

**A STUDY ON THE SCOPE OF CPFR IN SUPPLY CHAIN  
MANAGEMENT**

**(With Special Reference to Big Bazaar, Kochi)**

*Project report submitted in partial fulfillment of the requirement for the award of degree of*

**MASTER OF BUSINESS ADMINISTRATION**

In

**PORT AND SHIPPING MANAGEMENT**

By

**HARISANKAR S**

**Registration No: 2005304016**



under the guidance of

**Dr.SREEJA.K**

Assistant Professor

**School of Maritime Management,  
INDIAN MARITIME UNIVERSITY**

(A central University, Government of India)

**KOCHI CAMPUS**

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## **DECLARATION**

I **HARISANKAR S** , Registration No. **2005304016**, student of **School Of Maritime Management, Indian Maritime University, Kochi Campus** pursuing **Master of Business Administration in Port and Shipping Management**, hereby declare that this report titled “**A STUDY ON THE SCOPE OF CPFAR IN THE SUPPLY CHAIN MANAGEMENT (With Special Reference to Big Bazaar, Kochi)**” has been prepared by me towards the partial fulfillment of the requirement for the award of degree of “**Master of Business Administration in Port and Shipping Management**” under the guidance of **Dr.Sreeja.K, School of Maritime Management, Indian Maritime University, Kochi Campus**.

I also declare that this project report is my original work and has not been copied from any other report previously submitted for the award of any Degree, Fellowship, or other in the similar title.

Place: Kochi

Date:

**HARISANKAR S**

Reg.2005304016

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**HARISANKAR S**

## TABLE OF CONTENTS

Chapter No.	CONTENTS	Page No.
	<b>DECLARATION</b>	i
	<b>ACKNOWLEDGEMENT</b>	ii
	<b>TABLE OF CONTENTS</b>	iii
	<b>LIST OF TABLES</b>	v
	<b>LIST OF FIGURES</b>	vi
	<b>EXECUTIVE SUMMARY</b>	vii
1	<b>INTRODUCTION</b>	<b>1-6</b>
	1.1 Meaning of Collaborative, Planning, Forecasting and Replenishment	1
	1.2 Scope of the Study	2
	1.3 Review of Literature	3
	1.4 Objectives of the Study	6
	1.5 Research Methodology	6
	1.6 Limitations	6
2	<b>AN OVERVIEW OF RETAILING INDUSTRY AROUND THE GLOBE</b>	<b>7-21</b>
	2.1 Introduction	7
	2.2 Brief Profile of Retailing	8
	2.3 Retailing – Global Scenario	10
	2.4 Retailing – Asia-Pacific Scenario	11
	2.5 Retailing – Indian Scenario	13
	2.6 Retail Industry – Post Covid 19	17
	2.7 An Outline of Big Bazaar	18
	2.8 SWOT Analysis of Big Bazar	19
	2.9 Summary	21
3	<b>FUNCTIONS OF COLABORATIVE, PLANNING, FORECASTING AND REPLENISHMENT</b>	<b>23 - 38</b>
	3.1 Introduction	23
	3.2 CPFR Model	25
	3.3 Steps in CPFR	27

	3.4 CPFR Scenarios	29
	3.5 Implementing CPFR	32
	3.6 Sequence of Events in CPFR Supply Chain	33
	3.7 Benefits of CPFR	35
	3.8 Challenges of CPFR	36
	3.9 Summary	38
<b>IV</b>	<b>CPFR IN BIG BAZAAR</b>	<b>39 - 45</b>
	4.1 Introduction	39
	4.2 CPFR and Traditional Supply Chain	39
	4.3 CPFR and Vendor Managed Inventory	41
	4.4 Comparative Review	44
	4.5 Implementation of CPFR in Big Bazaar	45
	4.6 Summary	45
<b>V</b>	<b>FINDINGS AND CONCLUSION</b>	<b>47 - 50</b>
	5.1 Findings	47
	5.2 Suggestion	48
	5.3 Conclusion	48
	<b>BIBLIOGRAPHY</b>	<b>50</b>

## **LIST OF TABLES**

<b>Table No.</b>	<b>Title</b>	<b>Page No.</b>
2.1	Representation of Asia Pacific retailers in the world top 100 retailers list	12
3.1	Steps in CPFR	27
4.1	Comparative Review of TSC, VMI & CPFR	44

## LIST OF FIGURES

<b>Figure No.</b>	<b>Title</b>	<b>Page No.</b>
2.1	Analysis of Indian Retail Industry - IBEF	16
3.1	VICS CPFR Model	26
4.1	Schematic diagram of a supply chain (shaded) within the total supply chain network.	39
4.2	Vendor Managed Inventory system.	41
4.3	CPFR system	42

## **EXECUTIVE SUMMARY**

Supply Chain Management (SCM) is the management of the flow of goods and services and contains all processes that convert raw materials into final products. In SCM, it is hard to keep a harmony between customer demand and adequate product supply. Henceforth, Collaborative, Planning, Forecasting and Replenishment (CPFR) is utilized as an apparatus to defeat the above comprehensive nature. Collaborative Planning, Forecasting and Replenishment (CPFR) is an idea that intends to improve supply chain integration by supporting and helping joint activities of the supply chain.

CPFR looks for helpful administration of stock through joint perception and replenishment of items all through the supply chain. Data shared among providers and retailers help with planning and fulfilling client requests through a steady arrangement of shared data. This takes into account consistent refreshing of stock and upcoming prerequisites, making the end-to-end supply chain process increasingly productive. Effectiveness is made through the decrease in expenditures for merchandising, inventory, logistics, and transportation across all trading partners.

CPFR is viewed as the most up to date system in the development of supply chain collaboration. A few of the prior joint effort systems like Continuous Replenishment Program (CRP) and Vendor Managed Inventory (VMI) was coordinated towards stock replenishment exercises and didn't consider the significance of demand forecasting and production planning exercises. In any case, CPFR is a thorough collaboration methodology that gives an excellent chance to both

the client and the provider to be engaged with demand forecasting and stock replenishment planning activities.

The study is done to distinguish the extent of CPFR so as to upgrade the supply chain network which assists with keeping up the harmony between customer demand and product supply by focusing simultaneously in all other operations related to manufacturing and distributing activities through appropriate upstream and downstream correspondence and furthermore takes into account steady refreshing of stock and upcoming prerequisites, making end-to-end supply chain system progressively successful and along these lines making a positive netrevenue.

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Meaning of Collaborative, Planning, Forecasting and Replenishment**

Collaborative Planning, Forecasting and Replenishment (CPFR), a trademark of GS1 US, is a thought that intends to upgrade supply chain integration by supporting and helping joint practices. CPFR looks for cooperative management of stock through joint perception and replenishment of items all through the supply chain. Data shared among providers and retailers help with arranging and fulfilling client requests through a steady arrangement of shared data. This allows for continuous updating of inventory and future requirements, making the end-to-end supply chain process more efficient. Efficiency is made through the decrease in expenditure for merchandising, stock, logistics, and transportation over all exchanging partners.

#### **1.1.1 Origin of CPFR**

CPFR started as a 1995 initiative co-led by Wal-Mart's Vice President of Supply Chain, Chief Information Officer, Vice President of Application Development, and the Cambridge, Massachusetts software and strategy firm, Benchmarking Partners. The Open Source initiative was at first called CFAR (pronounced See-Far, for Collaborative Forecasting and Replenishment). To advance CFAR as a standard, Benchmarking has posted specifications on the Web and briefed more than 250 companies, including Sears, J.C. Penney, and Gillette. Around 20 companies are implementing CFAR.

Warner Lambert (now part of Pfizer) served as the foremost pilot for CFAR. The pilot's results were openly announced at a CFAR industry session at Harvard University, July 30, 1996 of executives from Wal-Mart's suppliers as well as other retailers and the Uniform Code Council. Benchmarking Partners presented CFAR to the Board of Directors of the Voluntary Interindustry Commerce Standards Committee (VICS). VICS established an industry committee to arrange for rolling CFAR out as an international standard. The new committee was co-chaired by the Vice President of Customer Marketing from Nabisco and the Vice President of Supply chain from Wal-Mart. Based on the proposal of Procter &

Gamble's Vice President of Supply Chain, the standard was renamed CPFR to highlight the role of planning in the collaboration. The initial publication of the VICS CPFR Voluntary Guide lines came out in 1998. Presently there are committees to develop business guidelines and roadmaps for various collaborative scenarios, which comprise upstream suppliers, suppliers of finished goods and retailers, which integrate demand and supply planning and execution. The committee is continuing to get better the existing guidelines, tools and critical first steps that enable the implementation of CPFR. These committees gained knowledge from pilot studies which have occurred over the past six years. VICS continues to guide much of the research and implementation of CPFR through its guiding principle and project investigations.

CPFR is considered to be the newest strategy in the evolution of supply chain collaboration. Some of the earlier collaboration strategies like CRP and VMI focused on inventory replenishment activities and did not think about the importance of demand forecasting and production planning activities. However, CPFR is a comprehensive collaboration strategy that provides an brilliant opportunity for both the customer and the supplier to be involved in demand forecasting and stock replenishment planning activities.

## **1.2 SCOPE OF THE STUDY**

By adopting the approach of CPFR in the supply chain management a company will be capable to manage many correlated activities. It ought to control inbound and outbound logistics helps in inventory management by keeping a track on the demand of customers and also preserving the balance with production. The study focuses on understanding the scope of CPFR if carried out in the supply chain network of Big Baazar. It helps to understand the technique concerned in the supply chain management and also the possibility of CPFR, if adopted.

The study is carried out to recognize the scope of CPFR (Collaborative, Planning, Forecasting and Replenishment) in order to enhance the supply chain network which helps

to hold the stability between customer demands and product supply by focusing concurrently in all other operations associated to manufacturing and distributing activities through suitable upstream and downstream communication and additionally allows for continuous updating of inventory and upcoming requirements, making the end-to-end supply chain process more effective and thereby growing a advantageous profit margin.

CPFR is a thought that has confirmed to attain cost reductions with the aid of reduction of inventory, offering a greater visibility of information via the entire chain, and lowering time to market. The research is meant to discover what are the traits and elements needed to gain integration and what are the major limitations that will compromise the implementation.

### **1.3 REVIEW OF LITERATURE**

By focusing just on competitive relationships with others, companies are increasingly realizing that this isolated focus is making it difficult to maintain and/or grow market share. Modern companies face a numerous of different challenges such as globalization, supply chain risk management, quick development in technology, increasing costs, problems relating to demand uncertainty, enhancing the delivery of products or services, and the need to develop customer service and quality on an ongoing basis (**Fisher, 1997; Stevenson, 2002; Brindley and Ritchie, 2004; Hsu and Wang, 2004; Briscoe et al., 2004; Colicchia and Strozzi, 2012; Irani and Kamal, 2014**). As pointed out by **Branska and Lostakova (2011)**, one very powerful method to overcome some of these challenges is the integration of business logistics systems with logistics systems of suppliers and customers by means of collaboration approaches such as Collaborative Planning, Forecasting and Replenishment (CPFR). Collaboration and integration in the framework of supply chains has been widely discussed in recent years (**Chandra and Kumar, 2000; Byrne and Heavey, 2006; Holmström et al., 2006; Jiao et al., 2008; Liston et al., 2008; Jain et al., 2009; Wang et al., 2010; Derrouiche et al., 2010; Sundram et al., 2011; Kamal and Irani, 2014**).

Supply chain management is considered as a tool that primarily concentrates on procurement and transformation of material. In SCM it is hard to maintain a balance between customer demand and sufficient product supply. Hence CPFR (Collaborative, Planning, Forecasting and Replenishment) is used as an instrument to overcome the above difficulty. A buyer-supplier relationship is the most powerful process of consumer satisfaction. Basically SCM focuses merely on manufacturing and distribution operations and therefore CPFR approach eradicate the demand and supply uncertainty through improved ascending and descending communication.

### **1.3.1 Theory behind the concept of CPFR**

Profitability is no longer the major reason for change, in the actual market this reason is not enough for companies aiming for competitive advantage. Collaboration between the members and real partnering based on sharing and trust is what is leading companies into a leaner cost efficient and agile supply chains (**Tenhiala, 2003**). This collaboration between partners in the supply chain directs to mutual benefits by sharing of real time information. This information is based on customer behavior and most modern trends in the market (**Büyüközkan et al., 2012**). Retailers which are the points of sale of the supply chain are the linkage between manufacturers and customers. Every partner along the supply chain is benefited from this process innovation tool. The innovation process of each partner varies and so do the activities involved (**Cassivi, 2006**). Planning collaboration in today's world requires mass collaboration to a certain extent than collaboration between close partners. This action leads to a further robust replenishment and with IT systems involve the planning process becomes more scalable in a business network (**Holmström et al., 2002**).

The retailer's innovation process of the supply chain begins in the category management process; the supplier innovation starts at the replenishment of the supply chain process. Category management allows retailers to control in a systematic form the products that are being offered to the customer. This leads to profitable retail space, and providing additional value for the customer. This is created by avoiding buying promotions from

suppliers or fresh product introduction in their process. On the other hand the supplier operates based on replenishment, instead of waiting for the orders to trigger supply, the supplier acts according to consumption. For a supplier to replenish inventories efficiently information needs to be based on stock lists rather than orders and material movements. Category management and efficient replenishment is a must to implement collaborative forecasting and planning in order to establish win-win situations of trading partners. (Holmström et al., 2002) A push pull system is followed in a CPFR practice. The push part of the supply chain is followed by upstream suppliers which work in a make to stock procedure in a just in time basis. Forecasts are used to determine lot sizes and stock level. This will make sure a low inventory on downstream companies. Downstream companies work in a make to order procedure or “pull” process. Based on historical data they trigger the orders to the upstream suppliers to meet demands. The main aim of the system is quick response and rapid change. (Yang-Fang, et al. 2012) Tools that help information reach the members of the supply chain are electronic point of sales and they serve as a component of the continuous replenishment system (Tenhiala, 2003). This leads to a additional automatic collaborative planning and forecasting.

CPFR boost level of relationship between partners, improves the communication channels by jointly managing the method and sharing of information (Cassivi, 2006). A structure is needed establishing the competences of the partners, includes the responsibilities and leadership of the CPFR activities. It also delimits partner’s involvement by acknowledging their delimitations. The participants agree to share only single forecast. This forecast is prepared and shared by the utilization of certain agreed information channels and technologies (Saha, 2012). This shared forecasting allows a reduction on inventory levels caused by bullwhip effect through a thorough scientific forecasting procedure to congregate customer demands and effectively replenish inventory (Yang-Fang, et al. 2012). It is agreed on the methods used to determine difference in views. Overall the whole process is steered by only one shared forecast. The elimination of constraints within the supply chain is an important step towards effective CPFR implementation. The share of only single forecast leads to removal of buffer inventories and a more synchronized

production cycle (Saha, 2012). Lawrence Fennel a Wal-Mart CPFR pioneer saw CPFR as a procedure that is not about changing technologies and reorganizing the business, it is about a business strategy to make partnering and agree on mutual objectives. It is a cultural change in where performance amongst partners is shared. Most significant it is all about having real time communication and responding to the dynamics of the customer behavior (Tenhiala, 2003).

#### **1.4 OBJECTIVES OF THE STUDY**

The main objectives of the study are:

- To study the scope of Collaborative Planning Forecasting and Replenishment in supply chain management.
- To study the functions of Collaborative Planning Forecasting and Replenishment in retail sector.
- To analyse the impact of Collaborative Planning Forecasting and Replenishment in BigBazaar.

#### **1.5 RESEARCH METHADODOLOGY**

This study uses the secondary data to analyse and to understand the scope of CPFR. The diverse data are collected and analysed with the help of information from the research papers, reports, journals, website, reference books, newspaper and magazine, chamber of commerce, concerned books, various authenticated blogs written by industry experts, interview with the industrial players for the trends and suggestions.

#### **1.6 LIMITATIONS**

This study is based on secondary data, which is descriptive in nature. Due to the current situation of the economy, field research was not possible. However, interviews with the industry experts and telephonic discussions with the private participants have enabled to present vast inputs that have been built into analysis and interpretation.

## **CHAPTER 2**

# **AN OVERVIEW OF RETAILING INDUSTRY AROUND THE GLOBE**

### **2.1 INTRODUCTION**

Retailing is the act of selling consumer merchandise or services to customers through different distribution channels in order to win returns. Retailers are meeting expected demand across a supply chain. The term "retailer" is commonly used where a service provider cares for the small orders of countless people, who are end-customers, rather than large orders of a small number of wholesale, corporate or public clientele. Shopping is the term used to purchase products. Often this is achieved in order to get hold of finished products, including essentials such as food and clothing; often it happens as a leisure activity. Recreational shopping involves frequent window shopping and browsing and usually does not result in a purchase.

Many modern retailers typically come up with a range of strategic-level decisions including the type of shop, the region to be serviced, the best product selection, customer care, support services and overall market positioning for the shop. Once the strategic marketing strategy is ready, retailers develop the product mix that includes the 4P's. In the digital age, by selling through various channels, including both bricks and mortar and online retailing, increasing numbers of retailers are trying to reach larger markets. Likewise, emerging innovations are transforming the way customers pay for goods and services. Retail support services may include credit provision, distribution services, consulting services, stylist services and a number of other support services.

Selling physical products typically involves a wholesaler and a seller in equal measure. The wholesaler is a go-between, or middleman, among merchandise producers and retail stores. The wholesaler purchases goods directly from manufacturers in large quantities, stores the goods in warehouses, takes orders from customers (usually retail stores), and arranges for the distribution of the products. The shopping area is composed of supermarkets, department stores, chain shops, specialty stores, convenience stores, franchise stores, mail order houses, online retailers, and door-to-door sales. Retail stores are purchasing their products from

wholesalers, stocking the items and reselling them in limited quantities to individual customers. Retailers must identify the needs and wishes of their customers, and the goods they sell must also be advertised and displayed attractively.

Retail entrepreneurs are entrepreneurs who start or purchase their own business or franchise operations. We are responsible for all the characteristics of a company, from preparing and ordering goods to managing daily operations. Retail managers are responsible for making retail establishments profitable. Depending on their company they oversee the selling of food, clothes, furniture, sporting goods, novelties and many other products. Their responsibilities include recruiting, educating, and overseeing other staff, maintaining physical facilities, handling inventories, controlling expenditures and receipts, and ensuring high quality public relations. Retail executives in the United States own around 1.6 million jobs. Retail sales staff aid customers by recognizing their needs, displaying or explaining items, collecting payment, reporting sales and wrapping up their orders or preparing for delivery. Occasionally, they are called sales managers, store clerks, or salesmen.

## **2.2 BRIEF PROFILE OF RETAILING**

Retailing is a very important business activity which gives customers the opportunity to buy goods and services from various types of merchants. The America's main retail outlets were trading posts and general stores. Goods purchased from Native Americans were traded at trading posts for products imported from Europe or produced in other parts of the world. When villages and towns expanded, trading posts converted into general stores and started selling food, farm necessities, and clothing. Such shops, usually run by a single person, often acted as the post office and became their communities' social and economic hub. Huge supermarkets, discount homes, chain stores and shopping malls have grown in popularity since the Second World War. Even so, privately owned companies prosper by frequently offering additional personal and better educated support to customers. Retail is a dynamic and diverse market today. This includes the selling of all types of consumer items, such as automobile parts, pharmaceuticals, clothes, health-care products, books, and food, as well as services such as car repair or rug cleaning.

The purchasing and selling of goods was relatively uncomplicated until a little more than a century ago. Industrial issues for the products they manufactured typically collected or purchased local components. Retail store owners would periodically purchase products for later resale through major seaports and manufacturing centers. Retail stores could generally be divided into two types: small shops specializing in one type of commodities, and general stores with a wide variety of goods. In addition, itinerant peddlers selling products from house to house served customers in outlying regions. In the United States, the original wholesalers were possibly the ship chandlers, or manufacturers, in New England who manufactured goods needed by merchant and military ships. Ship owners found a centralized supply network allowing them to quickly outfit the vessels. Wholesaling became a very important component of the purchasing and selling process with the introduction of mass-production and mass-marketing techniques in the 19th century. Individual producers have found that by using a wholesaler they can sell more efficiently. Retail buyers found it more appropriate to deal with a few supply sources than with hundreds of organisations.

U.S. retailing witnessed massive growth during the 1850s and 1860s. Chain companies were formed such as the Great Atlantic & Pacific Tea Company. Such companies as the Macy's and Marshall Field's have grown into considerable department stores. The start of low postal rates gave rise to big, mail-order firms like Montgomery Ward and Sears & Roebuck. F. W. Woolworth introduced another well-known retailing style, the five-and-ten-cent store, which is now best known as the variety store.

Self-service was introduced in the confectionery and accessories fields and in the grocery business after World War I. The goods and displays were used in self-service shops, rather than salespeople, to inspire consumers to purchase. Horse-drawn streetcars and subsequently electrified streetcars brought people to the city's central locations for shopping.

In the 1950s and 1960s, people's movement to the suburbs stimulated the formation of a new type of merchandising: the one-stop shopping centre. These were smaller than today's malls but similar where all kinds of goods were located in an easily accessible area. Commonly, ample parking space was open. Around the same time, some major department stores, specialty

stores, and mass merchandisers, conscious of suburban consumers no longer making daily shopping trips to the capital, built branch stores in the suburbs. One-stop shopping has been pushed to the extreme these days, with mammoth malls comprising retail stores, food courts, and entertainment centres. Independent retailers in small towns and cities were replaced by supermarket chains carrying virtually all kinds of products from grocery to clothing, hardware to DVDs, all under one roof. At the same time, online shopping has enabled almost anything to be bought without having to leave home.

Manufacturing process has declined in recent decades, and the service sector has increased. Printing, pest control, telecommunications, computer repair, housing, and transportation are among a wide variety of facilities employing sales forces. Services sales were initially accomplished by individual communication with prospective customers all the way by. The method, along with direct mail, telephone, the Internet, and print and radio advertising, is still used today. Sales in all manufactured goods and services are closely related to the advertisement, printing, shipping, transport, and broadcast industries.

### **2.3 RETAILING – GLOBAL SCENARIO**

The global Retail scenario: The US\$ 9 trillion Retail industry is one of the world's biggest industries and still growing. 47 of the Global Fortune 500 companies & 25 of Asia's Topmost 200 companies are retailers. Even as the developing countries are making quick strides in this industry, organized Retailing is currently controlled by the developed countries with the USA, EU & Japan constituting 80% of the world. Retail is a significant contributor to the overall economic activity globally the total Retail portion in the World GDP is 27% while in the USA it accounts for 22% of the GDP. The share of organized Retail in the emerging markets ranges from 20% to 55%.

Traditionally, local players incline to dominate in their home markets. Wal-Mart, the world's top retailer, has about 8% of the US\$ 2,350 billion market in the USA. Similarly, Tesco has a market stake of about 13% in the US\$ 406 billion UK market. The chief value propositions that most

large retailers use a combination of low price, 'all-under-one-roof' convenience and 'neighbourhood' availability.

Retail has played a key role world over in increasing productivity across a wide range of consumer goods and services. The influence can be best seen in countries like U.S.A., U.K., Mexico, Thailand and more recently China. Economies of countries like Singapore, Malaysia, Hong Kong, Sri Lanka and Dubai are also heavily aided by the retail sector. Retail is the second-largest industry in the United States both in number of institutions and number of employees. It is also one of the leading world-wide. The retail industry hires more than 22 million Americans and generates more than \$3 trillion in retail sales annually. Retailing is a U.S. \$7 trillion sector.

Wal-Mart is the world's principal retailer. Already the world's largest employer with over 1 million associates, Wal-Mart displaced oil giant Exxon Mobil as the world's biggest company when it posted \$219 billion in sales for fiscal 2001. Wal-Mart has become the most up-and-coming retail brand in the world due to its ability to leverage size, market clout, and efficiency to create market dominance. Wal-Mart heads Fortune magazine's list of top 500 establishments in the world. Forbes Annual List of Billionaires has the leading number (45/497) from the retail business.

## **2.4 RETAILING – ASIA-PACIFIC SCENARIO**

Asia-Pacific accounts to more than 50% of World's population and major retail market in world. The retail industry in Asia-Pacific carries on maintaining its momentum, driven by economic and social developments and population growth. Key factors in the expansion of retail industry are robust economic growth, rising population, changing consumer trends, rising purchasing power and penetration of international players. Retail industry in the Asia-Pacific region developed at a CAGR of 10.2% over 2013-18.

India is largely optimistic, with an expected CAGR of above 16% followed by Indonesia with a CAGR of 14%, China and Vietnam. Other Asia-Pacific nations are likely to register a CAGR of 1% – 12%, least by Japan with a CAGR of less than 2%.

Asia-Pacific retail sector is driven by increasing disposable income and consumer confidence. Asia-Pacific retail market has turned out to be more robust after the entry of international retail chains. Retail market is imperfectly affected by low GDP per capita and high youth unemployment in developing countries.

Liberal retail policies and elimination of trade barriers and restrictions on foreign investment and linkage to World Trade Organization (WTO) are helping the retail sector expansion in Asia-Pacific countries. India has recently made its policies liberal which will assist in higher growth and will make business easy.

**Table no.2.1: Representation of Asia Pacific retailers in the world top 100 retailers list**

Sl.NO.	COMPANY NAME	WORLD RANK
1	Aeon, Japan	13
2	JD.com, China	20
3	A.S. Watson Group, Hong Kong	50
4	Lotte Shopping Co., Ltd., South Korea	65
5	CP ALL Plc., Thailand	66
6	E-MART Inc., South Korea	74
7	China Resources Vanguard Co., Ltd., China	81
8	FamilyMart UNY Holdings Co., Ltd., Japan	84
9	Dairy Farm International Holdings Limited, Hong Kong (87)	87
10	Isetan Mitsukoshi Holdings Ltd., Japan (89)	89

11	Vishop Holdings Limited, China (92)	92
12	Reliance Industries Limited/Reliance Retail, India (94)	94
13	Gome Retail Holdings Limited, China (95)	95

*Source: Deloitte's Global Powers of Retailing 2019 report.*

## **2.5 RETAILING – INDIAN SCENARIO**

The Indian retail industry has come out as one of the most vibrant and fast-paced industries due to the entrance of several new players. Total consumption expenditure is expected to achieve nearly US\$ 3,600 billion by 2020 from US\$ 1,824 billion in 2017. It accounts for over 10 per cent of the country's Gross Domestic Product (GDP) and around eight per cent of the employment. India is the world's fifth-largest global destination in the retail space.

India is the world's fifth largest universal destination in the retail space. In FDI Confidence Index, India ranks 16th after U.S., Canada, Germany, United Kingdom, China, Japan, France, Australia, Switzerland and Italy.

### **2.5.1 Market Size**

Retail industry reached to US\$ 950 billion in 2018 at CAGR of 13 per cent and probable to reach US\$ 1.1 trillion by 2020. Online retail sales are forecasted to develop at the rate of 31 per cent year-on-year to reach US\$ 32.70 billion in 2018. Revenue formed from online retail is projected to grow to US\$ 60 billion by 2020.

Revenue of India's offline retailers, also recognized as brick and mortar (B&M) retailers, is expected to boost by Rs 10,000-12,000 crore (US\$ 1.39-2.77 billion) in FY20.

India is expected to turn out to be the world's greatest growing e-commerce market, driven by robust investment in the sector and fast increase in the number of internet users. Various agencies have high expectations about growth of Indian e-commerce markets.

Luxury market of India is expected to produce to US\$ 30 billion by the end of 2018 from US\$ 23.8 billion 2017 supported by growing exposure of international brands amongst Indian youth and top purchasing power of the upper class in tier 2 and 3 cities, according to ASSOCHAM.

### **2.5.2 Investment Scenario**

The Indian retail trading has received Foreign Direct Investment (FDI) equity inflows totaling up to US\$ 2 billion during April 2000–December 2019, according to the Department for Promotion of Industry and Internal Trade (DPIIT).

With the growing need for consumer merchandise in different sectors including consumer electronics and home appliances, many companies have invested in the Indian retail space in the past few months.

India's retail sector attracted US\$ 970 million from a variety of private equity funds in 2019. Walmart Investments Cooperative U.A has invested Rs 2.75 billion (US\$ 37.68 million) in Wal-Mart India Pvt Ltd.

### **2.5.3 Government Initiatives**

The Government of India has taken a selection of initiatives to improve the retail industry in India. Some of them are listed below:

- The Government of India may change the Foreign Direct Investment (FDI) rules in food processing, in a bid to allow e-commerce companies and foreign retailers to sell Made in India consumer supplies.
- Government of India has allowed 100 per cent Foreign Direct Investment (FDI) in online retail of merchandise and services through the routine route, thereby providing clarity on the existing businesses of e-commerce companies operating in India.

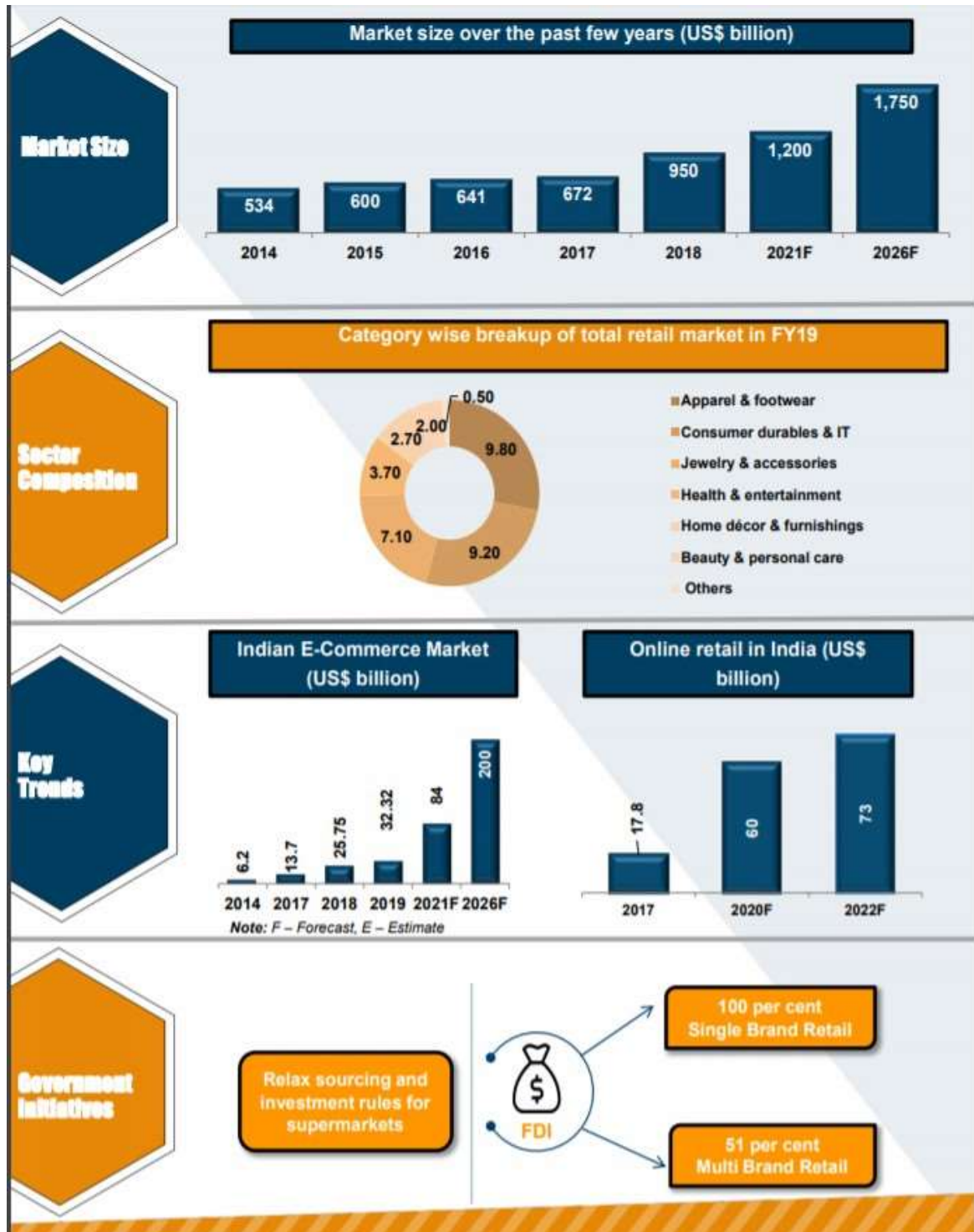
### **2.5.4 Road Ahead**

E-commerce is expanding progressively in the country. Customers have the ever-increasing option of products at the lowest rates. E-commerce is probably creating the largest revolution in the retail industry, and this trend would continue in the years to come. India's e-commerce industry is forecasted to arrive at US\$ 53 billion by 2018. Retailers should leverage the digital retail channels (e-commerce), which would enable them to expend less money on real estate while reaching out to more customers in tier-2 and tier-3 cities.

It is projected that by 2021 traditional retail will grasp a major share of 75 per cent, organised retail share will reach 18 per cent and e-commerce retail share will reach 7 per cent of the

whole retail market. Nevertheless, the long-term outlook for the industry is positive, supported by increasing incomes, favorable demographics, entry of foreign players, and increasing urbanization.

**Figure No 2.1: Analysis of Indian Retail Industry**



Source: IBEF

## **2.6 RETAIL INDUSTRY – POST COVID 19**

The COVID-19 has slowed down the economy. The unheard of world crisis is creating a similarly terrible influence on the already low consumer sentiments that the retail zone had been tackling. The complete lockdown, a necessity from the health care perspective; has only in addition broken the agencies at large. Retailers in the country at this point are now not looking to make profits, however are rather looking for a way to continue to be afloat and provide for the personnel and other stakeholders. At a time where the whole nation and world has to be on lockdown, industries and business proprietors are searching toward the government to supply aid in order to maintain organizations and salaries of the employees. The liquidity in the retail businesses is pushed with the aid of seasonal sales and collections, and with the fixed expenses being stagnant and high, the seasonal inflow of money is what keeps the groups afloat. Absence of this inflow threatens the existence of the businesses at large. The lockdown is easing in quite a few parts of the country and non – essential stores are getting back in business. But after having to shut shop for shut to three months, it can by no means be business as ‘usual’. Retailers have returned to markets where humans can no longer crowd into shops, where keen consumers won’t be window – shopping and jam – packed shops are a thing of the past.

Online organizations have doubtlessly gained momentum. Over 5,000 shops have been added to the fleet of leading e-commerce players for the duration of the lockdown, and more will follow. Interestingly, the consumer base is also expanding, with even senior residents embracing technology. That doesn’t imply brick and mortar will fade away because department stores are mainly experience centres rather than plain purchasing outlets. With journey no longer on the priority listing for many, department shops may be the only entertainment choice left. We will see the continued coexistence of online and physical retail. To continue to exist and thrive in this new market reality, retail corporations will have to adopt a technology-first approach in all aspects of their enterprise operations.

Prior to COVID19, e-commerce used to be estimated to double by 2023. The pandemic will only fast-track this growth, leaving outlets little room for delays in adopting a digital-first approach. Retailers want to focus all their efforts on making ready for an agile, digitally equipped omni -

channel retail strategy, retaining customers at the center of their digital strategy. Customers no longer use a single channel for shopping. They assume an integrated experience throughout units and channels, which many outlets find hard to preserve up with. Retailers must now make sure they have an omni - channel strategy in vicinity with an enterprise wide centralized stock administration system in order to continue to be profitable. When shops start to reopen, they will become spaces that assist outlets beautify the customer experience, which will consist of in-store pickup and reverse logistics centres. An integrated omni - channel strategy can make certain a unified ride for customers by means of monitoring, refreshing, and restocking stock shortly and preserving a check on pricing.

COVID-19 has called interest to some obvious inconsistencies in e-commerce logistics and supply chain. With e-commerce being the new go-to buying channel and research suggesting a continued growth in e-commerce demand, retailers need to be prepared. One terrible trip with a shipping or a reverse pickup and customers will go to an extraordinary provider. Wal-Mart recently introduced a robot-powered warehouse it really is anticipated to allow a pick-and-pack order charge that is 10 times quicker than that of a human. It's evident that logistics will play a main function in making e-commerce companies successful. Post-crisis, e-commerce gamers will have to invest in discovering dependable logistics partners, automating their logistics and grant chains for real-time updates, and discovering revolutionary approaches to meet customers' logistics expectations.

## **2.7 AN OUTLINE OF BIG BAZAAR**

Big Bazaar is an Indian retail store that functions as a chain of hypermarkets, discount department stores, and grocery stores. The retail chain was created by Kishore Biyani under his parent organisation Future Group, which is known for having a significant prominence in Indian retail and fashion sectors. Big Bazaar is also the parent chain of Food Bazaar, Fashion at Big Bazaar (abbreviated as FBB) and eZone where it houses all under one roof, while it is sister chain of retail outlets like Brand Factory, Home Town, Central, E Zone, etc.

Founded in 2001, Big Bazaar is one of the oldest and biggest hypermarket chains of India, housing about 250+ stores in over 120 cities and towns across the country.

They emphasize on operating the hypermarket network with the objective of maintaining its competitive advantage as well as gaining benefits of scale through focusing on efficiency & productivity. Also functions home & consumer durables chains. It was shaped through demerger and consolidation of all lifestyle fashion businesses of the group. A strong portfolio of domestic and foreign brands across all categories mixes with department stores, outlet malls, specialty chains and independent distribution networks. A combined food and FMCG company with a portfolio of fast growing FMCG brands and its own distribution network through urban convenience stores and rural wholesale markets and an upcoming food park. It works on the same economic model as Wal-Mart and has been effective in many Indian cities and small towns.

## **2.8 SWOT ANALYSIS OF BIG BAZAAR**

SWOT analysis presents the present situation of a company. It shows what the position of the company is in terms of its performance. It gives a complete analysis about the strategies used and whether any changes need to be made. The four aspects of the company; i.e. Strength, Weakness, Opportunity and Threat are assessed.

### **2.8.1 Strengths**

- Huge brand equity enjoyed by Big Bazaar
- State of the art infrastructure
- A vast variety of matter available under one roof
- Everyday low prices, which draw customers
- Highest percent of footfalls converted in sales
- Vast investment capacity
- Major value retail chain in India
- It offers a family shopping experience, where whole family can visit together.
- Available facilities such as online booking and delivery of merchandise.

### **2.8.2 Weaknesses**

- Overcrowded during offers
- Extended lines at billing counters which are time consuming
- Restricted only to value offering low price products. A number of branded products are still missing from Big Bazaar's line of products. E.g. Jockey, Van heusen.

### **2.8.3 Opportunities**

- A lot of scope in Indian organized retail as it is positioned at approximately 4%.
- Growing mall culture in India.
- More people these days favor to visit big stores where they can find large variety under one roof.

### **2.8.4 Threats**

- Competition from other value retail chains such as Shoprite, Reliance (Fresh and trends), Hypercity and D mart.
- Unorganized retail also appears to be a danger to Big Bazaar's business. A large population still prefers to visit local convenient stores for daily purchases.
- Changing Government policies.
- International players looking to foray India.

## **2.9 SUMMARY**

In Big Bazaar, the strengths and weaknesses are the internal factors whereas opportunities and threats are the external factors.

SWOT Analysis is a proven management framework which permits a manufacturer like Big Bazaar to benchmark its business & overall performance as in contrast to the competitors

and industry. As of 2020, Big Bazaar is one of the main brands in the life-style and retail sector. SWOT Analysis is a validated administration method that permits a brand like Big Bazaar to measure its business & effects relative to opponents and industry. Big Bazaar is also one of the largest lifestyle and retail brand in this industry.

Big Bazaar sells all most all the consumer items in a cost effective manner. Using price as the competitive edge, Big Bazaar operates effectively and profitably. The essential benefits of Big Bazaar are the progressive sales and promotions, huge range of products in each and every store locations, massive number of shops around India, and low-cost price. As their products are low priced, their stores are constantly crowded, the billing can take a long time, customer service and quality is variable.

An organization might also have lots of strengths, but it very important to skim them down to a small listing with only necessary strengths. Big Bazaar's key strengths consist of extensive range of products, many store locations, excellent promotions, and lowest price.

If a company is aware of its weaknesses, it can take corrective actions to convert these weaknesses into strengths. The competitors can use your weaknesses to their advantage. Therefore it is important to find out the ways to overcome these weaknesses. Big Bazaar's key weaknesses include slow billing, bad customer service, and too much crowd in stores.

Opportunities can be defined as the unique interior and external circumstance that can also help in the growth of the company. An enterprise has to be conscious of its opportunities and take benefit of these opportunities to improve it competitive edge. Big Bazaar's opportunities include availability of a massive middle class in India with sufficient buying power and there are many emerging areas where there are no hypermarkets.

When an enterprise doesn't know its external and inner threats, it may fail sooner or later. An organization's threats are its competitor's advantage. Threats can be from a competitor, from a product, from a legislation passed through the government, etc. It is highly essential for the

agencies to reduce the threats and expand the strengths. Big Bazaar's threats consist of new hypermarkets with large investments, such as More, Reliance Fresh, Tata Hypermarket, etc.

## **CHAPTER 3**

# **FUNCTIONS OF COLABORATIVE, PLANNING, FORECASTING ANDREPLENISHMENT**

### **3.1 INTRODUCTION**

#### **3.1.1 Collaboration**

Only by working together toward the similar goal can any partnership reward both parties. If the retailer's version of just in time means seller holds the goods until my stores need it', or the producer rewards its team solely on selling more product than last year, one side or the other gets squeezed on profits by carrying too much of the stock load. Instead of win/win, it is "I win, you figure out how to win." However, if the manufacturer and retailer can agree that their common aim is to satisfy as many customers as possible, at the highest profit to both parties, they can each win and both make more money.

This latest type of collaborative partnership calls for a long-term commitment to open communication and information sharing. Partnership on a strategy as well as implementation takes trust and determination but is the only viable way to increase revenue and profits. Retailers and sellers with a majority business attempting to take that long-term view will attain a true competitive advantage. Step one in collaboration involves confidentiality arrangement, a way of resolving conflicts, indicators of the supply chain scorecard and specific benefits or targets (i.e. both parties are compensated for productivity, not just sales volume). Goals needto concentrate on achieving the most sustainable revenue growth possible, as well as growing both parties' money and spending.

#### **3.1.2 Planning**

The unique Walmart/Warner Lambert 1995 CFAR (Collaborative Forecasting and Replenishment) presented the groundwork for the advantages to the consumer industry. Whenthe VICS (Voluntary Inter-Industry Commerce Standards) group of industry representatives worked to describe the basic standards, they saw the need to include "P" to the structure. Joint business planning (categories, brands, assortments, skus, key items, etc) and financials (sales,fill rates, pricing, inventory, safety stock, gross margin, etc) guarantee both parties of equivalent share in the game and forces common targets. Also, the combined project team

develops plans for promotions, inventory policy changes, product introductions and discontinuations, and store groupings.

### **3.1.3 Forecasting**

Either or both parties can make forecasts, but seller and retailer must agree to the final forecast of the work. The vendor may have considerable feedback on the chain level forecast by item or category, and the retailer may have better resources at the DC or store / SKU level to construct the forecast. Fundamental forecasts are created system based on comprehensive historical data, and the paybacks for good forecasts are better in stocks and sales, with less expenditures on both sides and cost-bearing. Seasonal considerations and knowledge about trend management are naturally more relevant in apparel and other sectors, where the payback for better predictions is more revenue and less markdown. Finalizing joint advertising strategies is often essential to achieving accurate forecasting. Manufacturers must integrate this comprehensive forecast into their planning of their growth.

However, even the best forecast will need to be monitored and adjusted in-season, and this is where two sets of eyes, focused on the reaction of the customers, can be twice as effective. Any of the software packages that are certified interoperable will cause forecast discrepancies between seller and manufacturer systems. Regulations need to be determined on how these variances can be resolved, but the fundamental principle of CPFR is that you can overcome these discrepancies together with the same objectives.

### **3.1.4 Replenishment**

Sales forecasts, using time series forecasting or demand planning systems, must be converted into order forecasts. Supplier limitations such as order processing time, lead times, order minimums and case packs need to be tackled, as does the retailer's persistent open-to-buy inhibitor. VICS also recognized collective transport planning as a crucial factor in replenishment. Condition triggers should include stock percentage, forecast accuracy, protection stock levels, filling rates, lead times, and order acceptance rates, and the negotiated scorecard should be checked monthly jointly.

Potentially contentious constraints such as limited quantity of vendors or over-commitments must be discussed in advance. Flexibility and joint reaction to surprises should be an anticipated benefit of close collaboration and partnership. It would no longer be necessary to keep a retailer locked in to forecasts eight weeks out when all partners own the forecast and share in the rewards.

Although setting up a CPFR system may seem daunting and labour-intensive, there are high risks to survival for those waiting for further evidence. CPFR will pave the groundwork for fulfilling all of your other strategies and goals, and running your company through exceptions rather than fire fighting will free up the time for merchants to become merchants. The program can be manually piloted but the ROI results will pay a lot of times over for investing in systems or consultants. The primary move is to train and educate the senior managers on the benefits of the ROI. As with every other significant initiative, leadership is required for this.

### **3.2 CPFR MODEL**

The CPFR model offers a general framework for the collaborative factors of planning, forecasting and replenishing processes. The CPFR model provides the factors in which industries focus. The model gives a simple framework for the flow of information, goods, and services. In the retail enterprise the “retailer usually fills the customer role, a manufacturer fills the seller role, and the consumer is the end customer.” The core of the model is represented as the consumer, followed by the middle ring of the retailer, and in the end the outside ring being the manufacturer. Each ring of the model represents one of a kind function inside the CPFR model. The consumer drives demand for items and services whilst the retailer is the provider of goods and services. The manufacturer supplies the retailer shops with product as demand for product is pulled through the supply chain by the end user, being the consumer.

Figure No 3.1: VICS CPFR Model



Source: Supply Chain Resource Cooperative

Some of the main processes discovered in the model can be found in the second ring that has arrows in a circular pattern. This is displayed with collaboration arrangement, joint business plan, sales forecasting, order execution etc.

### 3.2.1 Strategy & Planning

Collaboration Arrangement is the procedure of setting the business goals for the relationship, defining the scope of collaboration and assigning roles, responsibilities, checkpoints and escalation procedures. The Joint Business Plan then identifies the important events that affect supply and demand in the planning period, such as promotions, inventory policy changes, store openings/closings, and merchandise introductions.

### 3.2.2 Demand & Supply Management

It is broken down into Sales Forecasting, which projects consumer demand at the point of sale, and Order Planning/Forecasting, which determines future manufactured goods ordering and delivery requirements based upon the sales forecast, inventory positions, transit lead times, and other factors.

### 3.2.3 Execution

This consists of Order Generation, which changeover forecasts to firm demand, and Order Fulfillment, the process of producing, shipping, delivering, and stocking products for customer purchase.

### 3.2.4 Analysis

Analysis tasks comprise Exception Management, the active monitoring of planning and operations for out-of-bounds conditions, and Performance Assessment, the calculation of key metrics to assess the achievement of business goals, uncover trends or develop alternative strategies.

## 3.3 STEPS IN CPFR

CPFR initially was presented by VICS in their VICS CPFR Guidelines in 1998 as a 9 step (or data flow) process, beginning with the collaborating businesses developing the agreement for collaboration.

Table No.3.2: Steps in CPFR

Type of action	Step
Planning	Develop front-end agreement Create joint business
Forecasting	Create sales forecast Identify exceptions to sales forecast Resolve exceptions to sales forecast Create order forecast Identify exceptions to order forecast Resolve exceptions to order forecast
Replenishment	Generate order

Source: Supply Chain Resource Cooperative

### Step 1: Partnership between supply chain participants

First, the structure conditions for CPFR cooperation between dealer and manufacturer are defined. The first action is to increase transparency and standardize procedures and processes.

**Step 2: Drawing up a business plan**

In order to live a goal-oriented cooperation, a business plan have to be worked out in the second step. This plan should present precise information about the commodity group management of the contractual partners as well as order data.

**Step 3: Forecasting sales figures**

In the subsequent step, the sales figures are forecasted from the business plan, including production and inventory planning, in order to optimize the availability of the corresponding products.

**Step 4: Recording significant deviations in the forecast**

By comparing the forecasts made by the diverse stages of the supply chain, significant deviations are identified. In this way, any fluctuations can be identified at an early phase.

**Step 5: Joint solution search for deviation from forecast**

The identified divergences are then communicated directly between the parties concerned. Once the divergence has been clarified, the sales forecasted are adjusted.

**Step 6: Forecasting purchase orders**

In adding up to the business plan and sales forecast, retailers and manufacturers determine an order forecast that is based on the sales data and takes into account the framework conditions of the business plan.

**Step 7: Recording significant deviations in the forecast**

Similar to the fourth step, important deviations between the various order forecasts of dealers and manufacturers are now analyzed.

**Step 8: Joint solution search for deviation from forecast**

As in step five, the differences are communicated, adjusted and renewed in the order forecast.

**Step 9: Order process**

Finally, the final order forecast results in the real order of the goods.

### **3.4 CPFR SCENARIOS**

The reference model CPFR is designed to suit several scenarios. Each individual CPFR program must adapt the model to the trade relationship's specific needs. Of the reported replacement strategies, four different scenarios have dominated CPFR implementations on a wide scale. The CPFR guidelines now provide detailed descriptions of these specific scenarios to better help companies that are contemplating CPFR initiatives or involving trading partners in their programs.

- i. Retail Event Collaboration
- ii. DC Replenishment Collaboration
- iii. Store Replenishment Collaboration
- iv. Collaborative Assortment Planning

#### **3.4.1 Retail Event Collaboration**

In many retail environments, promotions and other retail events are building the largest demand swings, resulting in most out-of-stocks, excess inventory, and unplanned logistics costs. Consequently, retailers have based their joint efforts on retail events in these highly-promoted platforms, where their financial potential is greatest. CPFR's Retail Event Collaboration scenario presents this process with an industry-standard approach. Trading partners develop a collaborative strategy and a joint promotional business plan, typically on a yearly or quarterly basis. They work together to determine the impact planned events will have on consumer demand and distribution. Promotional orders are placed as events happen, and delivery takes place. The event then takes place in stores. Exceptions linked to planning or execution of events may be identified and resolved along the way. The process ends with an assessment of the results of a case.

### **3.4.2 DC Replenishment Collaboration**

DC replenishment collaboration is a CPFR scenario that enhances continuous replenishment programs such as co-managed stock or vendor-managed stock (VMI). Conventional replenishment programs normally calculate order necessities in a quick lead-time horizon. A single buying and selling partner entity manages the whole process. By comparison, DC Replenishment Cooperation offers a form of shared order commitment over a single lead-time at different horizons. DC Replenishment Collaboration allows producers to pursue a policy of making-to-demand, while allowing retailers to minimize their stock liability and risk of stock-out. Commonly, trading partners consult on DC withdrawal projections, manufacturer-to-retailer DC estimates or both. The collective production is an order or sequence of orders committed over a time horizon. The customer and vendor assist with their buying / re-buying and manufacturing order generation and provide organizations for preparation, respectively. DC Replenishment Collaboration extends the method of replenishment beyond the DC of the buyer and the finished goods warehouse of the seller to embody all nodes in the supply chain – from the store shelf to the raw materials. The advantages attributed to DC replenishment collaboration include:

- Greater visibility to enhance replenishment accuracy
- Out-of-stock reduction
- Overstock reduction
- Production ability aligned to meet customer demand

Additionally, DC replenishment collaboration aims to increase the efficiency of product flow between trading partners, particularly in supply chains that have long supply cycles, heavy, bulky or regulated goods, or complex transport requirements. Product flow benefits include optimized order quantities which minimize the cost of picking, loading and unloading operations and product put-away.

### **3.4.3 Store Replenishment Collaboration**

As with DC Replenishment, a single trading partner operates conventional store replenishment projects with a fixed lead-time horizon. Many retailers are now sharing greater responsibility for product availability at the store level through joint initiatives at the store level.

Store Replenishment Partnership leverages both the retailer and the manufacturer's expertise into implementing an effective replenishment program. Trading partners normally collaborate on store POS forecasts. Other collaboration points that persuade replenishment include:

- Store clustering
- Replenishment parameters
- Presentation stock
- Assortment optimization

Store Replenishment Collaboration production is an order or a collection of orders that are committed over a time horizon. With their replenishment preparation / buying re-buying and production and supply preparation organisations, the buyer and seller manage ordergeneration, respectively.

Store partnership focuses on the adjacent connection to the customer and therefore directly affects shelf availability. The benefits attributed to Store Replenishment Partnership include greater exposure of customer take-away, increased quality of replenishment, increased in- stocks, decreased overstock, and improved promotional execution. Trading partners have a straight view of how consumers react to new products, existing distribution of shelves and promotional take-away. Manufacturers and upstream suppliers exploit this knowledge for better operational execution across the supply chain.

#### **3.4.4 Collaborative Assortment Planning**

Several industries, such as fashion apparel and accessories, follow a seasonal rhythm of demand. As a result, collaborative planning in this market section typically has a horizon of a single season and is performed at seasonal intervals. The nature of fashion and other short lifecycle goods implies that there is minimal discrete historical data to utilize in the planning cycle. Hence, there is an important dependence on collaborative interpretation of industry trends, consumer tastes and macroeconomic conditions. Collaborative Assortment Planning is a procedure that allows retailers and suppliers to better coordinate their merchandising decisions to drive maximum profitability for both constituencies. Trading partners jointly build up an assortment plan, which contains both visual representations of the product and financial models. The output of this collaboration procedure is a planned purchase order containing item

commitments at the UPC (style/colour/size) level for each delivery point in the retailer's enterprise.

### **3.5 IMPLEMENTING CPFR**

Collaborative data modeling is a significant phase in the implementation stage of CPFR. In order to succeed in implementing a collaborative process, firms need to design a data model based on the relationship between the trading partners rather than analysing the structure of both firms individually. Preceding CPFR implementation cases confirmed that CPFR can take a number of different forms across supply chains. Also diverse forms of CPFR collaboration exist among several partners such as customers and suppliers. However, advanced CPFR implementation is a tough task and the rate of its adoption has been slower than expected. Skjoett-Larsen et al. (2003) classified CPFR into three levels – basic, developed and advanced – depending on the depth of collaboration. They argued that the essential CPFR is frequently the starting point for other collaborative initiatives.

#### **3.5.1 Implementation enablers**

Precise contextual conditions – i.e. goals of the collaboration, demand elasticity, product diversity and supply network spatial complexity, can affect the level of the collaboration in CP initiatives. Successful collaboration systems need many key enablers. These enablers for CPFR implementation differ due to the differences of industries and characteristics of the supply chain. It is very important that managers of firms know these enablers before starting to launch CPFR with trading partners. The formation of a high level of trust and the importance of information are two of the most documented enablers. In addition reduced information distortion in the supply chain is considered to be a significant objective for approaches like CPFR. Information as a key aspect in the successful adoption of CPFR has been widely investigated in several different aspects such as: visibility, accuracy, timeliness and readiness, compatibility and availability across to users, security. Senior management support and commitment and a clear communication/business arrangement are two key prerequisites for successful collaboration.

### **3.5.2 Barriers to Implementation**

A number of difficulties and obstacles in implementation of CPFR were observed such as, no shared targets; lack of demand variability; lack of budget for software; lack of partner trust; difficulties to calculate benefits; executive support obstacles; lack of real time coordination of information exchange; no adequate information technology and expertise. Undoubtedly, lack of partner trust is the most very important inhibitor and, if absent, remains the most obstructive obstacle to the adoption of CPFR. Difficulties with actual time coordination of information exchange, is one of the main obstacles. Lack of adequate collaborative software is also a obstacle to collaborative schemes. On the other hand, the fear of losing competitive information (financial reports, manufacturing schedules, inventory values, and intellectual property issues), lack of technical expertise, the availability and cost of technology have been cited as some of the main barrier to CPFR implementation.

### **3.6 SEQUENCE OF EVENTS IN CPFR SUPPLY CHAIN**

In a CPFR supply chain, the retailer and the manufacturer typically collaborate to jointly develop their demand forecast. In this study, the retailer demand forecast is calculated using the exponential smoothing forecast method. After developing their forecast, the retailer shares their demand forecast and stock level information with the manufacturer during each period. In this situation, the manufacturer does not forecast and uses the forecast information shared by the retailer to decide the production quantity. The sequence of events is as follows. Beginning of each period, the retailer develops demand their demand forecast and shares the demand forecast and stock level information with the manufacturer. The retailer calculates their target order up-to-level stock and determines the order quantity to bring the inventory to their order up-to level. To decide the production quantity, the manufacturer follows an echelon-based inventory policy in their replenishment planning and production planning. Under the echelon- based supply policy, the manufacturer considers their own inventory level plus inventory level of retailer, backorder quantity and any inventory in transit. If the production quantity is more than the production capacity, only the greatest quantity can be produced due to the production capacity constraints. Any unfulfilled demand for manufacturer and the retailer is backordered

with a backorder penalty cost which will be filled all through the next period. The service level for the manufacturer and retailer for each phase is calculated based on the fill rate. The total cost for the manufacturer and the retailer are calculated for each period based on the stock holding cost and backorder penalty cost during each period.

The following sequence of events occurs during each phase in the CPFR supply chain.

At the Retailer:

- Receive shipments from manufacturer (if any)
- Update the inventory level
- Observe the customer demand
- Fulfil the customer demand
- Demand not fulfilled is backordered
- Calculate the total cost for retailer
- Develop demand forecast and share information with manufacturer
- Calculate order-up-to level
- Determine order quantity
- Place order to manufacturer

At the Manufacturer:

- Receive shipments into the warehouse (if any)
- Update the inventory level
- Observe the retailer demand
- Fulfil the retailer demand
- Demand not fulfilled is backordered
- Calculate the total cost for manufacturer
- Use demand forecast from retailer
- Calculate order-up-to level
- Determine production quantity
- Begin production at the plant

### **3.7 BENEFITS OF CPFR**

#### **1. Improved responsiveness to consumer demand**

Reducing out-of-stocks and shorter cycle times results in a more responsive and reliable supply chain, thus improving availability on-shelf and increasing consumer satisfaction. CPFR aims to bring products in the right place at the right time.

#### **2. Greater forecast accuracy with particular shared forecast**

Sharing a single supply chain outlook helps participants to benefit from possible synergies, and brings together the efforts of trading partners. Trading partners may have different customer views and knowledge, as well as differing consumer data, perceptions, and research data, depending on their role in the supply chain and supply chain activities. The combination of this information is the basis for greater accuracy in forecasts. Upon coordination of the planning process, time horizons can be broadened to improve exposure and response time.

#### **3. Improved relationship between the trading partners**

Once cooperation takes place the partnership will progress. Trading partners can get a better understanding of their respective companies by regularly sharing information and setting up direct lines of communication. Therefore, the main advantages of developing a 'win-win' scenario are to be obtained.

#### **4. Increase in sales**

Planning and forecasting cooperation effectively eliminates out-of-stocks, missed revenue and improves the availability on-shelf, i.e. having the right product in the right position at the right time. Such developments lead to an increase in customer prices, which also means increased profits for all supply chain partners.

#### 5. Inventory reduction

One reason to maintain an inventory is to compensate for the inaccuracy of forecasts. Increased accuracy of forecasts encourages a reduction in the safety stock, rising inventory levels and increasing availability on-shelf.

#### 6. Cost reduction

Through aligning the development schedule with the negotiated forecast, expense could theoretically be minimized by reducing setup times, duplications of effort and variations. Subsequently the reduction in stock would reduce the cost of inventory, handling and administration.

#### 7. Improved production capacity utilization

An additional accurate forecast results in more effective use of the production resources as forecasting knowledge becomes more reliable.

### **3.8 CHALLENGES OF CPFR**

Many of the challenges around implementing CPFR are alike to those faced by companies wishing to implement ECR. The principles established by ECR around developing trading partnerships also relate to CPFR implementation.

#### 1. Selection of CPFR Partners

Trading partners who wish to cooperate with each other must determine the possible partnership based on expected, practical advantages, related to specific business goals, organizational and cultural issues. A 'near match' on these features is desired for a good relationship, or any suggestion that the potential exists for establishing a relationship with shared goals and objectives.

## 2. Senior Management

Buy In senior management has to support each of the trading partners by assuming the role of CPFR sponsor to ensure that the necessary resources (human resources, technical infrastructure, and time and project budget) are prioritized and dedicated to the project.

## 3. Trust Based Relationship

CPFR is committed to sharing sensitive information. To take full advantage of CPFR's benefits, trading partners need to establish trust-based relationships. Reliability demands the sharing of sensitive data and close collaboration. CPFR should not be seen as a tool for establishing a new relationship; rather, it may help to strengthen a strong, established relationship between trading partners.

## 4. Confidentiality

Sharing confidential information increases the need for confidentiality laws to be characterised. Confidentiality agreements will record general knowledge regarding places where confidentiality between the trading partners is important. Companies should also be aware of their national , European and global responsibilities regarding rivalry law.

## 5. Detailed Definition of Systems' Capabilities

Collaborating at the same data level is important for the performance of CPFR. In particular, the best practice would be to work together at the lowest level of data; to share promotional plans, forecasts and replenishment orders per unit of trade and per point of sales.

## 6. Internal Reward Structure

To ensure the desired actions of all interested stakeholders, the framework of each company needs to be consistent with the goals of the CPFR initiatives.

## 7. Cultural Change

Both internal and external collaboration require a change in mindset. In order to adapt to the collaborative approach, traditional trading partner relationships that have developed over a period of time must prove themselves capable of flexibility.

- Industry standards for data exchange
- Interoperability between exchanges
- Technology as an enabler.

Although CPFR is about business procedure, it is clear that significant levels of technology will facilitate the smooth implementation of CPFR. Furthermore, technology becomes a key enabler in the procedure of reaching critical mass with CPFR.

### **3.9 SUMMARY**

Based on present understanding, it can be said that CPFR offers significant opportunities to all supply chain partners involved. As mentioned previously, CPFR aims to reduce inefficiencies in the supply chain. It is recommended that CPFR initiatives focus on and are tailored towards areas where the most benefits are to be realized. The most important opportunities exist in trading relationships with one or many of the following characteristics, where demand is hard to predict. Promotional activities play a central role and new product introductions are frequent. It was understood that lead-times for production and/or replenishment are extended and Product life cycles are short. Forecast accuracy is low and high levels of stock exist in the supply chains. Seasonal demand variances are important and trading relationships are collaborative.

# CHAPTER 4

## CPFR IN BIG BAZAAR

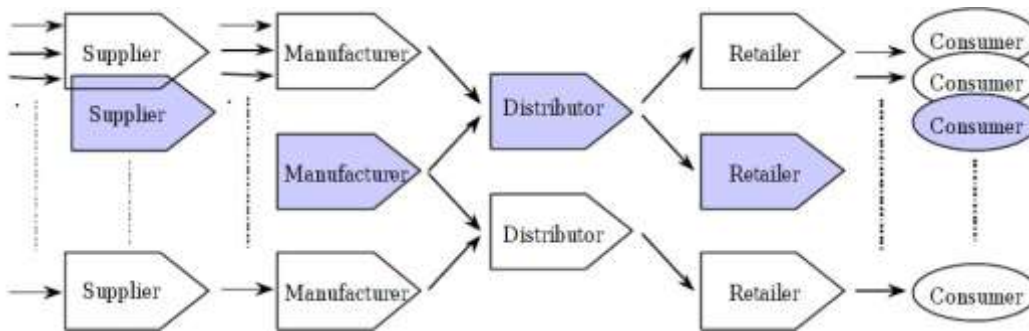
### 4.1 INTRODUCTION

The aim of this chapter is to compare the major supply chain techniques and to show which technique is most suitable to be implemented at **Big Bazaar**. In order to attain efficiency it is important to ensure that the customer is happy. The product must be present at the very time the customer needs it. The chance that the customer will shift to another retailer is high if the product is not available at the right time. In this world where the competition is very high it is necessary to look ahead and work to formulate an efficient supply chain.

### 4.2 CPFR AND TRADITIONAL SUPPLY CHAIN (TSC)

Traditional supply chain is defined as an integrated manufacturing procedure, wherein the Supplier supplies raw materials or semi finished goods to the manufacturer and are manufactured or assembled into final products, and then the finished goods are sent to the wholesaler, to retailer and finally delivered to customers. The supply chain not only comprises the manufacturer and its suppliers, but also transporters, warehouses, retailers, and consumers themselves.

Figure No 4.1: Schematic diagram of a supply chain (shaded) within the total supply chain network.



*Source: Journal of Industrial Engineering and Management*

'Traditional' refers to use of systems that primarily rely on human interaction and outdated technologies. These are the types of supply-chain management operations which will not continue to exist for longer. Many supply-chain management systems still rely on unproductive paper work and repetitive human-based tasks that result in lost data and wasted time.

A TSC fails to supply real time information about demand and inventory levels which must be available with all parties of the supply chain. Real time information leads to quicker response, lower cost and increasing service levels by reducing stock outs and reacting to the sudden surges and other dynamic situations in the environment. Without having proper visibility of the supply chain, it is hard to respond to the market forces. Therefore only with proper optimization and integration and getting better visibility and information the company will be able to react to the market forces.

Most of the supply chain technology and procedure improvement projects have been focused mainly on manufacturing and distribution operations. Therefore building demand-driven processes that add to demand visibility across multiple levels of the supply chain is important. Leading the charge, category leaders such as Wal-Mart, Dell, and Best Buy are taking aggressive steps to boost demand visibility to their suppliers and encourage them to participate in CPFR and VMI programs. With the increased visibility they'll be able to lessen costs and improve delivery performance.

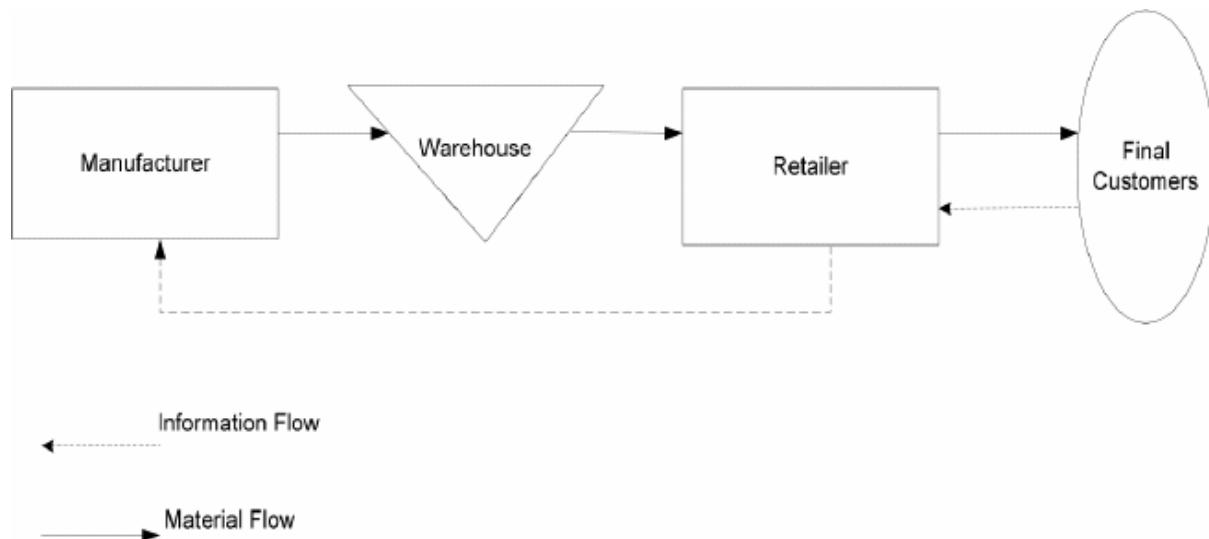
The best practices make it possible to enhance demand visibility, make better decisions with the information, and ensure that the new collaborative process is scalable and repeatable so that it helps to generate revenue and increase profit margin. Collaboration is a significant step that helps to improve demand visibility and use this increased visibility constructively. Collaboration allows suppliers and customers to communicate issues that are not normally covered by orders and shipping notices by transmitting these issues through electronic data interchange (EDI).

### 4.3 CPFR AND VENDOR MANAGED INVENTORY (VMI)

In VMI a manufacturer or distributor takes the role of stock planning for the customer. Widespread information sharing is necessary so that the manufacturer/distributor can maintain a high degree of visibility of its goods at the customer's location. Instead of the customer reordering when its supply has run out, the supplier is accountable for replenishing and stocking the customer at suitable levels. In traditional stock management, a retailer takes decisions regarding the order size, while in VMI the retailer shares their inventory data with a vendor/supplier such that the vendor is the decision-maker who determine the order size. This policy can avoid stocking inventories in huge volume which is not required and hence can lead to an overall cost reduction.

In the VMI system the retailer won't place orders; the manufacturer receives information about the market demand directly from the final customers and decides the order quantity.

Figure No 4.2: Vendor Managed Inventory system.

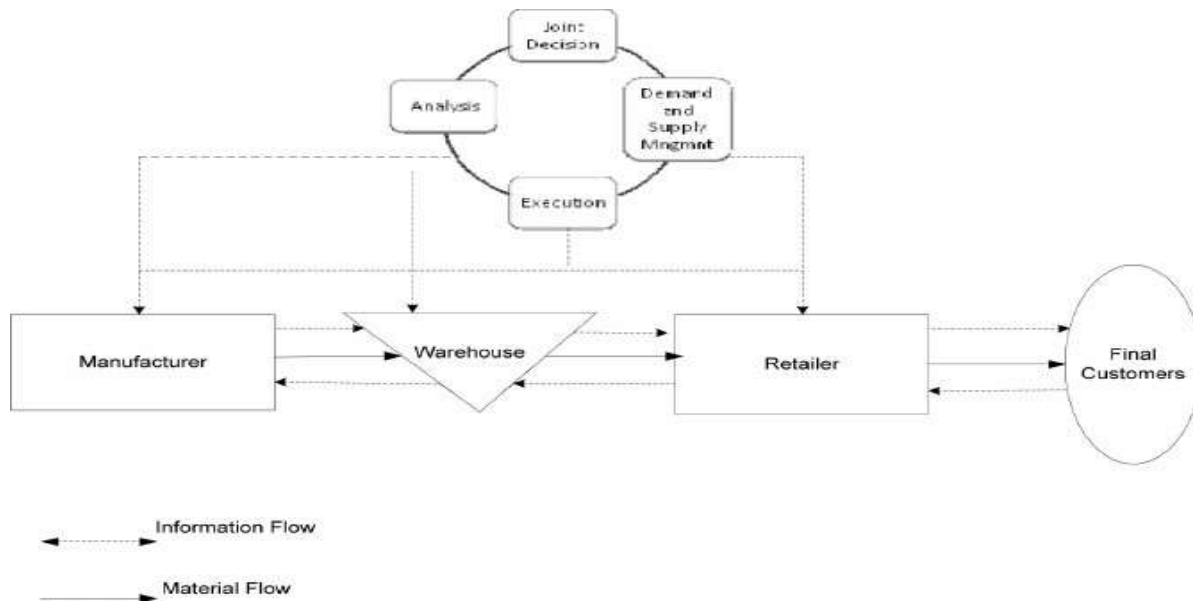


*Source: Journal of Industrial Engineering and Management*

In the CPFR system, the retailer and manufacturer share the power over the whole system. The parties make joint decisions about managing the operations over the whole system including production, processing, and distribution. There is no limit in transferring information among the retailer and the manufacturer in the supply chain. The market

demand is directly shared to both parties. The retailer also receives the information concerning the production arrangement from the manufacturer and uses this information to manage the inbound logistics and distribution process.

Figure No 4.3: CPFR system



Source: *Journal of Industrial Engineering and Management*

In VMI, the purchaser has no control which can cause issues. If they do not trust their supplier, then the system will not be effective. If the seller is not able to handle the additional responsibility, or cannot provide excellent service, the customer may experience regular stock outs. This will harm the relationship with their customers. The most common reason of VMI failure is due to lack of communication. Sharing of information by one party could cause many issues due to the conflicts of interests between contracting parties.

A relational contract allows trading partners to make use of the knowledge relating to their exact activities and to easily adapt to new information as it becomes available. CPFR uses a set of appropriate collaboration processes and technological model which makes it one of the more structured collaborative business arrangements. Extensive information sharing and joint decision-making under the CPFR arrangement improves joint understanding and visibility. Such

mutual understandings help CPFR partners organize the decisions and activities while adapting to the evolving internal and external environment. CPFR creates economic value by improving visibility and mutual learning among contracting parties.

Active cooperation is a complicated procedure even under the CPFR system because the current partnership involves comprehensive expertise and reciprocal commitment. CPFR is a business activity sponsored by IT and allows all retailers and suppliers to jointly invest in a specific IT framework for the exchange of electronic information and better organizational procedures for joint activities. Thus, under the CPFR, reciprocal responsibility equates the risk exposure of the contracting parties and decreases the potential for any contracting party to behave in the process opportunistically.

CPFR is a non-hierarchical and non-market organisational form and can give superior control when the contracting parties involved in this supply chain arrangement share information and make relation-specific investments to develop a long-term collaborative relationship. It is non-hierarchical since, under the contractual arrangement, each contracting party remains autonomous and collaborates in ways which do not suit the authority as in conventional hierarchy. It is non-market, and for additional productivity benefits it does not use price dynamics or competition, but motivates mutual interest and cooperation between trading partners.

#### 4.4 COMPARATIVE REVIEW

**Table No.3: Comparative Review of TSC VMI & CPFR**

Bases	TS C	VM I	CPF R
Action plan	Separate plans for supplier, manufacturer and retailer.	Planning is primarily done by the vendor/supplier.	Shared plans are developed jointly for the trading partners.
Order generation	Order generation is based on history of past shipments, Distribution Centre's sales and Point-of-sale data.	Order generation is based on the analysis of inventory levels done by the vendor.	Order generation is based on forecast of DC sales and POS data.
Responsiveness	Reactive	Proactive	Proactive
Focus	Focused on execution	Focused on planning	Focused on planning
Components	Limited to logistics and inventory point of view.	Includes logistics, inventory, procurement and planning	Includes logistics, inventory, procurement, planning, sales and marketing
Goal	Goal is to cut company cost	Goal is to reduce inventory costs	Goal is to generate trading partners revenue
Method	Works on efficient inventory replenishment only.	Works on inventory levels and replenishment.	Works on promotion, product introduction, inventory levels and replenishment to reach shelf effectiveness.

Forecasting	Several forecast of supplier, manufacturer and retailer.	Forecast customer demand by vendor.	Particular shared sales forecast based on collaborative process.
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#### **4.4 IMPLEMENTATION OF CPFR IN BIG BAZAAR**

Information sharing between supplier and the buyers will be restricted as a result of conventional business practices. Due to the lack of collaborative sharing of sales data, the supplier cannot see the discrepancy between what the retailer bought and what is actually sold to customers. The company have to create business-development teams with trading partners. Using CPFR, Big Bazaar must work together with its main suppliers on a real-time basis by using the Internet. The new practice has to lead to the development of common databases for product pricing and product specifications. This will help to jointly establish product-wise demand forecast. Big Bazaar must also distribute with its suppliers, the actual sales data in each store for the past years, demographic details of customers and product-wise stock positions at its stores and distribution centers. By involving sales and marketing information to supply chain planning and execution processes, CPFR can lead to a decrease in inventory levels and an increase in sales for both retailers and suppliers.

#### **4.5 SUMMARY**

CPFR is considered better than the previous electronic data interchange (EDI)-based supply chain practices. It is based on much broader cooperative arrangements where retailers and suppliers jointly build up forecast by sharing point-of-sale (POS), inventory, promotions and production information. CPFR is the newest in a variety of collaborative schemes aimed at better coordinating supply chain. The roots of CPFR can be seen in the ECR and VMI initiatives. Unlike these initiatives, CPFR was designed as a balanced collaborative approach where all forecasts and exception are communicated mutually to retailers and manufacturers and is also supported by much more strong software. VMI has failed to become widely implemented due to

some reasons. No one can make a decision on appropriate inventory levels including the customers themselves. And on the other hand, disruptions in the information flow may take place.

The real challenge to widespread adoption of CPFR is that it needs a basic change in the way buyers and sellers work together. Companies must make sure that their information technology systems, organizational structures, business processes and internal data are conducive to implementing CPFR.

## **CHAPTER 5**

# **FUNCTIONS OF COLABORATIVE, PLANNING, FORECASTING AND REPLENISHMENT**

CPFR is a method in which a company collaborates and integrates planning, forecasting and other required data from and within the company. It also uses data provided by the suppliers and customers.

- It is vital to have a good relation with the stakeholders. CPFR combines internal and external stakeholder data to create an efficient supply chain.
- The CPFR model provides a common framework for the collaborative aspects of planning, forecasting and replenishing processes. Each ring of the model represents different role within the CPFR model.
- The factors affecting the implementation of CPFR are collaboration arrangement, joint business plan, sales forecasting, order planning, Order Generation, Fulfilment, Exception Management and Performance Assessment.
- CPFR isn't a one-time action. The CPFR activity is as continuous as it is collaborative.
- Effective CPFR will only be doing well in enhancing the supply chain if it's systematically implemented.
- If companies aim to survive in today's competitive market, they need to develop supply chains that are robust and that are quick in responding to customer needs.
- Supply chains are prone to uncertainties which have adverse effects in the supplychain. The uncertainties will be able to be reduced by availability of information on stock levels, price, lead times, demand, etc.
- CPFR will enable Big Bazaar to employ an efficient and effective supply chain to deliver top performance.
- CPFR will direct to the development of common databases for product pricing and product specifications. This will help to jointly decide product-wise demand forecast.
- CPFR can lead to a reduction in stock levels and an increase in sales for both retailers and suppliers by involving sales and marketing information to supply chain planning and execution processes.

## **5.2 SUGGESTIONS**

- Software or technical improvement is essential in the company for the implementation of CPFR.
- Company should center on managing time so as to reduce constraints faced due to time.
- The level of partnering and collaboration among partners should be studied to understand how companies are working together and how they are growing based on win-win relationships.
- Improvement in the warehouse facilities of Big Bazaar must be considered

## **5.3 CONCLUSION**

CPFR is a system by which distributors and manufacturers collaborate to deliver goods to the end customer in a more effective, cheaper, less costly yet profitable manner to the supply chain participants. CPFR is the latest in the series of collaborative schemes which aim to better manage the supply chain and thus squeeze out the system's decoupling inventory.

The first objective of the project was to study the scope of CPFR in the supply chain management. CPFR was designed as a balanced collaborative approach where all forecasts and information are exchanged by retailers and manufacturers and the collaborative process of solving these exceptions is carefully laid out. With the development of better IT systems, information can be centralized, updated and shared in a further effective and efficient way. This allowed partners to visualize forecasting levels, levels of inventory and production plans. This action also leads to a reduction in the point of uncertainty.

One of the objectives was to study the function of CPFR in the retail industry. It has been understood that CPFR is a procedure that achieves results in order to produce a leaner, more efficient and effective supply chain management. This process innovation tool is generating cost reductions in huge manufacturers due to short lead times and specially controls on the inventory levels. The CPFR model provides a popular structure for the collaborative aspects of process planning, forecasting, and replenishment. The CPFR model illustrates the feature that industries are focusing solely on. The model provides a basic structure for the flow of information, goods and services.

Another objective was to analyse the impact of CPFR in overall performance of Big Bazaar. CPFR will allow Big Bazaar to introduce a supply chain that delivers peak performance efficiently and effectively. CPFR will contribute to the development of standardized product pricing databases and product specifications. It will help to jointly determine the demand forecast for the product-wise.

Efficient CPFR can only succeed in improving the supply chain if it is applied systematically. The optimized supply chain is one that aims to spend as little money as possible to deliver the customer orders correctly and where the customers want them. If it sounds appealing to improve the supply chain by procedurally oriented cooperation, then the next move is to find the right stakeholder to incorporate CPFR.

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