

CPFR

Only the Beginning of

COLLABORATION

By Ron Ireland and Robert Bruce

Collaboration is not for the faint of heart. But for those who have forged ahead with breakthrough initiatives like Collaborative Planning, Forecasting, and Replenishment (CPFR), the advantages have been many and significant. CPFR is not the end of the journey, though. It's one of a series of transformational best practices that can help companies achieve excellence across the value chain.

Ron Ireland is a managing director and Robert Bruce is a partner at Benchmarking Partners Inc. Both have previously worked at Wal-Mart, where they were closely involved in that company's pioneering collaboration initiatives.

Executives and middle managers across the retail and manufacturing spectrum have worked diligently to refine business processes to increase operating profit. They have implemented tactical measures and cut costs, increased productivity, enhanced utilization, and improved timing. But companies eventually reached a point at which there was little left to be gained from cutting labor, increasing productivity, reducing inventory, consolidating transportation, and so on.

The steady migration of best practices in recent years has been to gain competitive advantage through value generation. Business executives now are focusing on collaborative strategies—enabled by the Internet—that are transformational in nature. These strategies can help companies take a radical, rather than an incremental, step to improve customer service, revenue, and employee productivity while reducing expenses throughout the entire value chain.

To make that transformation, executives must broaden their vision to the total “ecosystem”—that is, the whole network of collaborative relationships and integrated business processes. The ecosystem stretches vertically and horizontally, extending from consumer to raw-materials supplier. New transformational strategies are based on forging an integrated



Illustration by Greg Ragland

collaborative network across that ecosystem. For many companies, Collaborative Planning, Forecasting, and Replenishment (CPFR) is the next step in industry best practices and a key transformational strategy.

Market Leaders Driving Change

Over the past several years, a number of initiatives designed to improve efficiency and effectiveness in the retail industry value chain have attracted attention. These initiatives promised to create functional savings and reduce the expense of doing business. But top executives found that even after implementing one program after another, their companies were not operating as efficiently as had been expected. The list of initiatives was long: space management, inventory management, just-in-time, automated replenishment, vendor partnerships, dynamic forecasting, quick response, vendor-managed inventory, scanner-based trading, efficient consumer response, category management, supply chain management, and more.

The problem was that each initiative was focused on increasing the effectiveness of a single functional silo of the value chain. For example, back in the early 1980s, just-in-time (JIT) initiatives were seen as very effective in tightening

cycle times and reducing costs and inventory. But, in fact, JIT processes did not reduce costs; rather, they more often pushed costs either upstream or downstream.

Only with quick response and, later, supply chain management, did the real breakthrough thinking occur. Specifically, these concepts looked at a combination of business processes across the value chain, rather than just at individual functional silos. Quick response, an initiative with roots in the apparel industry, focused on process integration. It addressed the interrelationships and linkages of business processes—starting with raw materials and going all the way through to the end-consumer. Focusing on the customer, quick response laid the foundation for developing trading partner relationships based on collaboration and trust.

Wal-Mart founder and collaboration pioneer Sam Walton challenged the adversarial relationship between retailer and supplier and created an entirely new model. “Vendor partners,” a term coined by Walton, represented a dramatic paradigm shift for many and forged a new way of looking at the business and the ultimate consumer. Wal-Mart was one of only a few companies that mastered trading partner relations while continuously raising the bar in creating value. The company established such a relationship with Procter &

Gamble in one of the first vendor-managed inventory (VMI) initiatives. VMI was a way of educating the manufacturer and focusing its attention on downstream retail processes and the consumer.

In the wake of Wal-Mart's success, many other companies embraced aspects of quick response, but few understood its scope and potential. Companies that were used to protecting information resisted the novel ideas of collaboration and trust. Retailers underestimated the importance of executive and organizational alignment in developing collaborative trading partnerships as well as the significant changes required in cultural attitudes.

Today, the battle continues between most retailers and suppliers. The retailers want to focus on consumer demand at the shelf, which is based on forecast point-of-sale (POS) data. Suppliers, for their part, are concerned primarily with an order forecast at the point of shipment, which is typically a warehouse. Although collaboration offers a customer-focused "win-win" model for the entire value chain, the current, real-world collaboration model between retailers and suppliers is often, "I win, now you figure out how to win." Transformational companies have moved beyond this paradigm.

The leaders have also begun to understand that building successful collaborative alliances starts with integrating demand with supply. Many supply chain management initiatives, however, have mostly addressed the supply side of the consumer-centric demand, which links replenishment, distribution, transportation, and logistical functions. This represented a great step forward but a clear void was obvious: The consumer and the demand side were left untouched and disconnected from the supply chain. To create a real value proposition for the consumer, the demand process had to be linked to supply, functional processes had to be integrated,

Transformational companies have moved beyond the "I win, now you figure out how to win" mentality.

and decisions throughout the total value chain had to be consumer-driven. (Exhibit 1 depicts how the key processes of demand and supply need to be integrated.)

Value Creation and CPFR

As this chronology suggests, early initiatives in value creation migrated from fundamental and functional activities, like just-in-time, to more integrated efforts linking business processes, such as supply chain management. The next significant step focused on optimizing decisions functionally and then cross-functionally. As companies implemented activity-based costing principles, they discovered that some decisions made functionally to meet individual goals actually cost money when viewed across the total value chain. They found that involving trading partners in decisions enhanced the value proposition.

Now, industry leaders have advanced a step further. They are not only involving trading partners in decisions but also aligning their relationships to these partners. The first major effort toward this relationship alignment was Collaborative Planning, Forecasting, and Replenishment. The goal of CPFR is total value chain collaboration among all trading partners who touch, or have an effect on, the value of the product to the end-consumer.

As progressive companies migrate toward best practices by creating dynamic, collaborative relationships, the value creation increases geometrically. Each step in the migration path—information, optimization, collaboration, exchange—is a prerequisite for the next, laying the foundation for maximum results. (Exhibit 2 shows the progression.)

CPFR has continuously raised the level of effective trading partner relations, value creation, and competitiveness in the marketplace. The most obvious place to focus collaborative activities was the point where consumer, retailer, and manufacturer converged—that is, at the intersection of where a product was planned, ordered, and replenished. This intersection is the source of significant and visible disruption. It shows up in excess inventory, out-of-stock occurrences, wild swings in production, emergency "at-once" shipments, high costs, and lower profitability by account. Forecasting and demand planning typically lie at the center of the disruption, providing an opportunity for the most apparent and immediate results.

There are many important reasons to collaborate on forecasts. Specifically, collaboration:

EXHIBIT 1

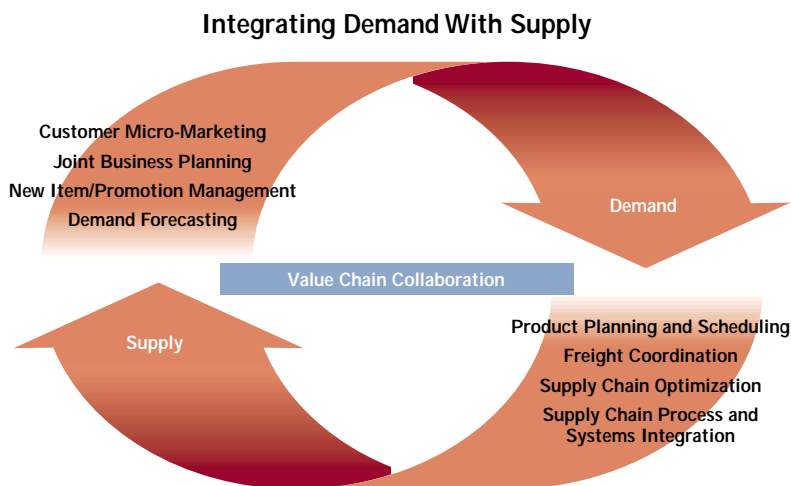
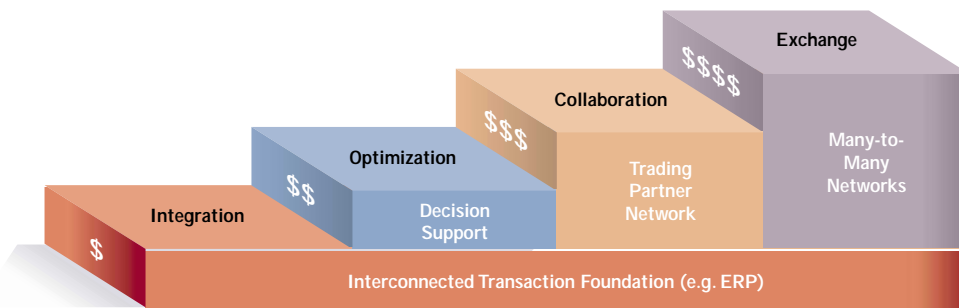


EXHIBIT 2

The Migration to Best Practice



- Builds business alliances focused on jointly managed processes.
- Promotes a common execution tool that links the enterprise at Internet speed.
- Results in a single, mutually owned, consumer-driven forecast.
- Provides a higher level of forecasting accuracy than statistical measures can.
- Links consumer demand with supply planning and execution.
- Forces an examination of operating processes—functionally and cross-functionally.
- Lays the foundation for business processes and technology, thereby facilitating other collaborative applications.

CPFR is not rocket science. To understand the value of collaboration, companies need only consider all of the statistical forecasting methods, methodologies, mathematical equations, and end results that retailers and suppliers use to generate individual forecasts. It quickly becomes evident that accurate forecasting cannot be done in a vacuum and it cannot rely on input from any source other than the consumer. Value chains that have 25 to 50 different forecasts from end to end and side to side are unlikely to be accurate. Collaboration gets back to basics: gain accuracy through promoting a single, jointly owned demand plan; forecast throughout the total value chain; link supporting processes; and then optimize internal and external decisions.

The value of a joint forecast becomes particularly clear after considering how it can help reduce inventory accumulation. We all know of the “bullwhip” effect of inventory as it moves from retail, to the distribution center, to production planning, to raw-material procurement. Companies routinely create and hold inventory to protect themselves against the vagaries of supply and demand. Because companies do not know when the next big order or next big materials shipment will occur, they tend to maintain some inventory locally to ensure product availability.

This accumulation of inventory occurs at multiple points in the supply chain. For example, a company will hold an inventory of raw materials, while the supplier of these materi-

ties of manufacturers are holding \$472 billion in inventory. Total inventory across the value chain is calculated at \$1.1 trillion.

Inventory accumulation was, in fact, the driver of CPFR. In 1995, Benchmarking Partners worked with Randy Mott (then CIO of Wal-Mart Stores and currently CIO of Dell Computers) and Rick Dalzell (then vice president of Wal-Mart Application Development and now CIO of Amazon.com) on an effort to define an integrated time-series distribution requirements planning (DRP) forecasting process. The process would link customer demand to replenishment needs at the shelf and through the supply chain of material, manufacturing, and transportation. Wal-Mart, along with Warner Lambert, Benchmarking Partners, Manugistics, and SAP, formed a work group to define this new model. After six months, they initiated a pilot to validate the model and gauge the potential payback to fund continued work.

The results of the Wal-Mart/Warner Lambert pilot were staggering. In-stocks improved, sales took a significant jump, inventories dropped, and production cycles were smoothed.

Because collaboration involves a dramatic paradigm shift for most retailers and suppliers, the pilot required a new way of thinking and execution. Some of the pilot’s “out-of-the-box” core concepts included: consumer-driven demand planning and forecasting; a stable manufacturing plan; make-to-order capacity planning; proactive exception management; aligned goals, objectives, and processes; and trusted partnerships.

The results of the pilot and the completion of the proof-of-concept design led to an industrywide effort in 1996, supported by the Voluntary Inter-Industry Commerce Standards (VICS) organization. In 1998, a select group of industry-leading retailers and manufacturers, supported by the Uniform Code Council (UCC), the Demand Activated Manufacturing Architecture (DAMA) project, and Benchmarking Partners, developed cross-industry guidelines for collaborative forecasting and replenishment (CFAR)—and eventually added planning to create CPFR. The guidelines focused on defining the front-end business agreements, common goals/metrics, cross-industry business processes, and recommendations for tech-

als holds a corresponding amount of the same materials as finished-goods inventory. Based on U.S. Commerce Department sales and inventory reports, Benchmarking Partners has projected that in the year 2000, retail value-chain sales will reach approximately \$3.2 trillion. To support these sales, retailers are holding \$372 billion in inventory. Merchant wholesalers are holding \$307 billion in inventory to supply the retailers. The combined multiple

nical standards, covering data, text, and security. (For more information and case studies, visit the CPFR Web site at www.cpfr.org.)

These collaboration efforts centered on the following key principles: mutual focus on the end-consumer; a consumer-driven value chain; mutual visibility and management of decisions; and open business relationships that shared information, data, and communications.

CPFR initiatives are proliferating, with pilots at more than a dozen retailers and at least three times as many manufacturers. A few progressive companies have moved beyond the pilot stage. Early collaboration leaders already have established more than 500 collaborative trading relationships using the Internet. Globally, CPFR pilots are operating in the United Kingdom, Germany, Mexico, Belgium, the Netherlands, and the Philippines. These are driven by multinational companies and their respective international trading partners. The CPFR guidelines are now printed in three languages—English, French, and Japanese.

The competitive advantage for many companies will depend on their ability to roll out CPFR faster than the competition can.

Software developed to support CPFR also is improving. Companies that produced early versions of CPFR software, such as Syncra, Logility, Manugistics, and i2 Technologies, have continued to enhance their solutions to address the challenges encountered in the early pilots. As these solutions mature, the installation process and ease of use will improve. New solutions from E-Millennium, E3, J.D. Edwards, Numetrix, and Extricity have entered the market. Enterprise resource planning (ERP) vendors that focus on the consumer packaged-goods (CPG) and retail industries—SAP, Oracle, Baan, and PeopleSoft—also plan to expand their existing collaboration tools to address CPFR in the near future.

The Question of Readiness

Collaborative planning, forecasting, and replenishment is an initial step in a multiphase strategy to integrate multiple business processes. For many companies, CPFR serves as the foundation for cross-functional internal and external decision-making. It also enables communication and data flows. Creating an e-collaboration vision, strategy migration plans, and an underlying architecture is a prerequisite for success.

For most companies, the decision to begin piloting CPFR is the first step in the integration process. The first phase typically focuses on the value proposition, the technology issues, and the implications for future change. The second phase of the pilot often involves developing a business case for change along with an implementation plan. This effort is intended to answer the next question: "Do we implement CPFR across our trading partner network and, if so, how quickly?" This decision sets up the third phase, a rollout process that

addresses such issues as training, technology, reliability, and, potentially, new organizational alignments.

The pilot is important for many reasons. The transition from conceptual understanding to factual experience is needed to build credibility and commitment. CPFR business practices will be company-specific. The amount and rate of change that are required and can be absorbed will be key factors in future strategies. The competitive advantage for many companies will depend on their ability to roll out CPFR faster than the competition can.

Understanding the need for and the benefits of collaborative partnerships is essential. But companies also must recognize the struggle between running the business today and obtaining the strategic benefits required to run the business tomorrow. There are plenty of skeptics to deal with, both internally and externally. Prior to starting a pilot, you need to make a reality check concerning your company's readiness to implement one. The following readiness issues should be addressed:

Is CPFR a priority initiative?

Many companies have a variety of complex information systems projects such as ERP, decision-support implementations, or e-commerce under way. These initiatives consume both business and technical talent, reducing the availability of resources to support a CPFR pilot. Considering that CPFR is an Internet-based transformational strategy, it's amazing how often it is overlooked as a top priority to gain competitive advantage and return on investment (ROI). There are ways to integrate a CPFR pilot into other projects that may be taking place. A thorough review of complementary and competitive initiatives is critical to assessing readiness.

Is there an understanding of the trust and openness required—both internally and externally—with trading partners?

If the CPFR pilot is to succeed, there must be a true spirit of collaboration and a strong desire for success—both internally and externally. In many cases, we have seen both trading partners actively engage in the beginning of the pilot-planning phase only to disengage later. Lack of mutual trust often is the underlying cause of the failure. We also have seen cases where the greatest obstacles to collaboration came from within. When reviewing both the company business processes and those of the trading partners, trust and openness are essential.

Are there opportunities for a quick win?

A successful pilot often can grab the low-hanging fruit, thereby quickly building credibility for the effort. Quick wins help start to drive ROI to the bottom line. One rule of thumb applies here: Select the product and tasks where the ROI should be obtained in less than three months. The longer the

timeframe, the greater the potential for losing focus.

Are there planning or decision-making processes that can be adopted to smooth out the supply chain?

Collaboration is about shared decision-making. The pilot should review the demand and supply chain process workflow to highlight where integrated, shared intelligence would yield better results. Make sure you have all the right players involved. We have seen initiatives fail simply because a critical function in the value chain was not a participant in this activity.

Is there a trading partner ready to begin a pilot?

A successful CPFR pilot requires a trading partner with the following characteristics: an understanding of the collaboration vision, the required technology, and the resources to execute successfully. Some trading partners are not ready to pilot CPFR because of their culture or a lack of capabilities. Others simply do not view CPFR as a top priority. In either case, these are not candidates for a pilot.

Has the technology infrastructure required to support an Internet-based ecosystem been addressed?

In some cases, a pilot does not need to consider the technology implications. If a structured approach to security is not in place, for example, a company may have to limit the pilot's use of technology. Yet pilots frequently need to address the use of firewalls and, possibly, encryption software as well. Moving beyond the piloting stage, the technology implications can change quickly. Increased collaboration can affect system capacity. Additional decision-support functionality may be required, and the need for Internet speed in the scalable environment becomes more apparent. New interenterprise Internet security and control functionality may be needed. Testing the technology constraints and identifying expansion issues must be core objectives of a pilot.

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Should you forge ahead or delay?

Being a pioneer engenders both risks and benefits. One of the benefits is that the collaborative work involved in the pilot and the lessons learned can lead to preferred status with key partners. Early adoption of CPFR also can lead to a competitive advantage because it accelerates the rate of implementation. Some companies, however, may want to delay their CPFR effort for three to six months while they ensure that their infrastructure is in place. A year-long delay, though, may be costly, causing a company to fall farther behind the competition. Much depends upon the particular company's ability to learn from others and to be open to change. The bottom line is that all pilots yield "lessons learned." Learning by doing, in this case, is generally preferable to learning by observing.

Lead or Follow?

As competition intensifies, the leaders typically extend their lead, while the laggards fall farther behind. There is still an opportunity for large and small companies alike to leapfrog the competition while migrating to best practices. But the

A Snapshot of Three CPFR Pilots

Pilot	Description	Results
Kimberly Clark and Kmart	2,100 stores, 14 distribution centers (DCs), and 15 SKUs. Utilized Kmart-developed Internet site.	Store in-stock levels improved. Adjusted DC replenishment logic. Reduced overall inventory required. Improved joint focus on specific goals through front-end agreement.
Nabisco and Wegmans	First-phase pilot managed 22 Planters Nuts SKUs at Wegmans' DC. Utilized spreadsheet and e-mail. Second-phase pilot managed 20 Milk-Bone SKUs. Used Manugistics Networks software.	Nut category sales grew 16.3%. Private-label nut sales grew 15.7%. Planters Nuts sales grew 53.9%. Days of inventory on hand decreased by 2.5, or 18%. Pet-snack category sales grew 7%. Private-label sales grew 31%. Milk-Bone sales grew 8%.
Wal-Mart and Sara Lee Branded Apparel	23 branded underwear items in 2,400 stores. Collaborated via spreadsheets.	Sales up 45% (Comp. sales up 35%). Inventory up only 12%. Market share up 10%. Retail turns up 30%. Retail weeks-on-hand down 23%. Gross margin return on inventory investment up 49%. In-stock up 2.7%.

leaders are already out of the gate, as evidenced by the following developments:

- Wal-Mart has announced the roll-out of a scaleable CPFR program this year.
- Procter & Gamble will pilot CPFR in Asia and Europe with several trading partners.
- KMart has a scaleable CPFR rollout under way.
- Tesco and Sainsbury are operating CPFR programs in the United Kingdom.
- Sports Authority has announced a CPFR rollout.
- Dayton Hudson and Liz Claiborne are implementing collaborative apparel product planning and forecasting.
- The Sports Authority, Safeway, and Best Buy all have announced CPFR pilots.

Other member companies of the VICS/CPFR committee have announced their pilots and rollouts as well. Still others have embarked on CPFR initiatives but remain secretive about their success for competitive reasons. The point is that there's been a lot of recent activity. (For a closer look at the results of three successful CPFR initiatives, see the sidebar on page 85.)

With the Internet as the enabler, it might sound easy to implement collaborative initiatives as these industry leaders have done. But implementation brings with it a number of challenges that must be met. Here are some lessons learned from implementations to date:

- Senior management must understand what collaboration is—and what it is not.
- Corporate ownership must be driven internally by a compelling business case.
- The vision of an e-business collaborative strategy and best-practice migration plan must be clearly articulated.
- A change management plan needs to be in place to address cultural and organizational issues that may exist both internally and with external partners.
- A trading partner for an initial pilot must meet or exceed your own supply chain capabilities and be ready for CPFR.
- Internal collaboration often is more difficult than external collaboration.
- Technology is only an enabler of collaboration. You need to get your business processes aligned first.
- Don't continue to observe from the sidelines. Learn by doing, testing, and making adjustments. CPFR is part of a corporate strategy for e-business, not a functional or departmental initiative to be driven by demand planning, logistics, or customer service.

Those companies that have successfully launched pilots already have tasted some of the benefits. They have adopted an Internet-based transformational strategy that exploits the potential returns to their operating profits while delivering the competitive advantages of being an early adopter. Some

After CPFR, the next step for many companies will be to move downstream toward collaborative merchandise planning and optimization.

have flipped the model to forge collaborative relationships with raw-materials suppliers as part of an e-procurement strategy. Others are expanding collaborative models to merchandise/assortment planning and product design as well as collaborative transportation and logistics.

Where companies have been less than successful in their implementations, the problems typically have centered on a lack of real collaboration and cooperation with the attendant "I win, you figure out how to win" mentality. Another common shortcoming is a failure to understand that the technology facilitating collaboration is just a tool. The real keys to success are how you execute the business and provide the right balance of business process, change management initiatives, and rewards/incentives.

Beyond CPFR

As the migration path to best practices suggests, CPFR is only one of a continuing series of ecosystem transformational strategies and best practices. When we first envisioned and designed CPFR, we thought that collaborative merchandise planning would be the first application. It was decided, however, that focusing on collaborative forecasting and replenishment would be embraced more rapidly by the consumer packaged-goods manufacturers and retailers. Plus, the benefits would be more visible in the shorter term and would energize the industry behind collaboration.

Application of collaborative principles, however, goes beyond Collaborative Planning, Forecasting, and Replenishment. After implementing CPFR, then, the next step for many companies will be to move downstream toward collaborative merchandise planning and optimization. This initiative involves the joint collaborative management of all related processes involving item/category selection, product merchandising, and seasonal and promotional planning—essentially, those activities that match product with the consumer and generate a form of demand creation. It involves the joint and collaborative management of the total merchandising process—from category analysis to new-product development.

Although collaborative forecasting and replenishment can better assure the availability of manufactured products, collaborative merchandise planning leads to greater forecast accuracy. It does this by considering the issues that most affect forecast accuracy, such as causal factors that have an impact on demand over and above base day-to-day sales.

Collaborative merchandise planning and optimization also establishes a strong foundation for vertically and horizontally aligned collaborative teams. These teams are rooted in account planning and development; product, category, and

assortment planning; and pricing policies and promotional/event planning. The most effective trading partner teams are formed in the merchandise buying organization that adopts an account sales management approach. These teams often include executive sponsorship and ownership, which intensifies the focus on account revenue, margin, and net-profit development. (Exhibit 3 shows the structure and key activities of a sample collaborative account management team.)

A strong collaborative merchandising-planning program:

- Focuses team goals and objectives on sales, revenue, margin, and profit development.
- Creates a team structure and alignment that reflects cross-functional members from merchandising, finance, supply chain management, inventory management, distribution/logistics, and transportation.
- Measures and tracks team performance functionally and by total company/account.
- Incorporates team performance into each member's performance-evaluation process.

With such an initiative, trading partners can collaborate on business planning, merchandising direction, promotional planning, and new-item/category development. By engaging

in joint decision-making and cross-functional analysis, they can optimize their decisions based on information about decisions being made on the same item both up and down stream. The span of these decisions encompasses store operations and merchandising, replenishment and inventory management, distribution center processing, transportation and logistics, and manufacturing and deployment.

Cross-functional optimization of these key activities is not for the faint of heart. But for those who have crafted the business processes, infrastructure, and systems architecture to support collaborative optimization, the payoff can be great. Only those organizations that have implemented this process

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can fully appreciate the revolutionary business case and bottom-line benefit. These are the industry leaders that are on the leading edge of best practices—positioning themselves for full, collaborative, customer-focused alignment. By participating in e-business collaborative optimization, they have taken the next quantum step for redefining the value proposition in the competitive retail marketplace. At the same time, they are creating an increasingly widening competitive gap—one that the laggards will find hard to close.

EXHIBIT 3

Collaborative Account Alliance Team

