by powerful host computers, thus allowing many organizations to hold their capital investments in communications gear to a minimum. Data transmissions originate from personal computers, most of which are capable of running software packages that harness the ubiquitous Internet communications standards.

Secondly, the Internet added intense momentum to the trend toward multimedia communications. At one time, unidirectional flows of text data accounted for practically all intercorporate data exchange. The Internet communications standards actively integrate image, video, and audio data, and are accordingly making interactive multimedia communications an inexpensive reality.

PLANET utilized two strategies in its bid to harness the Internet's communications standards. First, it decided to adopt TCP/IP while maintaining closed lines for the traditional J protocol. Compliance with Internet standards effectively opened the door to the inexpensive provision of a wide range of new services, including the exchange of product catalogs incorporating digital image data, as well as TV conferencing and other forms of interactive communication. In one sense, PLANET envisioned placing the entire industry on a single intranet (a closed network driven by Internet communications standards). Second, it considered mediating direct transactions over the Internet for transactions with relatively small companies or businesses abroad. PLANET anticipated that it would be possible to improvise various technological and procedural fixes as a means of effectively neutralizing the security risks that accompanied Internet use. It had set the summer of 1997 as its target date for the launch of Internet-based EDI services that would allow small and medium-scale wholesalers to participate with a low initial investment.

Kao's Participation in the PLANET Network

The Impact from Kao System Distribution

One event in September 1996 threw the toiletries industry into convulsions. Two months earlier, Kao had launched Kao System Distribution(Kao System Buturyu), a joint-venture it financed together with eight of its exclusive vendors. The "event," so to speak, was superstore retailer Ito-Yokado's announcement that it had contracted Kao System Distribution to handle the consolidated distribution of toiletries merchandise to 32 of its stores in Kanagawa Prefecture, beginning in 1997. Shipments from various wholesalers were to be collected first at Kao distribution centers, mixed with Kao merchandise, picked and sorted by destination store and sales category, and then finally delivered to retail outlets on a consolidated basis.

By 1993, Kao was already conducting all of its business transactions entirely online with the large superstore chain, Jusco Co., for everything from order placement to final settlements. In the process, it had begun analyzing Jusco's POS data and making recommendations for the optimized allocation of sales space, and also initiated automatic restocking routines that were based on its own forecasts of future demand. Although the following years would see Kao establish full-grown EDI links with as many as 30 major retail chains, its physical distribution services to those retailers would remain limited to the provision of Kao-brand merchandise, only. The bottleneck for Kao was that in contrast to conventional wholesalers, it was not in a position to handle the merchandise of other manufacturers.

Kao had its own exclusive distribution network. It had moved early on to set up fully computerized distribution centers in strategic locations nationwide, and it was the only manufacturer engaged in the split-case picking and delivery of broken-lot orders to client retailers. Furthermore, it had earned a solid reputation for the precision of its distribution operations. Kao System Distribution was set up to utilize Kao's 100 distribution centers around the country for the acceptance of shipments not only of products in Kao's own 600-item product line, but also of merchandise from wholesalers handling other brands. Those facilities had the mission of picking and sorting through this mixed inventory and making consolidated deliveries to individual retail stores.

Ito-Yokado's decision to fully outsource its store delivery service needs not to a wholesaler, but to a manufacturer, was a shocking event in the eyes of other toiletries manufacturers and wholesalers. Proctor and Gamble, a U.S. pioneer in the QR and

ECR fields, displayed a strong sense of alarm, as underscored by several newspaper articles (in Japanese):

"In a meeting with Ito-Yokado Co. President Toshifumi Suzuki on the 28th, P&G President Dirk I. Yeager cautioned that the consolidated distribution of merchandise from multiple manufacturers could place sensitive business information in the hands of Kao, one of P&G's rivals in the marketplace. Suzuki reportedly stated in response that P&G's concerns were unwarranted because Ito-Yokado intended to utilize only Kao's services as a physical distributor." (Nikkei Ryutsu Shimbun, Oct. 31, 1996)

"In connection with Ito-Yokado's plans to have a Kao distribution subsidiary handle the delivery of merchandise from other manufacturers to its stores beginning next spring, Proctor and Gamble (P&G) Far East Inc. President Burt McDonald noted in an interview the 27th that it could be in violation of Japan's antitrust laws for a retailer to stipulate that merchandise (from manufacturers and other suppliers) be delivered through the channels of a market rival. McDonald further divulged that he had visited the Fair Trade Commission to formally convey his company's concerns." (Nihon Keizai Shimbun, Nov. 28, 1996 morning edition)

"In his first formal statement to reporters at a press conference in Tokyo on the 12th, Kao President Tokiwa delivered his strongest rebuttal yet to claims made by Proctor and Gamble (P&G) of the U.S. regarding his company's plans to handle the joint delivery of merchandise from other manufacturers through its own distribution channels. Tokiwa completely dismissed P&G's claims, stating that there was 'absolutely no danger of information being leaked [on popular items or new products]. . . . We made a proposal for the efficiency-streamlining of a distribution process, and a retailer decided to adopt our proposal. In a market economy, the right to make recommendations and the freedom to choose ought to be guaranteed.'" (Nikkei Sangyo Shimbun, Dec. 13, 1996)

EDIPACK

Another Kao subsidiary is Kao Infonetwork, Inc., which was established at the same time as Kao System Distribution. As the only manufacturer supplying its merchandise directly to the retail sector, Kao accepted orders online (via electronic ordering systems) from around 1500 retailers nationwide, and had developed the expertise to convert a variety of proprietary retailer data formats. Kao Infonetwork markets EDIPACK, an EDI package that harnesses that expertise. EDIPACK integrates the ability to receive data utilizing several different communications

protocols and data formats, and convert that data into a format for use by an in-house backbone system. Kao Infonetwork had plans to market EDIPACK to wholesalers and manufacturers not only in the toiletries field, but also in food, apparel, and other industries.

Kao's Participation in the PLANET Network

Kao enlisted the services of some 2000 wholesalers (agents) nationwide to distribute its merchandise to retailers who otherwise had no access to its vendor-mediated network. However, most of the larger wholesalers were also on the PLANET network, which meant they had to put up with two separate order submission routines: for those to Kao and to other manufacturers through PLANET. Though Kao had made an attempt to supply its agent wholesalers with a simplified order placement system, this failed to take root. As a consequence, many orders to Kao were still being placed by fax machine and phone. In 1996, Kao yielded to the wishes of its agent wholesalers and began exploring the idea of participating in the PLANET network.

Kao already had a proprietary yet powerful information network of its own. Though initially met with a measure of surprise, Kao's decision to participate in the network of another firm was welcomed in the end. In effect, Kao maneuvered to have its merchandise distributed together with the merchandise of its market rivals through a system run by another company, while at the same time handling the merchandise of multiple manufacturers through its own subsidiary, Kao System Distribution. To many players in the industry, this constituted a radical shift in strategy for Kao, a company that had built its reputation over the years as a self-made innovator in the distribution of goods, merchandising services, and information.

Given that PLANET had been set up in the first place as a competitive alternative to Kao's exclusive system, many of the manufacturers already on the PLANET network had mixed feelings about Kao's participation. Some were not happy with the idea that Kao would be getting what amounted to a free ride on an open system that took many years to build and refine, and others expressed reservations that allowing Kao in the door would only help it expand its market share. As time went by, Kao System Distribution became yet another issue for debate. Nonetheless, as many wholesalers saw it, the PLANET infrastructure would not be satisfactory unless it allowed them to do business with all manufacturers, and that meant the door had to be opened to Kao, the industry leader in terms of market share. Also, from the vantage point of aiding the wholesaler federation drive to establish a set of EDI standards for online dealings between wholesalers and retailers, Kao's participation

was certain to be a boon because Kao had amassed extensive expertise in the arena of electronic business with as many as 1500 retailers nationwide.

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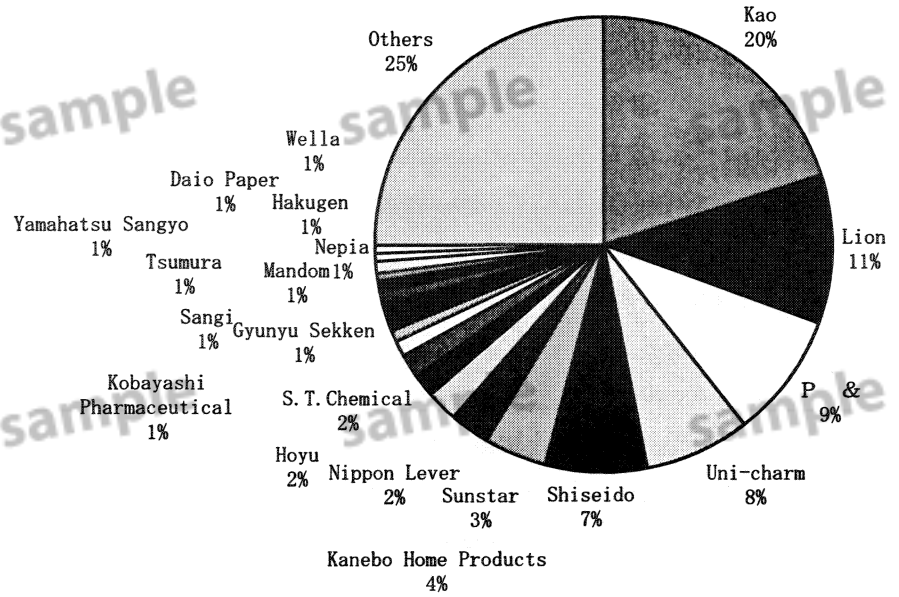
Steady progress has been made toward the principal goal of building an information network for the toiletries industry through broad-based collaboration. PLANET Inc. has made indisputable contributions toward that goal, and in the process it has actively shared its returns with the industry at large. However, PLANET in its current form is premised on the existing industrial structure and various existing technologies. As such, it must have the flexibility to change in parallel with coming changes in industrial structure and information network technology. The danger is that PLANET as a network could face obsolescence should it be identified as little more than a product of compromises made by rivals in the industry.

President Tamanyu envisioned that the industry as a whole would continue to thrive as its individual companies competed with each other while effectively harnessing PLANET as their common platform. To help achieve that vision, what role should PLANET strive to play?

Appendix 1 :Market-Share Breakdown for the Toiletries Industry

Industry Total*

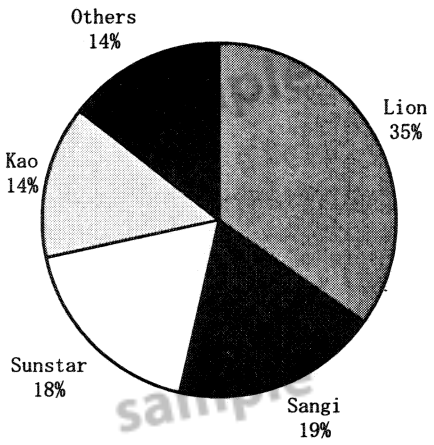


Market Scale*: 1579.9 billion yen ($13,166 million)

*Values for market scale and share vary significantly depending on the definition used for toiletries. The estimates here took the following product categories into account:

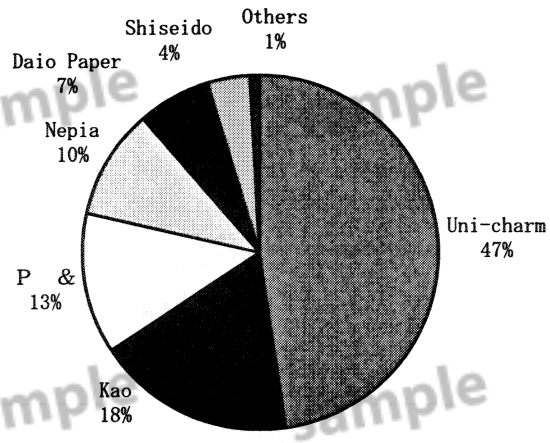
hair shampoo, hair rinse, hair treatment products, hair coloring for home use, hair spray, facial cream and foam, facial cleanser, body soap, hair grooming products for men, hair tonic, aftershave lotion, men's cologne, men's hair-growth tonic, synthetic clothes detergent, mild detergent, softener, kitchen cleanser, bleach, household detergent, toothpaste, mouthwash, toothbrushes, bath powder, antiperspirant, aromatic air freshener, paper baby diapers, paper diapers for adults, sanitary napkins, sanitary tampons

Toothpaste



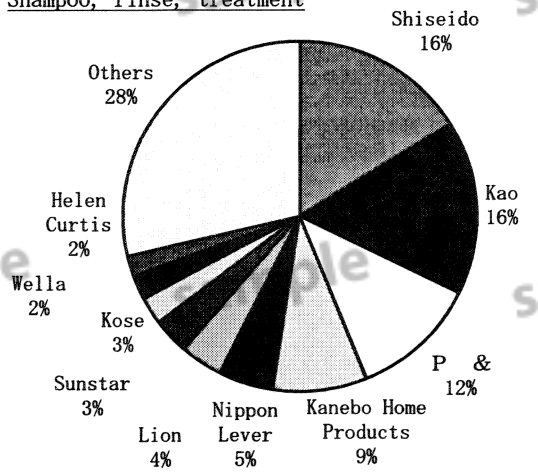
Market scale: 239.2 billion yen ($1,993 million)

Paper baby diapers



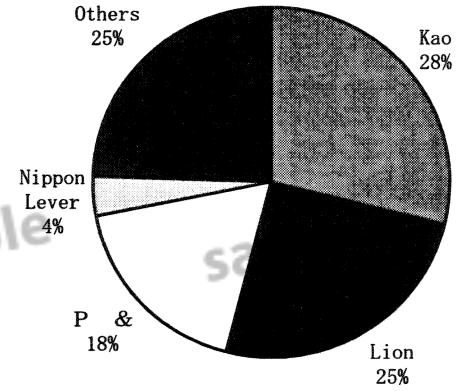
Market scale: 209.3 billion yen ($17,442 million)

Shampoo, rinse, treatment



Market scale: 68.8 billion yen ($573 million)

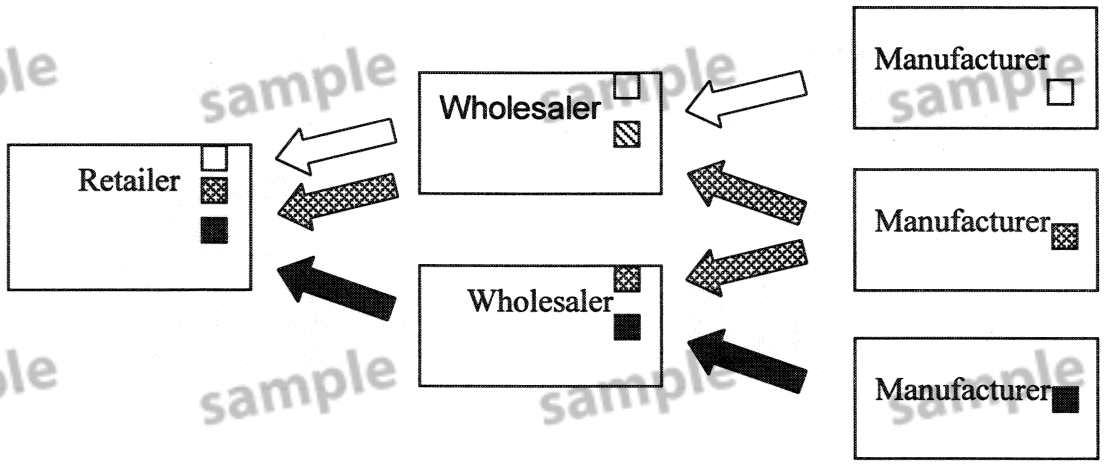
Clothes detergent



Market scale: 142.0 billion yen ($1,183 million)

Source: International Commerce (Kokusai Shogyo), May 1997 issue.

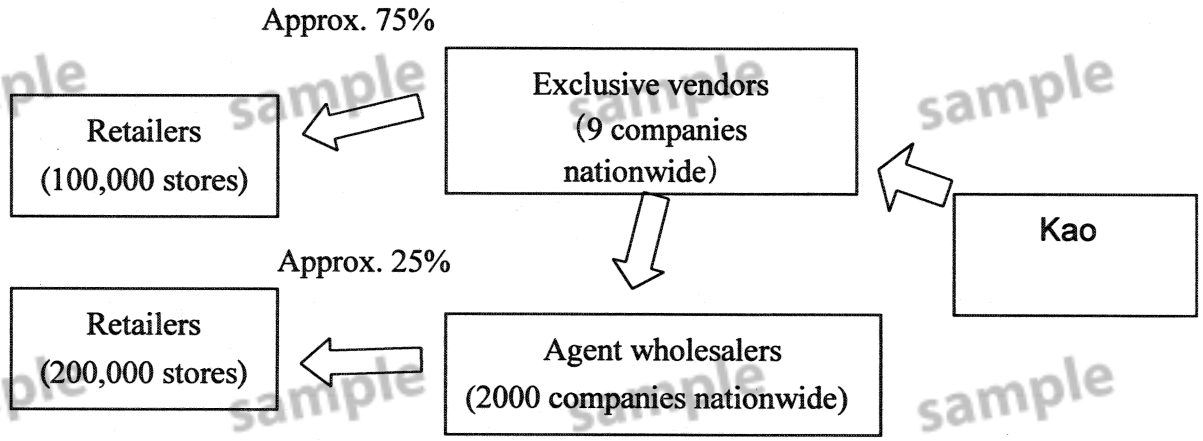
Appendix 2: An Overview of Wholesaler-Mediated Distribution in the Toiletries Industry



(Supply contracts per account) (Agent contracts)

300,000 stores 2,000 companies 1,000 companies

Appendix 3 : Overview of Kao's Distribution Chain



Appendix 4:Major Industrial VANs

Targeted industry	Toiletries	Food	Household goods	Pharmaceuticals	Candy and pastries
Network name	Planet	FINET	Hounet	JD-Net	C-VAN
Network operator	Planet Inc.	FINET Inc.	Kyodokumiai	JD-Net Kyogikai	Kashi-Gyokai VAN system Unei-Iinkai
VAN provider	INTEC Inc.	INTEC Inc.	FUJITSU FIP Co. IBM Japan	NTT Data	FUJITSU FIP Co.
Start of operations	Feb. 1986	Oct. 1986	July 1988	May 1988	Aug. 1988
Number of participants *	110 400	45 150	42 18	152 200	450 60
Data types handled	**13 types** order placement, stock-out , stock purchase, invoice verification, sales , inventory , product , funds transfer , etc.	**4 types** order placement, shipment notification, sales performance , product	**4 types** order placement, delivery (restocking), invoice , payment,	**7 types** order placement and receipt, stock-out, delivery notification, invoice, price notification, sales , inventory	**4 types** order placement and receipt, invoice and payment, sales date, direct shipment
Communications protocol	JCA Zengin	JCA Zengin	JCA	JCA Zengin	JCA(99%) Zengin
Cost	Borne by manufacturers	Borne by manufacturers	Split by manufacturers and wholesalers	Borne by manufacturers and wholesalers	Data exchange costs borne by manufacturers

*Upper manufacturers, down wholesalers

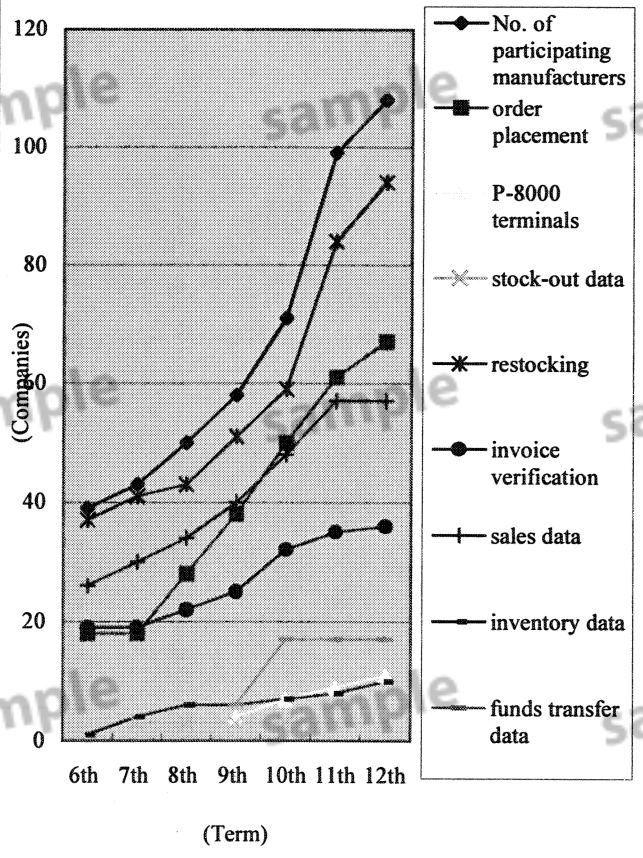
Source: PLANET Inc. "Total EDI Outline." Revised, 1995.

(Appendix 5 omitted)

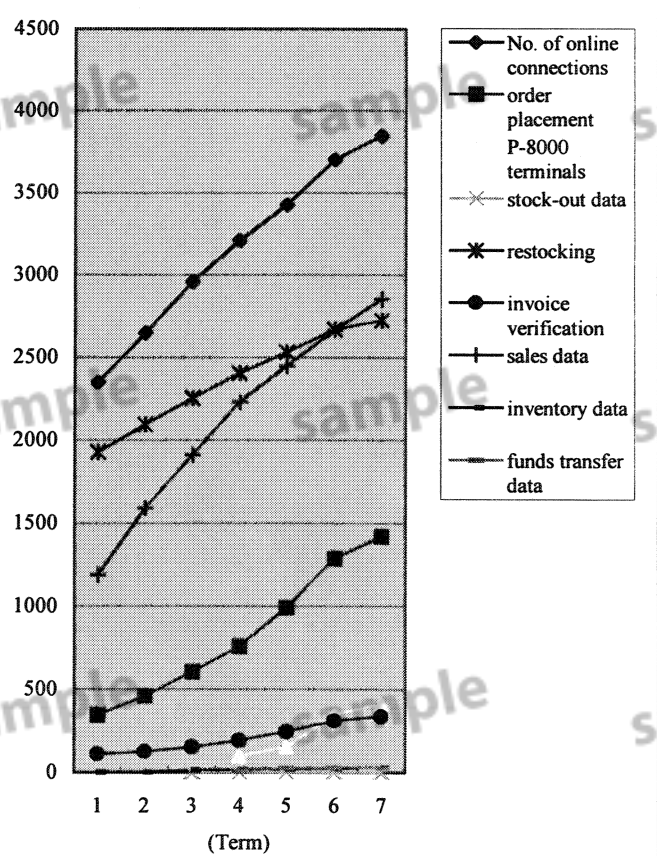
Appendix 6 : Network Connections by Data Type

		6th term (91/7)	7th term (92/7)	8th term (93/7)	9th term (94/7)	10th term (95/7)	11th term (96/7)	12th term (96/12)
		Actual	Actual	Actual	Actual	Actual	Actual	Actual
No. of participating manufacturers (companies)		39	43	50	58	71	99	108
Data type	order placement	18	18	28	38	50	61	67
	order placement (by P-8000 terminals)				4	7	9	11
	stock-out data		3	3	3	3	3	3
	restocking	37	41	43	51	59	84	94
	invoice verification	19	19	22	25	32	35	36
	sales data	26	30	34	40	48	57	57
	inventory data	1	4	6	6	7	8	10
	funds transfer data				6	17	17	17
No. of online connections		2348	2648	2959	3207	3424	3701	3845
Data type	order placement	345	460	606	759	991	1286	1419
	order placement (by P-8000 terminals)				99	153	349	413
	stock-out data			1	1	1	2	2
	restocking	1926	2093	2253	2405	2530	2668	2723
	invoice verification	111	126	153	193	246	311	337
	sales data	1188	1589	1910	2229	2447	2665	2852
	inventory data	1	4	15	16	21	25	31
	funds transfer data				7	27	28	30

Trends in No. of Participating Manufacturers, by Data Type



Trends in No. of Online Connections, by Data Type



Source: Documentation for PLANET maker/user conference.

Appendix 7 :Financial Statements for the Business Year to July 31, 1996

Balance Sheet

	Amount (millions of yen)	Share (percent)
Sales	1214	100%
Cost of sales	723	60%
Gross profit	492	40%
Marketing, general, and administrative expenses	357	29%
Operating income	134	11%
Nonoperating income	3	0%
Nonoperating expenses	0	0%
Ordinary income	137	11%
Income before taxes	137	11%
Income taxes	70	6%
Profit for the term	57	5%
Profit brought forward from previous term	61	5%
Unappropriated retained earnings at end of term	128	11%

Profit and Loss Statement

	Amount (millions of yen)	Share (%)		Amount (millions of yen)	Share (%)
Cash and time deposits	306	46%	Accounts payable	0	0%
Accounts receivable	162	24%	Advance received	46	7%
Inventory	0	0%	Unpaid enterprise tax	10	2%
Prepaid expenses	4	1%	Unpaid corporate tax	38	6%
Other current assets	1	0%	Accrued expenses	144	21%
Allowance for doubtful receivables	-1	0%	Reserves for bonus payments	2	0%
Current assets	472	70%	Other current liabilities	3	0%
Tangible fixed assets	6	1%	Current liabilities	243	36%
Intangible fixed assets	3	0%	Reserves for retirement allowances	12	2%
Investment securities	10	1%	Fixed liabilities	12	2%
Deposits and guarantees	53	8%	Total liabilities	255	38%
Long-term prepaid expenses	105	16%	Capital	280	42%
Other investment	21	3%	Capital surplus	2	0%
Fixed assets	198	30%	General reserves	5	1%
Total assets	670	100%	Unappropriated retained earnings at end of term	128	19%
			Total liabilities and capital	415	62%
			Total liabilities and capital	670	100%

Source: PLANET Inc. documentation.

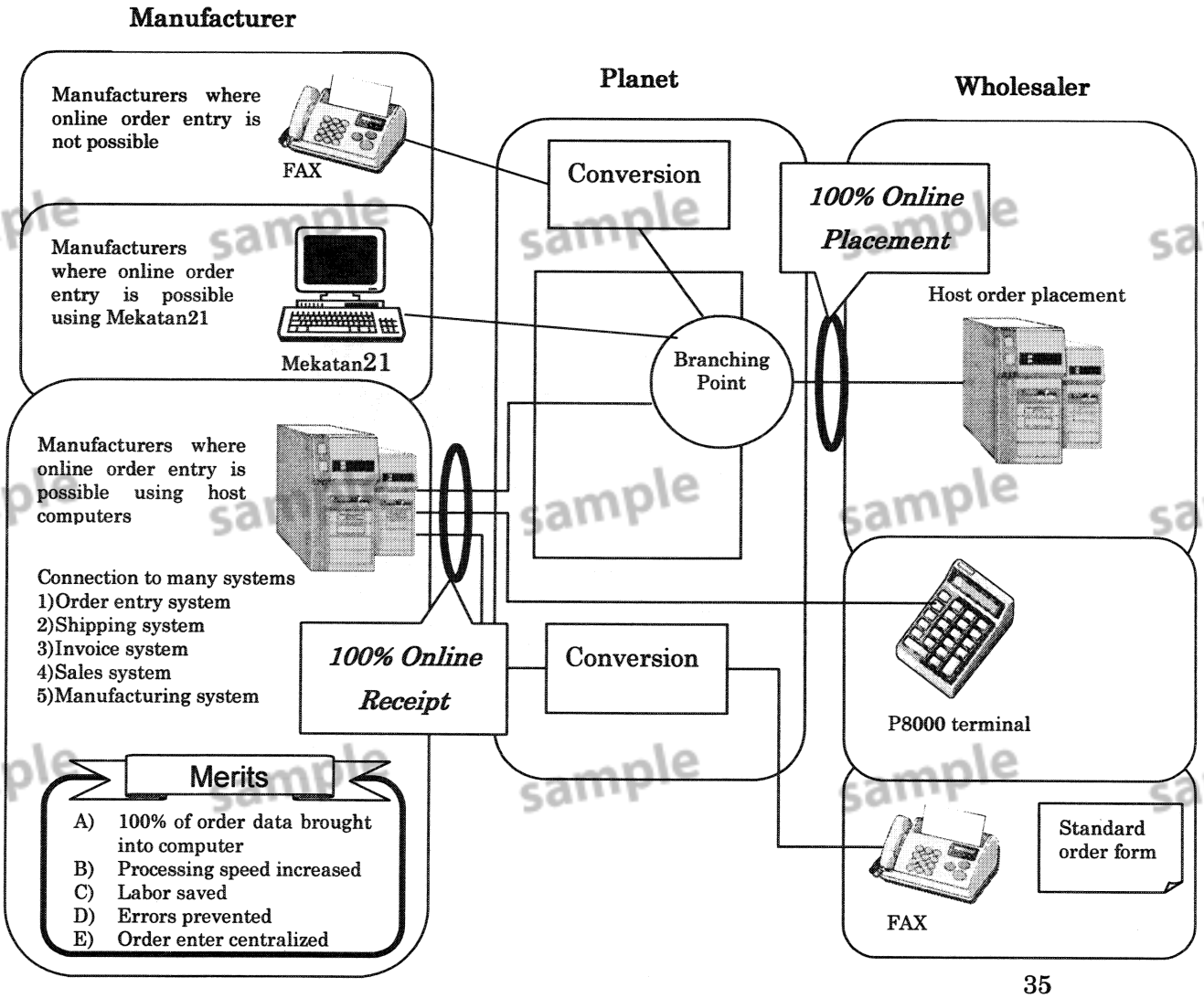
Appendix 8 : 100% Online Order Placement /Receipt

100% Online Order Placement /Receipt for Total EDI

No matter how many different types of data are covered by EDI, the foundation is still order data. Planet takes comprehensive action to insure that users can place and receive orders 100% online.

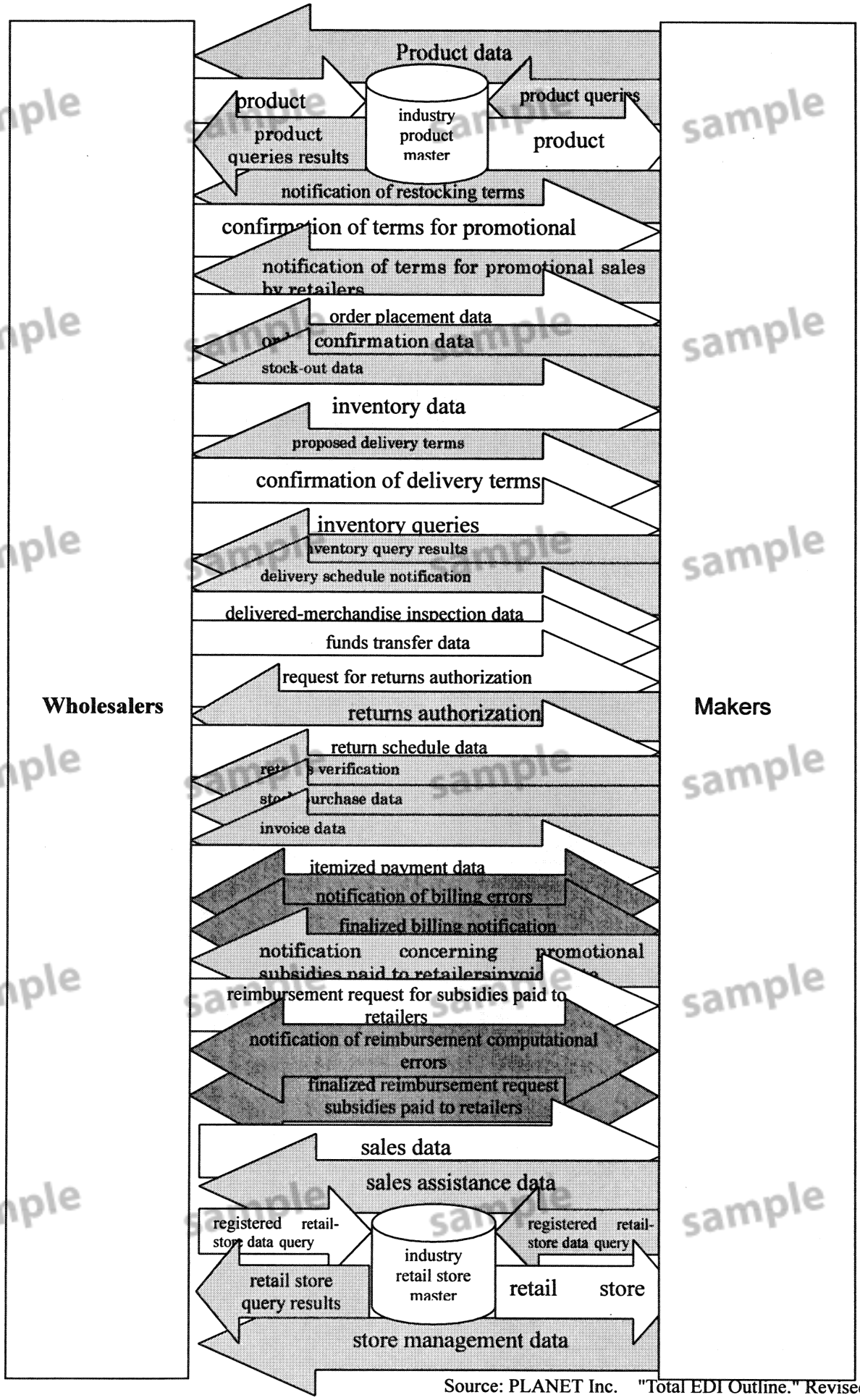
- Wholesaler 100% online order placement:
  Using Planet's "FAX Order System" for manufacturers which cannot yet receive orders via computer, it is possible to convert the computer transmission to a fax transmission and automatically send the order form. This has already enabled many wholesalers to realize 100% online ordering.
- Manufacturer 100% online order receipt:
  Technically advanced wholesalers are able to transmit order data from their own computers (host order placement). For other wholesalers, however, we provide a basic order terminal (the P8000 terminal) which enables them to place order online. In the case of wholesalers which cannot use the P8000 terminal, manufacturers can receive the order data using " FAX/OCR Conversion".
  "FAX/OCR conversion" is a service where the wholesaler fills in order quantities on standardized order forms and send those forms by fax. Planet converts the fax signal into a computer signal and send it to the manufacturer. By combining these three different mechanisms, the manufacturer can build an environment capable of 100% online order receipt.

Source: Corporate brochure.



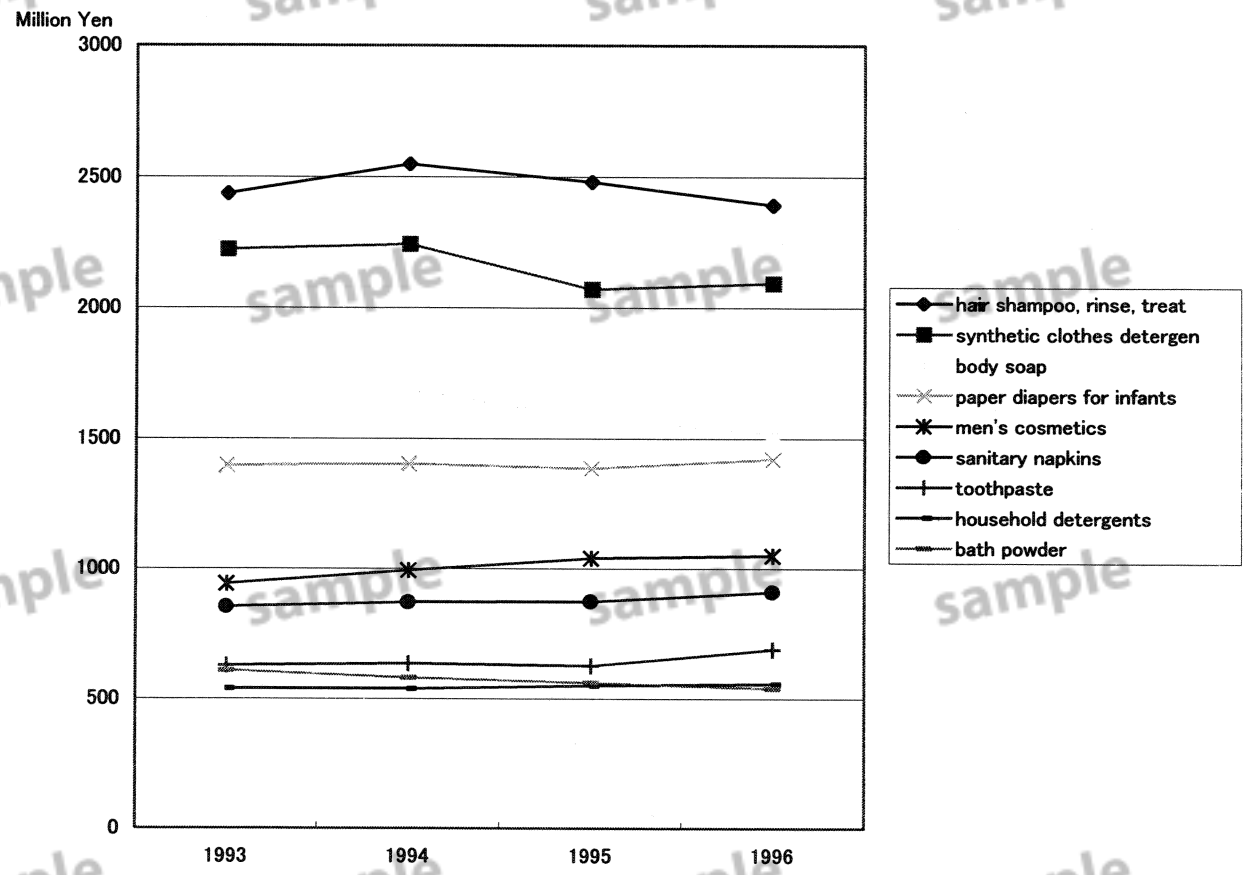
sample

Appendix 9: Total EDI Data Types at a Glance



Source: PLANET Inc. "Total EDI Outline." Revised, 1995.

Appendix 10:Trends in Market Scale for Key Toiletry Products



Source: International Commerce (Kokusai Shogyo), May 1997 issue.

Appendix 11:Noteworthy Steps to Consolidate Multi-Vendor Distribution, Joint Delivery, and Accounts Management

1993
Sotetsu Rosen supermarket chain contracts Ryoshoku Ltd. to manage its processed food accounts.

1994
Sotetsu Rosen chain consolidates its frozen food accounts with Ryoshoku, and its candy and pastry accounts with Tokyo Ryoka and (Ryoshoku-affiliated) San-esu.

Kanagawa supermarket chain Totas Cooperative (a regional voluntary chain) contracts Jairo (a subsidiary of the food wholesaler, Koami) to handle the consolidated distribution of processed foods, household goods, and candy and pastries.

Daimaru Peacock contracts its consolidated distribution needs to Ryoshoku and Meidi-ya for processed foods, Chuo Bussan for daily necessities, Iwata Shoten for household goods, and Ryoshoku and Yukiwa for frozen foods.

1995
Kanagawa Distribution Service Cooperative (Kanagawa Ryutsu Service kyodokumiai) begins joint deliveries of toiletries to Sotetsu Rosen.

Inageya Co. contracts food wholesalers Kokubu Co.,Ltd. and Yukijirushi Access to handle the consolidated distribution of processed foods, candy, and pastry products.

Fuji Citio contracts Nishino Shoji to handle the consolidated distribution of processed foods, candy, and pastry products.

Sun-net Tohoku Consumers' Co-operative Union consigns consolidated distribution of processed foods, candy, and pastry products to Ryoshoku, Kato Sangyo, and San-esu.

1996
Pastry wholesaler San-esu begins joint deliveries for food wholesalers Kokubu and Inageya.

Super Alps contracts liquor wholesaler Hiroya to handle the consolidated distribution of processed foods, candy, pastry products, and certain toiletry items.

1997
K Net Consumers' Co-operative Union (a purchasing organization for cooperatives) commissions the consolidated distribution of processed foods to food wholesalers Ryoshoku and Kato Sangyo, and of candy and pastries to candy wholesalers San-esu and Yamaboshiya Co.,Ltd.

Ito-Yokado contracts Kao to handle the consolidated distribution of toiletry products to its outlets.

York-Benimaru contracts Ryoshoku to handle the consolidated distribution of processed foods and toiletry items.

Source: Nikkei Ryutsu Shimbun

sample

sample

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