

Staff Paper

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Improving Vertical Coordination of Agricultural Industries Through Supply Chain Management¹

Donald Ricks, Timothy Woods and James Sterns²

Introduction

Supply chain management is an important topic related to improving efficiency, vertical coordination, overall performance and competitiveness in food industries. Considerable attention has been given to supply chain management as an approach for improving vertical coordination and market performance in both the trade literature and by food economists. Much of this has been primarily from the perspective of grocery retailer-wholesalers, food manufacturers and their suppliers. Supply chain management is also very relevant, with substantial opportunities for improved efficiency and performance, if the perspective is from an agricultural commodity industry. The goal for a commodity industry in this regard is to find ways to enhance their responsiveness to their customers, and ultimately their competitiveness. This can be accomplished when two or more vertical segments together pursue innovative approaches to doing business with emphasis on the vertical linkages that mutually benefit all parties.

Effective supply chain management with an agricultural industry involves various coordinating aspects and vertical linkages, with the goal that the regional industry is responsive, efficient, and in a mode of continuous improvement. Effective supply chain management can enhance an industry's competitiveness compared to competing regional and international industries and is especially important

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today because of the increased globalization of agricultural markets. Agricultural industries in United States are competing directly with industries in many other countries—both for U.S. markets and for export markets. The importance of effective supply chain management in an industry context for competitiveness in today’s global markets is appropriately described by authors Nitschke and O’Keefe (1997). They state from their perspective that “the system of Australian growers-packers-exporters competes against the business systems of Chile or South Africa. It therefore follows that the competitiveness of the system is dependent on both the competitiveness of individual firms and the nature of the linkages between firms along the value chain.”

This paper discusses the concept and objectives of supply chain management, particularly as it relates to certain agri-food industries broadly defined to include not only retailers and food manufacturers but also processors, shippers, packers and growers. Aspects of supply chain management related to regional commodity industries are examined. Some specific examples are discussed to illustrate ways in which supply chain management may be improved in certain commodity industries such as fruit or vegetable industries.

Supply Chain Management

The objectives of supply chain management have been to improve the coordination and performance of production and marketing systems.³ Supply chain management generally includes vertical coordination and logistics aspects of a supply system. Porter’s value chain and value system framework captures the essence of organizing activities within and between firms in order to transmit value (Porter, 1985). Companies within a market channel strive for ways to improve their competitive position and mutually develop new initiatives that are implemented within their terms of trade. Widely cited examples of such initiatives include just-in-time manufacturing (JIT), vendor managed inventories (VMI),

³No distinction is made here between supply chain and channel management.

continuous replenishment (CRP), and efficient consumer response (ECR).⁴

These initiatives were developed with the goal of enhancing the competitive position of a vertically linked sequence of participants in a market channel. They are both on-going and may be driven by changes in the business environment. These generic changes include new retail distribution options (e.g., super-centers, deep discount/mass merchandising formats), Internet trade, multi-national procurement and production, industry consolidation, and more demanding consumers. These initiatives have more similarities than differences and can be grouped into one overall philosophy: supply chain management.⁵

These types of coordination in the food manufacturing and retailing system have been moving forward in recent years under the general umbrella of efficient consumer response (ECR). This concerted effort to develop innovative marketing practices that would improve the coordination of trade between food manufacturers and retailers was driven by the mutual recognition of a need to change entrenched standard operating procedures that had resulted in excessive costs within the system.

The Food Market Institute Report by the Kurt Salmon Associates is pointed to by many in the food industry as being the beginning road map toward improved coordination (1993). The reforms proposed under the ECR movement included a focus on efficiencies in product assortment, the logistics of replenishment, promotion, and the introduction of new products. Many different reforms to operating practices have been implemented since then. These changes have not been small. Indeed, some have referred to the ECR initiative in the grocery industry as “the re-engineering of the food supply chain” (King and Phumpiu, 1996).

⁴Our appreciation is expressed to Judy Whipple for input on certain terminology. The language describing such strategic inter-firm linkages between multiple participants in market relationships has evolved along several fronts, but in most cases deals with essentially the same core concept -- improved performance through supply chain coordination.

⁵This paragraph’s discussion draws heavily on a paper by Whipple, Frankel, and Anselmi, entitled “The Effect of Governance Structure on Performance: A Case Study on Efficient Consumer Response.”

King and Phumpiu conclude that the advances in performance in the food system supply chain through the ECR initiative indicate that *“through collective action coordinated by trade associations, firms can work toward industry-wide benefits, even before the distribution of these benefits is known”*.

Progress toward achieving these efficiencies, however, in the minds of many food industry participants, has been slower than many had initially forecasted. A Progressive Grocer survey in 1996 indicated about three-quarters of the food industry executives felt trade relations had not improved from five years earlier. Further, the benefits to ECR, according to those in the survey, was concentrated in a few large manufacturing firms and the major supermarket chains (Progressive Grocer, 1996). An overall observation of those in the industry appears to be that re-engineering the food supply chain is a slow process that involves many players and the reforms do not necessarily benefit all participants equally.

Vertical Coordination and Market Performance for Vertically-Linked Subsectors

The study of the coordination of the system of production and exchange activities within a vertically linked commodity industry (i.e., a subsector) has a long history in agriculture (eg. Shaffer, 1973, French, 1974; Marion, 1986; Bernstein and Staats, 1992). The goal of this type of analysis has been similar to supply chain management -- to improve the performance of the vertically linked marketing system for a particular agricultural industry. Often, emphasis in the study of coordination evolved around the structure-conduct-performance paradigm (Caves, 1967) and, in more recent years, the new empirical industrial organization approaches (Caswell, 1992). One aspect of both frameworks is some emphasis on the development of market rules to enhance various measures of performance, particularly exploring institutional mechanisms that could enhance system transaction efficiencies and lower system costs. There is emerging, however, a need for research that encompasses far more of the total array of important factors than the traditional emphasis on issues of concentration ratios, market power, and empirical measurement. Rather, the need is for research focusing on broad vertical coordination and

market performance issues and on inter-firm relationships that include the entire marketing channel and influence the efficiency and performance of vertically linked systems.

A somewhat different way to look at the issues surrounding the coordination of a subsector can also be considered. Firm-level strategic planning has emphasized the coordination of resources internally with a view toward changing opportunities and threats from the markets external to the firm. Planning principles and methods can also be adapted to facilitate improved performance in serving customer needs by a regional agricultural industry (Woods, et. al., 1998, Lyford, et.al., 1998, 1999). These methods include approaches for envisioning needed future strategic directions for effective competitiveness, developing and maintaining regional industry goals, completing situational and gap analysis, clarifying and prioritizing key issues, identifying and evaluating action alternatives, building consensus, developing implementation strategies, and establishing strategy evaluation mechanisms. All of these can be done in the context of setting the stage to facilitate a regional agricultural commodity industry's on-going efforts of improving competitiveness in a world of global markets and very dynamic economic conditions.

Opportunities for Improving Coordination and Performance in Regional Fruit Industries

Supply chain management from the perspective of a commodity industry such as a fruit industry is broader in perspective than supply chain management for an individual firm. With the industry perspective, supply chain management involves vertical coordination between several levels and many different types of firms within the marketing and supply chain. For fruit and vegetable industries opportunities to improve coordination can be pursued that explicitly include growers, packers, shippers, processors and industry organizations. Supply chain management for such complex, varied and vertically linked systems supplements, and in some respects facilitates, the value chain of the individual firms within

these industries.⁶

Innovation and high performance through supply chain management is especially important for agricultural industries today because of the increased concentration of grocery retailer-wholesalers and food manufacturers within the United States and other countries. Recent estimates place 40% of the U.S. supermarket sales in the hands of the top five chains in 1999 as compared to that same share spread over the top twenty chains just five years ago, documenting and emphasizing the pace of grocery retailing consolidation. The amount of produce required doesn't appear to be changing, but the structure for grocery firms and the overall channels through which grocery products are moved have been changing considerably. The survival strategy proposed by some analysts calls for grower-shipper firms to form marketing and distribution alliances. At the very least, the pressure will be on for them to find ways to eliminate inefficiencies and cut costs (Roselle, 1999).

Supply chain management is especially important for fruit and vegetable industries which typically involve many small firms at each of the vertically linked levels of the supply chain. There is a need within most agricultural industries to effectively achieve vertical coordination of the many relatively small farm firms, packer firms, shipper firms and commodity processors. Competitiveness for a regional industry requires that these many small and vertically linked firms be well coordinated in order to provide maximum value to downstream buyers.

Coordination with many small firms is generally difficult to achieve. Changes in standard operating procedures can be quite difficult to implement across all participants in a region. In contrast to these conditions are industries which are dominated by a few large oligopolistic firms, especially in the case of industries with *strong* consumer brands. For these industries, the complexities of implementing a reform of activities toward increased efficiencies associated with supply chain management are more

⁶Porter distinguishes between the system of activities organized within a firm (the value chain) from the whole system of value-adding activities over all firms linked together in a market (the value system).

easily addressed and the goals more readily achieved by these few oligopolistic firms.

Common Supply Chain Management Needs From an Industry Perspective

There are a number of common supply chain management needs from the perspective of an agricultural commodity industry such as a fruit or vegetable industry. One of these is to develop and emphasize a *marketing* or *customer* needs perspective and guiding strategic directions versus a *production* perspective. Some of the marketing-oriented supply chain management needs of an agricultural industry often include:

- Analyzing the industry's primary customer needs, the value chain and hence opportunities for market expansion by the industry through more effectively servicing the needs of customers.
- Obtaining continually updated information on the evolving preferences, needs and requirements of the industry's customers.
- Producing and supplying adequate *quality* of products to the industry's customers.
- Developing and adapting new varieties, new products and new uses of the industry's products for changing customer needs.
- Supplying adequate, but not surplus, volumes consistently when these are needed by the customers.
- Obtaining effective consumer access through retail grocery shelves and through the menu offerings of food service retailers.
- Overcoming the common obstacles for effective supply chain management from the commodity industry's perspective including such obstacles as limited grocery retailer shelf space, grocery firms' category management and slotting fees.
- Developing and expanding export markets by meeting the special requirements for these markets in various export receiving countries.
- Building upstream relationships with grocery retailers that insure purchase pricing practices which are not prohibitive to the long-run viability of cost-efficient producers and processors.

The degree to which a regional commodity industry achieves these supply chain management

needs will have a major impact upon the competitiveness and long run economic viability of that industry. Strategies to achieve these supply chain management needs from an industry perspective can be important to supplement the supply chain management strategies of the marketing, manufacturing and farm production firms within an agricultural industry.

Firms within such an agricultural industry, including its marketing and supply chain firms at various vertical levels, of course, develop and implement strategies to achieve the above needs from the perspective of their firm. These supply chain management needs for the firms such as food manufacturers, processors or shippers include both strategies to market their products to their customers and strategies to obtain the needed inputs or raw product supplies. In a somewhat similar fashion but with a broader perspective, commodity industries, such as the Michigan apple industry or the Maine blueberry industry, also need to consider certain strategic directions for supply chain management. Such an industry perspective (e.g., Porter's "value system") can facilitate the development and implementation of strategies for effective supply chain management from the perspective of the firms. This is especially important in today's highly competitive and global market economies.

Marketing firms within the industry such as shippers or commodity processors have somewhat more abilities in regard to supply chain management than do the growers. Hence supply chain management tends to be somewhat a higher priority for shippers and processors. On the other hand, effective supply chain management by shippers or commodity processors is limited by (1) what crops, products, varieties and qualities that their farm suppliers grow and (2) by the lack of marketing muscle by these commodity processors and shippers to gain effective market access.

Because of the lack of marketing muscle by the commodity processors and shippers, an important consideration for effective supply chain management from a commodity industry perspective is: What type of firm has both the ability and the inclination to be a "primary driver" in accomplishing the needed effective supply chain management for a commodity industry? Firms which have well-established

consumer brands are well-positioned to be “primary drivers” for the purposes of effective supply chain management. These firms today are generally quite large firms with substantial abilities to effectively perform all of the necessary roles of media advertising, promotions, retailer deals, market research, new product development, payment of retail grocery slotting fees, and the provision of category management leadership. Within most fruit and vegetable industries, however, there are relatively few firms which have strong consumer brands and the related abilities to accomplish all of the aforementioned important functions that are needed for effective supply chain management and consumer access in today’s U.S. food markets.

A number of the more innovative and stronger commodity processors and shippers try to perform the needed roles as a “primary driver” for effective supply chain management for their commodity. However, because of their limited abilities to meet all of the expensive requirements of modern U.S. grocery retailers (e.g., slotting fees, advertising support), effective supply chain management from the perspective of a commodity industry such as a fruit or vegetable industry often must involve commodity firms such as processors operating in a role of a “secondary partner” through linking or partnership arrangements with other firms who do have the important abilities to be “primary drivers” for effective, modern supply chain management. Thus such effective supply chain management from perspective of a commodity fruit or vegetable industry commonly involves exploration and development of innovative partnership relationships between different types of firms to accomplish the needed market access in an effective manner.

The supply chain management challenge of stimulating growers to produce the varieties, types of products and qualities that are needed to effectively serve the customer’s needs is especially challenging for perennial crops. This is because of the long-term nature of the perennial crops, their related large long-term investments and the difficulty of switching to new varieties, or new crops, or different qualities as the market and customer needs change over time.

Because of the above difficulties and limitations of typically relatively small commodity firms effectively meeting all of the challenges of supply chain management, the stimulation of effective supply chain management from an industry perspective can be, to some extent, facilitated by use of an industry generic promotional organization, industry associations, or some type of an industry visioning or futuring council or think tank. Such an approach can aid in developing an industry perspective as well as encourage a marketing perspective rather than only a production perspective. This kind of an approach can also facilitate an industry to envision future strategic directions as well as facilitate certain kinds of needed informational activities (as illustrated in the following two sections) that will aid the needed supply chain management strategies of a competitive industry.

Analyzing Customer Needs, the Value Chain and Market Expansion Opportunities

Effective supply chain management in an industry of many small commodity firms may be enhanced by certain kinds of market research in regard to changing customer needs. The information provided by such market research can be quite useful to various firms within a commodity industry and for the performance of the industry as a whole, including several vertical levels of the supply chain, in serving the industry's customer needs. On the other hand, typically small commodity firms such as produce shippers or commodity processors usually do not have well-developed abilities or inclinations to do much market research. Thus this is an area in which there is often an important public good aspect for appropriate market research which can be beneficial for the needed supply chain management goals of various firms within the industry.

An industry approach to both analyzing customer needs and achieving improved supply chain management performance in serving these changing customer needs can be illustrated with an example from the Michigan apple industry. This case example has involved a number of key elements in this industry approach to improve its performance in serving the changing customer needs. These elements

will be explained and summarized below.

Several years ago leaders in the Michigan apple industry decided that they needed more comprehensive and concerted efforts to reduce some of their industry's problems, to adapt more quickly and appropriately to the changing needs of their customers and to analyze various strategic directions that were needed to help them be competitive in the marketplace in view of increasing U.S. and global competition. As a part of this overall visioning analysis for needed strategic directions for the industry, industry leaders decided that more comprehensive information on the changing consumer and trade customer requirements and preferences for apples was a high priority need for the industry. Therefore the industry requested that a series of market research studies be conducted in relation to Michigan apples.

These market research studies were done by Michigan State University to provide more specific information on the modern tastes, preferences, perceptions and buying behavior of consumers and trade customers in regard to Michigan apples. These market research studies were requested and partially financed by the apple industry. Apple industry leaders and organizations also worked closely with the university in developing the specific questions and types of information to be analyzed. The close partnership between the industry and the university in developing the market research also included subsequent analysis of the results along with development of strategies by the industry to better serve the customer needs that had been identified through the market research. Industry leaders also worked closely with the university in a partnering fashion to develop the successive stages of this series of apple market research studies.

The industry has recently implemented a number of strategies to accomplish these goals of better serving their customers. Industry organizations which were especially important in working with the university and in implementing strategies to better serve customers included the Michigan apple industry's generic promotional organization, a shippers association and a think-tank group with representatives from

all of the various vertical segments of the industry. This industry think-tank group focused on industry futuring, visioning and problem solving.

The series of apple market research studies, which were developed in close partnership with the industry leaders, were completed over a six-year period by the university. These interrelated series of market research studies included the following:

1. *An initial survey of the industry's apple shippers (Ricks and Woods, 1994).*
This survey obtained information on the perceptions of these key mid-chain firms regarding consumer and trade customer needs, preferences, requirements and priorities.
2. *A consumer focus groups study (Beggs, et. al., 1995).*
This study emphasized information on consumer preferences, perceptions and buying behavior regarding apples.
3. *A large-sample consumer survey by telephone (Ricks, et. al., 1995).*
This survey built onto the results from the focus group study and provided information from a much larger sample of consumers (n = 1,350) regarding their preferences, quality needs, varieties, types of packs and buying behavior.
4. *Consumer taste tests regarding consumer preferences for fruit crispness and flavor (Greaves, et. al., 1998).*
5. *Visual tests with consumers regarding their preferences for overall apple appearance as well as fruit color and size (Greaves, et. al., 1998).*
6. *Another more specifically targeted survey of shippers regarding their analysis of their customers' preferences for apple varieties for fresh market (Ricks, et. al., 1996).*
7. *A similar survey of apple processors regarding market preferences for apple varieties for processing market uses (Ricks and Sterns, 1997).*
8. *A grocery trade survey (Sterns and Ricks, 1998a, 1998b, 1998c).*
This survey obtained information from these key grocery trade customers on their needs, preferences, operating procedures, their perceptions of consumers' behavior and the performance of the apple industry in serving the needs of these important customer groups.

Supply Chain Management for Improving Quality

A common supply chain management challenge for many agricultural industries is the need for continuous attention to adequate quality in order to effectively meet the preferences of their consumer

customers. Providing adequate quality is especially challenging for fresh fruits and vegetables because of their perishability. This is particularly noteworthy in contrast to manufactured food products.

The need for continuing attention to improving fresh quality, including efforts at various vertical levels within the supply chain, is illustrated by the results of the apple industry market research that is summarized above. One of the highlights of these apple industry market research studies was that a very high percentage of the consumers indicated that their apple purchases are strongly influenced by their preferences for firm, crisp apples. These market research results further showed that a very high percentage of consumers regard crispness of the apples as being much more important for their purchases than other quality characteristics such as degree of red color and large fruit size--two characteristics traditionally emphasized by trade customers.

The market research results which emphasized the importance of crisp apples to consumers, along with a recent trend of increasing attention to crisp apples by certain grocery customers, accentuated the priority importance to the industry for emphasizing strategies that help provide firm, crisp apples to the industry's customers. Industry leaders discussed this important topic and developed a series of strategies to give greater attention to improving apple quality in regard to crispness. The necessary action strategies to accomplish this goal of better serving the customers' needs by necessity involved supply chain management aspects including vertical coordination of the needed changes in the practices of growers, packers, storage operators and shippers. Thus, this is a good example of supply chain management for improved performance on quality by an agricultural commodity industry.

The development and implementation of a series of strategies by the industry to improve the crispness of apples for the industry's customers was facilitated by discussions of industry leader representatives from the various industry segments, vertical levels and industry organizations. This important process for improved industry performance was aided by the use of an industry problem-solving and think-tank council comprised of the various industry segments. This group considered how

to improve communications and vertical linkages so that all phases of the industry including growers, packers, storage operators and shippers all did their part to produce and market top-quality, crisp apples in order to best serve their industry's customer needs.

The set of strategies which were emphasized by the Michigan apple industry to improve their performance on key condition or crispness factors included the following:

1. Information to increase awareness of the problem by all segments of the industry on the importance of top condition, crisp apples in order to serve customer needs and to expand the demand for the industry's fresh apples.
2. Strategies to improve the coordination and interrelated management steps for top condition apples at several vertical levels.
3. Harvest timing information.
The importance of ideal timing of the harvest for crisp apples going into storage was emphasized by shippers, packers and university extension.
4. Technological research on apple maturity and ideal harvest times for different varieties.
This was accompanied through special emphasis by university research and included extension of the results of this technological research on ideal harvest timing to growers, packers and shippers.
5. Emphasis on top storage management techniques for crisp apples.
6. Research on the most advanced and effective storage technologies.
7. Orchard modernization strategies to contribute to the most advanced production systems for crisp apples.
8. Expanded usage of pressure testing at all vertical levels of the supply chain.
9. Communications to growers about the importance of switching to superior varieties which inherently produce more crisp apples.
10. Diversion of more lots of marginal condition fruit to be sold for processing instead of for fresh market.
11. Attempts by the industry to sell top condition crisp apples for premium prices.
As a result of the above set of effective strategies taken by the industry to improve quality, some shippers were able to obtain small price premiums for top condition apples from some grocery trade customers in some years. Such price premiums on a continuing basis would provide significant incentives for all segments of the industry, especially growers, to continue to implement strategies needed to achieve the desired degree of quality.

However, in many instances price premiums for top-quality apples have not been attainable from the trade customers. This has been especially the case when apple supplies were in surplus. The suppliers of top quality apples in regard to crispness were, however, more likely to obtain the volume of sales business from customers than those suppliers with lesser quality apples in regard to condition.

The above series of strategies to improve the industry's performance in providing top-quality, crisp apples to the customers were given substantial emphasis by the Michigan industry during the last several years. This series of industry developed and implemented strategies has resulted in substantial improvements in Michigan industry's performance in regard to providing this important, but difficult, aspect of quality for fresh apples. This improvement in the industry's performance was documented by a 1998 survey of grocery trade customers who were asked for their evaluation of the performance of Michigan apple industry in regard to apple quality. (This trade survey was done several years after the industry began to devote greater emphasis to the supply chain management type of strategies for improved quality.)

In this recent trade survey most of the grocery customers were highly complementary of the progress that the Michigan apple industry has made on improving its overall quality in recent years. Many of these trade customers indicated that Michigan had made great progress in improving their quality and hence their competitive position in the fresh market and the demand for their products. Many of these trade customers indicated that the Michigan industry's performance was especially noteworthy compared to the period before they implemented this set of quality improving strategies.

Developing and Marketing New Products and Uses

A common challenge for commodity industries such as fruit and vegetable industries is the need to develop and market new products and uses to meet changing consumer preferences. There are many supply chain management considerations for this type of challenge commonly experienced by commodity industries. This aspects can be illustrated by the situation and some of the challenges that are faced by the

tart cherry industry as this industry seeks to adapt their products to modern consumer preferences.

The U.S. tart cherry industry has historically marketed much of their industry's production in the form of sweetened desserts such as cherry pies, cherry cobbler, cherry pie filling and cherry cheesecake. A challenge to this industry is posed by the trend in consumer preferences away from high calorie, sweetened desserts such as pies. Therefore the cherry industry has been devoting considerable and concerted efforts to developing and marketing a series of new cherry products and new uses for tart cherries which do not involve sweetened desserts. A major goal of the industry in this regard is to develop a number of successful, major-volume products which use tart cherries and which fit today's consumer preferences for uses such as snacks, drinks, breakfasts, lunches, main meal dishes, and many other non-dessert uses. To accomplish these goals, some of the newer products and usage categories for tart cherries that are being pursued include dried cherries, cherries in meat products such as hamburger and sausage, combinations of fruit juices and drinks including cherry juice, cherry paste for snack bars, single-serve size cherry side dishes and cherry brandy.

Dried cherries are one relatively new category which is well-suited for the changing tastes of many U.S. consumers. Dried cherries can be marketed for a number of important modern consumer uses. These include (1) dried cherries as a snack instead of candy or cookies, (2) dried cherries as an industrial ingredient in manufactured food products such as in breakfasts cereals and baked goods, (3) dried cherries in food service markets such as for a salad ingredient or on restaurant buffets, and (4) dried cherries in manufactured snack bars.

Each of the above types of newer cherry products or product usage categories are currently in different stages of development. Some have developed to a stage of important sales volume that may be near a point of more rapid growth in the near future. Others are in their very early stages with limited sales volume, but seem to have substantial potential opportunities for market growth in the future. Still others are more in the idea stage for a usage category which may be developed into volume markets at

some time in the future.

Supply chain management considerations are important for the tart cherry industry to be able to effectively develop these new cherry products and new market usage categories. One key consideration is that tart cherries are a crop which is entirely processed, mainly by commodity processors who do not have recognized consumer brands. Therefore the industry has relied heavily upon sales of processed cherries, such as frozen cherries, to food manufacturers to be used as an ingredient in manufactured consumer products such as cherry pies, cherry turnovers and cherry cheesecake.

Because of this feature of the main supply chain for tart cherries, a key consideration in the development and marketing of new cherry products and new uses is: What type of firms or segments of the supply chain have the ability and the inclination to take the lead in developing and marketing such new cherry products and uses? This is a major supply chain management challenge for an industry which primarily markets its products as a commodity ingredient to food manufacturers. A related key consideration is: What type of firm can and will be a “primary driver” for all of the necessary supply chain management linkages and functions which are required to be successful in developing and marketing new cherry products and uses in the modern U.S. food marketing system?

The tart cherry industry is attempting to use a combination of different strategies with the use of various types of firms as the “primary drivers” for the different new cherry products, along with various collaborative arrangements with “secondary partners” within the industry. The cherry industry is also making substantial use of the industry’s generic demand-expansion organization to facilitate the development and establishment of the new products and uses. The industry is attempting to develop a number of innovative combinations of approaches including vertically-linked partnerships for success in developing and marketing the new products and uses in the context of effective supply chain management for this commodity industry.

Concluding Overview

Supply chain management and related analyses with an agricultural industry perspective offer substantial opportunities to improve the efficiency and performance of such industries in serving the needs of their customers. Effective supply chain management for an agricultural commodity industry necessarily involves a number of vertical levels of channel firms. Strategies additionally require institutional arrangements for linking and vertically coordinating many smaller firms within the various vertical levels of the supply chain. The opportunities for innovation that can improve the competitiveness of a regional industry are often related to these vertical linkages fostered through supply chain management. A key consideration is how to facilitate improvements in the supply chain and its vertical linkages to accomplish improved performance and thus the competitiveness of an agricultural industry.

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