

Designating the driver: Establishing a cooperative distribution network in Japan*

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Abstract

This article is an exploratory case study, which describes the recent evolution of a distribution network for ice cream in Japan and explores the forces behind that evolution. The case incorporates the perspectives of actors at the manufacturing, wholesaling, and retail levels. In examining how a particular distribution structure evolved among these parties, we suggest that the resulting structure was a response to environmental changes. We identify power and efficiency as driving forces behind the network architecture, and we identify mechanisms used to facilitate trust between the parties.

Key Words: trust, supply chain, food industry,

1. Introduction

This paper analyzes the recent evolution of a packaged ice cream distribution network in Japan. It explains how manufacturers in this network came to rely on each other for distribution and how they balance the need to simultaneously cooperate and compete. This analysis addresses two questions common to network analysis: (1) what determines the structure of a given network (Arujo and Easton, 1996, p. 104), and (2) what is the innovative process that allows the actors to accommodate routines that were previously "strange?" (Omta, Trienekens, and Beers, 2001, p. 3).

Distribution systems for consumer packaged goods include numerous functions carried out by manufacturers, retailers, and various intermediaries (Pellegrini, 1989, p.3). This paper focuses on the "physical transfer" function of distribution, encompassing product storage and transportation (Gadde and Hakansson, 1992, p. 175). Of the numerous alternative modes for governance of this transfer function, common examples include manufacturer ownership of downstream warehousing and transportation facilities (e.g., Coca Cola), retailer ownership of upstream warehousing and transportation facilities (e.g., Aldi), and retailer reliance on third parties to provide warehousing

and transportation (e.g., K-Mart). Naturally, any given retailer or manufacturer may use multiple modes.

For a given combination of actors and products, there are numerous network structures capable of achieving the needed distribution function (Gadde and Hakansson, 2001, p. 17). While the industrial networks approach describes the relationships in these many possible networks, transaction cost theory offers cost minimization as a factor determining the governance mode of the transactions in the network (Williamson, 1975). Our approach in this paper is to describe the evolution of a specific network and to identify consistency, if any, between the network governance we observe and expectations from transaction cost theory.

While there is an abundance of empirical research on networks, there is still concern that network theory remains conceptually abstract. (Smith and Laage-Hellman, 1992, p.59). This view may be due to the network approach drawing on other theoretical frameworks. In this paper we take a network approach in acknowledging the inter-related nature of multiple suppliers and intermediaries with a focal retailer. After identifying the players and events of the network, we examine the drivers of those events. Accordingly, we view the actor's relations more holistically than as a collection of dyadic relationships. In taking a network

approach, we are encouraged to be mindful of power and trust in our case examination. (Uzzi, 1997).

2. Methodology

As an exploratory case study in the manner of grounded theory, we do not start with a conceptual framework, but look for relevance of conceptual tools after examining the case. Our case incorporates the perspectives of actors at the manufacturing, wholesaling, and retail levels. Considering that this approach is useful at both early and late stages of theory development (Eisenhardt, 1989), our approach seems particularly appropriate for research that applies relatively late stage theory (such as transaction cost economics) to a relatively early stage research agenda (network theory).

By examination of the evolution of a network over time, we begin to answer the call for longitudinal studies in understanding the dynamics and complexities of cooperation (Smith, Carroll, and Ashford, 1995, p. 19). There are several features of our particular case that enhance its contribution to network literature. The case takes place in Japan, where buyer-supplier networks have inspired scholars and industrialists around the world (Lincoln, Gerlach, and Takahashi, 1992; Sako and Helper, 1998). Specifically, we explore the *formation* of a network structure, where considerable prior literature focuses on the characteristics of *already established* "keiretsu" networks. The case occurs in the food retail sector, which has been marked by recent and ongoing consolidation and globalization, and for which there is much concern about how supply chains should evolve. It concerns a product (ice cream) that requires particularly careful handling, and thus a particularly well-disciplined supply chain. Also the case involves a type of cooperation among competitors, an environment in which trust issues are of particular importance.

Of the many alternative strategies for qualitative investigations (Miles and Huberman, 1994), research can focus on one player or on many; on a moment in time or on a period of time. Our approach covers a period of time, approximately ten years from the mid 1980s to the mid 1990s. We examine a network consisting of a Japanese supermarket chain, its suppliers and wholesalers. Because any given chain may have hundreds of different types of relationships with suppliers and wholesalers for different product categories, we focus on one product category, ice cream.

3. Time frame of research

Our findings represent research that occurred over a two-year period, from 1999 to 2001. Our initial background knowledge on key players in this study derived from field

research by one of the authors in Japan in 1999 on the introduction of a US ice cream brand to the Japanese market (Hagen, 2000). In subsequent visits with three ice cream manufacturers, a major retailer, and a wholesaler, all in 2000, the project took definition as a pointed investigation into how ice cream is distributed in Japan. After further research of secondary sources, and inquiries of informed industry sources in the year 2000, one of the authors conducted interviews and site visits in January, 2001. Both authors returned for final site visits and interviews in March, 2001.

4. Research subjects

Our research focuses on distribution of ice cream products by three ice cream manufacturers (Snow Brand Milk Products, Meiji Milk Products, and Morinaga Milk Industry,) to one retail chain (Ito-Yokado Co.). We conducted interviews with authoritative executives at Ito-Yokado, Snow Brand Milk Products, Meiji Milk Products, and Ben and Jerry's, as well as at the wholesalers Yukijirushi Access and Tokyo Meihan. The manufacturers are both big (e.g., Snow Brand Milk Products) and small (e.g. Ben and Jerry's), affording a "de-centering" research strategy (Miles and Huberman, 1994 p. 34) that avoids too narrow of a perspective.

As the central organization in the network of interest, some explanation of Ito-Yokado Co., Ltd. is in order. Currently, 182 superstores (combination supermarket/general merchandise stores) in Japan comprise this chain, which has approximately \$15 billion of annual sales. Growing out of a single retail store operating in 1920, the present company was founded in 1958 by Masatoshi Ito (recently transitioned from Chairman to Honorary Chairman), and today it is part of the publicly traded Ito-Yokado Group, which has sales of approximately \$29 billion, with 58 operating units, including the superstores, department and specialty stores, the Denny's restaurant chain in Japan, and 7-Eleven convenience stores.

In 1973, Ito-Yokado introduced 7-Eleven convenience stores to Japan by obtaining an area license from this US-based convenience store chain. By 1986, the company had 2,650 stores in Japan (Batzer and Laumer, 1989), and in 1991, when 7-Eleven, the US-based franchiser, had severe financial problems, Ito-Yokado purchased a majority share of the franchiser. At the end of 2000, the approximately 8,600 7-Eleven stores in Japan were among 21,000 worldwide. While sales for 7-Eleven accounted for \$29.4 billion of sales worldwide, many of the stores were operated under franchise or other license agreements, so their contribution to Ito-Yokado Group revenues was approximately \$13 billion. For purposes of this report, Japanese yen currency is converted to dollars at the rate of

107 yen per dollar, in keeping with reporting by the company for the fiscal year ending February, 2001. In 1985, 7-Eleven Japan established point of sales (POS) systems in each store to enhance product selection and inventory management. 7-Eleven is the largest convenience store chain in the world, and Ito-Yokado is one of the world's largest retailers. In total, we had substantive interviews with 18 active industry executives, and two non-corporate food distribution experts (a university professor and a trade journalist). These were semi-structured interviews in which we asked for explanation and clarification about the distribution structure and its history. In most cases we submitted a list of specific questions prior to the interview. Most interviews were at company offices, but we also toured four separate ice cream distribution centers with some of the interviewees. Where possible we taped the interviews for later transcription. In some cases, ambient noise and revelations interjected during a tea or meal break, prohibited recording, in which case we would record notes immediately after the meeting. Interview meetings ranged from one hour in an office, to half a day, including travel and lunch, with the interviewee. We met with several of the interviewees on multiple occasions.

A benefit of qualitative analysis is the ability to provide informants with feedback so that errors can be identified (Miles and Huberman, 1994, p. 274). We prepared a working paper for this early feedback (Hayashi and Hagen, 2001) and had subsequent personal, telephone or e-mail dialogue with selected informants to assist in gaining clarification.

This research could be viewed as a multiple-case study, examining each supplier relationship separately. We choose, rather, to regard the study as a single case, in which we examine the network of suppliers and intermediaries serving a focal retailer.

5. Case findings: Background on ice cream sales and distribution in Japan

Japanese ice cream sales have generally risen steadily in the post-war period, though year 2000 sales projections are somewhat below a 1994 peak of 430 billion yen. Japanese per capita consumption of all ice cream products is 6.29 liters per year, which is 29% of US per capita consumption. There are an estimated 30 or more frozen dessert manufacturers in Japan. Ice cream is sold primarily in

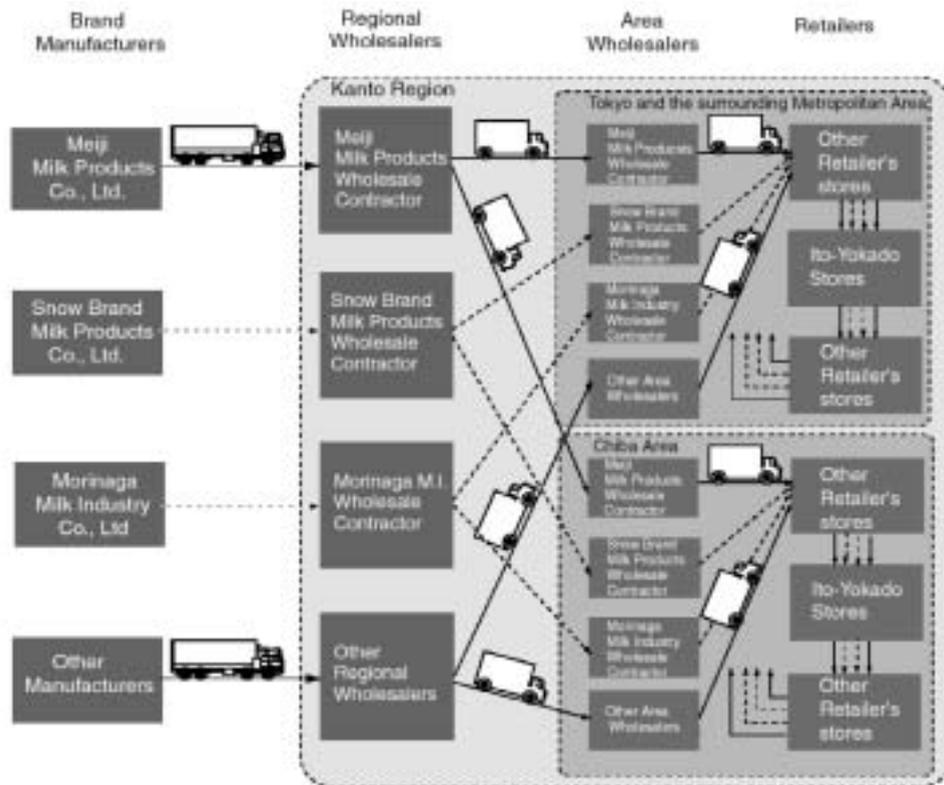


Figure 1. Traditional system for ice cream distribution.

Note: Each manufacturer uses its dedicated wholesale network to supply all stores, resulting in delivery congestion at stores.

individual serving sizes in Japan. Convenience stores account for 32 percent of sales, and supermarkets (which carry multi-packs of individual servings) account for 34 percent. The balance is sold through independent stores, restaurants and vending machines (Japan Ice Cream Association, 2000). The retail sector in Japan has been highly fragmented. The population per retail store in 1977 was just 69, compared to 122 in the United States. Federal law limited the growth of chain stores in order to protect these many small retail outlets. Nevertheless, the growth of chain stores in Japan began to accelerate in the late 1970s (Czinkota and Woronoff, 1986, p. 133). A common view is that in the early 1980s, Japan's economy made a transition from a sellers' market to a buyers' market (Hirai, 1995). Specifically, manufactured goods (including processed foods) were no longer in short supply. The most rapid chain store growth has been in the convenience stores channel, with many previously independent stores becoming franchisees. Until the mid 1980s, each manufacturer had its own distribution network, often including several tiers of wholesalers, which would distribute only that manufacturer's brand and enjoy a higher margin as reward for the exclusivity. Wholesalers provided a strong link between manufacturers and a highly fragmented retail sector. Frequently the manufacturer had some measure of control of its network of wholesalers through stock ownership. The wholesaler, in turn, would be the primary financier for the retailer. (Czinkota and Woronoff, 1986). In addition to providing warehouse, distribution, promotion, sales, and financial services, the wholesalers would stock the retailers' shelves in a DSD (direct store delivery) system. Initially, wholesalers provided, at their expense, freezer facilities at retail outlets, though by the mid-1980s, retailers were largely assuming this responsibility and expense (Business Intercommunications, Inc., 1985, p. 332). This system of distribution, which still exists for small independent retailers is illustrated in Figure One.

While small stores would generally carry only one or two brands of ice cream, larger stores would carry multiple brands, resulting in multiple wholesalers entering the store each day for shelf-stocking. Competition among the route men of one wholesaler with that of another could be fierce. Each would sometimes rearrange the freezer shelves to benefit its products at the expense of competitor products. There are reported cases of route men even destroying each other's merchandise. With the advent of multi-unit chains, retail stores were increasingly managed by employees rather than owners, increasing the opportunities for route men to induce a manager to grant more shelf space to the detriment of store operations. In short, large retailers faced a growing need for an alternative to the traditional system of ice cream distribution.

6. Development of the unified system of distribution

By 1986 Ito-Yokado had emerged as the second largest food retailer in Japan. The sales generated by its 127 stores at that time were second only to those of the Diaei retail chain, which had 186 stores. Each of its stores was receiving shipments from multiple ice cream manufacturers each day. Because of temperature and odor absorption concerns, these products were generally not stored and transported with non-ice cream products, adding further to loading dock congestion.

To reduce congestion at its loading dock and in its frozen food aisle, Ito-Yokado developed a system whereby one of its major wholesalers, (Tokyo Meihan) would serve as distributor of all ice cream products to its stores in Tokyo. Tokyo Meihan was part of the wholesale network for Meiji Milk Products, one of Japan's three largest ice cream manufacturers. Small manufacturers agreed to convert their distribution for Ito-Yokado to Tokyo Meihan. The larger manufacturers, such as Snow Brand Milk Products, however resisted, wishing to continue using their affiliated wholesale systems.

At the beginning of a major expansion of outlets in Chiba (a rapidly developing area adjacent to Tokyo) in the early 1990s, Ito-Yokado entered into a similarly exclusive ice cream distribution agreement with Yukijirushi Access, the wholesaling network of Snow Brand Milk Products. Upon its wholesaling affiliate being awarded this exclusive distribution in Chiba, Snow Brand agreed to distribute via its competitor, Tokyo Meihan, in Tokyo. Between 1995 and 1996, Ito-Yokado contracted with Fregiport (the wholesale affiliate of ice cream maker, Morinaga Milk Industry) to be the exclusive distributor for the retailer's remaining areas in the Kanto (eastern Japan) market. Specifically Fregiport's territory would be Tochigi, Gumma, and Ibaraki Prefectures, and portions of Saitama and Kanagawa Prefectures not already covered by Tokyo Meihan.

Snow Brand Milk Products, Meiji Milk Products, and Morinaga Milk Industry were the three largest ice cream manufacturers in Japan, and their affiliated wholesalers (Yukijirushi Access, Tokyo Meihan, and Fregiport, respectively) became the core of what came to be called a "Ichigen-ka haisou," or "unified distribution system" for Ito-Yokado in Japan (see Figure Two).

By this system, Ito-Yokado divided its stores in the Kanto region into three districts, and it traded with only one wholesaler in each district. Thus, for example, Morinaga Milk Industry and Snow Brand Milk Products were forced to use the wholesale services of Tokyo Meihan, an affiliate of their competitor, Meiji Milk Products, for distribution in

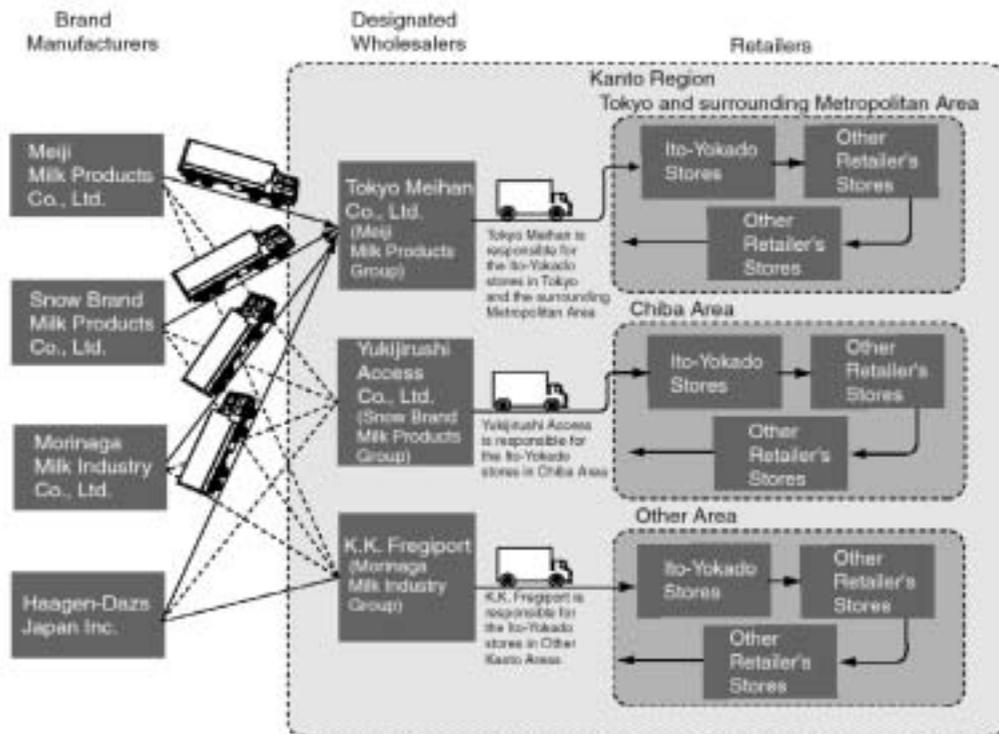


Figure 2. Unified system for ice cream distribution.

Note: The retailer's stores in divided by area. Each area is served by a single wholesaler, and all manufacturers must use that wholesaler.

the Tokyo area. Similarly, Morinaga Milk Industry and Meiji Milk Products were forced to use the wholesale services of YukiJirushi Access, an affiliate of their competitor Snow Brand. The map of the unified distribution system for Ito-Yokado in Kanto is shown in Figure Three. The areas outside Kanto were similarly divided among these three wholesale networks, and a map of that division is provided in Figure Four.

As this unified distribution network developed for Ito-Yokado, other retailer-supplier networks evolved in a similar fashion, driven by retailer need to rationalize their deliveries. Competing route men would no longer be jockeying for position in the frozen dairy case on a daily basis. Considering that suppliers generally prefer not to rely on competitors for distribution, especially in Japan where manufacturer-based wholesaling was entrenched, we ask how these concerns of the suppliers were addressed. It would appear that the manufacturers were losing control over distribution of their product, and that each wholesaler would, with conflict of interest, have incentive to give favorable treatment to the products of its affiliated manufacturer. Development of the unified distribution system included a consolidation in the wholesale function, with smaller

wholesalers going out of business or being acquired by the three major wholesalers.

7-Eleven and other convenience store chains also developed unified distribution structures. With need for frequent deliveries of small quantities in many stores, the 7-Eleven unified system was distinct from that of Ito-Yokado, despite common ownership of the two companies. Storage and transportation for the convenience sector required different product mixes, smaller order quantities, and more frequent deliveries on smaller trucks.

7. The unified distribution system in practice

Not surprisingly, each of the three large wholesalers in this case study claims to give no favoritism to the products made by its affiliated manufacturer. As one example, the majority of sales by Snow Brand Milk Product's wholesale network is now of products made by companies other than Snow Brand. In the past, the route men were also salesmen, jockeying to increase their sales at the expense of competitors. Now, distributors are compensated by total product flow of the product category (regardless of brand). One of the wholesalers in our study reported that 70% of



Figure 3. Wholesaler assignments by area with Kanto.
 Note: Ice cream distribution for Ito-Yokado in Kanto (Tokyo Region) is divided geographically among the three wholesalers, each of which is affiliated with a major manufacturer.



Figure 4. Wholesaler assignments by area.
 Note: Ice cream distribution for Ito-Yokado in Japan is divided geographically among three wholesalers, each of which is affiliated with a major manufacturer. The Kanto Area divisions are indicated in Figure Three.

its sales were based on electronically generated orders driven automatically by POS data. This further limits the salesmanship function by the wholesaler or its deliverymen. Also, the retailers began providing shelf plans identifying exact placement of product by SKU (stock keeping unit). Delivery men must follow these plans. Approximately 20% of retail ice cream sales are accounted for by small and independent retailers who still rely on traditional distribution, wherein route men are key in determining orders and shelf placement. These independents provide an outlet for excess inventory from the chain stores.

The only circumstance disclosed in which wholesalers and their affiliated manufacturers acted on their familial relationship was that wholesalers may sometimes overstock their affiliate's products to help the affiliate meet a "sales" target. For example, just before the end of the fiscal year, the affiliated wholesaler may buy more product than necessary so that the manufacturer can increase its sales for that year. The wholesaler then bears the inventory expense until the product is sold to retailers. This was not seen by any of the parties as harming the non-affiliated manufacturers. Perhaps the greatest harm to manufacturers in the unified distribution system is their lack of influence in pushing products to retailers, which results in the manufacturers taking increased inventory risk.

In a surprising way, quality control may actually have been enhanced by the unified distribution system. In the traditional system, route men were sometimes forced by air quality standards to shut off engines while awaiting access to the store. As a result, refrigeration was turned off, threatening degradation of the product. This was obviously problematic for DSD route men, who were accountable for quality of the product through distribution to the store shelves.

Now that distribution is unified, the manufacturer is further removed from control of the handling of its products. As a new effort to assure proper handling of the product and presentation in the store, the manufacturers hire inspectors to monitor their branded product at retail outlets, looking for frost on the package, damaged containers, or improper facing on the shelf. If needed to prevent inferior product from being sold, these monitors sometimes have authority to actually purchase any substandard product simply for the purpose of removing it from the shelf where it could harm the reputation of the brand. One of the large ice cream manufacturers employs between 40 and 50 of these "field ladies." Haagen-Dazs is an ice cream brand independent of the three major ice cream manufacturers and their affiliated wholesalers. It goes an extra step of hiring inspectors to monitor for proper storage and handling at the wholesale companies.

8. Discussion and implications

Analysis of the specific network evolution case described above may help to explain and inform network evolution generally. Most importantly we see the case as an example of a network evolution triggered by external stimuli which gave a network actor both the opportunity and need to initiate reform in order to reduce its direct costs as well as the network's transaction costs.

The trend of supply chains shifting from supplier-dominant to consumer-dominant has been widely observed in many markets and with many product categories (Pellegrini and Reddy, 1989, xiii). Consistent with Easton (1992, p. 10), we see that this trend was caused by external stimuli. In the Japan case, changes in consumer wealth, technology, and opportunity for retailer growth, were factors. Embedded in the trend was a power shift so that retailers, in their competition against each other, could make greater demands of their suppliers, influencing the structure of the network (Uzzi, 1997).

As retailers increasingly took responsibility for product selection and shelf placement, the question arose of who could provide wholesale services so that multiple brands could be combined in deliveries to the stores. The retailers could integrate upstream into distribution, but ice cream distribution requires highly specific assets (frozen warehouses and trucks) that they would be unlikely to fully utilize. This would also stretch retailers' managerial capacity in that ice cream, though a growing and high margin category, still only accounted for an estimated five percent of supermarket sales.

Turning to a third party wholesaler would require finding a party with adequate warehouse and route capacity. Among the most likely parties were the existing wholesaling networks of the major ice cream manufacturers. Selecting one or more wholesale networks, though, would require inducing manufacturers to rely on their competitors for product distribution. Not only would the retailer have to change its relationship with its suppliers, it would have to induce the suppliers to change their relationships with each other.

The importance of simultaneously considering both vertical and horizontal relationships has gained recent attention (Lazzarini, Chaddad and Cook, 2001). We consider both, starting with the vertical relations between the retailer and a wholesaler (supplier). Moving from multiple suppliers to a single supplier runs counter to a supply chain methodology that at least two suppliers be used for each input in order to prevent supplier complacency (Hagen and Choe, 1998). A solution to this issue is to have more than one wholesaler, with each wholesaler assigned a separate territory. This approach, found in the unified distribution system, allows the retailer to benchmark and

compare the wholesalers, and to possibly shift business from one to another if needed.

As the retailer and selected wholesaler develop a new, deeper relationship, each party's relative dependence on the other is likely to be of concern (Heide and John, 1988, Anderson and Narus, 1990). There is danger that the retailer could become overly dependent on the wholesaler if that wholesaler developed monopoly distribution power. However, there are other retailers in the same geographic area with similar supply arrangements with other wholesalers. Any given district is thus still served by multiple wholesale networks, affording the retailer the opportunity to switch wholesalers if need be. Similarly, the chosen wholesaler is not required to serve one retailer exclusively, again alleviating dependency concerns.

Of greater concern than the vertical relationship in this case is the horizontal relationships that were created. Power and trust are important in the collaborative process (Ulzzi, 1997, Morgan and Hunt, 1994), and the unified system effectively forced the manufacturers to collaborate at least to achieve distribution. It is of note that in the establishment of the Ito-Yokado unified distribution system, it was Tokyo Meihan, which first agreed to participate in the system. Of the three candidate wholesalers, Tokyo Meihan was the smallest. As such, it arguably stood to gain more than it stood to lose by this proposed network. As found in the US radio industry (Leblebici, Salancik, Copay, and King, 1991), it is often the non-dominant actors that have most incentive to undertake pioneering strategies. The largest wholesaler (Yukijirushi Access) resisted taking this role. For the benefit of increased distribution revenues, it would have risked losing power by effectively helping a competitor gain new market share. Ultimately, of course, each of the three largest wholesalers did agree to participate as unified wholesalers distributing competitor products.

Significant trust issues arise when suppliers must cede distribution rights to competitors in important markets. We find the design of the subject network incorporated devices to facilitate trust, thus reducing network transaction costs. The resulting network relationships can be viewed as a variant of the "co-marketing relationships" on which research is "scant" (Smith and Barclay, 1997, p.4). The biggest concern is that the designated wholesaler/manufacturer would give preference to its own products to the detriment of the other products it is distributing. Two areas of concern in the present case are product handling (e.g., letting a competing ice cream product partially thaw) and sales (e.g., improperly stocking or displaying the product). We have identified three mechanisms which appear to have helped ice cream manufacturers trust their competitors for distribution.

(1) **Reciprocity:** Ito-Yokado's use of three wholesalers, each assigned to a different geographic area, effectively created a hostage situation (Williamson, 1983), such that each of the three big manufacturer/wholesaler families had to rely on each other for distribution in at least one market. Opportunistic behavior on the part of one wholesaler could be quickly reciprocated by another.

(2) **Narrow focus:** There were fewer opportunities for a wholesaler to act opportunistically. With the advent of POS ordering, the wholesaler had less of a sales role. Use of POS data by retailers to develop shelf plans also reduced wholesaler discretion in product placement.

(3) **Third party power:** If a wholesaler gave favorable treatment to its affiliated manufacturer, this would hurt the retailer as well as the non-affiliated manufacturers. The retailers keep service logs, and they are in a position to assign fines or otherwise penalize non-conforming service. As central party to the network, the retailer had enforcement power (including incentive to use that power), which would discourage manufacturers or wholesalers competing unfairly against each other.

We see that the features of the unified distribution arrangement and the changed nature of stock ordering and shelf planning enabled the manufacturer/wholesaler groups to cooperate with their competitors. This trust enabled the reduction of the transactions costs that might otherwise be borne for carefully monitoring each other. Nevertheless, as reported above, some monitoring was still undertaken. Haagen-Dazs, as a manufacturer other than one of the big three, could not rely on the hostage effect. Interestingly, it had a reputation for having the most rigorous program of monitoring the wholesalers. The cost of such monitoring could effectively be saved, or at least reduced, by those manufacturers who were protected by the hostage principle.

1. Another trend which would be expected to facilitate trust is that each of the big three wholesalers has become increasingly detached from its parent manufacturer. The wholesalers are profit centers that can increasingly best serve their manufacturing parents by providing good service to all customers in order to return a profit to their parents. The value of an ownership link between manufacturer and wholesaler is becoming less evident.

The unified system, developed for the new market realities, interestingly provides the same benefits as the "Japanese style partnerships" described by Dyer and Ouchi (1993). These authors identify close, cooperative-type, buyer-supplier relationships as offering benefits not available with the alternative options of vertical integration or a large supplier base. Those benefits are: fewer direct suppliers, customized

investments by suppliers, and forced competition among suppliers. The unified distribution system, however, achieves those benefits through a quite different design than that typically found in analysis of Japanese keiretsu organizations. While there continues to be strong belief that buyer-supplier networks in Japan are rooted more deeply in sociological culture than in economic cost minimization (Mukherji, 2001), the network we have described appears motivated by and fully consistent with the transaction cost view that the transaction will be governed in the way that minimizes transaction costs (Williamson, 1975, 1985). In the present example, the physical transfer transaction is governed by market (that is the transfer services are bought, not made), and the focal actor (the retailer) has devised several mechanisms in the network of distribution service providers to protect itself (the retailer) from opportunistic behavior by the manufacturers and wholesalers in that network. Further, it has created devices to enable the other parties in the network to minimize intra-network transaction costs.

9. Limitations and conclusion

While analysis of a single case may help to explain and inform network development broadly, the generalizability of findings is, by nature, limited. The distribution structure in Japan is notoriously complex. Attempting to map out its structure is hazardous and subject to error. Also, the evolution of a distribution system over a period of time is more complex than can be fully learned in a retrospective field study. That said, we think it likely that our sampling of multiple informants (as suggested by Yin, 1994), helped us to approach the real story through triangulation. We have examined the evolution of a network for ice cream distribution, observing how it developed in response to external change. As an actor gained power, it developed a network to serve it at minimum transactions costs. Part of the focal actor's challenge was to design the network so that other actors could function without burdensome costs of protecting themselves from opportunism. From this case, we gain insight about how distribution networks may evolve to suit a changing environment and about how trust can be facilitated to enhance network performance.

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