

## Food supply chain A critical link to success

As the saying goes, 'No more do companies compete, it is their supply chains that compete' - the real battle on ground in modern trade is based on augmenting the supply chain. Today, food manufacturers are facing some of the most challenging market conditions ever. They must find ways to reduce production costs, meet increasingly numerous and complex regulatory requirements (like safety & traceability), and produce a wide variety of consistently high-quality products. As they manage these issues, the manufacturers must also invest considerably to improve supply chain responsiveness, and be more innovative & adaptive to emerging consumer-buying patterns. Managing supply chains requires an integral approach in which chain partners jointly plan and control the flow of goods, information, technology and capital from 'farm to fork'. In this article, **Rakesh Rao** takes a look at the changing dynamics of supply chain, as it links the various facet of food & beverages industry.

India has progressed from an agri-deficit to an agri-surplus country creating the need for proper storage and management of food grains as well as horticultural produce. However, about 60 per cent of the quality of food is lost in the supply chain. And, consumers actually end up paying approximately 35 per cent more than what they would be paying if the supply chain was improved, because of wastage as well as multiple margins in the current supply structure.

Besides, the farmer in India gets only around 30 per cent of what the consumer pays at the retail store. If this is compared with the situation in the US, farmers there receive up to 70 per cent of the final retail price. Wastage levels too are as low as 4 to 6 per cent. Thus, one can easily understand the benefits that could be generated from emulating those practices and tapping that expertise for the supply chain in India.

### Efficiency matters

In the changed business scenario, every customer wants reliable and just-in-time product delivery. Marketers are facing tough competition, experiencing shrinking product life cycle, managing proliferation of product offering, and growing power of retailers. It is of little wonder then that in today's global economy, it is imperative to cut down cost while maintaining high quality standards, and necessitating the adoption of many new strategic tools; one among them is 'supply chain management' (SCM). Effective SCM initiatives focus strongly on revenue growth, asset utilisation and cost reduction.

"Efficient SCM is extremely important for food & beverages (F&B) industry from the point of view of the perishable nature of many of the products; the multi-tier system in the supply chain; the fast changing nature of customer tastes & preferences; quality & freshness; and the health, safety & environmental aspects. And of course, competitive market forces," feels Dr S Subba Rao, interim director – PhD Program, Department of IOTM (Information Operations Technology Management), University of Toledo, USA.

SCM is the management of materials, information, technology and funds from the raw material supplier to the consumer. It is essential to a company's revenue generating activities as it relates to growth, efficiency and customer satisfaction. It is critical to a company's financial success in terms of revenue, cost and asset productivity. SCM helps in building collaborative working relationships between distributors, retailers, manufacturers, sales and marketing agents with the ultimate objective of building an efficient food distribution system.

of purchase (PoP). Slowly, but gradually, one will have to shift from bulk to break bulk as freshness of the product will define the success in the market," says Akshay Sharma, national manager logistics, Radhakrishna Foodland Pvt Ltd.

For the F&B industry, Radhakrishna Foodland offers the services like supply chain structuring & consulting; inventory planning & replenishment management; co-ordination – imports/exports; warehouse management; customer services / order processing and logistics (refrigerated and ambient transportation).

In order to develop an effective SCM, companies must design a customer responsive supply chain creating a flexible and cost effective supply chain, and employ the right technologies

### The SCM gains

- Reduction of product losses in transportation and storage
- Increasing of sales
- Dissemination of technology, advanced techniques, capital and knowledge among the chain partners
- Better information about the flow of products, markets and technologies
- Transparency of the supply chain
- Tracking & tracing to the source
- Better control of product safety and quality
- Large investments and risks are shared among partners in the chain

### Customer-driven approach

An effective SCM is interrelated and dependent on other functions of business. It calls for total integration with all other business functions. "Presently, the F&B industry has understood the need and advantages of an efficiently managed supply chain and is shifting from the traditional ways to structured systems and infrastructure. This has mainly been attributed to the demanding customers and the shrinking shelf spaces at the point

to enable the business model. An effective SCM is seen as the wealth of new opportunities for companies that capture right supply chain partners.

According to Dr Rao, the factors that an F&B company has to take into consideration while managing its supply chain are customer requirements including providing customised products (mass customisation), quality assurance from suppliers to final customers along the entire supply chain, coordination &

**Dr S Subba Rao**

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collaboration among the partners of the supply chain, implementing lean supply chain methods, global sourcing and developing strong sustainable supplier relations.

**The snagging tale**

India may be among one of the world's leading producers of fruits and vegetables but a major portion of the produce end up rotting as waste, even before they arrive in the market for sale. Poor post-harvest methods of warehousing, storage and unsafe transportation from the point of production to the point of sale are among the most prominent causes of this avoidable value drain.

Sharma believes, "Major area which requires immediate attention is the post-harvest handling of the produce. Though India being one of the largest producers of fruit and vegetables it is estimated that more than 30 per cent of its produce is wasted due to inadequate cold chain facilities and improper handling."

The lack of efficient transportation and logistics management is leading to massive loss of income for

the agricultural producers and creating cascading negative effects through the entire business value chain, hitting the end consumer, who has to pay more for less of value.

"Transportation contributes approximately 13 per cent to the Indian GDP and is not yet awarded the status of an industry. Lot of work has been carried out in the past decade in terms of infrastructure development, but urgent reforms are needed in resolving state border formalities/structures and roads. There is an urgent need and initiative required from the government to set up drivers training institutes across the country," stresses Sharma.

Speaking about the current challenges (hurdle) faced by Indian logistics industry, he affirms, "During the last decade, most of the industries were witnessing strong growth rates and the economy was booming. The biggest challenge today, however, is to address the skill gap and take immediate steps to prevent the skill gap as becoming a barrier to growth."

**Tools for improvement**

In order to efficiently manage the supply chain, a range of new SCM tools have been developed over the past decade. According to Dr Rao, some of the important tools that are used in the F&B industry are supply-chain operations reference (SCOR) model; demand forecasting; lean principles; and Six Sigma. It also includes various supply mapping tools like value stream mapping; total supply chain cost analysis; risk pooling; supply contracts; total supply chain inventory analysis;

postponement strategies; logistics planning; and total spend analysis.

New management systems have been implemented to improve logistics, increase the use of information and communications technologies and boost quality management. Jack Weiss, CEO, WAM Systems Inc, believes that supply chain leaders in the F&B industry face unique issues in the planning, sourcing, manufacturing and delivery of products.

He adds, "Sourcing constraints due to seasonal crop harvest, government regulations, changing retailer packaging demands, and intense competition for limited shelf space all play key roles in determining the best solution for production and delivery. Internal pressures to constantly maintain optimal supply chain performance add to make this a particularly challenging business problem."

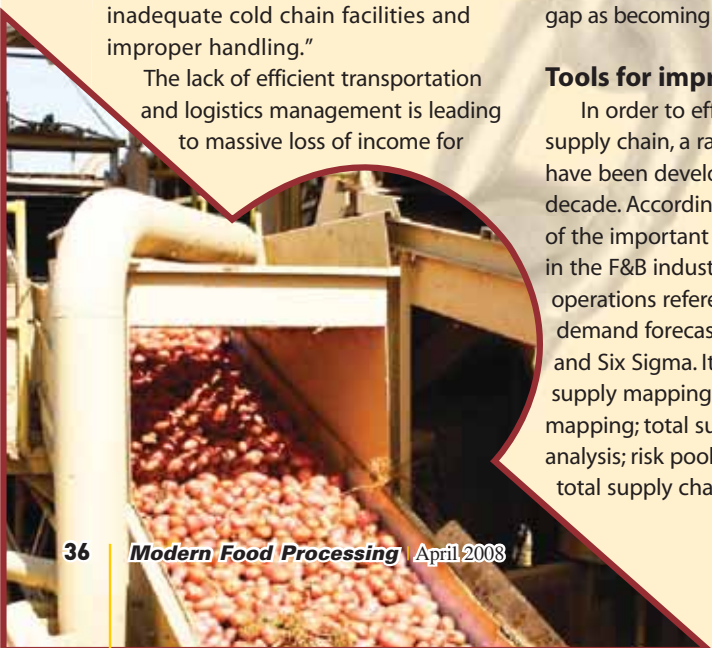
To build and maintain a competitive edge, according to him, companies look for solutions to manage this complex environment - solutions that can help businesses meet changing customer needs while optimising competitive performance goals.

"WAM Systems' *Picasso*<sup>TM</sup> is designed to address this type of environment, and accommodate the industry's specialised needs through an intuitive solution that places critical decision-making information in the hands of the key personnel who need it most," claims Weiss.

**SCM for SMEs: Does it make sense?**

A majority of the prevalent strategies in supply chain management continue to focus on large businesses, since more often than not these companies have been the pioneers in embracing the concept of SCM. But has modern SCM been realistically successful in addressing the needs of small and medium enterprises (SMEs), which dominate the F&B market in India?

SMEs, due to their various constraints - finance, infrastructure and human resources among others - have found it tough to adapt modern SCM into their strategic ambience.





SMEs often are not large enough to justify centralised organisations for supply chain management involving large corporate staffs in the various business functions. The result is a focus on individual facilities and, therefore, on a decentralised supply chain organisation.

Most of the supply chain software packages, historically, have been developed for large enterprise clients - both in terms of functionality and pricing. Therefore, from a cost-conscious SME's point of view, purchasing an SCM software only relevant to its specific requirements makes sense. SMEs can indeed benefit from some of the generic SCM capabilities - such as order processing, inventory reconciliation, warehouse management, and transportation management. Therefore, instead of going in for a monolithic SCM implementation, SMEs should look at a more customised approach.

"Software for forecasting demand, production management, distribution management including warehouse management, logistics management, collaborative management, value stream mapping, will play an important role in improving efficiency and timeliness of supply chains. Care should be taken to select software for needs of SMEs, since many of the software like SAP are for large companies. Microsoft has some software available for SME needs," informs Dr Rao.

Despite all the challenges that an SME faces, the opportunities to capitalise on the potential of supply chain management are great. SMEs can make great strides in both cost reduction and operating efficiency by fully leveraging supply chain concepts.

## Akshay Sharma

national manager logistics, Radhakrishna Foodland Pvt Ltd



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## Safety first

Recent outbreaks of food borne diseases have focused attention on food safety and traceability of food products. With the enforcement of international safety guidelines, manufacturers are seeking effective tracking solutions to ensure safety across the food manufacturing chain. "As more and more processed food moves across the global supply chain, traceability of food is becoming a very important quality assurance requirement. Therefore, traceability is being mandated by USFDA and similar organisations in many countries across the world. RFID solution vendors are addressing this requirement through 'epedigree' solutions, which are used for end-to-end traceability of food items throughout the supply chain," says T S Rangarajan, global head - RFID solutions, Tata Consultancy Services.

Food safety concerns have led to the development of 'integral chain-care' tools such as social accountability, good agricultural practice (GAP), total quality management, and HACCP (hazard analysis at critical control points). Implementation of such tools

throughout a cross-border supply chain enables chain partners to ensure the quality and safety of their products and guarantees acceptable social chain performance.

Dr Rao feels that F&B industry can address the issue of traceability by paying attention & implementing the principles of Total Quality Management (root cause analysis, C-E diagrams, mapping the processes, error proofing, quality audits, quality at the source approach, etc) and use of RFID. "Education and training related to TQM all along the supply chain is important," he stresses.

Retailers (like, Walmart, Carrefour, Tesco, Royal Ahold and Sainsbury) have increasingly established their own quality standards (eg, EUREP-GAP and BRC2), which suppliers must meet. Tracking and tracing systems are used to certify the quality of products and ensure transparency in the flow of goods throughout the supply chain.

## RFID: A primer for tracking

With increased concern for food safety, the primary issues facing food business firms are developing,

## Jack Weiss

CEO, WAM Systems Inc



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RFID connects the last mile between physical objects and the IT system thus providing 'realtime visibility' of all objects in the supply chain. This realtime visibility can be leveraged to control inventory throughout the supply chain by adapting and modifying orders in sync with business demands

implementing and maintaining traceability and tracking systems. RFID has made it possible to track the entire food chain from the farm, through to food processing units, distribution and retail chains.

"RFID connects the last mile between physical objects and the IT system thus providing 'realtime visibility' of all objects in the supply chain. This realtime visibility can be leveraged to control inventory throughout the supply chain by adapting and modifying orders in sync with business demands. Currently due to lack of visibility, inventory accumulates at each stage due to lead times and delayed information," opines Rangarajan. According to him, 'Realtime visibility' will enable instant communication and JIT inventory management which will increase inventory turns and reduce overall supply chain inventory thus increasing supply chain efficiency.

RFID makes it possible to effectively trace, identify and recall consignments suspected of contamination. It can help companies minimise the negative impact on their businesses in

the event of contaminations and also outbreaks of food borne diseases like the recent bird flu.

Although globally, RFID is increasingly used in the food industry, the market in India is still in the nascent stage. The main reason for this is low penetration of processed food in India. "Another issue is less penetration of barcode in processed food. This is due to the fact that there is a large unorganised sector in processed food, which does not use any form of traceability. Finally, there is no equivalent of USDA in India (there is only ministry of consumer affairs and Bureau of Indian Standards as oversight agencies which do not have F&B as a specialisation). Under these circumstances, the market for RFID solutions is huge but unexplored and unmandated," says Rangarajan.

However, the demand for RFID solution is likely to increase in coming years. He explains, "In other industries, all export-oriented companies are already getting covered by RFID mandates from their buyers/ customers. And in future, Indian food companies - especially which are engaged or planning to get into exports - would use RFID to manage their supply chain."

**And miles to go...**

With the advent of modern retail stores, there is an increasing awareness about the efficient supply chain management, as it enables the retailer to move or store products more effectively.

"While income and population growth are the key determinants of the food market, well-being, enjoyment, conveniences are the key drivers in the high income market. Clean speedy services from farm to fork is a deciding factor in fresh food logistics. There is a gradual shift from transaction driven services to a relationship driven services with focus on constant quality where the principal and the service provider work as partners and focus on their core areas with a common vision: 'customer delight,'" says Sharma.

Efficient SCM not only prevents needless movement of goods, vehicles transferring products back and forth; but also frees up storage space for more productive use. The efficiency and effectiveness of supply chain management can also be understood by the fact that modern retail stores maintain lower inventories than traditional retail.

Till now most retailers in India have invested mostly into the front-end, but relatively little on the back-end and supply chain. The most important part of retailing business is to find a balance between investing in front-end and back-end operations. The channel dynamics is going to change over next couple of years as the retailers start growing in size and their bargaining power is likely to increase. Probably that would bring some kind of mutual understanding between producers and retailers to develop strong supply chain network. In such a scenario, both the existing and new operators will have to make collaborative efforts to phase out inefficiencies in the supply chain network.

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