

Agile Supply Chain Management In Retail

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INTRODUCTION

Global retailers, face alarming issues that pose a serious hurdle to the growth opportunity that the retail industry promises for the world's economic progress. During the past few decades, retailers have been facing increasing competitive pressures from a number of sources. In a bid to improve profitability and efficiency, retailers are seeking ways to reduce costs, improve efficiency and enhance customer service through efficient supply chain management. Supply chain management can be one such driving factor which may positively impact the overall retail trend. Today, efficient management of logistics and the supply chain is not just important for survival, but a necessity for retailers to gain a competitive advantage. Looking at the rapidly evolving retail sector, it is essential to develop robust supply chains.

This paper mainly focuses on the potential of Global retail industry to boost the overall world market retail growth through an agile supply chain management. It goes through the various organizational attributes, which are relevant to the strategies of Supply chain management. Different supply chain drivers and their performance are studied to know the importance of supply chain decisions from the organizational perspective and thus contribution towards retail environment.

AGILE: The agile philosophy concentrates on empowered people and their interactions and early and constant delivery of value into an enterprise. Agile project management focuses on delivering maximum value against business priorities in the time and budget allowed, especially when the drive to deliver is greater than the risk. Principles include:

- The project breaks a requirement into smaller pieces, which are then prioritised by the team in terms of importance.
- The agile project promotes collaborative working, especially with the customer.
- The agile project reflects, learns and adjusts at regular intervals to ensure that the customer is always satisfied and is provided with outcomes that result in benefits.
- Agile methods integrate planning with execution, allowing an organisation to create a working mindset that helps a team respond effectively to changing requirements.

SUPPLY CHAIN MANAGEMENT:

Supply chain management (SCM) is the broad range of activities required to plan, control and execute a product's flow, from acquiring raw materials and production through distribution to the final customer, in the most streamlined and cost-effective way possible.

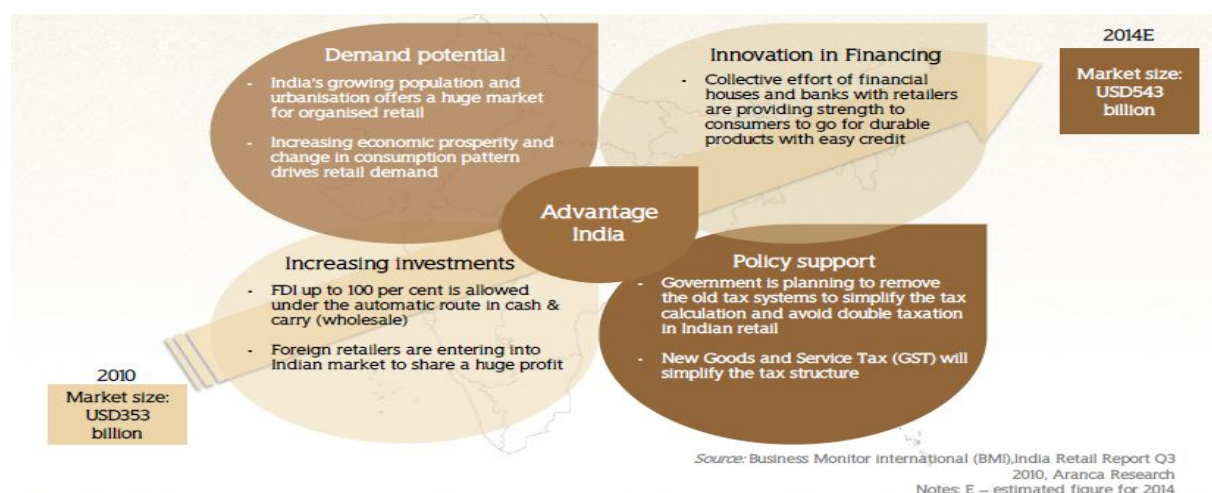
The main goal of supply chain management involves management of a wide range of components and processes, such as storage of raw materials, managing the inventory, warehousing, and movement of finished from the point of manufacture to the point of consumption.

GLOBAL RETAIL SCENARIO

The global retail market generated more than \$10.5 trillion in 2010, according to research from Market Line. Market expansion is expected to record yearly growth of close to 5% through 2015 to exceed \$13.2 trillion. Rising GDP growth, burgeoning population, greater disposable income, and increasing consumer spending are combining to drive the Global Retail industry and opportunities for retail segment players. As indicated in Lucintel’s study, the retail industry is highly fragmented and is dependent on macroeconomic factors such as GDP, disposable income, and consumer spending. Asia Pacific (APAC) dominates the industry, representing 12.92% of the global market. The APAC retail industry is expected to drive the market and grow at the highest rate among all regions during the forecast period of 2012–2017.

INDIAN RETAIL SCENARIO

Retail is one of India’s largest industries, contributing to about 12 per cent of the GDP and providing employment to 8 per cent of the nation’s workforce. The retail sector is expanding and modernizing rapidly in line with India’s economic growth. India is one of the most desirable retail destinations in the world. India’s twin growth engines of economic growth and demographic profile set it apart from other nations and present a compelling business case for global retailers looking to enter the market. Strong GDP growth, Business and consumer confidence, Capital markets buoyancy are the key factors contributing towards upbringing of Indian retail sector.



SCM AND ITS IMPACT ON ORGANIZATIONAL ATTRIBUTES

Supply chain management's importance has been gaining momentum and focus from retailers. There are numerous reasons for this. During the past two decades, major changes in supply chain management have been driven across a variety of industries by some common trends:

- Consumers have become increasingly demanding in terms of their expectations of price, selection, availability and quality of both products and services. They are seeking higher degrees of product and service customization. Empowered customers expect on-time delivery, self-service with real-time order configuration and status information, and optimally priced product/service bundles.
- Product lifecycles have shrunk dramatically, and as a result, speed to-market and product innovation have become critical to corporate success.
- The development of new technology solutions and the increasing utilization of the Web have enabled optimization and connectivity between trading partners. This is evidenced by collaborative hubs, e-procurement solutions, optimization algorithms and event management solutions.
- Supply chains have become increasingly global and complex, presenting greater challenges in managing supply and demand. New customer and distribution channels are being developed, and then enhanced by technological innovations and geographical expansion. Existing channels are under pressure and require constant change to retain market position. Companies have dramatically increased their use of global sourcing partners for cost and capability reasons, extending the number of players involved in delivering value to a customer.
- Cost reduction continues to be a major corporate agenda item, and the costs inherent in the supply chain management functions tend to be significant in terms of overall corporate spend. Current margin pressures are severe, and supply chain performance is focused increasingly on the overall business impact and shareholder value.

Linking Supply Chain Performance to a Firm's Financial Performance

Supply chain managers make decisions and use organizational resources that eventually impact the financial outcomes of the firm. To do so effectively, they need to link the results of supply chain decisions to the financial goals and related metrics of the company. By creating a set of linkages between the work that is being performed and the financial outcomes of the firm, the organization's supply chain function can gain organisational visibility and demonstrate the impact of supply chain decisions and resource utilisation on firm's financial performance.

Wal-Mart Stores is well-known for its ability to redefine the playing field when it comes to procurement leverage, but also for its investments in green products and supply chain

practices, as well as its sophisticated collaboration techniques with suppliers on merchandising and planning, forecasting, and replenishment. A mainstay in supply chain, it has been on the Gartner Supply Chain Top 25 ranking every year since it first published in 2004.

PANTALOON RETAIL (India) Limited reported a consolidated turnover of Rs. 9786.94 crore for the financial year ended 2009- 2010 representing a CAGR of 29.4% over the last 3 years. The consolidated EBIDTA for FY2009-10 is Rs. 952.24 crore, compared to Rs. 609 crore in FY 2008-09. The consolidated PAT for FY 2009-10 is Rs. 76.35 crore, compared to a loss of Rs.7.46 crore in FY 2008-09. Profit after minority interest increased from Rs. 10.07 Crores in FY 2008-09 to Rs. 67.49 Crores in FY 2009-10, representing an increase of 570%. They strongly believe that a robust supply chain is the key to sustainable scale and leadership. Efforts have been made in terms of IT integration, SKU rationalization, vendor management, and warehouse optimization and transportation network ensuring a seamless integration between all partners in the value chain. As a result, they have seen improvements in the fill rates and turnover rates at the store level, thereby improving margins and turns.

RELIANCE FRESH RETAIL VENTURE

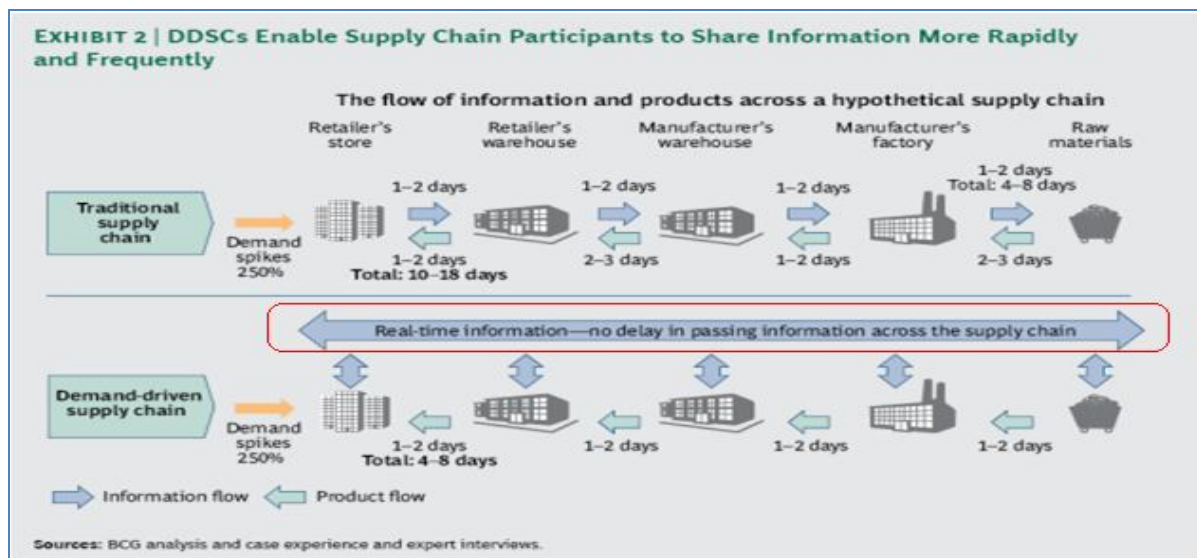
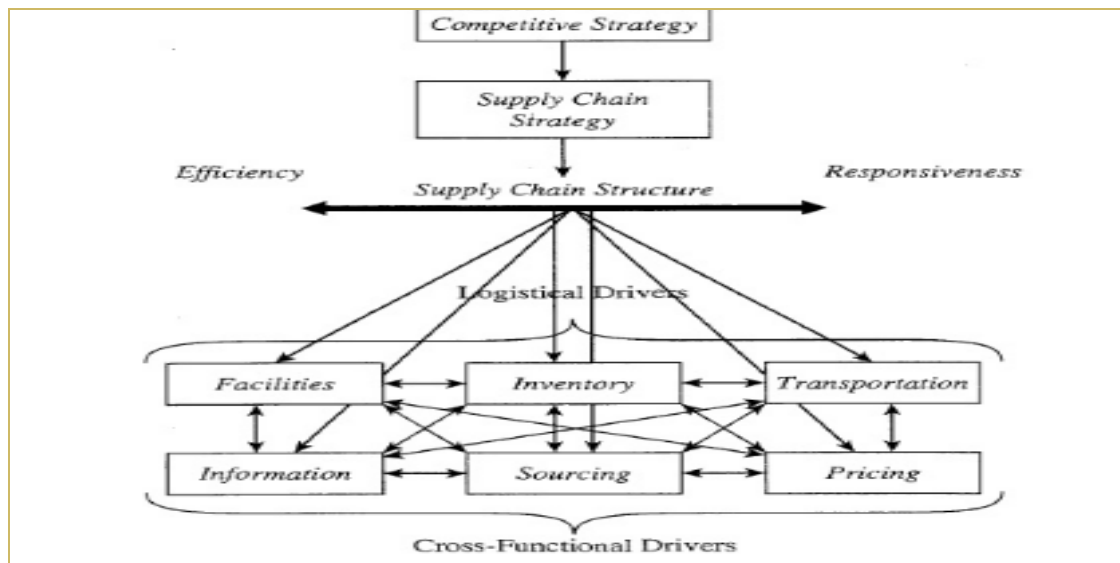
Reliance Retail, with its penchant for mega ventures, planned an investment of Rs. 8,000 crores, representing over 25% of its total investment of Rs.30,000 crores in the venture, for developing its Pan-India supply chain network which includes linking farms in various Indian states with Reliance Fresh Retail outlets to serve consumers throughout the country. The plan included building cold chains and warehouses linked through its own dedicated transport services. This network was to become the main differentiator in making Reliance Fresh retail both competitive and responsive, providing benefits simultaneously to the farmers and the consumers. Reliance Fresh Retail, however ran into trouble with the local traders and vendors in several states right from its inception; a reaction which is apprehensive. It attracted political intervention with some state governments ordering closure of these and other similar stores.

Some of the factors related to SCM contributing to the inefficient performance are:

- Declining sales due to inadequate differentiation
- Thin retail margins
- Uncontrolled shrinkages
- Inappropriate choice of location of outlets
- High rental : up to 40 to 50 percent of the total operating costs
- Insufficiently trained front line staff
- High overhead costs, electricity bills and staff salaries
- Collective denting capacity of small-time shop keepers
- Cumbersome and deficient physical inventory counting process

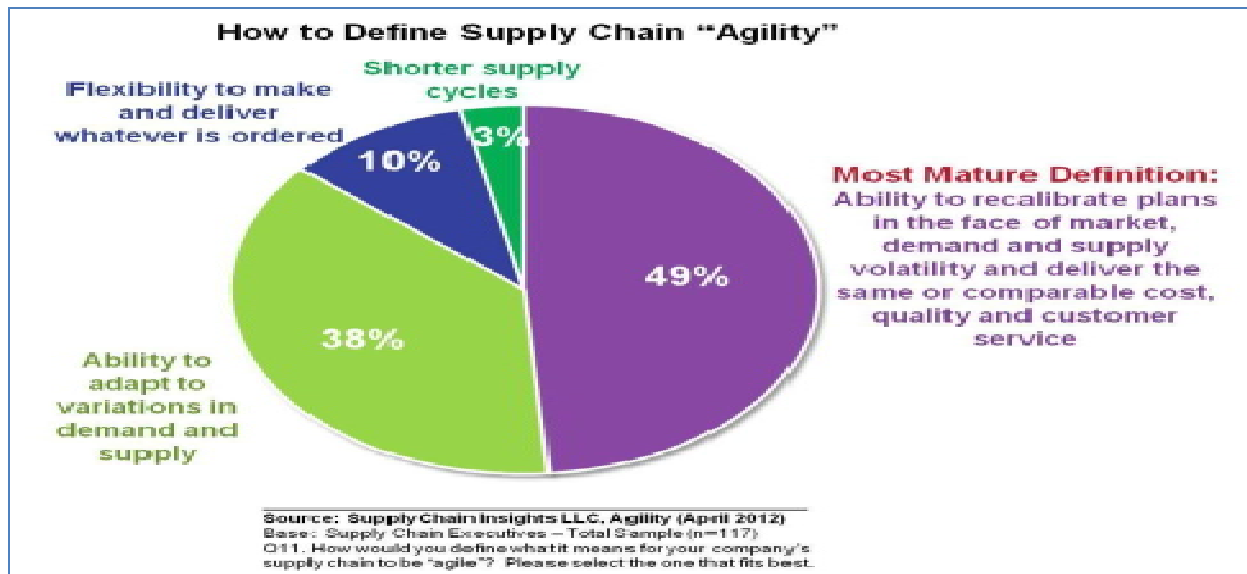
Reliance fresh distribution network is likely to undergo reengineering strategy.

Interesting facts in this diagram is the manner in which it is described a different information layer that crosses organizational boundaries. In the top half of the diagram, the “traditional” supply chain we can see data flowing between systems, usually between ERPs with EDI signal, that’s a cascade, starting from demand and bubbling up the supply chain to raw material. The information first has to go from the retailer’s store to the retailer’s warehouse, and then to the manufacturer’s warehouse, etc. I think we can all recognize this as the most dominant form of demand propagation in place today. The reason is that demand translation – the conversion of a demand signal into an appropriate supply signal – has to take place at each level (and node) of the supply chain before the signal can be propagated to the next node.



After knowing the importance of agile supply chain management, its practical implementation in the current retail industry is also of prime importance. Few mathematical models and equations will help us in finding the optimal solutions for different drivers of

supply chain. Facility related costs, transportation costs, inventory costs are the key components of costs associated to agile supply chain management.



The transportation model of linear programming can be used to determine how to allocate the supplies available from the various factories or warehouses that stock or demands those goods, in such a way that total shipping cost is minimised (optimal shipping plan). In transportation problem, we have certain origins which may represent factories from where we supply we supply a required quantity of the products to a certain number of destinations.

MINIMIZE THE TRANSPORTATION COST:

Origins	Destinations(retail stores)				Available
	1	2	.....	N	
1	c11	c12	.....	c1n	a1
2	c21	c22	.....	c2n	a2
.
.
m	cm1	cm2		Cmn	am
Required	b1	b2	.....	Bn	

The pattern of distribution of items in the form of transportation matrix is separately given below:

Origins	Destinations(retail stores)				Available
	1	2	.....	N	
1	x11	x12	.....	x1n	a1
2	x21	x22	.....	x2n	a2
.
.
m	xm1	xm2		Xmn	am
Required	b1	b2	.....	Bn	

$$Z= c_{11}.x_{11} + c_{12}.x_{12} + + c_{mn}.x_{mn}$$

Subject to the restrictions:

row restrictions:

$$x_{11} + x_{12} + + x_{1n} = a_1$$

$$x_{21} + x_{22} + + x_{2n} = a_2$$

Column restrictions

$$x_{11} + x_{21} + + x_{m1} = b_1$$

$$x_{12} + x_{22} + + x_{m2} = b_2$$

$$x_{m1} + x_{m2} + + x_{mn} = a_m$$

$$x_{1n} + x_{2n} + + x_{mn} = b_n \text{ and } x_{11}, x_{12}, \dots, x_{mn} \geq 0$$

LEAD TIME

This is the time gap between the placement of an order and the time of actual supply. it is not necessarily identical to delivery time. it is composed of following 3 components

$$\text{Lead time} = \text{Servicing time} + \text{Delivery time} + \text{Receiving time}$$

Servicing time is time taken for placing an order. It includes time for obtaining quotations, negotiating price, visiting potential suppliers and ‘letting’ contracts. Delivery time is the time taken by suppliers to comply certain order. Receiving time includes time for unpacking goods, inspection of goods and movement of goods to store.

CONCLUSION

A supply chain process includes customer orders, order processing, inventory, scheduling, transportation, storage, and customer service. Agile supply chain is flexible and is able to adapt to changing customer requirements. This paper looks at the agility of supply chain from

holistic point of view. The customer demand is always changing and hence the inventory, transportation, physical location of the building, pricing, sourcing, information resources, and other facilities should also be changed in order to optimize inventory-holding cost, storage cost, carrying cost, transporting cost, customer database preservation & maintenance cost, differential pricing or cost leadership acquaintance, fixed operating expenses based on the location & other ancillary activity cost. The supply chain should be able to act according to the change in demand. The pre-defined model and other mathematical model discussed in the paper represents real life supply chain where the organization can be vulnerable to internal & external threat in the event of Mis- judgment & management.

REFERENCES:

- Book on “Supply Chain Management-Strategy, Planning and Operations” by Sunil Chopra and Peter Meindl
- Book on “Fundamentals of Supply Chain Management- Twelve Drivers of Competitive Advantage” by John T. Mentzer
- Textbook Of Logistics And Supply Chain Management by D.K Agarwal
- IMAP retail Report Retail Industry Global Report — 2010
- IBEF(India Brand Equity Foundation) Report on Retail Market & opportunities
- BMI India Retail Report Q4 2012
- PWC report on “Winning Sector-Retail in India”-Factors for Success
- www.fibre2fashion.com