

Collaborative Planning, Forecasting and Replenishment (CPFR)



The CPFR reference model provides a general framework for the collaborative aspects of the planning, forecasting and replenishment processes (Wiehenbrauk, 2010)



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Introduction

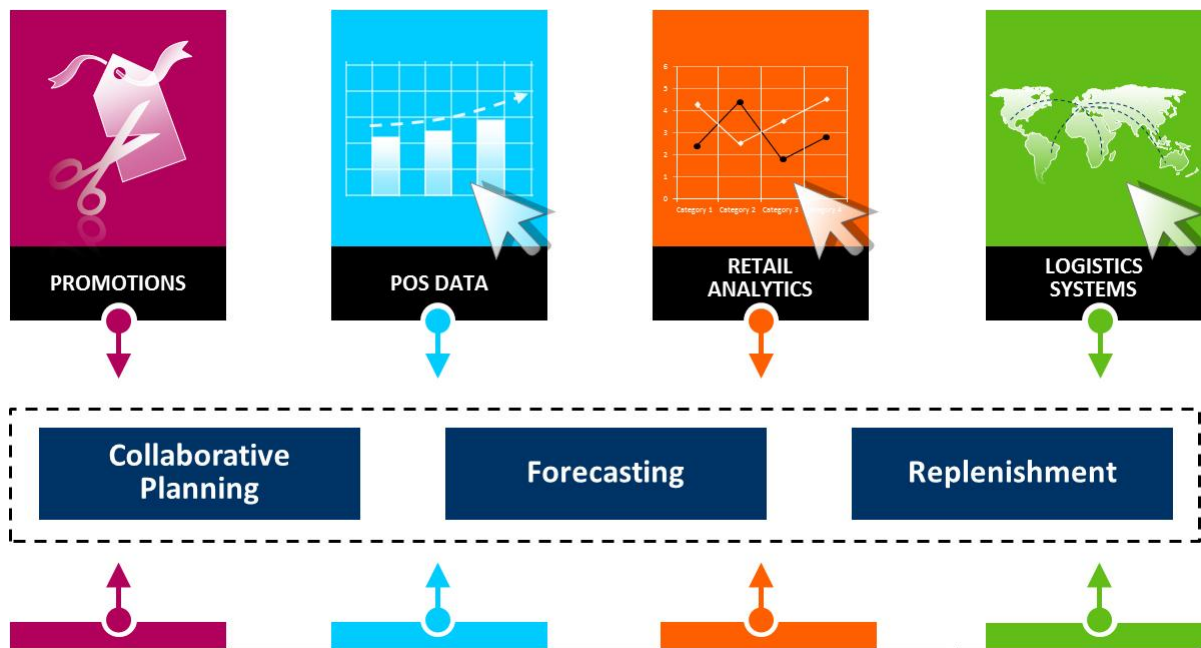
Promoted by the Voluntary Interindustry Commerce Standards group (VICS), CPFR is a widely known practice used to create synergy between multiple trading partners (Wilding and Braithwaite, 2006). CPFR helps reduce inventory and achieve efficiency in transport and logistics planning through aligning and sharing sales, and marketing best practice (Bozarth, 2011). It can also incorporate promotions and change trends in demand while forecasting sales, deal with high inventories to guarantee product availability or address the lack of coordination between supplier, retailer and/or other functions (eg. marketing, financing, purchasing and logistics). The CPFR framework can be applied to a variety of industries. Customers here are placed at the centre while buyers, retailers and suppliers become collaborating participants (Voluntary Interindustry Commerce Standards Association, 2004).

CPFR bridges gaps not addressed by the Efficient Consumer Response movement (ECR), Vendor Managed Inventory (VMI) and Co-Managed Inventory (CMI) (Voluntary Interindustry Commerce Standards Association, 2004; Sheffi, 2005). Thus, CPFR extends business processes to include IS for capturing and transferring information between trading partners, formalised sales and order forecasting processes, formalised exception handling processes and feedback systems. Core elements of CPFR are: (1) efficient assortment – product offerings should be rationalised to improve supply chain performance; (2) efficient product introductions – new products should be introduced in response to real customer needs and after the impact on supply chain performance has been considered; (3) efficient promotions – prices should be kept as stable as possible and the supply chain impact of promotions should be considered; (4) efficient replenishment – physical and information flows that link producers to the consumer should be streamlined to cut costs and increase value (Bozarth, 2011).

CPFR processes are not entirely dependent on technology but its use can make collaboration more scalable. For example, IT solutions can facilitate sharing forecasts and historical data, automating and collaborating arrangements and joint business plans, evaluating exception conditions or enabling revisions and commentary. The CPFR IT solutions need to be integrated with the supply chain system of records (Mendes, 2011).

Definition

Collaborative Planning, Forecasting and Replenishment (CPFR) is "a business practice that combines the intelligence of multiple trading partners in the planning and fulfilment of customer demand". The CPFR links best practice in sales and marketing (e.g. such as category management) to supply chain planning and execution processes to increase availability while at the same time reducing inventory, transportation and logistics costs (Voluntary Interindustry Commerce Standards Association, 2004).



Successful Application

In general, the following four activities take place in collaboration to improve the performance of the company: (1) Strategy and planning - the rules for governing collaborative relationships are drawn and the mix, placement and plans for the products are put in place; (2) Demand and supply management project - issues related to customer demands, orders, consignment and shipping requirements are discussed; (3) Execution place - orders are produced and shipments delivered and received and the products are stocked on the shelves of a retailing outlet, sales are recorded and transactions and payments take place; (4) Analysis monitor - results are compiled, key performance statistics produced and plans are adjusted according to the insights shared with the team (Voluntary Interindustry Commerce Standards Association, 2004).

Steps to Successful Application

- Develop front end agreement.
- Create the joint business plan.
- Create the sales forecast.
- Identify exceptions for sales forecast.
- Resolve/collaborate on exception items.
- Create order forecast.
- Identify exceptions for order forecast.
- Resolve/collaborate on exception items.
- Order generation.

Voluntary Interindustry Commerce Standards Association (2004)

Hints and Tips

- It is important to incorporate the CPFR solution in the recording system of the enterprise for the upkeep of supply chain data (Voluntary Interindustry Commerce Standards Association, 2004).
- There is a need to continuously facilitate training to comprehend each other's business, planning and replenishment strategies (Tan, 2008).
- Details about any price-related event should be shared with suppliers in order to have a hassle-free production process (Tan, 2008).
- It is essential to create cross-functional teams that comprise senior employees as well process users from both the partnering organisations (Tan, 2008).

Potential Advantages

- CPFR does not require substantial investments, thus allowing smaller companies to acquire benefits (AMR Research, 2001).
- CPFR can be made more measurable with the use of IT but overall it does not require technology to function as a process (Voluntary Interindustry Commerce Standards Association, 2004).
- CPFR allows companies to exploit the knowledge of their suppliers and customers to make better forecasts. For example, in the 1980s Wal-Mart pioneered a real-time online application that provided its suppliers with up-to-the-minute sales data (Sheffi, 2005).

Potential Disadvantages

- Collaboration is generally hard to achieve. CPFR requires a lot of initiative and it can be more difficult to establish it internally (Voluntary Interindustry Commerce Standards Association, 2004).
- Collaborative technologies can be extremely expensive and there is a risk of recreating old processes with new expensive technologies (Tan, 2008).
- There might be trust issues in collaboration with external service providers, as CPFR can require exchanging of strategic and confidential information (Tan, 2008).

Performance Monitoring

- Order forecast accuracy: a tangible way to measure the success of a CPFR pilot (Voluntary Interindustry Commerce Standards Association, 1999).
- Inventory levels: a measure of the effectiveness of a CPFR initiative (Voluntary Interindustry Commerce Standards Association, 1999).
- Return on investment (ROI) (Voluntary Interindustry Commerce Standards Association, 1999).
- Customer satisfaction (Voluntary Interindustry Commerce Standards Association, 1999).

Case Studies

- In the mid-1990s Walmart, Warner-Lambert, SAP and Benchmarking Capital decided to plan and forecast how to replenish mouthwash Listerine in the market. Following this collaboration, the service level of Warner-Lambert increased from 87% to 98% and the lead time for product release reduced from 21 to 11 days. Over the test period the sales of the product went up by US\$8.5m (deMin, 2005).
- Superdrug ran a CPFR initiative with Johnson & Johnson and experienced 13% reduced stock on the collaborated product lines. The forecast accuracy for Superdrug increased by 21% and the warehouse availability - by 1.6%. The lines that were subject to CPFR saw Present Stock On Hand levels reduced by 23% compared to the product lines that were not exposed to CPFR which increased by 11.8% (Sheffi, 2005).
- Condis and Henkel partnered for a CPFR pilot to achieve a shared forecast. This figure was then used to undertake replenishment at Condis's warehouses. As a result on-time deliveries increased by 6%, deliveries increased by 5%, the accuracy of sales forecasting went from 60% to 75% and improved communication between the partners led to an added advantage of reduced modifications in promotional plans - from 68% to 25% (ECR Europe Report, 2002).

Further Reading/References

Web Resources

- The CPFR Committee official website <http://www.vics.org/committees/cpfr/>
- The value and advantages of CPFR <http://www.businessweek.com/adsections/chain/2.1/cpfrmeans.html>
- CPFR Overview <http://www.decisioncraft.com/dmdirect/cpfr.htm>
- Brief overview of the CPFR model <http://scm.ncsu.edu/scm-articles/article/cpfr-model-2.-demand-and-suply-management-collaborative-planning-forecastin#1>
- White papers on CPFR <http://www.bitpipe.com/tlist/CPFR.html>

Books

- Supply Chain Collaboration, Ireland and Crum, ISBN 978-1932159165
- Collaboration, Planning, Forecasting and Replenishment, Seifert, ISBN 978-0814471821
- Business Networking, Osterle, Fleisch & Alt, ISBN 978-3540413516
- Supply Chain Management, Ling, ISBN 978-9812700728
- Demand Management Best Practices, Crum & Palmatier, ISBN 978-1932159011

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- Wilding, R. and Braithwaite, A. (2006) Effective Sourcing for Transaction Success. Financial Times. 19 October.

Video

Lowe: Improving demand forecasting

https://www.youtube.com/watch?feature=player_embedded&v=4vZFSkRED84

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