Supply chains and distribution in india

Abstract

India's FMCG industry has emerged as a distinct sector over the last few decades. Multinationals are seeking to pursue growth opportunities in emerging markets due to increased globalization and competition. India is one such emerging market that not only provides multinational companies with a large customer base but also welcomes western products. Having a presence in India means sourcing, moving and processing up to one billion or more units. In addition, the cost expectations and the larger size of the consumer market will have implications on supply chains. Excellent supply chain strategies for India will involve adopting efficient processes enabling products to smoothly change hands from the supplier to the consumer while adapting to the constraints of cost, infrastructure availability and market size of the economy. Other constraints associated with political, religious or cultural barriers may also need to be considered.

The report is divided into two major parts. One deals with the distribution chains prevalent in the urban market while the second part delves into the intricacies of the rural distribution market. We follow the same format for both the parts starting with an introduction into the current trends found in the urban or rural market, then clearing our point with a case study and finally presenting what are the challenges faced by the companies.

Supply Chain Management in Urban region- Introduction

The FMCG sector is the fourth largest sector in the country and has been growing in folds in the past few decades. The sector has both organized and unorganized players and the number of players in both the segments are on increase, in addition to this there is also an increase in the number of products introduced every year. Since the sector is characterized by the fast movement of goods and services its dependence on effective supply chain is higher than that of any other sector so supply chain management is become one of the most vital functions. Supply chain management in urban sector typically refers to procurement of raw materials, processing them into finished products and distributing them in the urban region till its reaches the end consumer. Every company/ firm in the FMCG sector has its own supply chain models which are similar yet different from one another. Below are two examples of the supply chain models.

The supply chain management in urban regions is more to do with choices for instance in logistic a firm can choose to transport the product via railways, roadways, airways or in some case even waterways. An effective supply chain will enable the firm to minimize the cost, maximize returns, match the supply to the demand and ultimately satisfy the customers. An urban supply chain in most cases has clear cut distinction between the inbound supply chain (pertaining to providing raw materials and components), in house supply chain (conversion process), outbound supply chain (distribution of good and services. The profile of the urban consumers plays a crucial role in determining the supply chain because at the end without the consumer there is no point in building up the supply chain model. Strategic decisions like number of outlet the firm would have to distribute its product, the kind of outlet, method to transport the product, places from were the raw material is procured, manufacturing method (automated, semi automated or manual) etc are taken keeping the consumer and the utility of the product to the consumer in mind. This is on account that the urban consumers are well informed and there are many competitors fighting for that consumer.

The Supply Chain of Dominos Pizza (India)

Dominos Pizza in India

Dominos Pizza opened its first store in India in 1996. Jubilant FoodWorks Limited, a Jubilant Bhartia Group Company holds the Master Franchisee Rights for Domino’s Pizza for India, Nepal, Sri Lanka and Bangladesh. Prior to Sep 24, 2009, the company was known as Domino’s Pizza India Limited and underwent a name change, rest of the terms remaining the same. The promoters of the company are Mr. Shyam S Bhartia, Mr. Hari S Bhartia and Jubilant Enpro Private Ltd. Today Dominos has more than 300 stores in India with more than 9000 employees. According to the India Retail Report 2009, we were the largest Pizza chain in India and the fastest growing multinational fast food chain between 2006-2007 and 2008-2009 in terms of number of stores.

Over the years Dominos Pizza has focused on:-

Delivering great tasting pizzas

Superior Quality

Exceptional Customer service

‘ Think global and act local’

Value for money offerings

Being a home delivery specialist capable of delivering pizzas within 30 minutes or else FREE

Revenue in India

70% of the revenue comes from home deliveries

30% of the revenue comes from OTC sales

30 minute Guarantee

Dominos has its unique proposition that they deliver pizza at a customer’s doorstep within 30 mins of placing the order or they would receive the pizza free. They have positioned themselves as a brand that delivers happiness home (Khushiyon ki Home Delivery) has an emotional benefit which they offer to their customers

Dominos Supply Chain Integration

Shown below is a high level flow of the supply chain followed by Dominos Pizza, India:-

Raw Material Procurement

Distribution

Logistics

Inventory Management

Operational Strategy

Production Process

Quality Initiatives

Customer Service

R

Raw Material Procurement

Dominos has 4 commissaries or production kitchens-cum-warehouses (Regional Centralized Facilities) in India

Delhi

Caters to 54 outlets in NCR region including 33 outlets in Delhi City itself

Bangalore

Caters to 90+ outlets across south zone

Kolkata

Caters to 15+ outlets in Kolkata

Mumbai

Caters to 80+ outlets in Maharashtra including 51 in Mumbai and 15 in Pune

Raw materials like Wheat is brought in from Jalandhar and sent to commissaries in refrigerated trucks. Pizza dough is prepared using a proprietary recipe in the commissaries. They are then made into dough balls and sent to retail outlets in refrigerated trucks. Vegetables like tomato, capsicum, baby corn, onion and spices are purchased locally. Cheese is brought in from Karnal, Haryana. Food which is frozen is sent in these trucks at -18 deg Celsius.

It uses a hub and spoke model with commissaries as Hub and retail outlets as spokes.

Logistics

Wheat (Jalandar)

Dough Vegetables (Local) Cheese (Karnal)

Commissary

Refrigerated Trucks Retail Outlets

Inventory Management

Major inventory consists of perishable items with a very small shelf life.

Some of the items are tabulated below:-

ITEM

SHELF LIFE

Dough Ball

3-4 days

Seasoning and Toppings

4-5 days

Onion, Capsicum , Tomato

5 days

Cheese Blend

4-5 days

Chicken & Meat

2-3 days

Cheese Dip

4-5 days

Mexican Wrap Base

3-4 days

Each store maintains approximately 4 days of inventory since most of the items have a shelf life of around 3-4 days. Inventory is refilled by trucks from the commissary every 4 days. There is a mini cold storage in every outlet. Inventory levels are monitored centrally by POS (point of sales) data using Intura Vision (POS management system) installed in every outlet. Intura Vision is the simplest and most reliable point-of-sale management system available for delivery and quick service restaurant operations. Intura Vision streamlines every aspect of your operation, including order taking, credit card processing, kitchen management, deliveries, inventory, and customer marketing, to make your business more efficient and profitable. There are two POS per outlet. Orders are received in telephonic form also there are in-store orders.

Production Process

The entire production process is streamlined into three stages:-

Dough Table

Here the pizza base is prepared. It is rolled out of the dough ball. There are three standard sizes Personal (8 inches), Medium (10 inches) and Large (14 inches). Personal, medium and large serves one, two and four persons respectively.

Then cheese blend is applied on the base. The entire process of making a pizza base takes 1-2 minutes.

Bake line

In this stage toppings and seasonings are applied on the top of the prepared base. The choice of toppings depends upon the pizza ordered. Customers also have the facility to customise their own pizza by choosing their toppings from a variety of toppings available. Toppings can be veg, non-veg or both. Customer can also choose the seasoning they prefer depending upon the spices they would like to have in their pizza. The entire process of make line is 1 minute.

Ven

The pizza is then ready to be baked in oven. The temperature maintained is 470 Fahrenheit. Oven has a capacity to bake 6-7 pizzas in one slot. The pizza needs to be baked for about 5-6 minutes. The ovens used now-a-days are fully automatic along with a conveyer belt, so that the flow is continuous.

In case of production in India, Dominos has a turnout of 1 pizza per minute. This meets the current demand requirement. The constraint here is the oven. They have overcome this by withdrawing the 30 min guarantee during festivals like New Year, Christmas, Diwali and rush-hours.

Operations Strategy

Dominos follows a hub and spoke distribution network wherein the 4 commissaries are the hubs and the retail outlets are the spokes. The raw material is replenished in the outlets from the hubs every 4 days or when it gets over, whichever is earlier. Vegetables are purchased locally (delayed differentiation). They have incorporated IST (interstore transfer) to cater to sudden spikes in the orders during special occasions wherein inventory falls short. In such cases material from nearby store is transferred to the critical store so that there is no halt in operations. They also have performance based costing for their employees where employees are given incentives depending upon the volume of sales which they achieve. Higher the sales better the incentives.

Present status due to mismanaged Supply Chain in India:

In India, about 60% of food value is mislaid in the supply chain from the farm to the final consumer. Consumers end up paying approximately 35 percent more than what they could be paying if the supply chain was refined, because of wastage as well as multiple margins in the present supply structure. Comparing with what returns farmers in India get (30%), in the USA the farmers can receive up to 70 percent of the final retail price and wastage levels are as low as 4 to 6 percent. Therefore we can appreciate the benefits that could be generated from implementing those practices and tapping those skills for the supply chain in India. The significance can be understood by the fact that the logistics cost component in our country is as high as 7 – 10 percent against the global average of 4 – 5 percent of the total retail price. Therefore, the margins in the retail sector can be improved by 3 – 5 percent by just improving the supply chain management.

Supply Chain Challenges – Urban India

Some key reasons of underperformance of supply chain management in urban India

1. Supply chain risk mitigation in an economic downturn:

supplier financial risk,

volatility in energy, commodity, labor rates and currency exchange,

unpredictable economic recoveries.

2. Searching for working capital:

FMCG companies will look to reduce inventory and lower operating or carrying costs.

Buyers will look to extend payment terms

Suppliers will drive to collect receivables more quickly, creating the need for a liquidity buffer such as supply chain financing

3. Shortening the supply chain by making proper use of transportation facility:

Companies will need to plan a distribution system that takes care of the realities of domestic transportation infrastructure. India’s supply chains must contend with slow transit networks and inadequate infrastructure. For example, 70 % of India’s seaborne trade is handled by just 2 of the 12 major ports. The Railways is also constrained when it comes to freight movements.

Historically, the country’s rail capacity was limited to passenger traffic, and people protested the use of rail for freight movement. Only of late has the government initiated efforts to promote rail shipments.

Most commercial shipments in India make their journey aboard a truck. Hiring a carrier meant working with a small trucking company, as the country has no large, national transportation companies. A recent study of the transportation industry found that the majority of carriers had less than five trucks in their fleets. Scheduling deliveries and pickups also can be tricky. At present, most warehouses are located in the heart of Indian cities, and many municipalities prohibit large truck movements during daytime hours. It is possible to negotiate special exemptions in some places, but generally shippers must plan on nighttime movements. Another alternative is to unload large shipments at a cross dock outside the city and move orders to smaller vehicles for delivery.

4). More free-trade agreements and more scrutiny:

The entry of foreign players in the retail segment will increase competition even further. More importantly multi-national companies might be having more money at their disposal. Thirdly they will also have access to latest technology and a ready highly efficient model to implement from.

5). Push-pull boundary:

Increased competition, and fluctuating demand will make it difficult to identify the points at which the flow of goods switches from being pulled by consumers to being pushed by extractors..

6). Maintenance of safety stock:

Instead of having huge safety stocks at different places, centralized place will have to be used to have even more cash liquidity and lesser availability of godowns.

7) Judicious use of newer technologies and decision making tools:

Use of newer technologies such as RFID (Radio Frequency Identification) continue to change the way SCM systems are designed and managed. Until recently, barcodes were the primary means of tracking packages. The advent of cheap, reliable RFID technologies have eliminated the need to physically scan packages in shipment, storage, etc, since packages with the embedded chips can be remotely scanned.

8) Creating a demand-driven supply chain

To support a demand-driven supply chain, FMCG companies must deploy performance-oriented supply chain practices, such as continuous monitoring and alert notification. This will give them a clear idea of their total supply network to adapt to changes in demand and adjust based on real-time insight into global operations. A reliable demand plan provides the foundation for sales and ops planning (S&OP) which helps FMCG companies better arrange daily operational; more effectively balance supply and demand; and make better decisions that impact both the top and bottom lines.

9) Other problems faced:.

Inadequacies in infrastructure such as lack of high quality road networks, power shortages and insufficient storage spaces.

The current rise in property prices and rentals may render a few retail business models unviable.

The retail industry loses to the tune of US$120 to US$130 million every year in frauds, thefts and employee pilferage, shop lifting, vendor frauds or inaccurate supervision despite using standard and modern security features

Multiple taxes at the federal and state level

Rural Market – Introduction

The FMCG sector in the urban areas is becoming quite saturated (though it will continue to dominate in the next 8 – 10 years) while the penetration in the rural areas are only about 1%.

The rural areas have and will continue to make up more than 50% of India's total households and accounting for more than its current 66% contribution to total FMCG consumption.

Rural India has a large consuming class with 41 per cent of India's middle-class and 58 per cent of the total disposable income.

Currently, nearly 34% of the off take of FMCG companies come form rural areas. Companies like HUL, ITC and Colgate have already established good distribution networks in these regions. Other companies would start catering to these regions in near future.

Figure 1: Urban and Rural growth rates (Personal Care products)

A huge segment of this market is currently flooded with obscure brands that are largely manufactured and distributed by small and medium enterprises. However, with the growing competition in the FMCG business, it has become difficult for SMEs to market their products sustainably. This is mainly due to the solidly established brand images of bigger players and the increasingly sophisticated demands of the urban customer. SMEs also lack the capital investment needed to compete with bigger players.

However, with the growing economy, substantial business opportunities for FMCG producers have emerged in the Indian rural sector. The rural FMCG market is growing with a CAGR of 3-4%. In the case of products like soaps, talcum powder, cooking oil, tea, cigarettes and hair oil, the share of rural market crosses 50%. The capital expenditure of urban consumers on FMCG products is Rs. 49, 500 crore, while that spent by rural population is over Rs. 63, 500 crore. This is indicates the growth rate and participation of rural FMCG markets in India. Despite the huge scope for FMCG products in the fast-emerging rural markets, some gray areas need to be worked out before SMEs can establish sustainable businesses:

- Rural India does not represent a homogeneous market. The tastes and preferences of the consumers vary from district to district in the country. With changes in the language and dialect, advertising has to be tailored specifically for different target consumers.

- Networks are not efficient to tackle the distribution demands. Problems exist in reaching the interiors of the country. Initial expenditures to develop distributor networks are immense, because in Roads and communication networks are not efficient to tackle the distribution demands.

- As there is little consumer research regarding the rural markets, companies commit the folly of overestimating the awareness of product usage in the rural market.

- The Indian consumer is traditionally price sensitive and more so in the rural parts. Multinational companies that modify portions and packaging to create a greater value proposition have succeeded in targeting the rural consumer.

- The rural distributor cannot stock a large variety of products because of credit problems. Also as the retailer plays a vital role in the village in convincing the consumer about the usage of the product, it becomes imperative to provide sufficient information and infrastructure support to stock adequate inventory of goods. Major global brands have included villagers in their distribution channels, not only providing employment but also extending the reach in the rural markets.

- While increased penetration of telecommunication has resulted in an increased awareness among villagers, it is still important to understand that a major chunk of rural community is not educated enough to comprehend the technicalities of the product/brand usage.

Models for Rural distribution chains

Approach 1 : Dedicated Rural Entrepreneur: The Individual is preferred to have a two wheeler and act as the spoke between the super stockiest and the villages in a hub and spoke model. He is expected to know the area well and has sufficient education to run a business. He is recruited to cover the nearby areas as well (upto a 40KM range). He acts as the point of contact to receive and deliver the goods to the respective stores in his area of service.

The analysis says this model works well for products that cost more than 75 per Kilo and the important part is that the company need not worry about the administration part of the operation.

Approach 2: Distributor consolidation for urban and rural markets: Here we are to consolidate the urban distributor and the super and sub stockiest into a single group to serve the retail outlets. This entity is supposed to cover the town and the villages nearby.

Approach 3: Consolidated Distribution with tele-order booking:

Rural tele-density in India is expected to go up in the near future. This would help to remove the role of saleman an facilitate direct communication with the rural retail outlets to the super stockiest. However the drawback is that the company might loose on the relationship with the retail store in the absence of a sales person.

Approach 4: Distributor choice based on unutilized reverse logistics potential

Another non-traditional form of Collaboration for rural distribution could be to partner with other partner low-margin, high-reach players in rural markets. An example could be that of the dairy industry. The vehicles form the Dairy factories goes empty to the rural areas for collection and comes back with the milk. So it could be used for the transportation of goods from the factory site to the rural areas.

Pepsico Distribution Chain

Pepsico India's distribution in rural areas thrives on two major factors :-

Third party outsourcing

Hub and spoke model in the rural areas.

This mechanism is followed in the urban areas as well but in the rural regions the local entrepreneurs from the smaller spokes of the distribution channels. In all its operations the transportation is outsourced to the third parties. However there are some cases in which large distribution centres have their own fleet for transportation of finished products.

The major two challenges faced by the company in the Indian context are the insufficient distribution in the rural sector and the inherent market risks.

Distribution forms a major part of the company's concerns as it not only accounts to the revenues lost but also the potiential market share. The concern is primarily because of the Physical conditions of the Indian market and also the low purchasing power of the rural customer base this results in the setting p of the distribution centre cost being high. Coupled to that we have the insufficient sales offsetting the set up cost.

Another concern is the taste of the rural customer who is more attracted to the local juice store or the fruit stall thereby increasing the competition from the unorganized sector.

In case of distribution we have the issue of the size of retail store. The retail outlets in rural areas are more or less Kirana stores and there is near complete absence of the retail chains. So the amount of inventory that can be stocked in the small retail stores is very small.

Apart from the distribution channel issues we have the risk of the market conditions. The small shops in the rural areas lack the refrigeration or storage capacities. The inventory is kept to meet the demands for the day and most of it is kept out in the open dues to lack of storage facilities. Thus many a time during the rainy season we can see the closure of these shops and sales of the products getting stalled.

Pepsico has implemented the following strategies to overcome these concerns

Utilizing the collective efforts of the small scale farmers, land holders and regional government

Alliances with other multinationals

Promoting entrepreneurship

It started with a strategy similar to project Shakti used by the Hindustan Lever, but alliances were with local entrepreneurs and other multinationals. Its started by making the entrepreneur the spoke of its regional distributional network in the rural areas and then went along with Hindustan lever's to share its distribution network. This helps the entrepreneur having a larger spectrum of products for distribution and hence a better prospect.

The distribution chain of Pepsico India has a fragmented design which can be largely attributed to the lack of transportation infrastructure. And this resulted in the creation of collaborative and entrepreneurial partnership that thrives with symbiotic existence. An example could be that of a supplier who Is willing to lease land holding from other farmers

Supply Chain Management in Rural Market- Challenges

The following are a few of the challenges that a company faces while managing its supply chain in rural markets.

Multiple Tier, Higher Cost and Administration Problem

In the first place, the rural supply chain requires a larger number of tiers, compared to the urban one. The long distances to be covered from the manufacturing points to the scattered consuming households cause this situation. At the minimum, the rural supply chain need the village-level shopkeeper, the mandi-level distributor and the wholesale/stockiest in the town. And on top of them are the manufacturers own warehouse and branch office operations in selected centres. Such multiple tiers and scattered outfits push up the cost and make supply chain management a major problem. The scope of manufactures' direct outlet such as showrooms or depots is quite limited in the rural market unlike in urban areas. It becomes expensive as well as unmanageable. The dependence of the firm on intermediaries is much greater in rural areas as direct outlets are ruled out. But controlling such a vast network of intermediaries is a difficult task. Control is mostly indirect. And because of these factors the firm has to be more careful while selecting the supply chain members in rural areas.

Non-availability of dealers

Another problem is the availability of dealers. Many firms find that there are limited numbers of suitable dealers. Even if the firm is willing to start from scratch and try out rank newcomers, the choice of candidate is really limited.

Poor Viability of Retail Outlet

Retail sales outlets in the rural market suffer from poor viability. A familiar paradox in rural distribution is that the manufacturer incurs additional expenses on distribution, still the retail outlets find that the business in unremunerative. The scattered nature of market and the multiplicity of tiers in the supply chain use up the additional funds the manufacturer is prepared to part with. And no additional money comes to any of the groups. Moreover, the business volume is not enough to sustain the profitability of all the groups and the retail outlet suffers the most.

Inadequate Bank Facilities

Supply chain in rural markets is also handicapped due to lack of adequate banking and credit facilities. Rural outlets need banking support for three important purposes.

To facilitate remittances to principals and to get fast replenishment of stocks

To receive supplies ‘ through bank’ (retiring documents with the bank)

To facilitate credit from bank

As banking facilities are inadequate in rural areas, rural dealers are handicapped in all these aspects. It is as estimate that there is only one bank branch for every fifth village.

Inadequate Credit Facilities

Inadequacy of other institutional credit is another constraint. Rural outlets are unable to carry adequate stocks due to lack of credit facilities. They are unable to extend credit to their customers. Thus there is a vicious circle of lack of credit facilities leading to inadequate stocking and loss of business, finally resulting in poor viability of outlets.

Lack of Transportation Facilities

Many rural areas are not connected by proper transportation facilities. There are a very few villages with railways lines. Atleast 50 percent of the rural roads are poorly surfaced, and many totally destroyed or severely damaged by the monsoons and remain unserviceable. Also the use of bullock carts looks inevitable for many years into the future. In such a scenario distribution of goods via any supply chain is a huge challenge in itself.

Lack of Proper Communication Facilities

Communication with these villages is difficult and highly expensive. Moreover, 300, 000 villages in the country have no access to telephone. This acts as a hindrance to proper supply chain management.

Other Challenges

Apart from the above there are various other challenges that firms face on day on day basis like.

Low literacy rate

Difference in languages and Dialects

Prevalence of Seasonal Demand

Rural policy

Caliber of the rural community- they have great acumen but they need intensive training

Supply Chain Management in Rural Market- How to tackle the Challenges

In order to tackle the problem of supply chain management the following strategies can be implemented.

Satellite Supply Chain

In this system stockists are appointed in the major towns and feeder towns. They by and large discharge the following functions; (a) Financing (b) warehousing and (c) sub-distribution. Retailers in and around feeder towns get attached to these stockists. The manufacturer supply goods to the stockists either on consignment or on cash/credit basis. Further these stockists deliver the good to the retail market points or satellite markets. Over a period of time some retailers grow in stature and importance. If such retail points also coincide with centres of demand and transportation within the feeder town area, they are elevated to stockists points. If 15-20 retailers were operating as part of the original stockist's network, 5 or 6 get elevated over a period of time to stockists. Fresh retail points get established simultaneously out of which some get attached to the original stockists while others to the new one.

This process continues as long as the market and consumption level keep expanding and the supply also catches up via such a supply chain. Just like second-generation stockists, set of third generation stockists get established with the passage of time. At any point of time, a certain number or retail points hover round a particular stockist. Hence the system is called Satellite Supply chain distribution. The satellites have their own satellites too.

The advantages of this system are

Market penetration takes place without manufacturer having to expand his direct stock points.

This system can bring in ample rewards in terms of increased sales and lesser distribution costs.

Syndicate Supply Chain

This solution is essentially for small companies: tie up with leading companies that already has a presence in rural market and distribute products through there supply chains.

Relying on Private Village Shops

Tie ups with the village private shops are the cheapest and most convenient channels in the rural markets.

Supply Chain Management in Rural Market- Opportunities

In the present scenario, companies operating in India will have only two options: either