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DEVELOPING A SUPPLY CHAIN STRATEGY FOR A MIDSIZE RESTAURANT CHAIN

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ABSTRACT

In this paper, we develop a supply chain strategy for a growing midsize restaurant chain. Based on a case research of The HoneyBaked Ham Company of Ohio, we propose that an integrated approach should be applied to handle the challenges presented in the midsize restaurant distribution system. Specifically, we focus on action plans for mitigating inefficiencies found in the previous supply chain of HBH. As the success of supply chain management has increasingly become part of the competitive advantage of many firms, our work provides managerial insights to practitioners and researchers in the area of chain restaurant management where supply chain is often overlooked as a standard "back-office" function.

INTRODUCTION

Supply chain management (SCM) refers to a set of systematic approaches utilized to efficiently integrate supply chain parties so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time (Simchi-Levi, Kaminsky, & Simchi-Levi, 2003). These parties include suppliers, distributors, transporters, and stores. A restaurant supply chain consists of all parties involved, directly or indirectly, in fulfilling a customer request at restaurant outlets. It at least partially includes business functions such as procurement, logistics, distribution, inventory, operations, and marketing. Quality, service, cleanliness, and value are the cornerstones of many successful restaurants. The success of the restaurant supply chain management can be attributed to this focus (Ritchie, 1990). In this paper, we will discuss the development of a supply chain strategy for a midsize restaurant chain. The research is based on a recent supply chain project conducted at The HoneyBaked Ham Company of Ohio (HBH).

Small and mid-sized enterprises (SMEs) are distinctive in the sense that SMEs are relatively small in size and scale, and some SMEs are in the fast lane for growth. The size distinction is often seen as a disadvantage, as SMEs may not have a large supply chain work force or a sophisticated IT infrastructure to support the logistics system.

However, this does not necessarily mean

SCM is not important to SMEs. The small size and often rapid growth of SMEs like HBH instead create a unique challenge in managing their supply chains. Operating an effective and efficient supply chain is, in fact, vital to their overall success in the long term.

The goal of SCM is to maximize the supply chain profitability, which is defined as the difference between the revenue and the total cost incurred in the supply chain (Chopra & Meindl, 2003). Clearly, there is only one source of revenue in a supply chain: the customer. All flows of information and product generate costs within the supply chain. SCM is extremely important to all business owners and managers simply because it has a strong impact on both the revenue and costs for all firms in a supply chain (suppliers, distributors, and retailers). Focusing on eliminating waste in both material and process, the notion of lean supply chain management has increasingly attracted attention in recent years (Vitasek, Manrodt, & Abbott, 2005). Companies, especially small ones, need to pursue innovation and focus strategies to support their growth (McGee & Shook, 2000). As small businesses continue to grow, their supply chains also need to change to accommodate the challenges from the expanded business. In this respect, supply chain strategy is essentially important in offering sustainable business competetiveness. While results have varied, evidence suggests that formal strategic planning is related to superior performance in business management (see Schwenk & Schrader, 1993; Brews & Hunt, 1999; Perry, 2001). Further, strategic supply management has been empirically linked to firm performance through measures of return-on-investment, profit as a percentage of sales, firm revenues, etc. (Carter & Narasimhan, 1996).

In general, the marketing strengths for restaurant chains are consistency, convenience, and value for money (Mawson & Fearne, 1996). SCM plays a critical role in offering these competitive advantages in the marketplace. For example, the fast and timely shipment of product is essential for providing high quality food. A restaurant supply chain presents many challenges that a traditional supply chain does not have. At the same time, since distribution or SCM is often seen as a "standardized" or "back-office" function in the restaurant industry, many people think it does not contribute to the corporate competitive advantage. In companies that employ a centralized distribution, the reason is often to achieve better price negotiations through centralized buying rather than improving logistics (Bernstein & Paul, 1994). As a result, despite the extreme importance of managing a successful supply chain in a restaurant chain, this topic has received little attention in the SCM and restaurant management literature.

Among the related articles, Mawson and Fearne (1996) identify key elements of the buying process to facilitate the development of supplier-buyer strategies for a sample of UK chain restaurants. They utilized the case study method to analyze the supply chain decision-making processes in one of the largest restaurant chains in the UK. Their findings suggest that chain restaurants value not only technical competence and financial stability but, also, consistency of their suppliers. Samuel and Hines (1999) use the quality function deployment method to involve inputs from a range of representatives from a major food distributor for making supply chain improvement decisions. There are also a number of papers dealing with food distribution issues in a general setting. Salin and Nayga (2003) examine the inter-company relationship in the cold food supply chain used for exporting frozen potatoes from the U.S. to developing countries in Asia. Fernie and McKinnon (2003) assess the potentials for further cost savings in the grocery distribution sector in the UK. More recently, Aghazadeh (2004) explores ways of improving logistics and distribution supply chains within the food retail industry.

This paper will explore the topic of strategic supply chain management in the restaurant industry. Through the HBH case, this paper sets out to identify key strategies of managing an efficient and responsive supply chain in the mid-size restaurant chains in the U.S., with a view to facilitating the development of strategies which are clearly focused on integration of activities, coordination, cost reduction, and information sharing throughout the entire supply chain.

HBH SUPPLY CHAIN

HBH Historical Development

The Honey Baked Ham Company of Ohio (HBH) is one of five companies that comprise Honey Baked Ham. The five companies were divided many years ago from the original Honey Baked Ham Company, which only sold hams to go. The various companies collaborate on a few things such as health care, some products offerings, and Federal Express contracts, yet they operate completely independently from each other regarding most of their supply chain issues. There is also a slight overlap in geography between companies. HBH of Ohio and HBH of Michigan cooperate in servicing on-line and catalog sales at a facility in Toledo, but this facility is completely separate from the supply chain strategy for the 51 stores owned and operated by HBH of Ohio. This article only concerns HBH of Ohio

HBH offers a holiday dinner solution as well as a casual dining experience to customers through its 51 stores located in ten markets throughout the country. Ten years ago, the HBH business could be characterized as basically a ham business. HBH utilized local distributors for everything but the hams. The hams were shipped direct to each store from the producers. The district managers were responsible for the management of the local distributors and worked with them on assortment management. As a result, the stores were relatively independent and inventory was replenished without excessive transportation delay. However, there were disadvantages such as high purchasing cost and the difficulty associated with managing the whole restaurant chain consistently. Stores could carry different products for non-core items; customers could receive a different sandwich from store-to-store. This clearly created confusion.

In 1999, HBH started to use a primary broadline distributor along with local distribution. The concept of this program was to minimize costs with the centralized distribution. The clear benefits were savings on inventory aggregation and the less expensive contracted prices for procurement due to the large purchase volume. Since 1999, HBH has used three distribution modes for shipping products to stores: broadline distribution, direct (ham) deliveries, and local distribution. The local distribution in each market is used primarily for fresh breads, produce, and salads. The hybrid distribution program was not quite successful as explained below, especially during the important peak holiday seasons of Easter, Thanksgiving, and Christmas, which account for a large percentage of the annual sales revenue.

The Unique Challenges of Midsize Restaurant Supply Chains

Most supply chains are concerned with three distinctive flows: physical products, information, and funds (Chopra & Meindl, 2003). However, for mid-size chain restaurants like HBH, managing these three flows presents many unique challenges:

- 51 stores in 10 states owned and operated by HBH (See Figure 1)
- Different menus for different regions (For example, Kentucky stores have a dinner roll called Camelot buns, and Kansas City stores have swirled dessert bread called Povitica.)
- Short shelf-life products such as

bread and salads
- Extreme seasonal demand (see Figure 2) (For example, the average sales in December is 14 times the average sales in January.)
- Unpredictable demand due to weather and events.
- Increasing number of stock keeping units (SKUs), especially due to the new café business. (Currently there are about 250 common SKUs offered at all stores.)
- A hybrid distribution system based on third-party logistics (3PL)

Figure 1 - HBH of Ohio Store Location Map

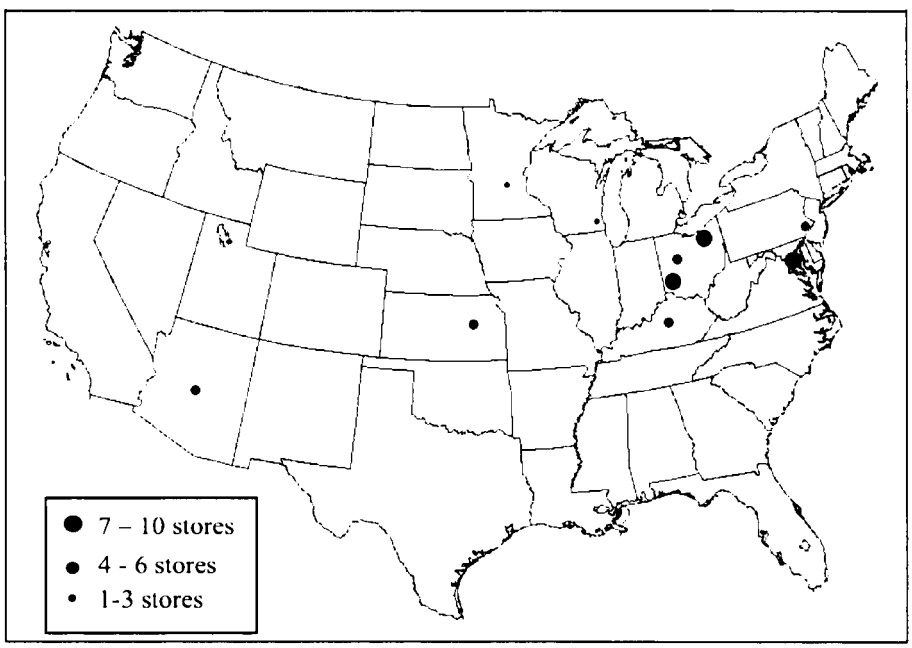
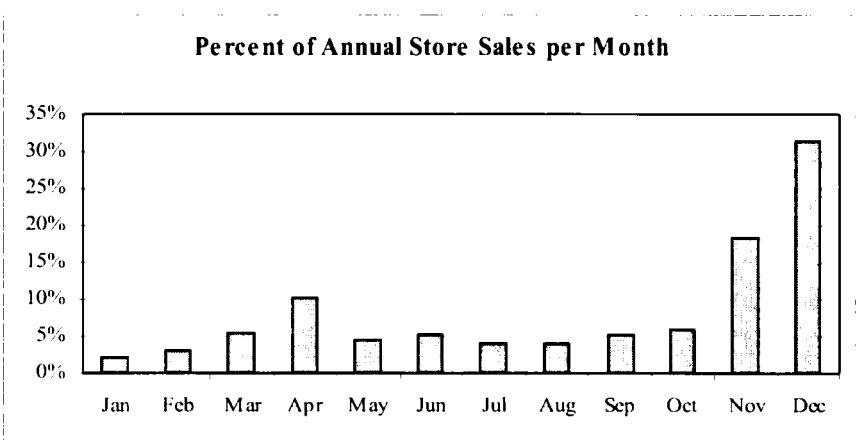


Figure 2 - Demand Seasonality of HBH of Ohio



The supply chain structure of HBH presents an efficiency obstacle since the markets are widely scattered. Nine of the ten markets are within 1000 miles of the headquarters, but few are very close. One supply chain characteristic is the extreme variation in demand. Peak demands occur at Easter, Thanksgiving, and Christmas. Regarding other supply chain characteristics, the HBH supply chain is responsible for delivering a wide variety of products, supplies, packaging, cleaning, and other materials, many of which have limited shelf life. There are more than 350 SKUs carried in its current supply chain (the number is still increasing as the company is expanding its casual dining business). Furthermore, the mid-size company that still has the desire to accelerate growth presents other unique challenges. For example, some supply chain strategies that worked well for a small company may not be adequate any more; yet some supply chain economics that are appropriate for a large company are not yet realizable in midsize supply chains. Due to the volume limitation, for example, companies like HBH have to use third-party logistics (3PL) providers for their distribution function. Thus, many supply chain techniques developed by large companies such as cross-docking may not be applicable.

Within the supply chain, because of the independent ownership, many firms primarily take care of their own interests when making decisions. To worsen the situation, quite often many supply chain members have conflicting goals in running their business (Narayanan & Raman, 2004). There are directly conflicting goals such as one's cost being the other's revenue and indirectly conflicting goals such as when an action taken by one party does not benefit itself but does hurt its supply chain partners (Walsh & Wu 2006). These, in turn, add to the complexity of managing HBH's distribution system. Further, HBH experienced rapid growth as it rolled out its new casual dining format to existing stores. HBH has decided to be innovative in its product offerings—thereby, increasing the product variety and the amount of difference from store to store. These specific characteristics make the midsize restaurant supply chain very challenging to manage.

Specifically, the product line carried by chain restaurants like HBH usually complicates their supply chain significantly. HBH delivers a wide variety of fresh meats, cheeses, and other food products necessary to operate the business. Each item has a different demand rate, demand uncertainty, temperature requirement, cost, and contribution margin. Moreover, based on the temperature at which products are kept, items are classified into three categories: frozen, refrigerated, and dry products. Accordingly, frozen items and dry items have longer shelf life and can be stored in the system for a minimum of several months. However, frozen items need additional freezer capacity for maintaining the required temperature while dry items do not need freezers. Refrigerated products include a variety of meats, cheeses, produce, and other fresh items. Their shelf life is relatively short. Overall, HBH's supply chain presents a number of industry-specific supply chain characteristics shared by many midsize restaurant supply chains.

Because of these difficulties and the limited study of strategic supply chain management in the small and midsize restaurant industry, the HBH supply chain is an intriguing case to investigate. The supply chain needed to be aligned with the recent strategic plan of the company, which was to double both sales and the number of outlets in 10 years. The team working on the project immediately saw the following issues that hampered the effectiveness of the existing system and beyond.

Weaknesses of the Current HBH Supply Chain

The major weaknesses identified for the existing supply chain came from the

distribution system. The system's performance during the three peak holiday seasons (Easter, Thanksgiving, and Christmas) was clearly not satisfactory in achieving corporate objectives. Problems such as stockouts and overstocking take away value from the customers. The following specific operational issues have been identified in HBH's supply chain:

3. Stock outages: Stock outages occurred throughout the year, especially on the most important products.
4. Shelf life: Additionally, the stores had to contend with shelf-life issues: products often were delivered with little remaining shelf-life, and in some cases, they were expired.
5. Forced distribution problem: There was a battle between too much product and not enough product. There was often the need to force products from the distributors to the stores. Some of this was the result of not ordering to historical demand, but much was due to over ordering by the distributors. For example, district managers have "driving product from store to store within their region at peak times" listed as their job description.
6. Delivery capacity: The delivery system was not adequate to ship products during the fall holidays. The number of cases delivered in December was twelve times that of an average non-peak month, and the system did not have the necessary resources (trucks, trailers, drivers, and warehouse capacity) to meet the demand.
7. Collaboration: In recent years, various distribution mistakes were repeated. Little change was made even after some parties agreed to solve these problems. Apparently, collaboration between companies within the supply chain is a tough issue.
8. Expanding product assortment: The above problems are also complicated by an assortment that is constantly changing and increasing with new products, seasonal products, deleted products, and substituted products. Without an effective distribution plan, the situation will only be exacerbated with the rollout of additional stores and new services.

Most of the above operational issues are fairly common to many of the mid-size restaurant supply chains as they share much of the same structure and demand characteristics in this industry. These issues are strong indicators of supply chain inefficiency. The next sections present strategic thoughts on mitigating these problems, along with the potential solutions developed under the framework of supply chain strategy.

SUPPLY CHAIN STRATEGY

Nature of Supply Chain Strategy

In the restaurant industry, a supply chain strategy essentially determines the procurement, transportation, and distribution of products to the customers. The supply chain strategy specifies what the company will attempt to do particularly well regarding these functions to support the company's overall business strategy. Therefore, decisions regarding inventory, transportation, operating facilities, and information flows within the supply chain are all part of the supply chain strategy. At the strategic level, the HBH SCM team, using a cross-functional perspective, developed very detailed descriptions regarding the strengths and weaknesses of the existing supply chain, as well as the expectations for the new supply chain system. This was used as a foundation to develop the requirements for the new system.

On the other hand, the overall business strategy defines ways of creating and maintaining the competitive priorities required in the marketplace. Strategy development has received continuous attention from both practitioners and scholars as markets become more competitive (Bettis & Hitt, 1995). The competitive strategy and all functional strategies, such as marketing and supply chain strategies, must fit together to form a coordinated overall strategy (Hill, 2000). Each functional strategy must support other functional strategies and help reach the corporate objectives such as profitability, growth, return-on-investment, etc. A company may fail either because of a lack of strategic fit or because its supply chain does not provide the required capabilities to support the desired strategic fit (Chopra & Meindl, 2003). At HBH, the SCM group consisted of managers from different areas to ensure that the new supply chain system would meet all other functional expectations, fit into the existing operations system, and achieve the long-term goals of the company.

Functions of HBH Supply Chain Strategy

To HBH, customer service remains a top competitive advantage through hosting, educating, and anticipating and fulfilling customer needs. SCM determines HBH's ability to have the right product at the right time (Fill rate or cycle service level is used to indicate this capability), therefore, SCM has direct and fundamental impact over the customer service offered by HBH. Besides, HBH uses direct mailing and a toll-free telephone number with its customers. In the near future, HBH aims to double the number of distribution points through additional café conversions of existing retail outlets, additional corporate and franchise locations, and strategic partnerships, to dramatically enhance customer convenience and increase shopping frequency. Along with this strategic plan, a successful supply chain strategy at HBH should serve the following purposes:

(1) Support the overall corporate strategy. For example, the supply chain strategy will provide the flexibility and capability to support the anticipated growth in business volume and the increase of SKUs.
(2) Support and maintain consistency with other functional strategies. For example, improve the distribution performance such as in-stock availability while containing the total cost. The overall cost of stock-outs and markdowns must be minimized, yet the distribution plan should cost no more than the current level. The marketing functions will benefit from better forecasting that will be possible from more current and accurate information obtained by the new supply chain system. The company will also enjoy the long-term benefit of better-trained store staff with regards to the ordering, receiving, inventorying, and transferring of product.

Internal departments such as store operations, purchasing, and accounting at HBH were asked to identify their expectations of a successful supply chain system so that their specific needs can be understood and selection of a plan that most closely matches expectations can be facilitated. The expectations include:

- Account management
- Pricing schemes
- Purchasing
- Cost effectiveness
- Service level
- Internal operations standards
- Delivery accountability
- Supplier and distributor cooperation

The expectations were incorporated into the Request for Quote that was sent to each prospective new supplier to HBH. Quotes were evaluated on both service and cost factors to determine the best method of distribution for HBH. In the end, improved financial performance is the most frequently cited benefit to be obtained from a successful supply chain strategy. A clear, well-thought-out supply chain strategy is the key to maximizing corporate profitability while

avoiding supply chain pitfalls.

RECOMMENDATIONS MADE TO HBH

Supply chain management consists of firms collaborating to leverage strategic positioning and to improve operating efficiency. In some sense, a supply chain strategy is a channel arrangement based on acknowledged dependency and collaboration. Supply chain operations require management processes that span functional areas within individual firms and link trading partners and customers across organizational boundaries. It is the interrelation of functions and organizations that challenges the successful implementation of integrated logistical management (Bowersox, Closs, & Cooper,, 2007). As a response, an integrated approach is needed to handle the interrelated nature of logistical work at HBH, covering areas such as procurement, collaboration, transportation, warehousing, and facility network design. We present our supply chain planning recommendations in this section.

Strategic Planning

As the leader of the supply chain, HBH has learned to "think earlier" and "plan earlier." SCM requires "early thinking" on many decisions relating to the flow of goods, information, and funds along the timeline. These decisions fall into three categories (supply chain strategy, planning, and operation), depending on the time frame over which a decision category has an impact. Strategic decisions such as store additions, supplier selection, distribution system design, supply network design, etc. have a long-lasting effect on HBH's operational performance. They must be made based on a careful systematic analysis well in advance. While the store locations of HBH are seemingly inappropriate, these location decisions are decades old, made under different circumstances by a different generation of leaders. The decisions might have looked sensible at the time, but they can present supply chain challenges in the present. The suggestions offered in this article present some effective tools to mitigate the negative impact of the existing store network. The supply chain strategy also needs to stay in line with the company's various functional strategies, so as to support the overall competitive strategy.

Customized Distribution

The food supply chain is characterized by a number of features, such as the associated lead-time, shelf-life, seasonality, variety, and uncertainty. As a result, a hybrid distribution system works better in meeting the needs for low cost and fast delivery than any pure method. A new system consisting of the following five distribution modes was proposed:

- Local Distribution: Local distri-bution will be utilized in each market for those items that need to be distributed weekly to each store. Broadly, items with low demand or short shelf-life such as bread, produce, salads, and beef are appropriate for using this option.

- Direct Distribution: Products are shipped direct from suppliers to stores. Only products with very high demand can be justified for using this method. In addition to hams, turkeys will also be distributed directly to the store.

- Central Distribution: The HBH proprietary items will be shipped to a central warehouse and distributed five times per year to the stores. This allows for the central distributor to meet minimums on these items and to cost effectively distribute them to the stores. Examples include HBH seasoning, a variety of HBH soups, and HBH logo packaging. Comparatively, the central distribution can be seen as an intermediate option between Direct and Local shipping methods.

- Dray Distribution: Local drays will be used for frozen products during the fall

holiday season. This will allow for local storage and delivery of highly seasonal items such as HBH side dishes, cheesecakes, and various baked pies.

- Rental option: Rental trucks can be leased for adding temporary storage capacity when necessary. This can be used together with all of the above four distribution options.

Based on the available distribution options, the key decision for implementing the new distribution system is the determination of which option must be used for which item in order to minimize the system cost while providing the required service level. The group initially selected a hybrid distribution system based on the company's experience with the old distribution system since the historical data was incomplete and of questionable accuracy. The initial hybrid plan serves as a good starting point, and the hybrid structure allows future refinement and improvement of the new system. Because one item can possibly be carried through two or more distribution modes, opportunities for realigning the new distribution system develop. This potential redundancy may also provide useful information regarding backup distribution plans under some "what-if" scenarios. For example, if a central distribution item is not available through the central system, the second (least expensive) distribution method can be employed to deliver the product. Furthermore, each store carries a different product assortment (meeting local demands), and their sales volume varies. Thus, for the same item, different distribution options might be justified for serving different stores. At the current stage, the SCM team decided to tailor the distribution options for each of the 10 markets instead of each store. It made sense to plan at the market level because these markets represent clusters of stores in close proximity. At the same time, it is noted that store level cost and other data are not available for further analysis.

Coordinating System Improvements Through Aligning Conflicting Goals

Different participants in HBH's supply chain such as HBH, distributors, and suppliers frequently have conflicting goals. For example, in order to save ordering cost, distributors tend to place large orders, which can create shelf-life issues downstream for HBH. Performance measurement, information sharing, and close collaboration between HBH and its distributors can be very effective in mitigating these problems. For example, information regarding the distributor's ordering cost and HBH's overstocking cost can be shared to facilitate efforts to reduce the overall system cost. Long-term inter-company strategic partnerships also help create a win-win situation for supply chain members. Overall, without the retailer's participation, no distributor can do well in achieving both effectiveness and efficiency in distributing highly seasonal and unpredictable products.

Generally, some conflicting goals are visible; for example, the revenue of a supplier is the cost for the downstream partner. This is a zero-sum game; what you lose, your partner gains. On the other hand, some conflicting goals are invisible. One's cost is not necessarily the revenue for others. In other words, the action taken by one party may not benefit itself but does hurt its supply chain partners. For example, without proper inventory rotation, the product shipped by the distributor could have little remaining shelf-life, which is very costly for HBH to correct later on. The challenge is how to coordinate all of the firms in the supply chain network so that conflicting goals are realigned such that everyone can come out ahead. Bowersox et al. (2007) argues that the main challenge for SCM will be the management of intense relationships across enterprises that involve such issues as collaboration, information sharing, partitioning, diverse corporate cultures, shared cost and risks, and trust. We believe these issues constitute the major causes of many

visible and invisible operational problems we mentioned earlier.

A contract-based incentive is one of the tools that can be used. A supply contract details the requirement of procurement of goods, transportation of materials, and distribution of the product to the customers. Based on the visible cost and other operational information, the proper incentive can be offered to supply chain members for synchronizing their decisions. For example, some stubborn inventory stockout problems can be cured by offering financial incentives to the distributor for improving the service level such that the overall supply chain inventory cost is minimized. Since operational actions are basically self-interest driven, without a monetary incentive, probably no other method can work as well in coordinating supply chain decisions. Financial incentives must be properly structured and aligned to drive and sustain the behaviors of all supply chain stages. After all, a win-win situation is materialized only if everyone receives their share of revenue increases.

With the conflicting goals, information is often not shared among supply chain members. Every firm needs more timely and accurate information about its supply chain performance. When companies cannot observe another firm's actions, they find it hard to design, implement, and justify any necessary collaboration program. Transparent information is an important basis for sincere cooperation. It is hard to win mutual trust if one company has information that others in the supply chain do not. In order to align interests, supply chain members' hidden actions have to be visible to every participant. Under the updated distribution system, HBH is allowed to collect and analyze better information, such as cost, inventory, and delivery data, to share with other supply chain members.

Learning Through Benchmarking

Benchmarking is a systematic procedure that measures a firm's processes against those of industry leaders. Companies like HBH can use benchmarking to understand better how outstanding companies plan and implement supply chain strategies so that they can improve their own supply chain performance. Benchmarking focuses on setting quantitative goals for improvement. Typical measures in restaurant industry include unit cost on procurement and distribution, service level, lead-time, and inventory turnover. In the logistics area, differences in managerial style and organizational culture do not affect the performance significantly, thus, benchmarking is particularly encouraged. In HBH's case, benchmarking data can be possibly collected from other similar restaurant chains that do not compete directly with HBH.

Integrative approach to decision making

Most of the companies are divided into a number of functional areas such as accounting, marketing, and operations. Unfortunately, most real supply chain problems do not define themselves in this way, meaning they are cross-functional in nature. We can break down SCM into various parts but one must not lose sight of the fact that SCM is rooted in senior level decision making for the purpose of facilitating a cross-functional integrative approach. Most efforts to improve supply chain performance fall short because they do not challenge the fundamental structure of the supply chain but, instead, attempt to improve performance within existing limitations, often by installing expensive new technologies (Frozen Food Age, July 2003). HBH recognized the importance of this, and both the president and COO of the company were deeply involved in the SCM project team. As a result, the HBH integrative approach focuses on the bottom line of the company, satisfies all functional areas' expectations, and seeks cooperation from all supporting departments such as IT, as well as outside suppliers.

CONCLUSIONS & IMPLICATIONS

HBH operates a midsize restaurant supply chain serving 51 stores in 10 widely scattered markets. We have found that the restaurant supply chain is a complex network of facilities dispersed over a large geographical area dealing with a unique product assortment. We have shown that it is challenging to design and operate such a supply chain so that systemwide costs are minimized and service levels are maintained, considering the extreme fluctuations in demand and food item shelf-life constraints. Different members in the supply chain frequently have different, conflicting objectives. Under the framework of developing supply chain strategy, we have offered integrative recommendations for mitigating many of these issues. We have found that for this particular growing, midsize restaurant chain, the most appropriate distribution option is an improved hybrid model. The chain is too big to run as an individual store, yet is too small to run a proprietary distribution system. The diverse product mix dictates that, economically, various modes of distribution make sense for different SKUs and stores. The new system will allow more timely and accurate data to be gathered which will be useful both in optimizing distribution decisions and in sharing with supply chain partners to promote trust and collaboration. The new hybrid distribution system is very flexible, allowing for both growth and changes in product mix. Ultimately, the hybrid solution is expected to provide the capability to be competitive in the marketplace and meeting various functional expectations within HBH. The suggestions presented in this paper are also consistent with the core requirements of lean supply chain management. (See lean SCM attributes identified in Vitasek et al. (2005) such as waste elimination, cost reduction and cross-enterprise collaboration.) Based on the six attributes identified in Vitasek et al. (2005), the suggestions presented in this paper are also extremely consistent with the core requirements of lean supply chain management.

For some areas where HBH is doing satisfactorily such as forecasting, no further discussion is offered in this paper. Forecasting at HBH is quite detailed, especially for the small peak at Easter and the large peak at Thanksgiving and Christmas. All deliveries are based upon these forecasts and they have proven to be very accurate by region, although product needs to be shipped from store to store within a region frequently. As demand forecasts form the basis of all supply chain planning, advanced forecasting technology can be still applied to further enhance demand prediction at HBH.

In developing our analysis, some assumptions were made in order to facilitate the necessary cost and performance evaluation. For example, demand for each store is assumed to be deterministic and equal to average store demand. Demand for each market is assumed to be the multiplication of the store number in that market and the average store demand. Along with other problems, these assumptions indicate many unresolved issues. More research is needed to further improve our understanding on how to design and operate a restaurant supply chain. For example, Jansen et al. (1998) use discrete event simulation as an effective tool to predict favorable logistics scenarios in multi-compartment distribution of the catering supply chain. Simulation models clearly have the potential of being applied to the HBH supply chain for addressing many of the intricate problems we have not been able to solve.

As small and mid-size restaurant chains strive to improve their operational efficiency and expand their business aggressively, we offer in this paper that strategic supply chain management can and must be part of their competitive strategy. As noted in Steiner and Solem (1988), successful small firms must seek a balance between the ends to which the organization aspires and the ways and means

available to them. Strategic SCM is such an accessible and powerful means for achieving competitive advantage in restaurant industry. Without it, due to the special challenges discussed in the paper, their supply chain can be easily misaligned, and a misaligned supply chain can be the major cause of numerous operational problems as well as an inferior corporate financial performance.

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