Optimizing Indian Retail Supply chain by implementing CPFR

By: Kushagra Prakash & Vivek Agarwal

Optimizing Indian Retail Supply chain by implementing CPFR

By: Kushagra Prakash & Vivek Agarwal

India's retail market is likely to touch a whopping Rs. 47 lakh crore by 2016-17, expanding at a compounded annual growth rate of 15 per cent, a Yes Bank-Assocham study says. Organized retail, which comprised a meagre seven per cent of overall retail market in 2011-12 is estimated to grow at a CAGR of 24 per cent and attain 10.2 per cent share of total retail by 2016-17. On the supply side, retail sector growth will be backed by expansion plans of existing players and the entry of new players, the study said.

Hence, it's important for every retailer to have a strong vendor relationship so that he can achieve maximum from this growing market base. CPFR will help both retailer & vendor to have more reliable understanding.

1. Introduction:

Collaborative Planning, Forecasting, and Replenishment (CPFR) is a concept that aims to enhance supply chain integration by supporting and assisting joint practices. CPFR seeks cooperative management of inventory through joint visibility and replenishment of products throughout the supply chain. Information shared between suppliers and retailers aids in planning and satisfying customer demands through a supportive system of shared information. This allows for continuous updating of inventory and upcoming requirements, making the end-to-end supply chain process more efficient. Efficiency is created through the decrease expenditures for merchandising, inventory, logistics, and transportation across all trading partners.

CPFR began as a initiative by WALMART in 1995.VICS organization currently is an organization which help industries to implement CPFR. CPFR deals with various Collaboration tasks like within Strategy & Planning, Collaboration Arrangement, Demand & Supply Management, Execution (Order Generation) and Analysis. The 3 kinds of Collaboration which are generally studied in it are Collaborative Assortment Planning, Store Replenishment Collaboration, and Retail Event Collaboration.

CPFR interoperability is also very important at the time when a retailer goes in Collaboration with several actors in its Supply Chain.

Various industries have implemented CPFR like JC Penney, Zara.

1.1 Collaboration Only by working together toward the same goal can any partnership reward both parties. If the retailer's version of just in time means vendor holds the goods until my stores need it, or the manufacturer 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 inventory load. Instead of win/win, it's "I win, you figure out how to win." However, if the manufacturer and retailer can agree that their common goal 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 new type of collaborative partnership requires a long-term commitment to openly communicate, and share information. Partnering on strategy as well as execution requires trust and commitment, but is the only sustainable way to grow sales and profits. Retailers and vendors who take this long-term view with a majority business will maintain a true competitive advantage. Step one in Collaboration means agreement to confidentiality, a means to resolve disputes, supply chain scorecard metrics and common incentives or goals (i.e. both parties rewarded on profitability, not just sales volume). Goals should focus on driving the most profitable sales growth possible, and can also include reduction of capital and expense for both parties.

1.2 Planning

The original Walmart/Warner Lambert 1995 CFAR (Collaborative Forecasting and Replenishment) laid the groundwork for the benefits to the consumer industry. When the VICS (Voluntary Inter-Industry Commerce Standards) group of industry representatives worked to define the common standards, they saw the need to add "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.) assures both parties of equal skin in the game and forces common goals for. In addition, the joint project team develops plans for promotions, inventory policy changes, product introductions and discontinuations, and store groupings.

1.3 Forecasting

Either or both parties can do forecasting, but vendor and retailer must agree to the final working forecast. The vendor may have valuable input on the chain level forecast by item, or category, and the retailer may have better tools to build the forecast at the DC or store/sku level. Basic forecasts are system generated based on detailed historical data, and the paybacks for good forecasts are better in stocks and sales, with less expense and carrying cost on both sides. Seasonal considerations and trend management information are obviously more important in apparel and other categories, where the payback on better forecasting becomes more sales and fewer markdowns. Also, finalizing joint promotional plans is key to complete forecast accuracy. Manufacturers must build this detailed forecast into their production planning.
Even the best forecast though will need to be monitored and adjusted in-season, and this is where two sets of eyes, focused on the customers' reaction, can be twice as effective. Any of the certified interoperable software packages can trigger forecast differences between vendor and manufacturers systems. Rules need to be determined on

how to resolve those variances, but the basic premise of CPFR® is that you solve those differences jointly, with the same end goals.

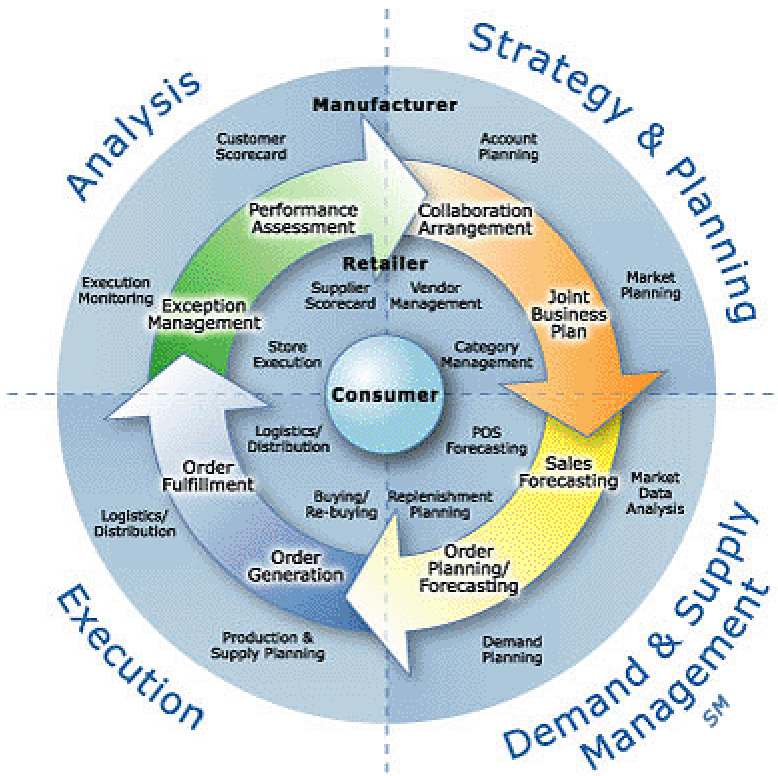
1.4 Replenishment

Sales forecasts must be converted into order forecasts, using Time Series Forecasting or Demand Planning systems. Supplier constraints such as order cycle time, lead-times, order minimums and case packs must be dealt with, as should the chronic open-to-buy inhibitor on the retailers' side. Collaborative transportation planning has also been identified by VICS as a key lever in replenishment. Exception triggers should include in stock percent, forecast accuracy, safety stock levels, fill rates, lead times, and order approval rates, and should be jointly reviewed monthly on the agreed upon scorecard.

Potentially contentious restraints such as restricted supplier quantity or over-commitments must be dealt with in advance. An expected benefit of close collaboration and partnership should be flexibility and joint reaction to surprises. Holding a retailer locked in to forecasts eight weeks out should no longer be necessary when both partners own the forecast and share in the rewards. Likewise, vendors should be more prone to ship items in short supply to retailers who have entered into this CPFR agreement.
While establishing a CPFR program can seem daunting and labor intensive, the risks to survival to those who wait for more proof are high. CPFR® can lay the groundwork for the success of all your other initiatives and priorities, and managing your business by exceptions rather than firefighting can free up merchants' time to be merchants. The program can be piloted manually, but the ROI results will pay for the investment in systems or consultants many times over. The first step is to get your senior managers trained and educated on the ROI benefits. Leadership is needed for this, as any other, important initiative.

2. CPFR Model

The CPFR reference model provides a general framework for the collaborative aspects of planning, forecasting and replenishment processes. A *buyer* and a *seller*, as Collaboration Participants, works together to satisfy the demands of an *end customer*, who is at the center of the model.



2.1 CPFR Activities

In the retail industry, the manufacturer as the seller and retailer as the buyer **1** engage in four Collaborative Activities to improve their performance:

- *Strategy & Planning* -Establish the ground rules for the collaborative relationship. Determine product mix and placement, and develop event plans for the period.
- *Demand & Supply Management* -Project consumer (point-of-sale) demand, as well as order and shipment requirements over the planning horizon.
- *Execution* -Place orders, prepare and deliver shipments, receive and stock products on retail shelves, record sales transactions and make payments.
- *Analysis*- Monitor planning and execution activities for exception conditions. Aggregate results, and calculate key performance metrics. Share insights and adjust plans for continuously improved results.

Collaboration may also focus on just a subset of the four activities (such as Strategy & Planning), while the rest of the process is performed through conventional enterprise processes. These partial implementations are sometimes called “CPFR Lite.”

Distributors may also be participants in the process, in the buyer role, the seller role, or both. For simplicity, the remainder of the discussion only identifies retailers and manufacturers in these roles. These execution activities are often called the “order to cash” cycle.

2.2 CPFR Tasks

There are eight tasks – two for each of the four Collaboration Activities.

- *Within Strategy & Planning*, *Collaboration Arrangement* is the process 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 significant events that affect supply and demand in the planning period, such as promotions, inventory policy changes, store openings/ closings, and product introductions.

- *Demand & Supply Management* is broken into *Sales Forecasting*, which projects consumer demand at the point of sale, and *Order Planning/Forecasting*, which determines future product ordering and delivery requirements based upon the sales forecast, inventory positions, transit lead times, and other factor

- *Execution* consists of *Order Generation*, which transitions forecasts to firm demand, and *Order Fulfillment*, the process of producing, shipping, delivering, and stocking products for consumer purchase.

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

2.3 CPFR Scenarios

The CPFR reference model is designed to fit many scenarios. Any individual CPFR program must adapt the model to the particular needs of the trading relationship. Of the alternative approaches that have been documented, four specific scenarios have dominated large-scale CPFR deployments. To better assist companies who are contemplating CPFR initiatives, or are engaging trading partners in their programs, the CPFR guidelines now provide detailed descriptions of these specific scenarios.

- Retail Event Collaboration

- DC Replenishment Collaboration

- Store Replenishment Collaboration

- Collaborative Assortment Planning

2.4 Implementing CPFR

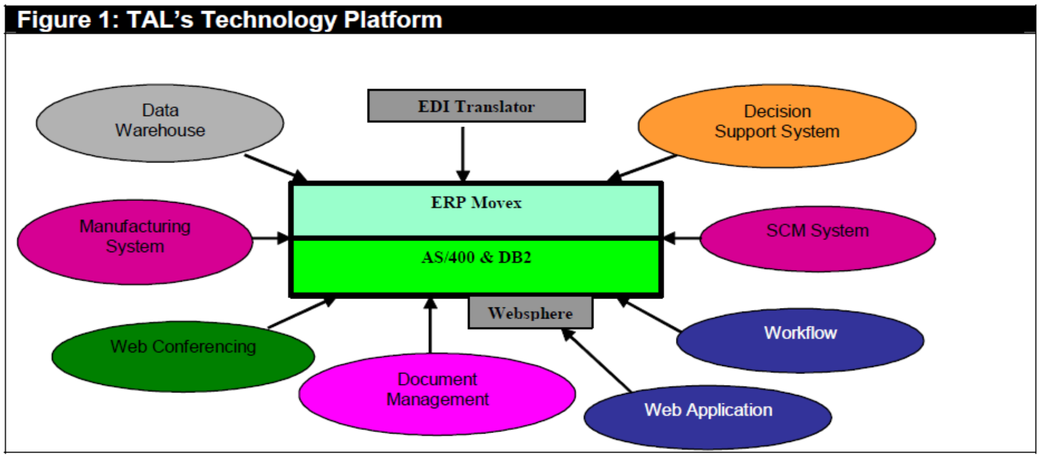
Collaborative Planning, Forecasting and Replenishment is always superimposed on an existing demand planning and replenishment process. CPFR enhances and is compatible with both vendor-managed (VMI) and conventional ordering processes. The distinguishing factor in these alternatives is who takes the lead in three Collaboration Tasks: sales forecasting, order planning/forecasting, and order generation.

Alternative	**Sales Forecasting**	**Order Planning/forecasting**	**Order Generation**
Option A (Conventional Order Mgmt)	Retailer	Retailer	Retailer
Option B (Supplier-Managed Inventory)	Retailer	Manufacturer	Manufacturer
Option C (Co-Managed Inventory)	Retailer	Retailer	Manufacturer
Option D (Retail VMI)	Manufacturer	Manufacturer	Manufacturer

(*Source-VICS White Papers)

3. Case Study of Manufacturing –TAL

Figure 1: TAL's Technology Platform



(*Source-Lee et al 2004)

Textile Alliance Limited (TAL) was established in 1947, and is one of the few remaining clothing manufacturers in Hong Kong (China), producing outerwear ranging from traditional trench coats to fashionable utility wear , trousers, ladies blouses, men's shirts and so on.

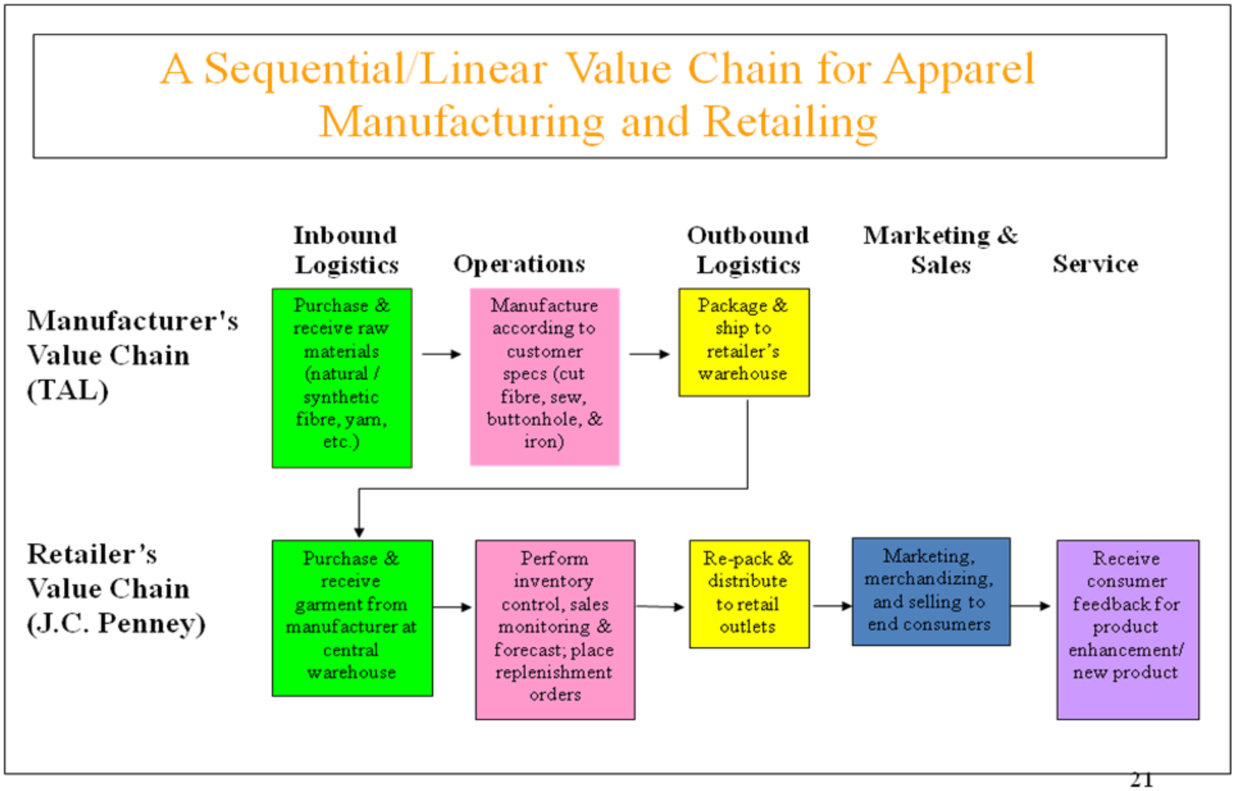
TAL has used EDI for over 10 years , and most of the company with which TAL has transactions also use EDI, hence business is almost paperless. Bar-coding and scanning for packing and picking(to supply the exact order to the customer and reduce warehouse expenses) are also extensively used.

For individual item, TAL does the price ticketing and packaging in the factory. This has the advantage that goods can be shipped directly to the store and put on to the shelf immediately, helping to reduce labor on high labor cost countries. When the customer decides the final retail price the information is sent electronically to the TAL's system and each item's ticket is electronically printed. If an order is received, for each retail location then the pick and pack process is used on site to provide the correct mix of products (sizes, colors….)

TAL notes that the company is increasingly doing business direct with the retailer, but the wholesaler doing business in private label or similar programs may still hold the buying power , for example when buying on behalf of many retailers. With 'Pick to Light' , the operator can select from multiples of single sizes, colors and so on when a light(signal from electronic database) is displayed, leading to a compilation of set of items according to the order received. Before the packing carton is loaded, the bar codes are scanned (again) and the data is stored in the system, then the electronic packing list is sent electronically to the customer. With ERP information can be extracted by the customer to see on the website how many pieces have been cut and the status of the order.

The decision support forecasting is undertaken on behalf of the Customer, and there is a replenishment planning system –sent back to the customer for approval – for example if the customer has a promotion sales history then this item of information can be factored into the forecasting system.

TAL uses Movex ERP , and IBM AS/400 and DB/2 for its custom applications, these enable support for document management etc.



Lee et al., 2004

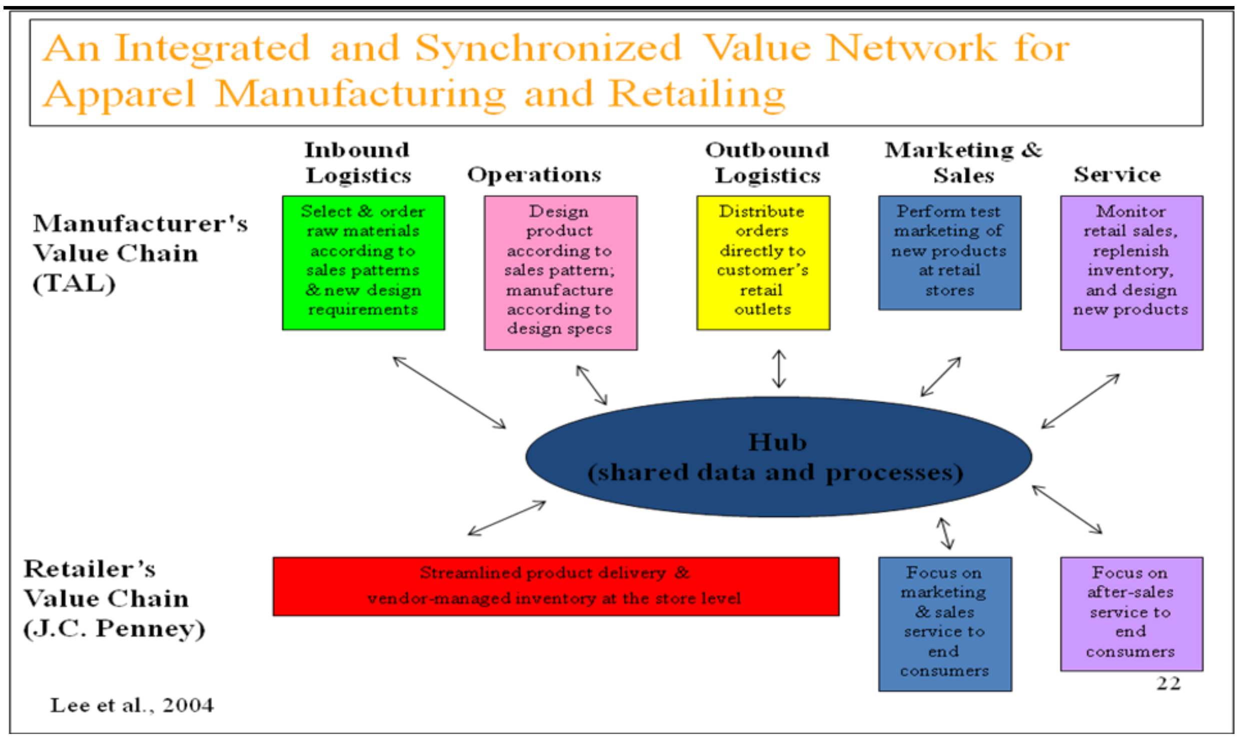
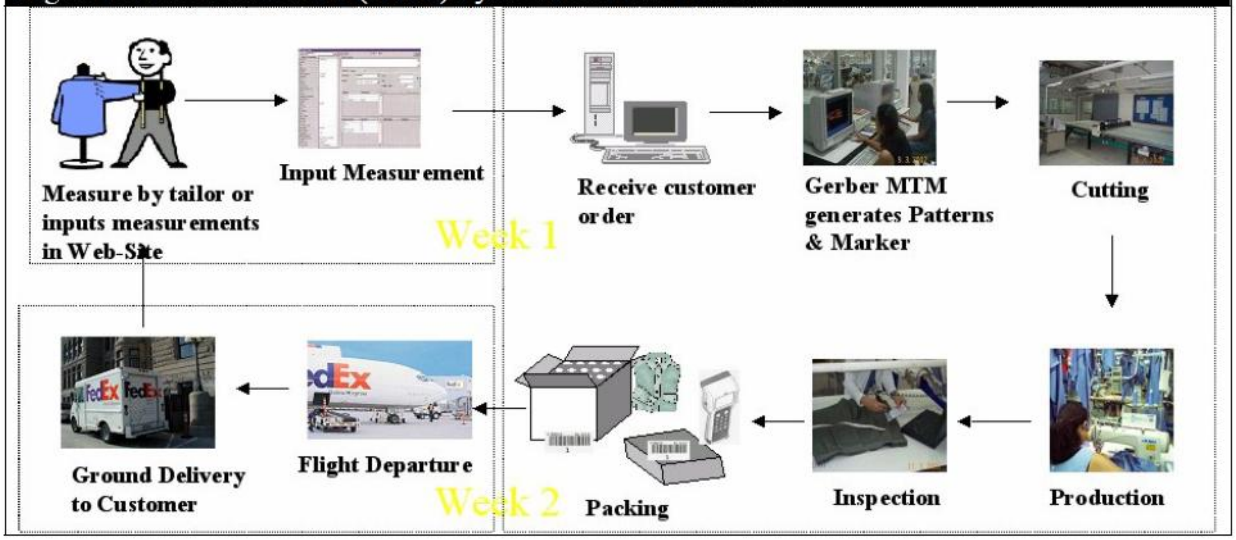


Figure 3: Mate-to-Measure (MTM) System Flow and Timeline



3.1 Modules in Vendor Portal

Currently five prime areas in this portal system are:

1. Collaborative Planning
2. WIP Inventory Tracking
3. Quality-Net
4. Sample Management
5. Product Development Collaboration

4. Methods of Forecasting done by Indian Apparel Industry

1. **Trend presentation** – based on Forecast publications, runways, fashion shows (videos or live)generally given by the design team, may also include inputs from designers
2. **Comparative shopping** – exploring and studying competitor brands merchandise or brands offering similar merchandise, for price points, colors and designs, usually done by designers and merchandisers
3. **Directional shopping** – similar to earlier, samples from other brands are bought within the budget.
4. **Secondary research** – consists of exploring websites of inspiration brands, international brands and designer brands for trends. Print outs of all the garments, prints, graphics from various sources are taken.
5. **Final range forecast** – based upon all of the above, a final forecast is prepared. Information from all the above sources is kept together. Similar looking or similarly suggesting pictures and info segregated and groups made. Out of these 8-9 groups of stories, 3-4 stories finalized.

5 SUMMARY

CPFR is a concept that aims to enhance supply chain integration by supporting and assisting joint practices. CPFR seeks cooperative management of inventory through joint visibility and replenishment of products throughout the supply chain. Information shared between suppliers and retailers aids in planning and satisfying customer demands through a supportive system of shared information. This allows for continuous updating of inventory and upcoming requirements, making the end-to-end supply chain process more efficient. Efficiency is created through the decrease expenditures for merchandising, inventory, logistics, and transportation across all trading partners.

Various benefits of CPFR are enhanced relationship, greater sales, category management, improved product offering, improved order forecast accuracy, inventory reductions, increased customer satisfaction. Generally, at the time of implementation of CPFR , certain investment is required in IT infrastructure but its ROI is very fast because of the above advantages.

In near future, as retail prices are going down every year and raw material costs are increasing, it's very important to optimize the supply chain. CPFR is a solution for the whole supply chain including retailers and vendors both.

References

1. CPFR Overview by VICS(2004)
2. CPFR®: The 21st Century's Most Powerful Process for Consumer Satisfaction By Michael J. Peterson
3. The value of CPFR-by Prof. Yossi Sheffi
4. CPFR's Secret Benefit –by Brian Albright
5. Key Steps to setting up a CPFR program to reduce inventory- by IOMA issue 03-08
6. Collaborative Forecasting: A Selection of Practical Approaches- by Johanna Samaros
7. Taking It One Step at a Time - Tapping into the Benefits of Collaborative Planning, Forecasting, and Replenishment (CPFR)-Oracle Case study
8. Improving supply-chain collaboration by linking intelligent agents to CPFR-by M.Caridi and R.Cigiloni
9. ABC of CPFR- by Ron Ireland
10. How to Implement CPFR and Other Best Collaborative Practices." Boca Raton, Florida: J. Ross Publishing. 2005,

11. Collaboration forms, information and communication technologies, and coordination mechanisms in CPFR-by P.Danese