

Collaborative E-Commerce: Driving Productivity in 2000 and Beyond

The next major innovation in technology-enabled productivity gains is collaborative e-commerce. CPFR, the first standards-based collaborative e-commerce initiative, provides early lessons on how this trend will evolve. The development of standards prior to extensive testing and experimentation is a new approach to change; the long lead times in developing tests and necessary infrastructure to execute collaborative e-commerce prior to broad-scale implementation indicate industry adoption will take a few years. Consumers and financial markets will drive companies to adopt collaborative best practices, and within the next five years the economy will be able to shed 25% of the inventory it currently takes to support retail sales.

For the past nine years, the U.S. economy has experienced an extended business cycle, driven at least partially by productivity gains enabled by technology. The U.S. Commerce Department reports that the monthly inventory-to-sales ratio for the U.S. consumer value chain, which began the decade at 1.52, has steadily dropped to 1.33. In 1999 alone, inventory productivity improved from 1.39 to 1.33, representing \$55 billion in inventory productivity improvements across the US retail value chain (see Figure 1.0).

Contributing to the economy's productivity improvements during the 1990s were technology investments in enterprise resource planning (ERP) solutions and advanced planning and scheduling (APS) solutions. Transaction processing and planning capabilities allowed companies to gain real-time control of their operations while optimizing business processes. Today, leading companies are looking to collaborative e-commerce as the next major driver of productivity improvement.

Collaborative e-commerce extends the transactional and optimization capabilities of ERP and APS solutions beyond the boundaries of the enterprise, integrating value-chain planning and transaction processing with trading partner applications across the value chain. The resulting collaborative business processes have the power to provide productivity improvements significantly greater than those achieved over the last decade.

Lessons Learned About Collaborative E-Commerce

Collaborative e-commerce is still in its infancy. The concepts can be applied to many different business processes and produce benefits across a range of industries. The process of moving from collaborative concept to industry implementation and benefits is the new challenge facing industry leaders. Collaborative Planning, Forecasting, and Replenishment (CPFR), the collaborative e-commerce initiative underway in the retail/consumer goods industry, has made significant progress in the transition from concept to implementation and provides some early lessons learned for all industries in meeting this challenge.

Standard Setting Is Done Backwards

Creating a collaborative business practice standard before testing and validating the concept leads to faster industry adoption. Learning from the painful experience in the 1980s when companies had to rationalize a large number of proprietary approaches to EDI to enable its use, the Voluntary Inter-Industry Commerce Standards (VICS) initiated the development of a standard approach to the CPFR business process before the concepts had been widely tested and validated. A central benefit to defining the industry guidelines before testing is that a standard hypothesis

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Consumer Goods

provides a baseline for experimentation and discussion.

The VICS community of interest that formed the CPFR guidelines for the retail/consumer goods industry also generated the network of participants that engaged in the early experimentation. The willingness of early innovators to share the results of their testing efforts and further the understanding of CPFR provided the foundation for expanded industry experimentation.

The VICS community also provided a platform for feeding the technology requirements supporting the CPFR guidelines to software companies. Based on these inputs, low-cost or free solutions evolved to support the early collaboration tests. The participation of the software companies in the standard setting process created a competitive, yet cooperative, environment. Challenges faced by the software developers were brought to the VICS community for discussion and enhancement of the CPFR guidelines. The software companies took an active role in marketing the concept of CPFR through both collective and individual market development initiatives. The result of their participation in the process has been the development of better software, more effective guidelines, and expanded industry awareness of the opportunities associated with implementing CPFR.

The VICS model for collaboration standard setting has since been followed by the high technology industry's RosettaNet initiative. In fact, RosettaNet

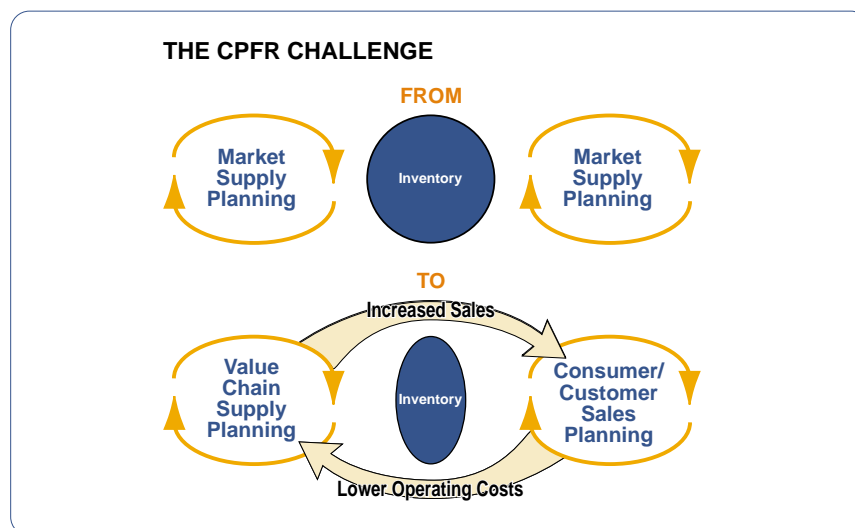


Figure 1.0 Total Business Inventories/Sales Ratios (Source: U.S. Department of Commerce)

reviewed the CPFR guidelines built for the retail/consumer goods industry and later adopted them in the suite of high technology collaboration guidelines. Expect this new model of standard setting and cross-industry cooperation to become a common approach to furthering inter-enterprise collaboration.

Testing Collaborative Concepts

CPFR pilot tests proved out the benefits but did not lead to immediate expansion of the concept. More internal infrastructure development is required.

Pilot initiatives are a fairly standard approach to testing new concepts, especially those that are expected to have a significant impact on the business. When the concepts involve integration with trading partner applications, the testing becomes much more challenging. Trading partners may have different priorities for the test as well as different capabilities to support the test. The net result is that the testing process takes longer to implement and the ability to reach conclusions from the test that can be projected across the trading partner base may be limited.

The business results achieved to date by CPFR pilots vary widely but have consistently been positive. The most surprising results have been in the area of sales. While

a number of pilots have seen dramatic sales growth triggered by changes in their product assortment or pricing strategies, a few trading partner pairs found they were able to significantly reduce lost sales by improving their shelf in-stock position. Since the lost sale is one of the hardest problems to measure, retailers and suppliers often overlook the opportunity.

Even the pilots that were focused on growing sales or reducing supply chain costs experienced a positive impact on inventory. In nearly all cases, the inventory improvements ranged between 15% and 35%. Most of these benefits were captured between one set of trading partners. Extending collaboration back into the supply base provides an opportunity for additional savings and further improvements in the total inventory-to-sales ratio.

The Technology

CPFR exchanges more data between trading partners requiring technology that can plan and execute each business at a lower level of detail.

Across the CPFR initiative, the most significant challenge for companies developing tests has been achieving the internal capability to support the new business practices. CPFR involves a fundamental shift from planning the business from a top-down market and brand approach to a

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reiter.ASCET.com
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TOTAL BUSINESS INVENTORIES/SALES RATIOS: 1990 TO 1999
(Data Adjusted for seasonal, holiday, and trading-day differences but not for price changes.)

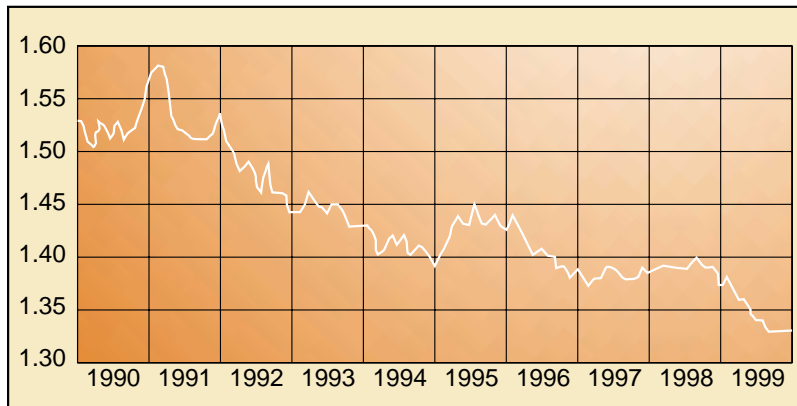


Figure 2.0 The CPFR Challenge (Source: Benchmarking Partners, Inc.)

bottom-up, customer-specific demand approach. Consumer goods companies traditionally plan demand and supply integration by deploying inventory to markets, not to specific customers. They do not integrate customer-specific demand information into supply planning until most of the costs in the supply process have already been incurred.

Retailers have a different approach to the same problem. They assume supply availability and try to manage problems by leaning on suppliers that fail to deliver. The majority of retailers do not provide forecasts, and those that do frequently find that most suppliers do not have a technology infrastructure that can make effective use of the forecast information. The result has been that both retailers and consumer goods partners testing CPFR have had to develop manual processes to support their tests. The manual processes are necessary to test the concepts, but they are not scalable and constrain the expansion of CPFR (see Figure 2.0).

The most common outcome of CPFR tests is the development of new technology infrastructure requirements to support the collaborative processes. Consumer goods companies require technology infrastructures that integrate customer-specific demand planning into market planning, available-to-promise planning capa-

bility, and make-to-order execution capability. Retailers are focusing on promotion and replenishment forecasting capabilities, as well as purchasing systems that can incorporate constrained supply information. Piloting companies have found that these technology requirements do not usually replace the ERP and APS solutions that were deployed in the 1990s. Instead, they tend to enhance existing solutions with incremental functionality. Those companies that have failed to upgrade their ERP and APS infrastructures are finding themselves further behind the curve in their ability to adopt innovative best practices in collaborative e-commerce.

Creating Collaborative E-Commerce Critical Mass

Preparing to develop CPFR critical mass takes time and an appreciation of the work required changing cultures.

CPFR tests have demonstrated that the benefits of collaboration are real – but so are the high costs of the supporting manual processes. For that reason, most companies piloting CPFR minimize the number of tests they engage in while they add the functionality that will allow them to efficiently expand collaborative operations. The early retail and CPG CPFR innovators have found that it is not uncommon to take a year or longer to develop a scalable

approach to collaboration.

The early innovators of CPFR are just beginning to roll out collaborative practices across large networks of trading partners. Speed-to-implementation and ease of ongoing integration management are critical, and leaders are incorporating a fair amount of standardization into their roll-out approaches. Retailers, in particular, are under pressure to standardize their approach to collaboration because of the large number of trading partners required to establish CPFR as the core business process. A large retailer may need to bring up over 200 suppliers to achieve to critical mass. A large consumer goods company, on the other hand, may need to bring up only 10 to 15 of its largest customers to reach critical mass. As a result, CPG companies can afford more customization in their relationships.

Retailers have been leading the CPFR roll-out, creating multiple collaboration processes capable of supporting a wide range of supplier competencies. As suppliers improve their collaborative competencies, they progress through the alternatives to achieve increased benefits. This approach supports scalable trading partner training as well as the retailer's ability to manage internal process alignment with a limited number of collaborative process alternatives.

Change Management

As most people that become engaged in CPFR initiatives will attest, implementing the technology is the easy part. Change management, particularly changing a culture to be collaborative, is much more difficult. Business process roles and responsibilities, as well as performance measures, all must change. These changes take longer to successfully integrate into the company than the supporting technology. The book is still being written on how companies will overcome the change management challenges. Two large retailers offer very different approaches. One retailer is providing access to information and training about its collaboration processes, as well as incentives for business partnership improvements. The other retailer is charg-

ing suppliers for installing its CPFR capabilities and is charging a monthly fee for usage. It is too early to tell which approach will prove most effective; however, the first appears to be reflective of a

ing collaborative e-commerce business practices. These industry groups are actively learning from one another through the support of the technology provider community that works across industries.

During the 1990s, transaction processing and planning capabilities allowed companies to gain real-time control of their operations while optimizing business processes. Today, leading companies are looking to collaborative e-commerce as the next major driver of productivity improvement.

collaborative culture while the other has adopted a more traditional arms-length approach to trading partner relationships.

Continued Growth

25% in inventory productivity improvement in five years is possible.

Lowering the U.S. inventory/sales ratio from 1.33 to below 1.0 while growing sales will happen. Collaborative e-commerce initiatives like CPFR will continue to drive these improvements. Trading communities in the high technology, automotive, and transportation industries also have working groups developing and test-

The speed to 1.0 will be constrained by the ability to change business practices and embrace collaborative cultures. But the pressure from consumers and the financial markets will drive this change sooner rather than later. Consumers are not going to let prices rise in an information rich environment, and the financial markets understand the power of the Internet and expect to see it incorporated into business strategies. The time to 1.0 will be less than five years with the early adopters being the early winners.

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