

# COLLABORATIVE PLANNING, FORECASTING AND REPLENISHMENT (CPFR): A NEW PARADIGM IN SUPPLY CHAIN MANAGEMENT

Vineendra Vira Jain, Donald L. Harrison College of Business, Southeast Missouri State University,  
One University Plaza, MS 5890, Cape Girardeau, MO 63701, (573) 651-1365,  
[bn15stu@semovm.semo.edu](mailto:bn15stu@semovm.semo.edu), [vineendra@yahoo.com](mailto:vineendra@yahoo.com).

## ABSTRACT

The emergence of business as a global activity, unfettered by the constraints of geographical and political boundaries, have necessitated a re-adjustment of attitudes with regard to the manner of doing business. CPFR is a menu-driven business process by which the trading partners integrate the company goals throughout the supply chain by collaboratively forecasting and continuously replenishing inventory through process improvement, collaboration, and technology solutions. The purpose of this paper is to: describe the concept of CPFR and its importance to the business world, elaborate with live examples of the organizations that have successfully carried out CPFR pilots, and present an analysis of one US based multinational organization's experiences in implementing CPFR.

### Introduction

In today's fast-paced changing Global economies, the key to survival for any enterprise is the high quality of its product(s) and service(s), entirely focused on continuously achieving higher standards of customer satisfaction by understanding and predicting customer needs, to provide it at the least possible cost, in the least possible time, and ahead of competition. This creates the need for a pragmatic approach to streamline the system and the need to differentiate an organization committed to the above characteristics. In order to stay ahead of competition, and be better prepared for change, organizations need to incorporate CPFR both internally and externally. Based on information shared among trading partners, collaborations occur on sales forecast, order forecasts, seasonality of products, pricing models, proposed promotional strategies, safety stock rules, minimum order quantities, store realignments, and order strategy. Successful CPFR implementation leads to business growth for all trading partners. CPFR is an Internet based, data-sharing business process that avoids data-entry errors, results in reduced inventory carrying costs, reduced operating expenses, and, thereby, ensures product availability across the supply chain. According to Katz and Hannah [2], "CPFR tools work as metal detectors to identify business issues that need immediate attention".

### What is CPFR?

CPFR can be defined as a menu-driven business process by which we integrate the company goals throughout the supply and demand process by *collaboratively forecasting* and *continuously replenishing* inventory with the customers by offering: the process, collaboration, and technology solutions. Traditionally, suppliers and retailers did their individual forecasts, and eventually ended up blaming one another for any shortcomings from their respective forecasts. CPFR entails that the supplier and retailer collaborate by sharing information such as the point-of-sale data, inventory stocks, out-of-stock data, proposed promotion & pricing strategies, planned production schedule, and subsequently evolve a shared, and agreed-upon forecast. This calls for a very strong commitment and a high level of trust from both the supplier and the retailer.

### Why CPFR?

The whole concept of 'Supply Chain Management' has undergone a recent metamorphosis. Over the years, it has become highly integrated with the 'quality consciousness movement' starting with quality control in 1960s, quality assurance in 1970s, quality systems in 1980s and total quality management during the 1990s. The impact of supply chain management is found in such processes as just-in-time (JIT), product-chain-partnership, and benchmarking.

The Internet and subsequent growth of e-commerce over the last couple of years have revolutionized our daily life, both personal and business, in this information superhighway age. The Internet has overhauled existing business practices and continues to evolve new ones.

CPFR is the most comprehensive and extensive model of supply chain management that integrates the entire process rather than targeting specific areas. It also ensures a higher achievement of customer satisfaction by bridging the gap between the supply and demand processes throughout the organization, thereby reducing the cycle time, and increasing customer satisfaction.

**Steps in implementing CPFR**

CPFR guidelines were supported and published by the Voluntary Interindustry Commerce Standards (VICS) association, a consortium of leading retailers and manufacturers. The five steps outlined by them to implement CPFR are:

1. Evaluate your current status
2. Define scope and objectives
3. Prepare for collaboration
4. Execute: Performing the pilot
5. Assess performance and identify next steps

**Fig 1: The CPFR Team:**

<b>Role</b>	<b>Responsibilities</b>	<b>Typical Position (Buyer)</b>	<b>Typical Position (Seller)</b>
Sales/Category Management	<ul style="list-style-type: none"> <li>- Sales forecasts</li> <li>- Promotion plans</li> <li>- Collecting and reporting sales results</li> </ul>	Category Manager, Replenishment Analyst	Commercial, Marketing Manager
Replenishment Process	<ul style="list-style-type: none"> <li>- Order forecast</li> <li>- Collects actual order &amp; inventory information</li> </ul>	Inventory Analyst	Logistics, Customer Service, Operations Manager
Technology	<ul style="list-style-type: none"> <li>- Sets up the collaboration environment</li> <li>- Monitors technology effectiveness, and evaluates technical rollout requirements</li> </ul>	IT Coordinator, Project Manager, Systems Manager	IT Coordinator / Representative

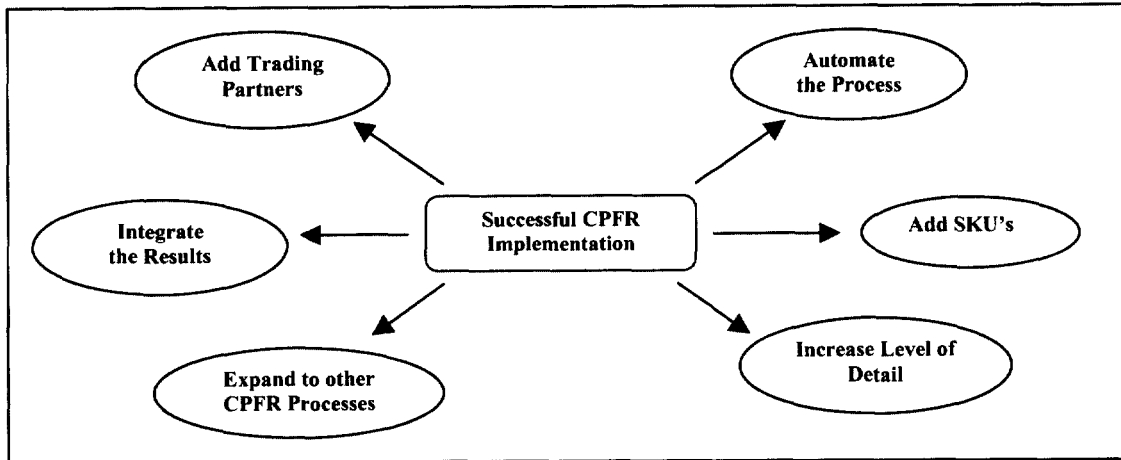
**Expected outcomes:**

Some of the benefits observed and reported by organizations as a result of initial CPFR pilots and successful implementation are:

- Increased level of trust due to sharing of critical information among trading partners
- Distinct increase in service levels to customers
- More accurate demand and sales forecasting, enabling better production management
- Increased visibility to planned and unplanned changes
- Near elimination of out-of-stock situations
- Enhanced category management benefits
- Reductions in inventory on hand
- Reduction in returns and allowances
- Shift from make-to-stock discipline to make-to-demand manufacturing
- Double-digit increase in sales
- Improved return-on-assets (ROA) performance
- Enhancement of the organization’s Economic Value Added (EVA)

Successful CPFR pilots have been carried out by Wal-Mart, Sara Lee Corp., Warner-Lambert Co., Procter & Gamble Co., Wegmans Food Markets, Nabisco Inc., Schnuck Markets, Food Lion, Salisbury, Meijer, Loblaw Cos., Kmart Corp., Kimberly-Clark Corp., Hewlett-Packard, Lucent Technologies Inc., Circuit City Stores Inc. to name a few. According to Katz, Klaris, and Scorpio [3], “The success of a CPFR initiative depends on strong, sustained, highly visible sponsorship. In order to create and implement a successful CPFR process, the management team must be ready to commit both personnel and resources”.

**Fig 2: Expanding CPFR:**



**Scope of future work on CPFR**

The emergence of business as a global activity and the shrinkage of the world into a Global Village, unfettered by the constraints of geographical and political boundaries, have necessitated a re-adjustment of attitudes with regard to the manner of doing business. At present, over sixty leading manufacturers, retailers, system integrators and software solution providers actively participate in the VICS CPFR Committee. This represents a very small percentage of the entire business community, and of the scope of CPFR. Every industry, every business has at least one supplier and one retailer, and therefore the scope of CPFR opportunities is unlimited.

With the emergence of ‘trading exchanges’ across industries, buyers and sellers are coming together more than ever before and the trading partner relationship is shifting from a ‘win/lose’ adversarial interaction to a ‘win/win’ collaborative interaction. The corporate and value-chain focus is shifting from *market-area specific planning* to *customer specific planning*. According to Harrington [1], “ True collaboration requires a strategic change in the nature of both the relationships and transactions between trading partners. By collaborating collectively, and in real time, on such things as sales forecasts, production plans, inventory management, and procurement, companies can begin to eliminate uncertainty from the supply chain”.

**Conclusion**

The goal of CPFR is to change the relationship paradigm and create significantly more accurate information that can drive the value chain to greater sales and profits. When implemented in a proper, coordinated manner, CPFR takes quick response, vendor managed inventory (VMI), and efficient consumer response (ECR) to the next level by ensuring increased sales through improved in-stock positions, better store-level customer service, and better asset utilization. At present, it can be stated that CPFR is still in its embryonic stage and much more can be achieved through detailed analysis and careful step-by-step implementation of the process.

**REFERENCES**

[1] Harrington, Lisa; *Collaborating on the Net*; Transportation & Distribution, Cleveland; Feb 2000; Vol. 41 (2).  
 [2] Katz, Matthew; Hannah, Debbie; *A closer look at CPFR processes: Working with forecast exceptions*; Bobbin, Columbia; June 200; 41 (10).  
 [3] Katz, Matthew; Klaris, Amy; Scorpio, Caitlin; *CPFR: Moving beyond VMI*; Bobbin, Columbia; May 2000; 41(9).