Chapter-1 Introduction

This chapter has the introduction about the firms taken into consideration then about the Indian Poultry industry. This chapter has seven parts. The first part tells about the Green Chick Chop as a franchise firm whereas the second part has the information about Zappfresh. In the third part have a discussion about the Indian Poultry (Non-vegetarian) markets. The forth part discusses about the concept of Supply Chain Management. The fifth part tells about the research background and research motivation. The sixth part discusses the concept of Supply Chain Cost analysis. And the research procedure adopted is discussed the seventh part.

1.1 Green Chick Chop

With a wide presence of about 71 stores in DELHI NCR region, Green chick chop have a certainly become a brand in market for poultry and raw non-vegetarian products. They work on the franchise model where they depart their working knowledge about the store layout and industry, the products available at the store are exclusively by Green Chick Chop or the one which the franchise allows, the owner is not suppose to keep anything at store without the concern of Green chick chop Management team. They have variety of products starting from raw meats to cold cuts, then they also have ready to eat which are just to be heat and eat, which includes the kebabs, frozen curry products, burgers, hot dogs etc.

1.2 Zappfresh.com

Zappfresh is a brand of DSM Fresh Foods Pvt. Ltd. incorporated in 2015 with the sole motive of serving the end consumer with a hassle free, clean, hygenic meat buying experience. As India is concern the poultry and non veg industry is full of foul smell, whenever a costumer goes to a store they experience a very pungent smell. Zappfresh is making it convenient to the consumer to order online though website/ call and the product will be delivered at your door steps. With over 70 SKU on the list they have a very wide and deep variety of product line. The one stop shop

meat eaters as they provide Chicken, Mutton, Pork, Cold Cuts and Ready to eat similar to that of Green chic chop. They are completely an E- commerce company. Indian e-commerce market was worth about $3.9 billion in 2009, it raise up to $12.6 billion in 2013. According to a survey in 2013 the e-retail segment of India was worth US$2.3 billion. About 70% of India's e-commerce market is travel related. According to Google India, there were 35 million people shopped online in India during the first quarter of 2014 and is expected to cross 100 million mark by the year 2016 ends. The CAGR vis-à-vis a global growth rate of 8–10%. Electronics and Apparel are also biggest categories in terms of sales.

By 2020, Indian E-retail is expected to generate $100 billion revenue out of which $35 billion will be of fashion e-commerce. Online apparel sales are projected to grow to a significant level in the upcoming years.

Fig 1.1- Total Retail and E- Retail Sales in India

(Source-http://dazeinfo.com/2015/01/07/retail-ecommerce-sales-in-india-growth-2014-2018-report/)

1.3 Indian Meat Industry

Meat is one of the fastest growing segments of the agricultural sector in India. The production rising rate of agricultural crops has been 1.5 to 2 percent per annum, which of eggs and broilers has a rate of 8 to 10 percent per annum. As a result, India has become world's fifth largest egg producer and the eighteenth largest producer of broilers. The meat industry has 12 different components of meat and meat by products related industries, namely-

- Trade in live animals- Buffaloes, sheep, goats, pigs, bullock and poultry.
- Slaughtering the animals for retail market consumption
- Slaughtering in integrated mechanized abattoirs for export
- Transportation services for frozen meat in refrigerated compartments
- Marketing of raw and wet blue hides and skins
- Marketing of bones for further processing of gelatine, ossein, di-Calcium phosphate etc
- Production of casing from the intestines;
- Production of souvenirs from horns and hooves;
- Marketing of blood for the production of pharmaceuticals from mechanized slaughter houses
- Production of meat-cum-bone meals and tallow in the rendering plants from offals and bones
- Production of pet foods

Drivers of this expansion are combination of factors:

- Growth in per capita income
- A growing urban population and
- Falling real poultry prices
- Foreign migrants into India

1.4 Supply Chain Management

A Supply Chain is integrated system that consists of independently managed organizations acting together for common goal. That each organization dependent on the performance of the other organization of the system. Generally, Supply Chain consists of different functions: inventory, logistics, and purchasing and procurement, distribution, forecasting, production planning, intra-and inter-organizational relationships and performance measures.

The term Supply Chain forms the picture of how different organizations are linked together. Figure 1.2 shows an overview of SC which consists of three department; supply/inbound logistics, production, distribution/outbound logistics. In depth analysis shows that third party logistics, distributors and warehouses are also some of the important parts of SC. The information flow is bi-directional as the information from each stage of the SC is required everywhere in the system. Product flow is only in one direction i.e. forward direction as no product will

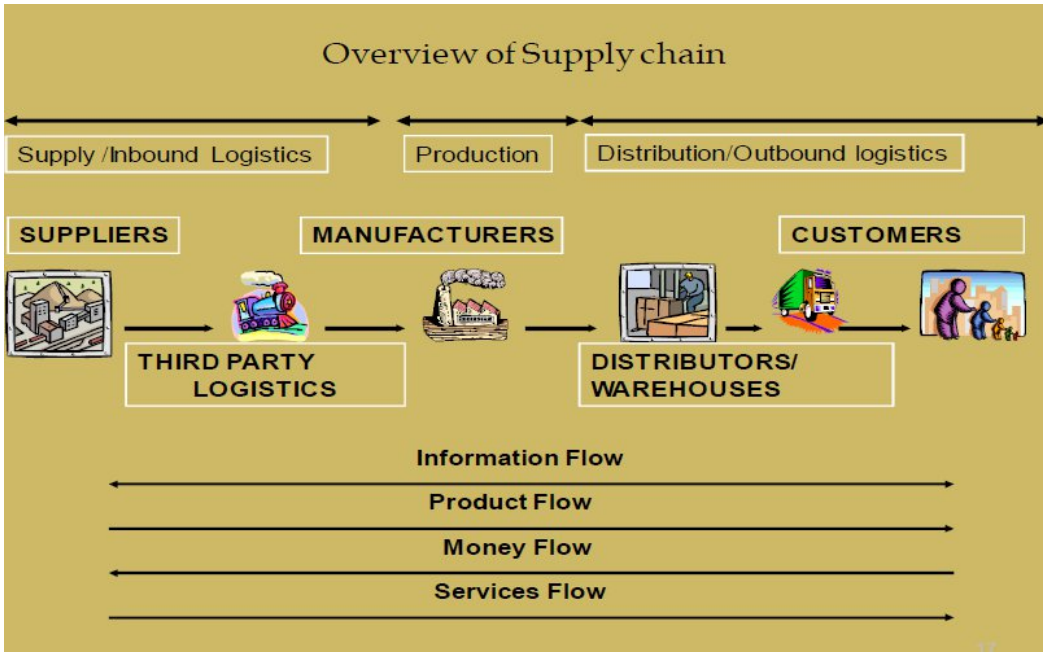

Fig 1.2 Overview of Supply Chain

(Source-http://www.evergreen-logistics.com/STATIC/en/jsp/logistics/scm.jsp)

Flow backward normally, except in the case of some special situations, such as order cancellation buyback or service, etc. Money flow is in backward direction as payment is made by all upstream (e.g. retailer to wholesaler/distributor) players to its downstream players in an SC. Regarding service flow, its direction is forward as upstream stage always provide service to its downstream players and finally to customers.

1.5 Research Background and Motivation

The purpose of the study is to assess Supply Chain in E-retailing scenario in India. We chose India to explore shopping motives of E-retailing stores since the format is relatively new to Indian shoppers, and this will help in knowing the best fit strategy to be implemented to cut the logistic cost on the part constituting a major part of the cost incurred to company.

There is a growing need to evaluate true drivers of e-retail in India. There is a vast scope for research and analysis rapidly changing environment, leading to change buyer expectations and realignment of the choice of set of stores.

It is important for Indian E-retailers to understand their evaluations on cost incurred in supplying products to the end costumers. Based on these evaluations, E-retailers could manipulate relevant Supply Chain strategy.

The study is expected to contribute to the knowledge about the changing demand supply of the consumer. Such knowledge is anticipated to assist market management in the process of formulation of Supply Chain strategies necessary to retain existing customers and even to influence attitudes and perceptions of potential customers.

1.6 Supply Chain Cost analysis

Revenue management is used for differential pricing to better match supply and demand to increase the SC profits. Traditionally, firms change the availability of assets to match the supply and demand of their products. But in the modern approach, pricing is used as a lever to reduce this mismatch between supply and

demand and it is an easier one to do it, compared to an investment in SC assets. Revenue management evaluate firm's profits by using differential pricing mechanism properly and retaining the valuable customers become more satisfied through greater asset availability. It is effective for segments each placing different values on the SC asset, perishable items, seasonal demand and bulk & spot customers. Optimization is to be applied in cases to obtain effective revenue management decision.

1.7 The Supply Chain Coordination

The research on SCM is related to Supply Chain coordination. It indicates the importance of this area because without it complete success of SCM is not possible and hence SCC can be termed as the backbone of SCM. The various steps to achieve the SCC in practice are:

- ~ Understand the existing SC
- ~ List out the areas of lack of coordination
- ~ Analyse the obstacles
- ~ Identify the appropriate coordination mechanism
- ~ Apply modelling and analysis to understand the effect of coordination mechanism
- ~ Get top management commitment for implementing the same
- ~ Get resources for coordination
- ~ Focus on communication between all stages and try to achieve it in the entire SC network
- ~ Use technology to support the coordination mechanism
- ~ Share the benefits of coordination equitably
- ~ Maintain the relationship and trust among SC members for long term success.

The importance of coordination is to improve the SC performance emphasizes the various issues of SCC to make the concept and practices of SCM more useful to all the users. The above is required to the study of the effect of various categories of mechanisms individually and in combination in different business scenario that can be carried out to ensure strong SCC among SC members to improve SC performance. Supply Chain contracts and Information sharing are two categories of mechanisms considered in this study to enhance the coordination and thereby to

improve the performance. Under Supply Chain contracts, price discount and delay in payment are the two mechanisms considered individually and in combination. Because, customers are more familiar and easily attracted or motivated as both the mechanisms provides Introduction 21 direct monetary benefits and hence firms are more concerned about these two mechanisms. Information sharing is the backbone of all other coordination mechanisms as it supports all the activities or operations to perform well.

1.8 Objectives

Primary Objective

• To study the multi-level Supply Chain of two selected firms: Green Chick Chop and Zappfresh.com

Secondary Objectives

• To study the different levels of Supply Chain in Zappfresh (online store) and Green Chick chop (Brick and Mortar Franchisee model).

• Analyse the transportation cost (online model) by creating an AS IS Process for the organisational delivery service.

• To suggest a hub and spoke model for the cost saving (online model) by creating a to-be model for the delivery service.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter explains the synthesizing literature mainly to the Supply Chain Management (SCM). To identify consequences of SCM and we propose the SCM boundaries in terms of Supply Chain orientation and integration. Finally, we conclude this chapter with identifying different barriers to effective Supply Chain management and the benefits and competitive advantages that can be derived from an effective SCM.

2.2 Evolution of Supply Chain

During the 1980s and 1990s, American firms were trying to integrate their logistics management with the thought of closing collaboration of the functions involved in logistic have a large impact on service and performance while reducing the total costs and higher productivity (Oliver and Webber, 1982).

The Supply Chain Management (SCM) concepts have evolved during that period of time and are now prevailing in both academia and practices. Lambert et al. (1998) observed that

"The term SCM was originally introduced by consultants in the early 1980s, since the early 1990s, academics have attempted to give structure to SCM."

Despite the short history of this field, the literature on SCM started growing rapidly (Larsen and Rogers, 1998). Shapiro (2001) pointed out that, SCM involves concepts from several management disciplines such as strategy development and the theory of the firm, production, logistics, inventory management, demand forecasting, management accounting, operations research and marketing management

The definitions of SCM, however, differ by different authors; Tyndall et al. (1998) defined logistics and SCM as the art of the flow of materials managing and products from one end to another that is source to end. Ellram and Cooper (1990) defined SCM as a management philosophy. LaLonde (1997) defines it as a management process. Even identical authors conceptualized SCM differently. Cooper and Ellram

(1993) conceptualized SCM as a form of integrated system between a vertical integration and separate identities on one hand and as a management philosophy on the other hand.

Table – 2.1: SCM Definitions

Definition	Source
Supply chain management is defined as an integrated philosophy to manage the total flow of a distribution channel from supplier to the ultimate customers.	Ellram and Cooper, 1990.
Network of organizations that are involved, through upstream and downstream linkages in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customers.	Christopher, 1992.
Effort involved in production and delivering a final product from the supplier's supplier to the customer's customer.	The Supply Chain Council, Kranze, 1996.
The integration of business processes from end user through original suppliers that provides products, service and information that add value for customers.	Lambert *et al.*, 1998 Cooper, *et al.*, 1997. The International Center for Competitive Excellence, 1998.
SCM is about going from the external customer and then managing all the processes that are needed to provide the customer with value in a horizontal way.	Monczka and Morgan, 1997.
The supply chain management encompasses all of those activities associated with moving goods from the raw materials stage through to the end user.	Quinn, 1997.
The delivery of enhanced customer and economic value through synchronized management of the flow of physical goods and the associated information from sourcing to consumption.	La Londe, 1998.
The systematic effort to provide integrated management to the supply value chain in order to meet customer needs and expectations, from suppliers of raw materials through manufacturing and on to end-customers.	Stein and Voehl, 1998.
The network of facilities and activities that performs the functions of product development, procurement of material from vendors, the movement of material between facilities, the manufacturing of products, the distribution of finished goods to customers and after-market support for sustainment.	Mabert and Venkataramanan, 1998.

The management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole.	Christopher, 1998.
The coordination of activities, within and between vertically linked firms, for the purpose of serving end customers at a profit.	Larson and Rogers, 1998.
All the activities involved in delivering a product from raw material through to the customer including sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, delivery to the customer, and the information system necessary to monitor all of these activities.	Lummus and Vokurka, 1999.
SCM is a concept concerned with activities to plan, implement and control the efficient and effective sourcing, manufacturing and delivering process for products, services and related information from the point of material origin to the point of ultimate consumption for the purpose of conforming the end-customer requirements.	Bowersox *et al*., 1999.
The SCM encompasses all activities associated with the flow and transformation of goods from the raw materials stage, through to the end user, as well as the associated information flows, material and information flow both up and down the supply chain.	Handfield and Nichols, 1999.
SCM is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses and stores, so that merchandise is produced and distributed at the right quantities, to the right locations, to the right time, in order to minimize system-wide costs while satisfying service level requirements.	Simchi-Levi *et al*., 2000.
Managing supply chain flows and assets to maximize supply chain surplus.	Chopra and Meindle, 2001.
A philosophy of management that involves the management and integration of a set of selected key business processes from end user through original suppliers that provides products, service and information that add value for customers and other stakeholders through the collaborative efforts of supply chain members.	Ho *et al*., 2002.
Network of connected and inter-dependent organizations mutually and co-operatively working together to control, management and improve the flow of materials and information from suppliers to end users.	Aitken in Christopher, 2005.

Furthermore, Lambert et al. (1997) suggest three primary aspects of a SCM structure:

1. Supply Chain Members;

2. Network Structure; and

3. Different types of links in SCM.

The first aspect is for the companies working in the same Supply Chain. Whereas the second concern is the structural dimension of the Supply Chain - horizontal structure, vertical structure and horizontal position of the focal company. The final aspect concerns of different types of process links in the Supply Chain, describing the degree of integration between members across that specific process link. Second, we have the process element. Lambert et al. (1997) suggest that this element gives eight different processes that are essential to SCM: customer service management, customer relationship management, order fulfilment, manufacturing flow management, demand management, product development, procurement, and commercialization and return.

However, Davenport (1993) defines processes as

"A structured and measured set of activities designed to produce a specific output and value for a particular customer."

Table 2.2 Elements of SCM

Elements of supply chain management		Description
Structure		
Members of supply chain		Member s, roles, etc
Structural dimension (horizontal and vertical)		Horizontal structure / position or vertical structure of members/ nodes
Degree of integration (managed, monitored and none)		Degree of integration on arcs between members/ nodes in the supply chain
Process		
Flow	Product flow	Flow of products between members/ nodes
	Information flow	Flow information between members/ nodes
	Monetary flow	Flow of money between members nodes
Operational activities		Type of activities order between activities
Management Component		
Physical and technical	Planning and control methods	Measurement , performance metrics, key performance indicator (KPI), etc
	Organizational structure	Firm organization structure , inter organizational team work , etc
	Responsibility (ownership, liability and operations)	Ownership of product , liability of product, or responsibility of operations
Managerial and behavioral	Management methods	Management methods, level of commitment , etc
	Power and leadership structure	Power structure and relations between members
	Risk and reward structure	Contracts, fee structure, mechanisms, etc
	Culture and attitude	Culture, trust or attitude

Sources: Adapted from Lambert *et al.*, (1997, 1998).

2.3 Supply Chain Integration (SCI)

Over the past decades, SCM shows the interdependence of buyer and supplier firm working collaboratively to improve the performance of the entire Supply Chain has interest in both practitioner communities and academic (Shin et al., 2000; Narasimhan and Kim, 2007). This attention is due to the fact that it focuses on creation of top as well as bottom-line improvement through integrative flow of materials, information and funds across the SCM, therefore creating a competitive advantage for the Supply Chain members (Christopher, 1992). Additionally firms started integrating their external relationship (Supplier-firm-customer) and internal contextual factors to improve customer satisfaction, firm performance, and firm competitiveness (chins et al., 2010). Therefore to make a success of these objectives, the SCI has been the subject of significant discussion and debates (Power, 2005), and it was also considered to be important for effective SCM.

Different terms are used interchangeably to denote this integrative attitude. Authors speak about integration between Supply Chain partners, about supply Collaborations or about alliance. Others talk about relationships, partnerships or supply side collaboration. The rationale behind all the terms appears to be that a company cannot be successfully compete by themselves and therefore they need to establish arrangements with other entities in the Supply Chain. Term like integration, collaboration, cooperation and coordination are just complementary to each other in a SCM as they consist of similar elements (Arishinder and Deshmukh, 2008).

The term Supply Chain Integration (SCI) will be used in the remaining sections. Integration is a very broad term which can be used to describe different variety of links between departments and firms. For example, externally or internally, firms are integrated with different elements of operations. These elements can be tangible (such as product flows, measurement, etc.) or intangible (such as relationships information, etc.).

The Global Supply Chain Forum (GSCF) defines SCM as

"The integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customer and other stakeholders"

Integrated SCM includes management, design, and integration of company's own Supply Chain with suppliers and customers (McCormack and Johnson, 2002). Horvath (2001) explained that Supply Chain Integration (SCI) has been key to creating value to the system and, eliminating redundancies through long-term strategic collaboration between SC partners in Supply Chain Management procedures from supplier's supplier to the customer's customer (Mentzer *et al.,* 2001). SCI is the degree strategical collaboration of the firm with their Supply Chain partners and collaboratively managing the intra-inter organizational processes to achieve the effective and efficient flows of information, products and services, decisions and information with a sole objective of creating maximum value for the customers at low cost and high speed (Bowersox *et al*., 1999; Frohlich and Westbrook, 2001; Stevens, 1989; Towill and McCullen, 1999; Van der Vaart and Van Donk, 2004).

The basis of SCI can therefore be characterized by collaboration, cooperation, shared technology, information sharing, trust and strategic partnership (Akkermans *et al*., 1999). Strategic partnerships are always against the arm's length relationship (Lambert *et al*., 1996). Lambert *et al*. (1996) demonstrate arm's length relationships are either one-time exchanges or multiple transactions. In either case, the transactions can be termed as having no sense of joint commitment or long-term cooperation, and both parties maintain their independence during the transaction.

But, a strategic partnership can according to Lambert *et al*. (1996) be defined as *"a tailored business relationship based on mutual trust, openness, shared risk and rewards that yields a competitive advantage, resulting in business performance greater than would be achieved by the firm individually"*.

Moreover, SCI emphasizes on the "intra and inter-organizational process". Both processes are critical in different stages of SCI.

Parnell (1998) states that SCI really occurs when:

"… Customers and suppliers establish tight partnerships with the objectives and probably outcomes of reduced inventory, shorter lead times and better service to the customer".

Table 2.4 Major Differences between SCI and Traditional Buyer-Seller Relationship

	Buyer-Seller Relationship	**SCI**
Relationship Dimension	***Dyadic relationship***	***Triadic relationship***
Cooperation level	Low level cooperation between buyers and sellers	High level co operational collaboration between the firms
Orientation	Arm's length oriented, self interested	Long term oriented customer focused
Target	No collaborative objective	To benefit all companies to pursue the collaborative objectives
Relationship complexity	Relatively simple	Complicated
Scope	External process focused	Both internal and external process focused
Extent	Working together operationally	Strategic, tactic and operational cooperation.

"If you are in Supply Chain management today, then complexity is a cancer you have to fight. Process management is the weapon. This course enabled our organization to understand that Supply Chain management is too important to be simply a function. It is everybody's job."

- Tom Blackstock, Vice President Coca-Cola North America (2009)

The key enabler of Supply Chain alignment: organizational structure, customer relational behavior, internal relational behavior, information sharing, top management support and business performance measurement system (Wong,

Skipworth and Godsel, 2011). The importance and benefits of cooperation and sharing of information, it still has had a tendency to focus on Supply Chain processes and hard, quantifiable elements (Abshy, Leat and Hudson-Smith, 2012).

Service Supply Chains are quite diverse in the context of type of exchanges from inputs and outputs that take place between the customers and providers (e.g. in health, financial services, etc.), describing that often there can be substantial flows of return by the customer. It is been highlighted that in service Supply Chains, providers need to handle bi-directional reverse flows:

● flows of customer-provided inputs, back to the customer in case of interruption of a service provision, or in some cases, back to the provider for re-processing when the final output failed to meet the customer requirements; and

● flows of provider items, e.g. facilitating goods, which are trusted to the custom (Kumar, Amorim, Bhattacharya and Garza-Reyes, 2016)

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Scope of the Study

1. Development of the logistic
2. The role of transportation in Supply Chain
3. Modes of vehicles in transportation
4. Volume of order that can be fulfilled by the transportation
5. Outbound transportation cost

3.2 Data Collection – Primary/Secondary and Sample Design

The data collection in the project is based upon both primary and secondary data for the Supply Chain, of the companies and getting know how about the industry norms prevailing.

As for the secondary data collection in the project also include transportation rate, delivery location and calculation of number of trips from the sales volume to the hubs the calculation number of deliveries for the last one month i.e. March 2016 to April 2016 and on the basis of calculation of the Number of trips from Processing centre to destination hub. As per the order growth month by month, the prediction are been made for the future month upcoming demand and supply.

The sample design is used in the project is the probability sampling method because draw of sample size in such a way that each member of the population has same chance of inclusion in sample.

Method of Study

Case study method has been implied as the method of study

Elements

2 Poultry firms

Processing centre, Hub, High Ordering locations

Sampling unit

2 Poultry firms with different models

Sample of all three- Gurgaon Processing Centre, Gurgaon hub and Delhi Hub

Sample Size

1 Processing centre and 2 Hubs, with over 1500 order analysed

3.4 Tools of Analysis

MS-Excel for the data collection, pie chart, bar chart for analysis of data and calculating the result and solution for the problem, the model can be optimized internally on a continuous basis to handle all changes in the business.

Google map is used for the calculation of distance between the hub and the delivery address, as it is one of reliable source for the maps. That's why it has been taken to calculate the distance.

BPR as-is and to-be analysis is been done to map down the process flow in the research and the design a new process which will be more cost effective.

Chapter 4 DATA ANALYSIS, INTERPRETATIONS & FINDINGS

4.1 Introduction

On comparing the 2 Supply Chains of online business model and the offline business model we need to compare the transportation, the work flow structure, the margins distributed and the cost involved in both the models.

4.1.1 CASE 1 (Green Chick Chop)

Green chick chop is a brand recognised for it's to quality at an affordable price. Founder Lt. Sheri Jarnail Singh started it in 1969 with Jarnail Poultry Farm. The need for a quality product was recognized and was been satisfied by Shri Jarnail Singh. Green Chick chop works on franchisee model; by far they have distributed the franchisee in Delhi and NCR region. With around 19 stores across Delhi NCR they are satisfying the need of clean butcher shop.

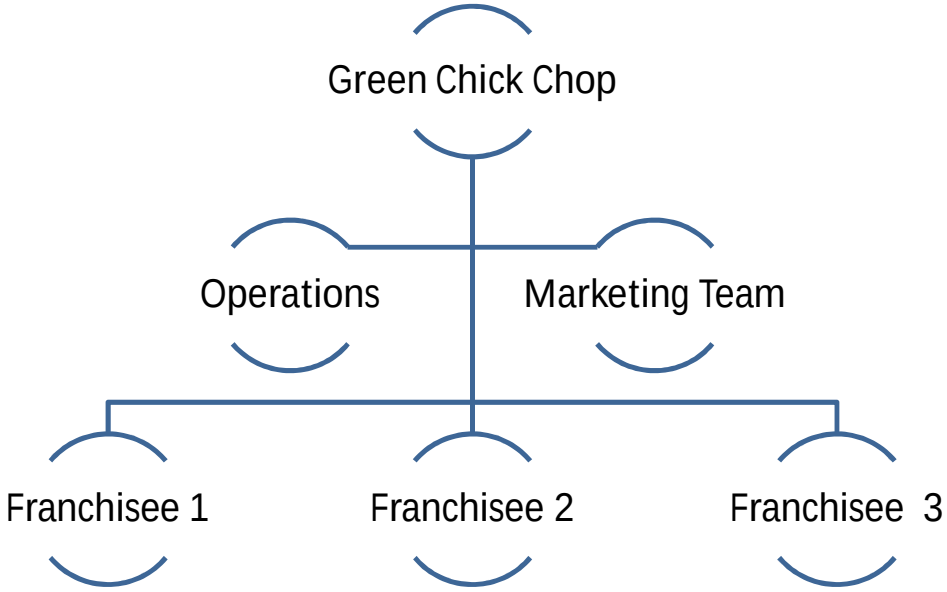

Fig 4.1 Green chick chop overview

(Source- interpreted by the author)

The basic structure of Green Chick Chop holds 2 departments marketing and operations. Marketing department is been held by the Owner or the MD and looks

into the franchisee distribution of GCC. Whereas operations department takes cares of distribution to different stores.

Order Flow Process

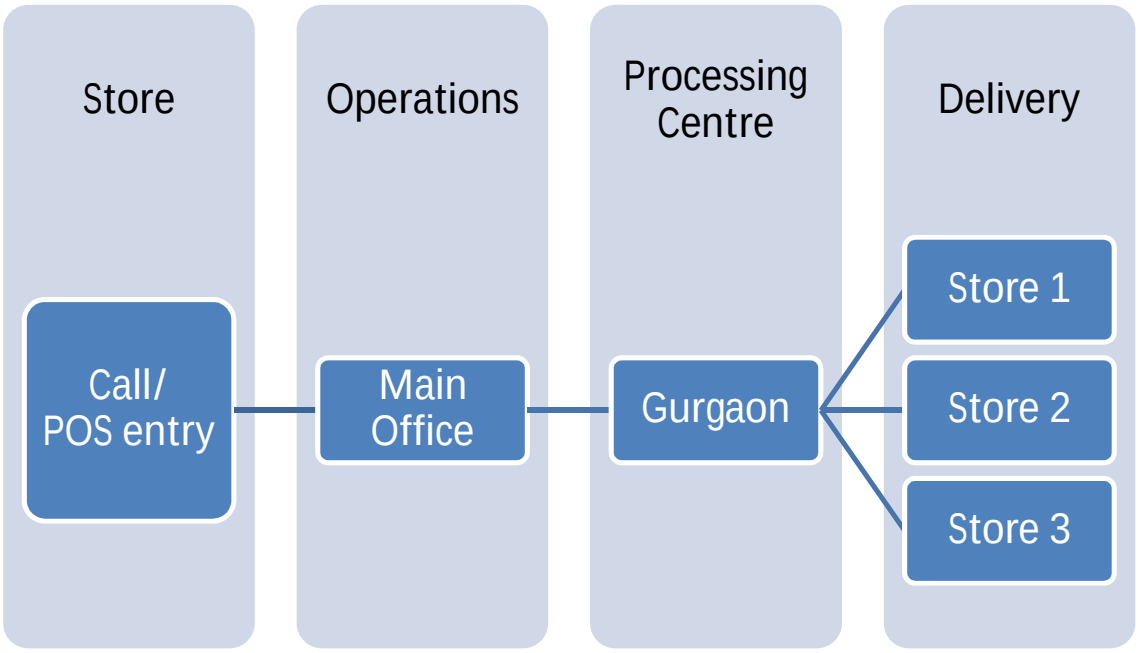

Fig 4.2 Order Process Flow of GCC

(Source- Compiled by author)

Purchase order is been generated by the store manager every evening. This order directly received by the operations team at the main office, which prepares intent for the vendor. Next day the Vendor fulfils the order at the Gurgaon Processing centre where different vendors deliver their produce to GCC. Green chick chop processing team prepares the products according to the day's requirement and pack them in the required quantity. The products are then loaded over trailers and been send to the respective stores. The store pays loyalty and profit share to Green chick chop on every sale generated by them. The plus point of franchisee model is the challenges faced by the operations teams are less as the stores are station and they have designated and optimized route planned to move on and eventually reducing the cost per kg.

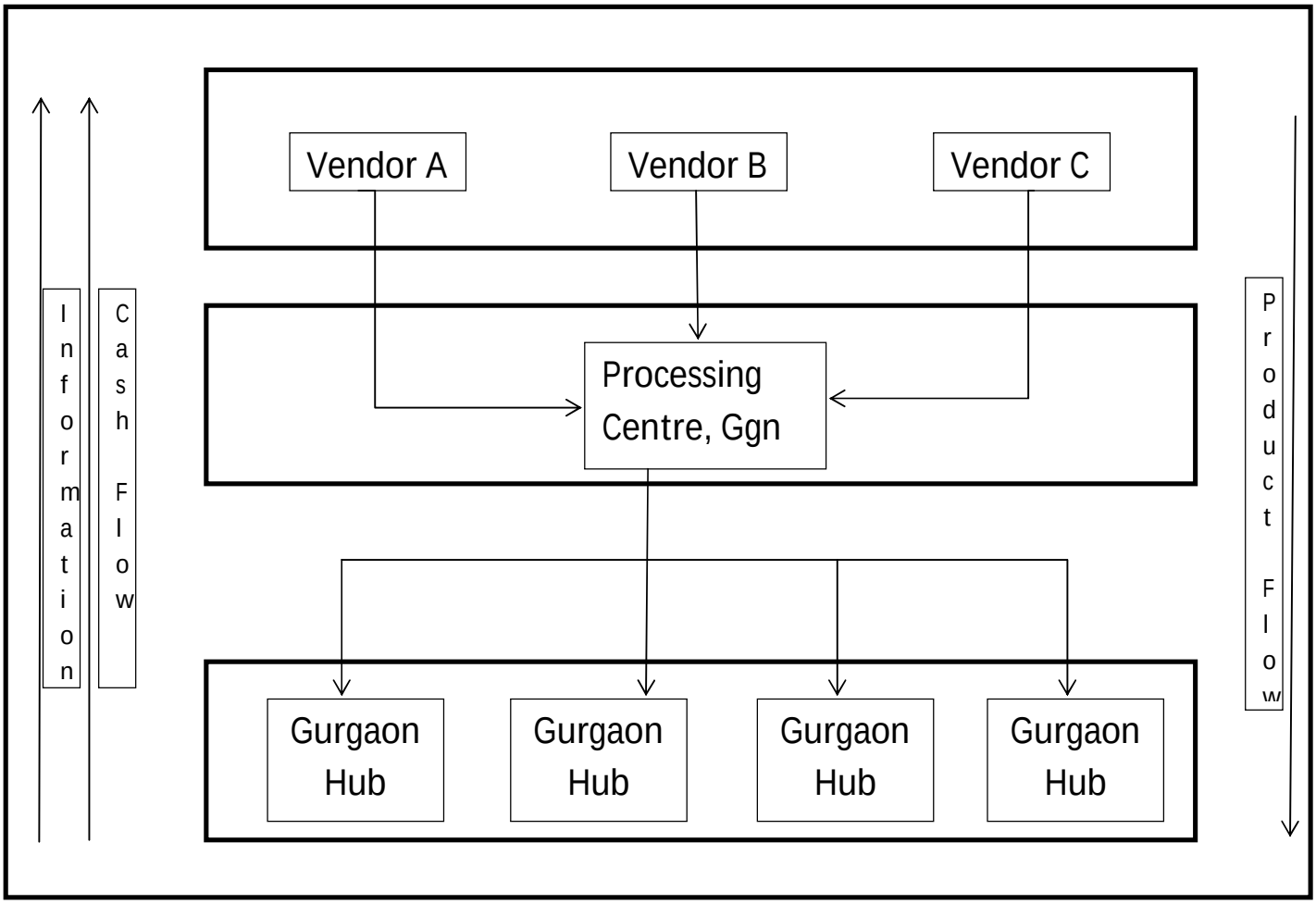

Fig 4.3 Green Chick Chop Supply Chain

(Source- Compiled by the author)

Green chick chop has about 71 stores in and across Delhi NCR. There are about 24 stores in Gurgaon, 47 stores in Delhi and 9 stores in NOIDA/ Greater Noida and a processing center at Gurgaon. As the processing center receives the order from the vendor they prepare it according to the requirement of the stores, they are also in the ready to eat segment so most of the raw goes to the kitchen for preparation of products like sausage, ham, kebabs, etc. and they send them under the brand name of Green chick chop. Nitrogen gas is used for quick freezing of the products and then dispatch center dispatches order according to purchase order been generated by the stores. The delivery is schedule between 9 to 12 AM, so that the store can prepare the products for the day.

4.1.2 CASE II (Zappfresh)

When we look at the operations of Zappfresh it is a small organisation catering to only 2 cities Gurgaon and Delhi.

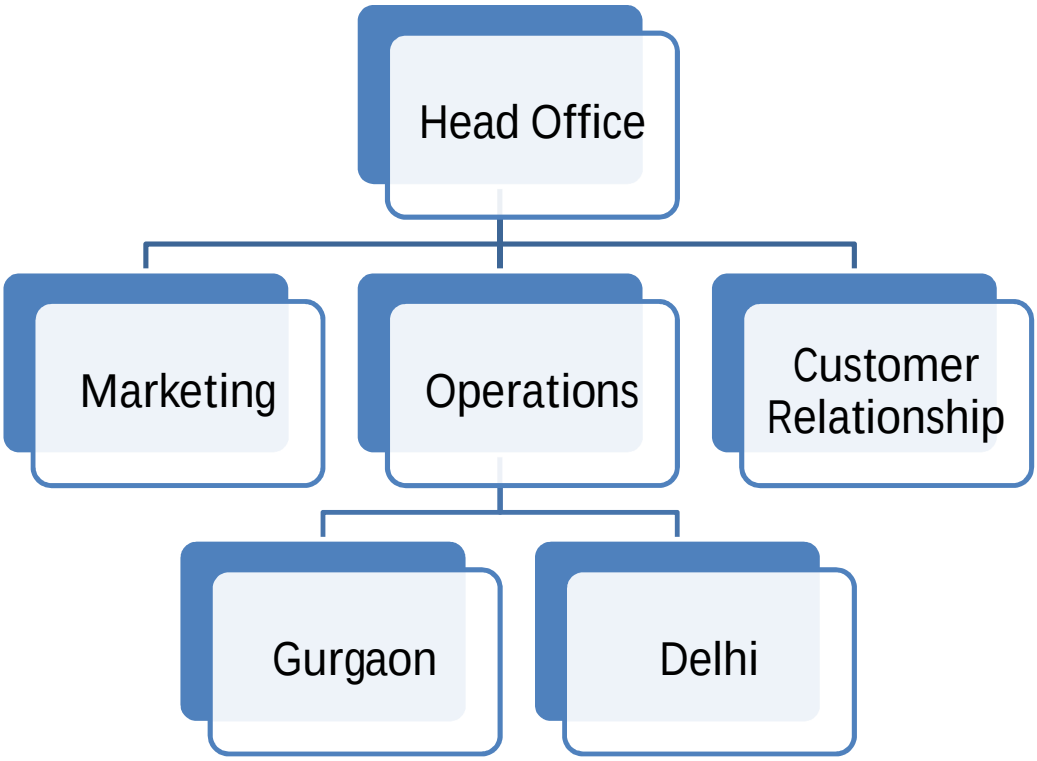

Fig 4.4 Overview of Zappfresh

(Source- Compiled by the author)

Zappfresh has three divisions- Marketing, Operations, and Customer Relationship management team. Operations team is further divided into two teams- Delhi and Gurgaon. Marketing team leads the customer accusation and Channel partner's fulfilment. Whereas the CRM team looks after the order fulfilment, the resolving the dispute, satisfying the customer. Operations main office teams handle the inventory and different operational challenges i.e. fostering the delivery time and the processing time, Demand forecasting and according to that preparing the intend. Gurgaon is the main Processing centre from where the processed products are been transferred to the different hubs in Delhi and Gurgaon. Where the order comes from the CRM team and delivery guys take the relevant order to the respective places.

Order Flow Process

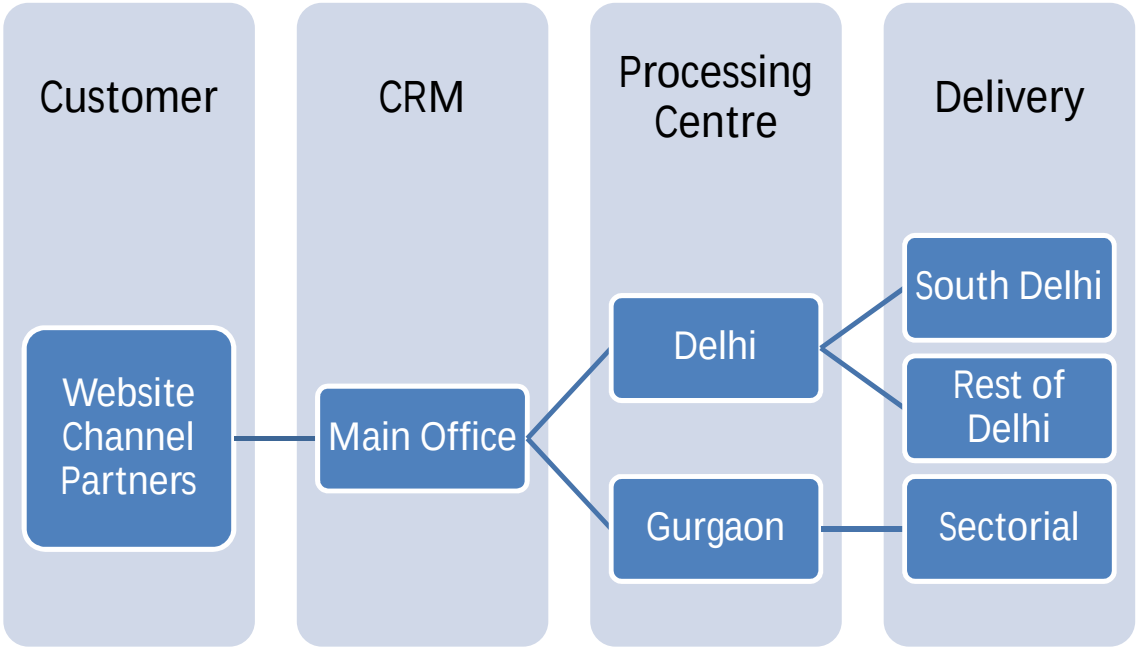

Fig 4.5 Order process flow of Zappfresh

(Source- Compiled by the author)

The orders are of two types – Website orders or the retail orders and the other are from the channel partners which are the bulk orders. Bulk orders are forwarded to the processing centre at Gurgaon whereas the website orders or the retail customer orders are been forwarded to the respective hub as per the address. The average time in forwarding a retail order is 2 minutes in weekdays and 4-5 minutes on weekends. The order processing time at Gurgaon hub is 26 minutes and whereas the processing time at Delhi is 37 minutes. The Rider then takes the order to the respective places; in case of no rider shortage the order gets delivered in the next 38 minutes (Average) where as in Delhi it takes 106 minutes as the span of Delhi (40 km Diagonal) is 4 times then Gurgaon.

For the bulk orders, the orders come a day before of the delivery. The day of delivery the order gets ready in first half of the day with an average preparation time of 34 minutes, there after the delivery van takes the order to the respective channel partners and delivery take the whole day from one end to another.

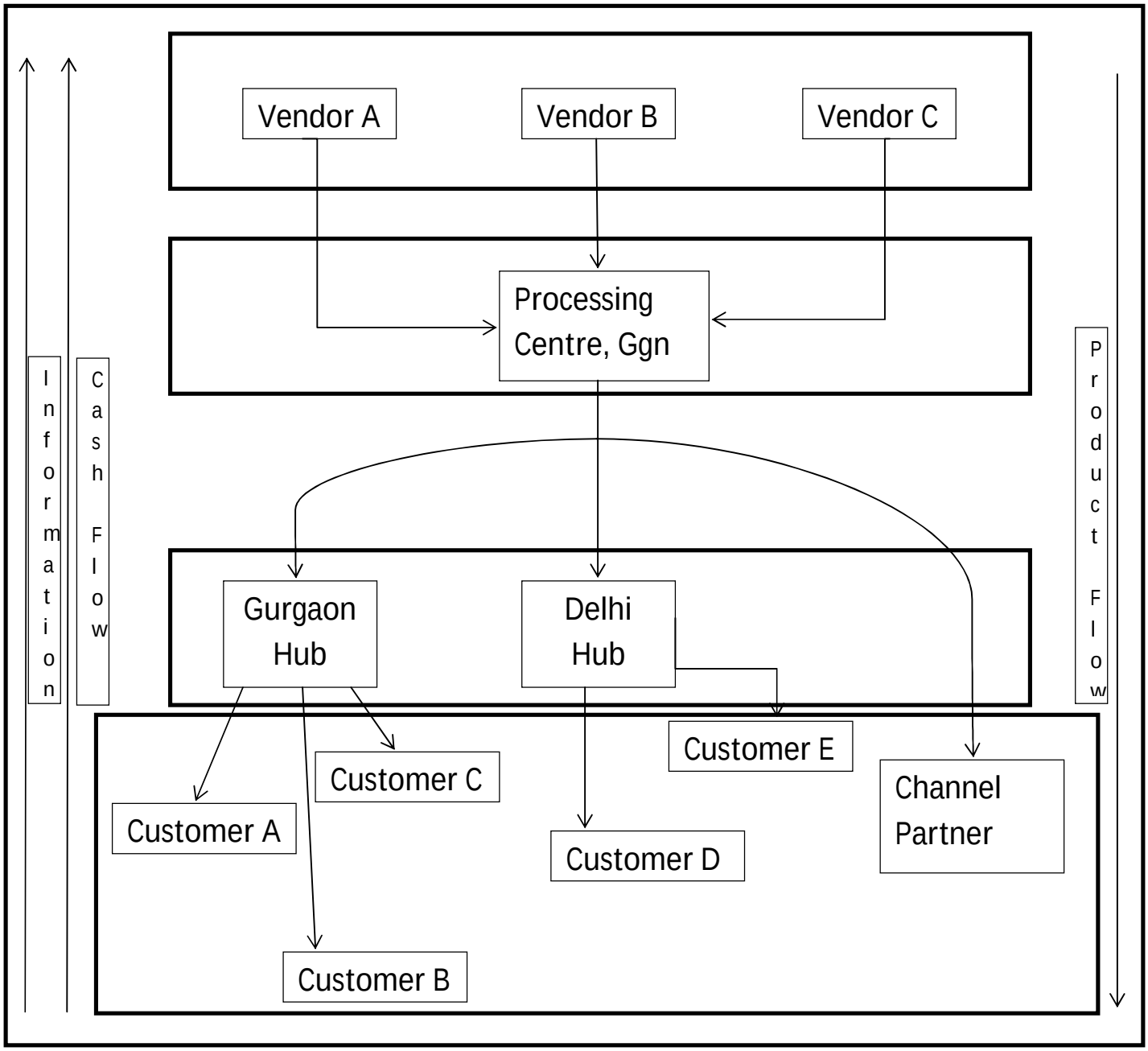

Fig 4.6 Supply Chain of Zappfresh

(Source- Compiled by author)

As we can see, the purchasing orders for the Vendors are been prepared by the head office operations team and managed by them. The raw products are been delivered at Gurgaon processing centre. The raw products are then processed and packed by the operations team at the centre. Then the products are sent to the respective hub according to the requirement prepared by the respective hubs. When the products are

procured by the hub team then they start making the orders, and delivery team helps them in fulfilling the order.

4.2 Delivery optimization

The data is procured from order sheet, where we have different attributes of no. of orders, address, time of order, delivery time etc. are mentioned. Data is taken for the month of March'16.

4.2.1 As is process-

Currently the product delivery is been done by two hubs-
Gurgaon- Sohna road sector 48
Delhi- Hauz Khas, South Delhi
Deliveries are been scheduled from these to hubs only on the past few records the order frequency has increased tremendously. So it's high time to find out the different options to streamline the deliveries and faster operations. This section focuses on the cost effective delivery options for the operations.

Gurgaon order bifurcation and cost estimation

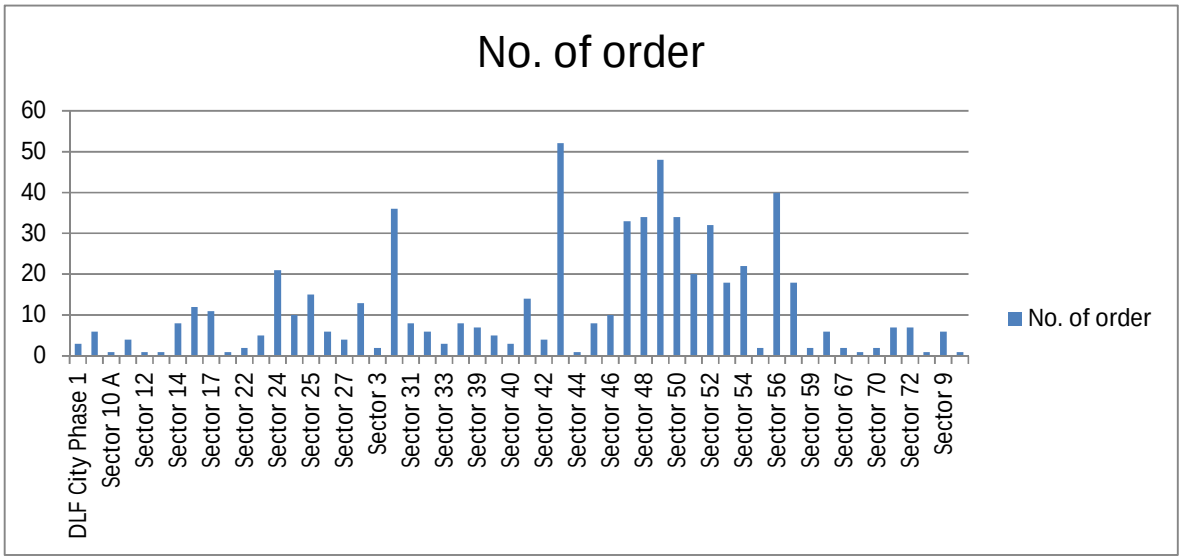

Fig 4.7 Order bifurcation of Gurgaon

(Source- Compiled by author)

Total No. of order's- 628

Distance travelled by the delivery team- 7834

Cost incurred per km- Rs. 2.5/-

Total Cost incurred - Rs. 19,585/-

Distance covered per order-12.15 Km

Cost incurred per order- Rs. 31/-

Average Basket size – Rs 389/-

Delhi order bifurcation and cost estimation

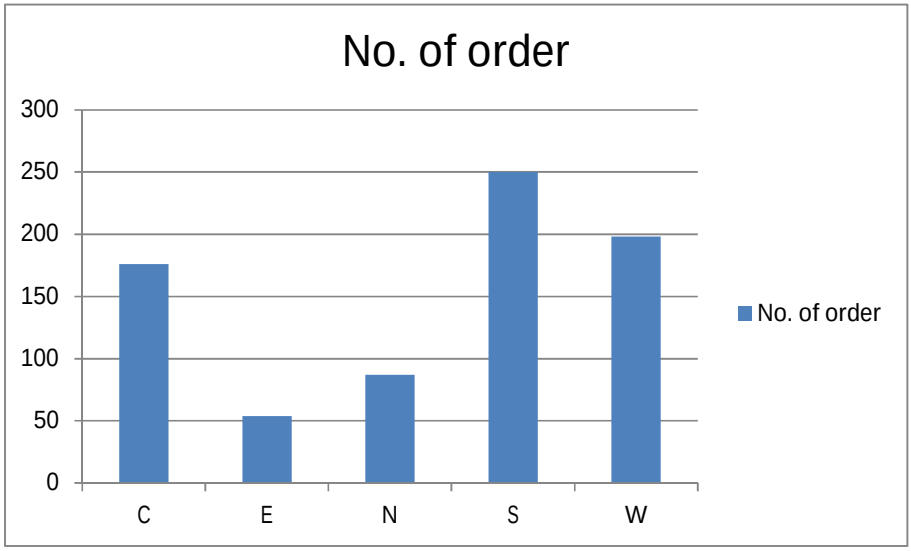

Fig 4.7 Order bifurcation of Delhi

(Source- Compiled by author)

Total No. of order's- 765

Distance travelled by the delivery team- 15888Km

Cost incurred per km- Rs. 2.5/-

Total Cost incurred - Rs. 39,585/-

Distance covered per order-28.45 Km

Cost incurred per order- Rs. 71/-

Average basket size – 278/-

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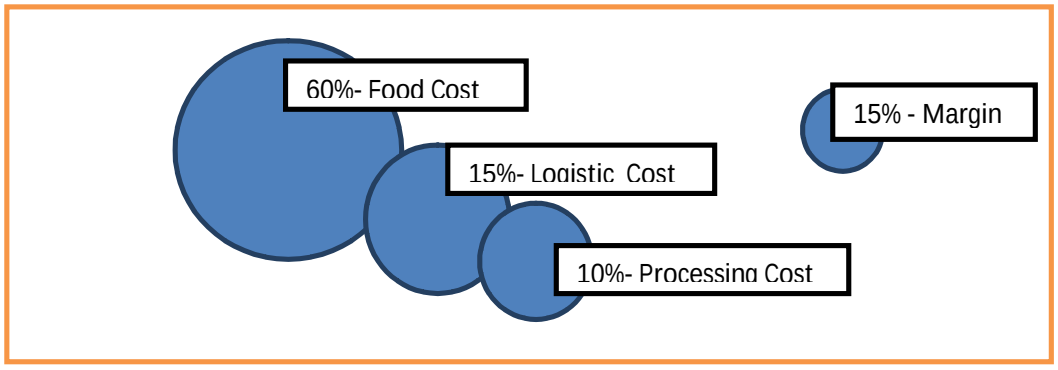


Fig 4.8 Cost analysis

(Source-Compiled by author)

When we look at the current scenario, cost incurred per order is increasing the breakeven quantity. As the food cost is 60% of the MRP, we have a very low margin to work on and the average basket size is also small so to cost incurred in delivering the food is a significant amount about 15% of the order. And including the processing cost the margin lefts out to be only 15 % which is very small amount to work on.

4.2.2 To Be Process

After analysis it been suggested to create several hubs in Delhi and Gurgaon and maintaining a processing centre at Gurgaon. Suggested hubs-

Delhi-

- Nangloi, to cater North and West Delhi
- Laxmi Nagar, to cater East Delhi and South East Delhi
- Hauz Khas, current hub to cater South and Central Delhi

Gurgaon-

- Kanahi, to cater North Gurgaon
- Sohna road to cater the south Gurgaon.

Gurgaon New Cost estimation

Total No. of order's- 628

Distance travelled by the delivery team- 5334

Cost incurred per km- Rs. 2.5/-

Total Cost incurred - Rs. 13,585/-

Distance covered per order-8.3 Km

Cost incurred per order- Rs. 24/-

Average Basket size – Rs 257/-

Delhi New Cost estimation

Total No. of order's- 765

Distance travelled by the delivery team- 8756 Km

Cost incurred per km- Rs. 2.5/-

Total Cost incurred - Rs.21890/-

Distance covered per order-11.44 Km

Cost incurred per order- Rs. 28.44/-

Average basket size – 223/-

4.3 Findings

Gurgaon	**As-Is**	**To-be**	**Savings**
Total No. of order's	628	628	
Distance travelled by the delivery team	7834	2334	5500
Cost incurred per km	2.5	2.5	
Total Cost incurred	19585	5835	13750
Distance covered per order-	12.15	4	8.15
Cost incurred per order- Rs.	31	24	7
Average Basket size – Rs	389	389	
Delhi			
Total No. of order's	765	765	
Distance travelled by the delivery team	15888	8756	7132
Cost incurred per km	2.5	2.5	
Total Cost incurred	39,585	21890	17695
Distance covered per order-	28.45	11.44575	17.00425
Cost incurred per order- Rs.	71	28	43
Average Basket size – Rs	278	278	

Table 4.1 Delivery Cost Analysis

So by doing the strategic planning in project use as a proactive tool designed to guard against predictable changes in requirements in which timing can be anticipated. This type of planning is directed at forecasting needs far enough in advance to efficiently allocate resources across the Supply Chain. The goal of strategic planning is to define the overall approach to transportation they relate to provide the maximum return on investment. In addition this information, the following information should be collected for the transportation system:

- freight classes and discounts
- transportation operating procedures
- delivery requirements

The focus of project is the total profit optimization. As the question arises how Supply Chain can be used to maximize profits? This is a different objective than traditional network optimization projects, which define the objective as reducing costs and maintaining customer service levels. Currently, a combination of operating scenarios are required that drive alternative network models. Then sensitivity analysis is performed to evaluate impacts on how a company is working to improve the parameters it uses to drive shareholder value.

So per the study of project that the distribution of the concentrate give the maximum saving by network optimization as compare to the current system of transportation adopted by the Zappfresh. This saving will be increase further as per the analysis.

CHAPTER 5 RECOMMENDATIONS & CONCLUSIONS

After studying both the Supply Chain models we come to an inference that both the companies are doing best for themselves for surviving into the market.

When we look at the Supply Chain model of Green Chick Chop the key notes are-

a) Static Supply Chain- When the flow of product is pre-defined and the delivery locations are also defined, which is the biggest plus point in case of Green Chick Chop as they can use this as an advantage and optimize their delivery system to cut the cost at a large extent.
b) Very low chances of cancellation, return or stalling of the products as the operation is so smooth that the products are been dispatched after confirming the purchase order.
c) Low food cost and supply cost leads to higher margins to play, which helps in creating a room for both Franchise and the store owner.
d) There are negative points too for such a Supply Chain, because if a product is missed from the purchase order or during the operations at processing plant, there is no provision of replacing or making the order on the same day by the same truck. As the truck would be on a particular supply module he would have to complete the whole supply before returning.
e) The processing centre and the supply have a 24 hours working timing, where the products are been procured in the evening and whole night the processing takes place and the products are been packed and ready to be delivered increasing the handling cost.
f) The flow of information is from the retail store owner to the management, which leads to incomplete information of the customer (end user) to the company, which will lead to loss of customer base.

The Supply Chain model of Zappfresh is very much dynamic in nature, as there are many inclusions to move in either directions, but this will hamper when the organisation turn out to be big, because then these small changes will not be scalable and would eventually result in losses. The key notes of their Supply Chain are-

a) Dynamic Supply Chain- Where you can't maintain stable structure of flow of products from one end to the other. You can just plan out for the best of the solution to cater to the customer. But it's difficult to satisfy every demand. Similar to that of Dominos, per outlet they have a cap 10 delayed orders, onto which they have to pay 300INR discount.
b) The biggest advantage of this Supply Chain is the full satisfaction of the customer, even if the product delivered is wrong then there is a leverage of returning and replacing the order.
c) High processing and delivery cost increases the food cost which leads to lower margins to play for further promotions and brand building activities.
d) The processing and delivery are the two different processes of the system, where processing take at the processing centre and delivery at the hub, so the cost increases. But creating a hub is cheaper than the cost incurred in establishment of a store, which is an advantage to such a kind of hub and spoke model.
e) The flow of information is directly from the end user to the management, which helps them in serving the customer better. This helps them to innovate with the product and services they provide.

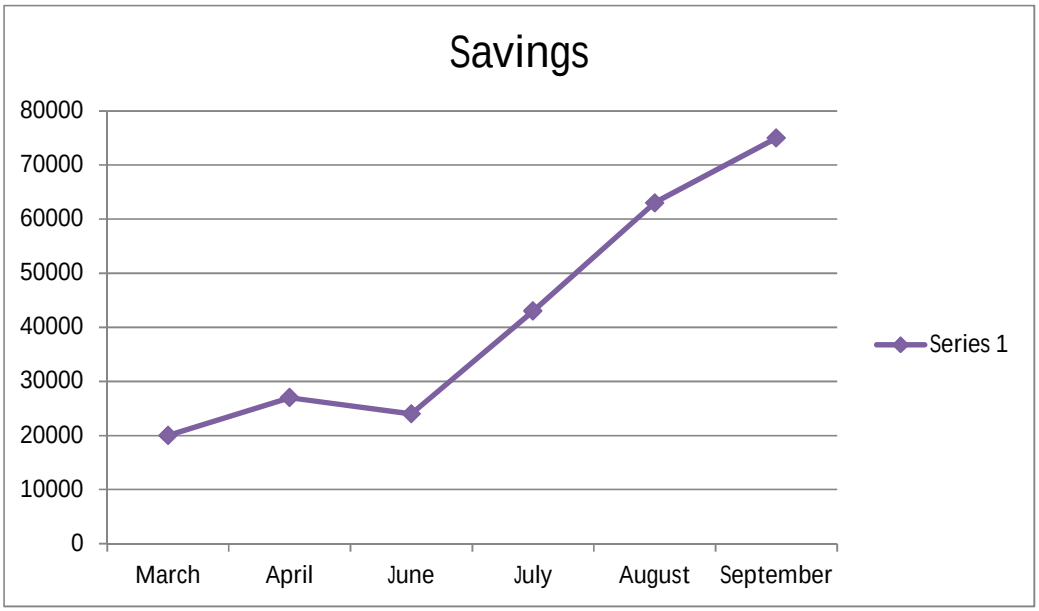
As per the finding the cost been incurred in the current format is about 10 to 15 % to the MRP, which is a significant amount when we consider the overall revenue generation. In Delhi the situation is worse where the travel cost is about 15 to 20% of the MRP which is reducing the margin for the company to a large extent.

According to the assumptions and the finding we suggest having a multi hub model in place of the single hub model.

The Suggested new hub locations are-

- Kanhai, Gurgaon
- Nangloi, Delhi
- Laxmi Nagar, Delhi

There sole intention for choosing the location is to reduce the cost of delivery been generated by catering the whole Delhi Gurgaon with just two centre. This is just increasing the pressure on the current operations team. As they have to formulate a bundle of orders daily from just two hubs.



CHAPTER 6: LIMITATIONS AND FURTHER SCOPE

This research is conducted on the internal information available to both the organisation and the data collected was confined to only these two organisations. There are multiple levels in retail sector which are not been taken into consideration as both the organisation do not use any of them such as Wholesalers, Distributors etc.

The research is been conducted when the rider is taking one order per time and returning to get the next order. There is no calculation of a single rider taking multiple orders at a single time as there are many situations when 2 to 3 orders are been taken by the riders in a single trip which reduces the cost and distance travelled by the rider on delivering the orders.

The another limitation of this study is that the rental cost is not been included in the operational cost of the hub as it will be a significant addition to the working capital of the single hub. This was not included as the locations were dormant assets of owner.

Further scope of the study would be implementation of similar model on different operational online portals to foster the delivery service and reduce the cost incurred in the delivery of the product to the customer.

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