



## The End of ERP as We Know It

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ERP, CRM, APS, VMI, EDI, SCM, CPFR. There are enough acronyms in the business software market to make gallons of alphabet soup\*. They describe business models and the software packages to support them that frequently overlap or offer differing—and more or less efficient—solutions to the same set of problems. In some cases, they only address parts of problems that should be considered holistically. Often, the software is ruinously expensive to buy and implement and, in some cases, becomes obsolete before it is either completely installed or paid for. To make matters worse, savvy marketers at software companies bend the meanings of the terms to suit their own purposes.

What's the poor business manager to do? In the next few pages, we will try to clear away some of the "white noise" surrounding these acronyms and offer a forward-looking view of the direction that modern manufacturing and retailing B2B (business to business), driven by the Internet, will go.

### The View from the Top

If you take the time to analyze what people do at work from the "50,000-foot view," a basic truth quickly becomes clear. Every operational activity undertaken in a firm is focused on one of three things: planning, execution, or measurement. *Planning* consists of the various activities that ensure the right products or materials will be in the right place at the right time at the right cost, so that customers are satisfied and companies make a profit. *Execution* represents the physical creation and movement of products or materials, and *measurement* represents the counting of products, resources, materials, and activities that are relevant to the performance of the execution activity.

In the past 20 years, management leaders have focused the bulk of their time and money on issues relating to developing efficiencies in the execution and measurement functions—the physical movement and accounting of goods. This is the core competency of enterprise resources planning (ERP) systems. But focusing exclusively on this admittedly important area misses the planning aspect—a full one-third of the big picture!

\* See Glossary at the end of the paper for the complete Soup Menu

Looking beyond the four walls of your own enterprise to gather and coordinate information from suppliers, customers, shippers, carriers, has always been necessary to ensure that you will have sufficient material to make your product and fill your customers' orders. The rise of the Internet as a viable technology for conducting business means that the performance bar has been raised in this larger supply/demand chain. Now it is no longer enough to accurately and efficiently track and account for the movement of goods and their related transactions through your factory. Your estimates of demand from customers and availability of materials from suppliers have to be far more accurate as well, and information about these issues has to flow as seamlessly as possible between you, your suppliers, and your customers, and the extended value chain to your customer's customer and supplier's supplier,

### **The Total Value Chain**

In keeping with our 50,000-foot view of business relationships, we must grapple with the notion of the supply chain. The term has been bandied about for more than a decade now, and has become a nearly meaningless catchall phrase, easily bent to the purposes of whoever is using it.

To sharpen the focus on this vague term, it helps to think about the manufacturing enterprise as the connecting middle link in a three-link chain. On one side is the supplier link, and on the other is the customer link. Obviously, it is crucial to manage supplies coming in to your factory, but planning cannot be complete without taking customer *demand* into consideration as well. It's not enough to manage your supply chain; you have to manage your demand chain as well.

Supply chain management (SCM) involves all of the processes (plan, execute, and measure) associated with your organization's ability to acquire raw materials and make your product, including your own capacity and your supplier's capacity. Demand chain management (DCM) encompasses all of the processes (plan, execute, and measure) associated with your organization's ability to deliver to your customers' customers and markets, including external factors.

While it's fine for the purposes of discussion to separate the three links in both chains, in reality, what happens in any one of these links has repercussions for the others. Real enterprises don't have just supply or demand chains; they have organically linked *value chains*. If the "supply chain" software you're considering isn't structured in such a way as to handle the inter-relationships between all the links in this value chain, it will not enable you to achieve the levels of efficiencies necessary to compete in the Internet-driven economy. To succeed now, you have to go beyond either SCM or DCM to VCM—value chain management.

### **Planning, Measurement, and Execution in the Value Chain**

The same three processes that cover all your company's inside activities apply to your outside supply and demand chains as well. Planning concerns itself with anticipating an order (demand). Planning includes all those steps that must be taken to anticipate and prepare for the eventual execution of an order. Planning is synonymous with information. Execution is associated with the physical side of product creation and movement from one end of the value chain to the other.

## The End of ERP as we Know It

Measurement is the third phase of the value chain process and relates to the performance and transaction-capturing side of a business—the kinds of things ERP systems were designed to do.

In the 1990s, ERP systems were the darlings of the marketplace. Manufacturers that could afford to put in these expensive, complex systems scrambled to get them up and running, and then struggled to learn to use them effectively. As time went on, and the gold rush mentality surrounding ERP subsided, some of the limitations of these systems became apparent. While ERP systems are fine for tracking inventory and managing transactions, they really have no capacity to address planning issues. The major ERP vendors themselves began to realize this problem and, in a brilliant marketing coup, co-opted the term supply chain planning. They began positioning themselves as “supply chain management solution” vendors—even before they really had much in the way of supply chain functionality to offer.

The figure below illustrates what we have been discussing so far: the total value chain, and how it is inter-related with the concepts of ERP, SCM, planning, execution, and measurement.

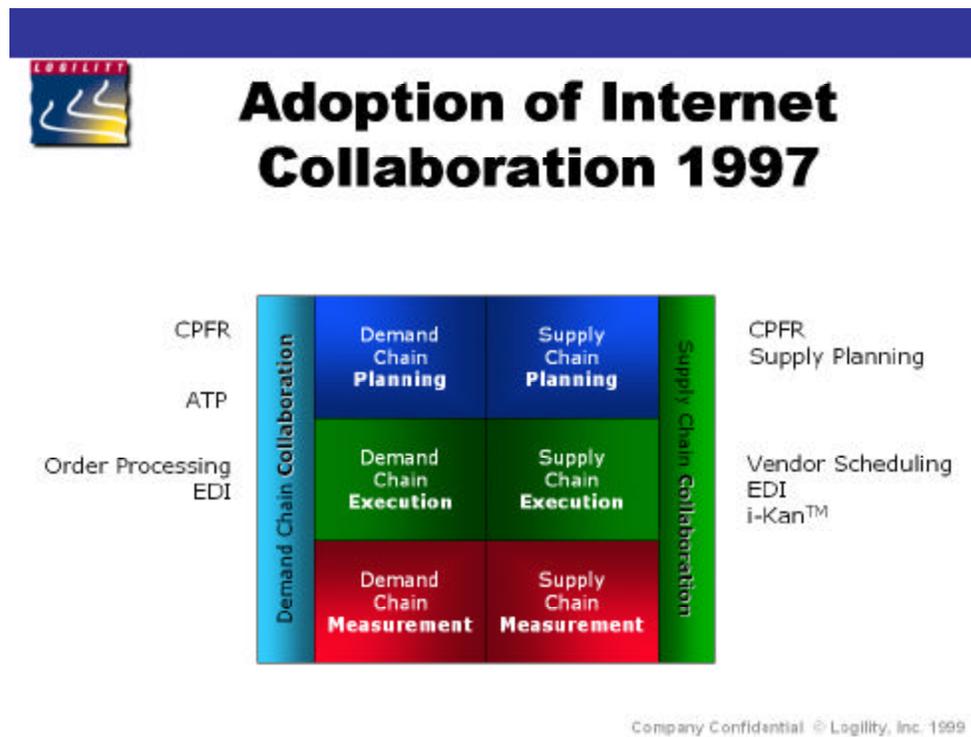


Figure 1: A perfect model?  
ERP, APS, SCP, SCM, and collaboration across  
all trading partners and processes

### APS and the Dawn of the Collaboration Model

Meanwhile, some companies, such as Logility, began looking at the planning function apart from the tracking and transaction functions. Their offerings were called advanced planning and scheduling (APS) solutions. APS is a term that grew out of

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the finite scheduling models that were added to material requirements and manufacturing resources planning (MRP and MRPII) solutions in the 1980s. However, the term has grown to include distribution, transportation, and demand optimization. It is this deep supply chain planning functionality that APS vendors offer.

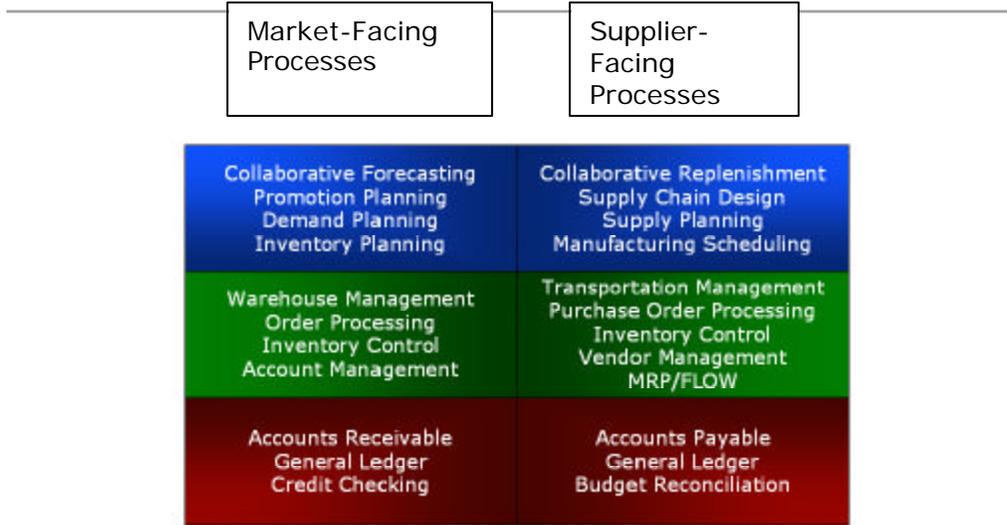
But APS was only the beginning of a solution. Forward-thinking individuals, looking at the direction of the marketplace and the possibilities for real-time transfer of information enabled by the Internet, began to see that the logical next step in optimizing communication and, therefore, performance across the entire value chain was collaboration.

Demand chain collaboration concerns itself with all the customer and market-facing processes in your organization, such as collaborative forecasting (a planning function) and collaborative order processing (an execution function). Supply chain collaboration concerns itself with all the supply and supplier-faced processes in your organization, such as collaborative replenishment or vendor scheduling (a planning function) and collaborative MRP for plant to plant and plant to vendor execution (an execution function). An example of a hybrid planning and execution model on the Supply Chain side is FLOW manufacturing, or lean manufacturing. The most forward-looking model today includes the concept of electronic Kanbans for automatic alert notification – faster than that physical Kanban. We call that concept I-Kan™.

When ERP vendors talk about supply chain planning or management modules, or whatever functionality they are selling, it is not APS. ERP provides for execution and measurement processes across the full demand and supply chains, and it is beginning to provide some limited and basic planning functions in some areas. Logility specializes in the planning processes *across the entire value chain*.

The figure below illustrates some of the many functions across the entire value chain that can benefit from the collaborative model.

## Examples



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Figure 2: Examples of where applications and processes fit in to the “perfect model”

### Collaborative Planning, Forecasting, and Replenishment

The first steps to building a viable collaborative model took place in 1995 and 1996 when Wal-Mart and Warner-Lambert piloted electronic data interchange (EDI) and Excel-based collaborative processes whereby both companies participated in the determination of the demand plan for Listerine Mouthwash—and the subsequent supply plan. The pilot produced significant benefits in terms of increased service levels at Wal-Mart to meet its customers’ needs, lower inventory throughout the value chain, and increased revenue to both Wal-Mart and Warner-Lambert.

Due to some acrimony and some history that we will not go into here, the original group broke up and re-formed around VICS – the Voluntary Interindustry Commerce Standards body. This industry move resulted in a name revision from CFAR to CPFR—Collaborative Planning, Forecasting, and Replenishment. The emphasis in this initiative is on collaboration—the removal and elimination of barriers between trading partners. This collaboration involves sharing important plans and data across the inter-company spaces. This latter model included in fact as well as in vision the collaborative forecasting *and* replenishment processes.

As this process was being built around EDI, Logility was implementing the world’s first truly Internet-based collaborative planning tool with Heineken USA. This enabled Heineken to work with its customers in the U. S. to jointly derive the sales forecast at the customer (distributor) level and the replenishment order from Heineken USA.

In June 1997, the Voluntary Inter-industry Commerce Standards (VICS) organization published a document that described CPFR. It is this model that today represents the most advanced example of a new business process that takes advantage of the Internet as a means to break down barriers between organizations.

CPFR represents the collaborative extensions to demand chain and supply chain planning. Planning is the focal point of the relationship and represents a formal agreement between companies. Furthermore, CPFR changes the transaction and, hence, the nature of the relationship between trading partners. If a feature or model fails to achieve this, it is not truly collaborative in nature. Visionaries today see CPFR as the most advanced model available. It goes beyond vendor-managed inventory, efficient replenishment, quick response, continuous replenishment planning, and other models, and it bears none of their overhead.

To help differentiate CPFR and non-collaborative processes that call themselves collaborative, ask yourself two questions. First, does the feature or model change the transaction? Second, do both trading partners jointly derive the information being exchanged? If parties just send and receive data to each other, this is more likely an exchange process and not a collaborative one. If all parties submit data, and some model compares and merges the data, and then synchronizes all the systems, then you have a collaborative model at work.

### **How CPFR Works**

Below are two diagrams that illustrate how the CPFR process works across a value chain. The "CPFR Process" diagrams shows how, after entering into a formal agreement, a buyer and seller exchange data to arrive at one-number forecasts and generate an order.

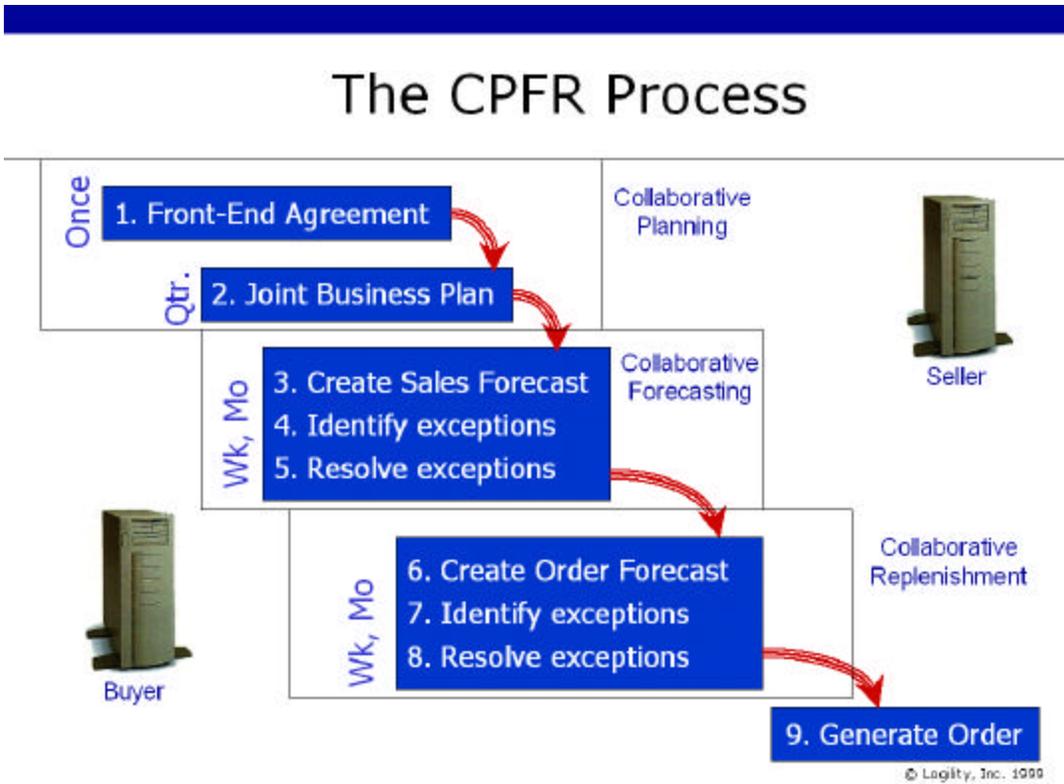


Figure 3: The Nine Steps of CPFR. These nine steps are described in the Guidelines published at the VICS Web site, [www.cufr.org](http://www.cufr.org). CPFR is a trademark of VICS.

The "CPFR Topology" diagram describes a "hosted" model of CPFR, where a series of buyers and sellers use a "service" approach to accessing a CPFR tool. Alternative models also available today include those where a company acquires its own CPFR tool and hosts it. In this case, each company would have a Web server. The point is that CPFR is so flexible that it "exists" at every potential node in a value chain.

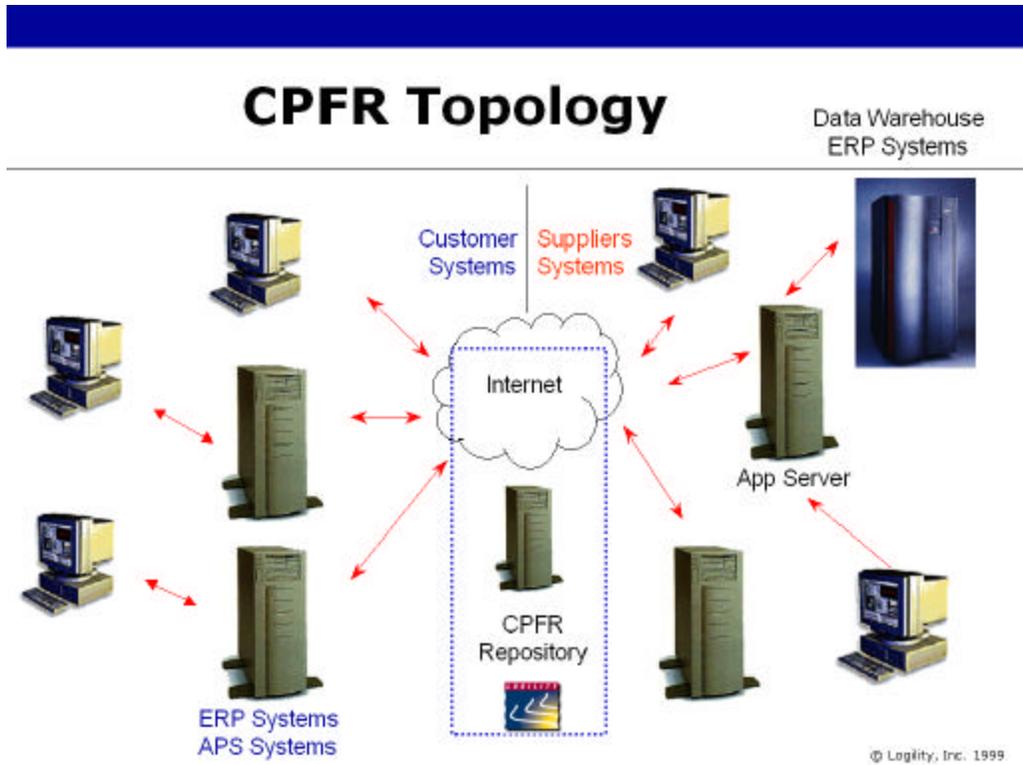
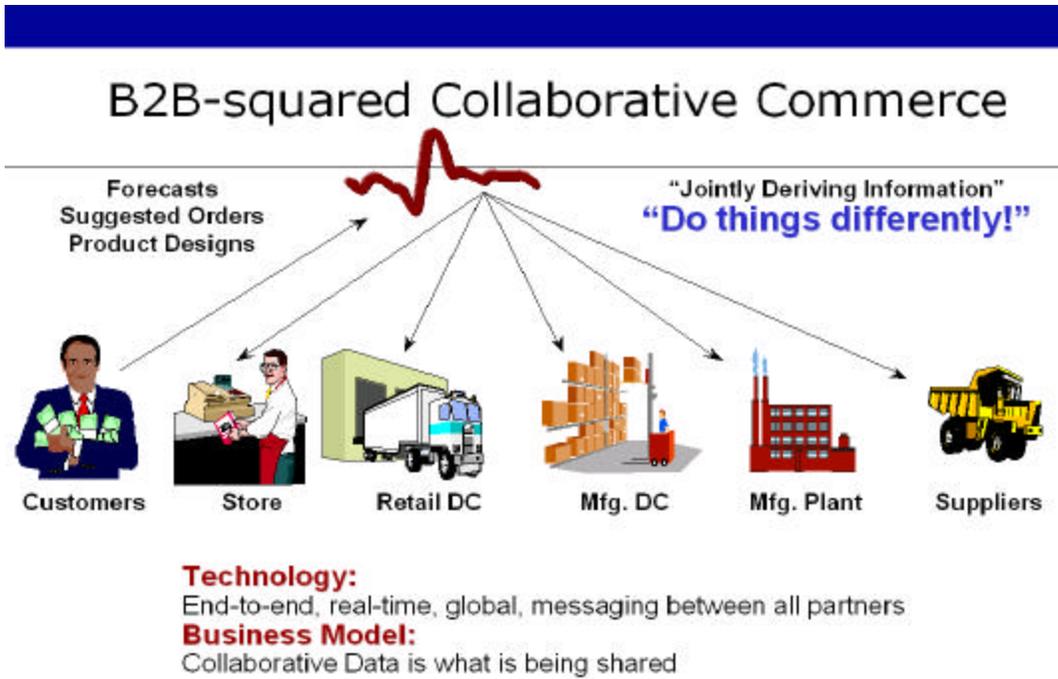


Figure 4: A “hosted” topology for CPFR

What is the ultimate goal of CPFR as currently envisioned? Basically, the concept is that by sharing such collaborative, one-number plans with multiple layers of the value chain at the same time, all the partners of the value chain can synchronize their businesses to the real trends identified in the channel. The following graphic demonstrates this concept, which eliminates the bullwhip effect we recognize in the value chain today.



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Figure 5: Global Collaboration Across the Value Chain

Today, the ultimate in the naming game is **B2B Collaborative Commerce**. The use of the word collaborative here represents all Internet-based processes, including planning, execution, and measurement. However, only true collaboration changes the transaction and hence the nature of the relationship between trading partners. How do you know if a process is true collaboration? Look at the data or information in question and ask, “Is this jointly derived? If the data are jointly derived through a process, it is true collaboration. If the body of data in question has no joint component, then it is of the false collaboration model.

Truly collaborative business processes leveraging the Internet include:

- CPFR
- Collaborative Transportation Management, CTM (another VICS project)
- Product Design
- Promotion Planning
- Load Tendering

“Same as” models touted as new, but really only using the Internet to speed old processes, include:

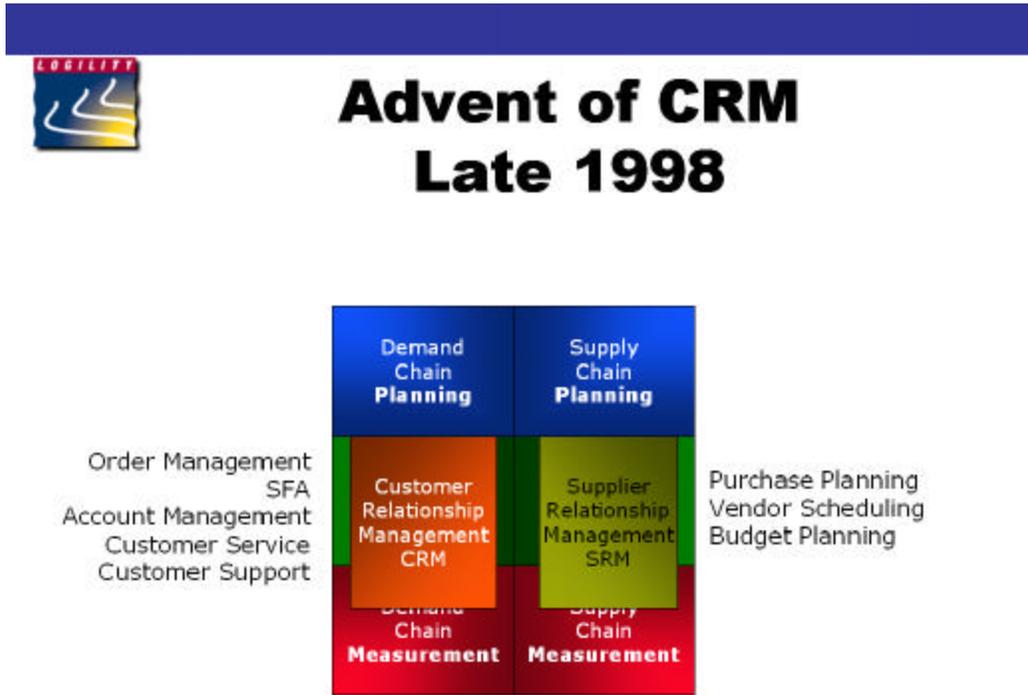
- Order Promising
- Order Entry
- Purchase Placement
- Catalog Fulfillment
- MRP Scheduling
- Inventory Availability

### Who Can Benefit from Collaboration?

If a product is a commodity or demonstrates the characteristics of a commodity, has many suppliers, and price is the only real determinant to purchase, then CPFR is not a suitable model. However, if your company needs to reduce its supplier base, create strategic relationships, and align its markets along vertical value chain boundaries instead of remaining in yesterday's supply chain models, then CPFR is applicable. Furthermore, if the companies in your value chain want to effectively automate the replenishment process between them, then CPFR is applicable.

### Yet Another Acronym—CRM

During the last year or so, a new player has appeared on the collaboration stage and is well on its way to becoming a star. Customer relationship management (CRM) has attracted so much attention because it allows several traditional business processes to be deployed "as is" over the Internet. In the beginning, CRM consisted simply of sales force automation, account management, and customer service.



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Figure 6: The original scope of CRM focused on sales force automation (SFA) and the implicit and natural implications of supplier relationship management

But soon it became clear that CRM was a very big umbrella. Taking a broad view, CRM is made of numerous components, all of which make the customer their focus. Here is a list of the more generalized features:

The basic foundation elements found in CRM are:

- Sales Management
- Field Service
- Customer Self-Service
- Key Account Management
- Customer Service
- Brand Management
- Collaboration

## What is CRM?

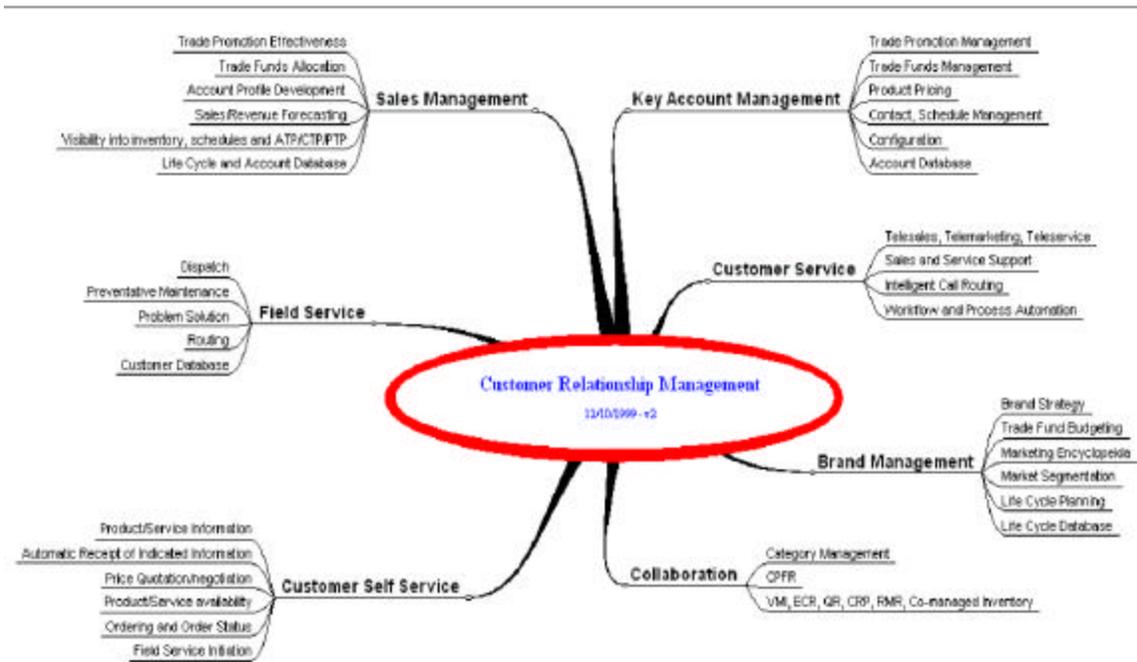


Figure 7: Elements of CRM

### Not Applications, But Processes

If one views CRM not as a set of applications, but rather as one or more processes, we can group its elements into three stages:

- Find a Market
- Serve a Market (product and service)
- Manage a Market

The "find" stage (Stage 1) contains all the elements a company uses and the activities in which it engages when it seeks a market in which to operate. This is the very early, conceptual stage where market research is done and where the determination of the target customer and market is the objective.

The “serve” stage (Stage 2) assumes that the find stage has delivered a real customer to the organization. It represents the operational side of CRM. This middle stage is the “how”—the method by which delivery is executed. Now that a relationship has been established, a product and/or service have to be traded. But even after the transaction is completed, and a product has been delivered, there may be numerous opportunities to serve the customer with extended solutions at the point of satisfaction. For example, a service engineer can solve a customer’s problem and use the opportunity to apprise him or her of other solutions that might be useful.

This second phase is more complex than most CRM vendors allow for. However, they still have a massive lead over ERP vendors and APS in the service side of the “serving the market.” This is an area in which CRM excels and which the other models do not recognize. By the same token, the auto-replenishment of product is an area in which APS and now CPFR excel, but CRM fails. Generally CRM assumes customer service has ascendancy over cost cutting; ERP takes the reverse as its foundation. Hence the assumption that CPFR fits more closely with CRM vendors that understand what CPFR is all about; they “get it” than with the ERP vendors who generally do not have a inkling. However, ERP vendor markets are now falling away and they are generally jumping on anything that is hot in order to keep their businesses afloat.



Figure 8: CRM: Find, serve, and manage a market/customer

The third stage of CRM is “manage.” This is where all the performance measures and key performance indicators focused on customer service and profitability are brought to bear on the relationship to verify that both trading partners agree that success has been achieved. This stage provides for a closed-loop approach so that feedback is provided to further enhance Stage 1 and tune Stage 2.

Stages 1 and 3 (“find” and “manage”) are today the essence of CRM in that software application vendors and consultants assume it to be, and therefore, describe it as a single process whereby a manufacturer (seller) seeks, finds, and acquires a retailer (buyer), and supplies the product. However, little thought has yet gone into what happens when that same customer, or a different one, places a second order for the same product. Or a third order. Or a fourth. And what about the scenario in which all customers order all products much of the time? This is the realm of the second (“serve”) stage of CRM. For CRM to describe and offer a complete, end-to-end solution, this stage needs to be at the core of CRM. Indeed, a competitive CRM solution will make this the focal point of its differentiating product. This is the place for CPFR. ERP remember focuses on the transaction and two years ago, when the ERP market bombed, all the vendors jumped on the nearest lifeline – that being APS.

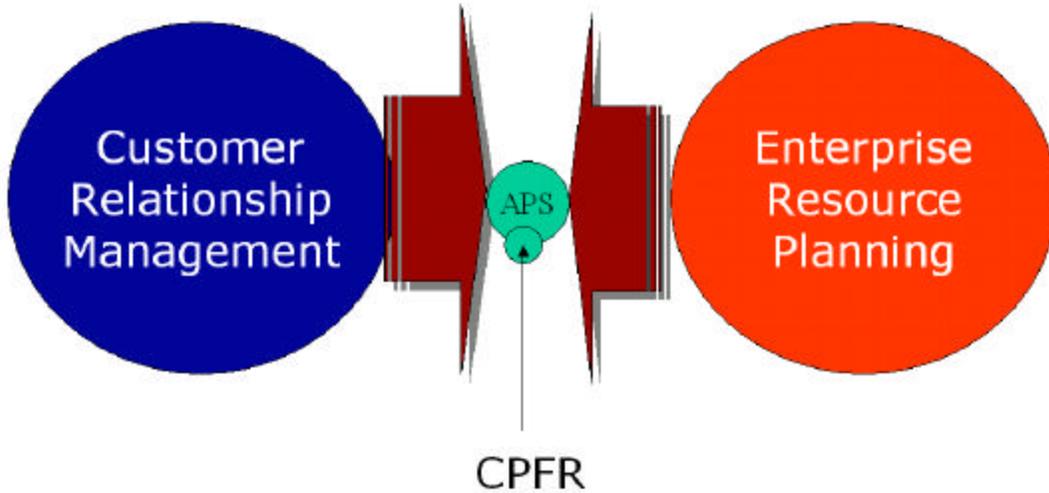
Now we have come full circle. What is actually new and innovative (CPFR) is being swallowed up in another industry-naming initiative and, again, specific vendors are stretching the terminology to suit their own purposes. CPFR ties buyer and seller together so that they jointly focus on the customers’ customer. This is unique. Consequently CPFR can deliver such a higher level of customer service that it is being treated as a service level and customer relationship initiative rather than a traditional supply chain or value chain initiative.

### **Two Types of CRM**

Today, CRM comes in two flavors. ERP suppliers are simply deploying their old screens inside a browser and calling themselves CRM vendors. These tools are virtually useless for collaboration and should be recognized as such by users. At the same time, real CRM vendors are building applications from the ground up that exploit the Internet. These are highly valuable to end-users, as they represent a critical evolution in enterprise and value chain business management tools.

So what of ERP, CRM, and APS? Basically, ERP and CRM are about to fight it out at the APS Corral! And CPFR is likely to be the first victim! Here’s why.

## Clash of the Titans



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Figure 9: Clash of the Titans as ERP and CRM fight it out at the Collaborative Corral

ERP must at least appear to follow the markets toward collaboration functionality, if it is to survive. Interestingly most ERP folk do understand that the Internet is “hot” but they really only think in terms of transactions. On the other hand, CRM must attack ERP to justify its existence. APS, (true) SCM, and true collaboration are about to get squeezed between the two titans. APS and CPFR are the high ground—the real differentiators of the digital economy—as they provide the only true way to change relationships between customers and their suppliers. ERP will be the loser in this struggle and the result will be a redefinition of ERP, as we know it. It will be relegated to be a mere financial control system as a new breed of software extends beyond CRM focused on the supply side of the value chain: Supply Relationship Management, or SRM.

But CRM is likely to swallow CPFR just as ERP is currently swallowing APS. The reason is that CPFR is a customer-facing opportunity for companies, so it is only natural for CRM to acquire it. Further, CPFR complements a key segment of the CRM process—one that is not yet readily differentiated among the CRM vendors. Until now.

### Customer Relationship Management and CPFR

The following graphic describes a typical relationship between a manufacturer and a retailer in pre-Vendor Managed Inventory days. It models a discussion that happens frequently . . . even today.

Basically, the manufacturer has a new product for which it is trying to find a customer and a market (Stage 1 CRM). In acquiring a market and customers, the manufacturer now seeks to promote its products at the expense of its competitor's product. This very predictable move is often tied to or driven by the numbers game in which a company is seeking to grow and meet its financial targets. At the same time, the customer wants to make sure he has sufficient quantities of the right products on hand to meet *his* customers' demands. After a series of negotiations, the buyer and seller arrive at an agreement: The customer will take X quantity of the product. Delivery then may become an issue. Oftentimes, a manufacturer's promotion strategy may not reflect supply capacity, so either the plant cannot actually produce in quantities now sold, or inventory is built up to satisfy projected demand, thus reducing the plant's profits.



Figure 10: Typical trading partner relationship pre APS, VMI, etc.

The straw that breaks the camel's back is that despite all this deal making, the customer may suddenly change his or her mind. This leaves the manufacturer with unsold inventory, a fact that can have massive ramifications on overall value chain performance.

To improve performance, the partners agree to try something new—vendor-managed inventory (VMI). VMI is all about continuous replenishment. It's a process whereby a supplier takes on the responsibility to maintain on an operational basis

the service level and delivery of products at a customer location. Many companies have done this, and it is often part of similar initiatives with different names. For example, Efficient Consumer Response (used in the grocery industry) has a component called Efficient Replenishment that is very similar to VMI.

The scenario for VMI, as shown below, is slightly different from “business as we know it.”



Figure 11: Relationships moved on with VMI. Or did they?

Despite the best will in the world and effort expended, VMI met with only partial success. There certainly are successful implementations in place today, but the vast majority of VMI or VMI-type implementations did not produce expected results. Further, some of the characteristics of VMI now seem more like risks or constraints:

- Supplier-Maintained
- Fixed Relationship/One Size Fits All
- No Exception Management
- Batch Model
- Requires EDI (expensive)

In the bulk of cases, the manufacturer or supplier did all the calculation work necessary for the replenishment process to take place. This meant that the customer

or retailer had to share some data with the supplier that previously had been private. This represents a major change from the way businesses have operated in the past. This is where EDI came in. EDI was an efficient tool to use when companies wanted to share large amounts of static data between themselves—typically overnight, daily, or on a batch schedule. EDI also provided a neat way to standardize on the data format. But it was expensive to implement. Only the largest manufacturers and retailers could afford it.

VMI also did not allow for much flexibility in the way trading partners approached each other. All trading partner structures were to follow the same, rigid model. Sold as a strength (standardization), this concept did not recognize that not all trading partner relationships are the same, nor are any two companies alike. Therefore configurable structures were needed. VMI did not support this.

Lastly, the supplier or manufacturer did most of the work. As the “engine driver,” the supplier was responsible for serving the customer warehouse, distribution center, or store. When exceptions, such as a late delivery, a quality problem in the plant, or a supplier letdown took place in the real world, the manufacturer was left trying to resolve the problem. It’s not that the customer wouldn’t or couldn’t help, but there was no way in which he or she could be notified of the exception in a timely manner. Exception management was non-existent at worst and limited to the supplier-side at best.

The cost issue of EDI and associated support services was also part of the undoing of VMI. It was marginalized to the larger corporations and hence its adoption was stymied. If it had been easier to implement then it would have gained a greater hold. Further, the buyer was not always good at sharing information about their plans in the marketplace. So sellers were always in a kind of catch-up mode. It was the seller “doing all the work” but the buyer did not share plans often enough – nor keep them up to date. The very foundation of VMI was therefore weak. Sadly, this is not the fault of the model. It was the fault of the deployments of the technology. The original Kurt Salmon Associates paper in 1992 was never fully deployed. Now VMI has a bad name.

## **Enter CPFR**

Collaborative Planning, Forecasting, and Replenishment (CPFR) was designed to take these VMI weaknesses and replace them with strengths. In this model, suppliers and customers *collaborate* from the very beginning of the process. The Internet allows them to trade important information on the fly and take note of exceptions as they arise.

CPFR is unique in many ways. Not least of which is that it provides a way to “jointly derive business plans”. All business interact with their trading partners in one of three ways. Exchange is the simple sending and receiving of data. Integration here represents the synchronizing of two enterprise computer systems – such as was deployed for VMI. Collaboration, the third and most evolved form of relationship, is the key that unlocks the secret to “jointly deriving business plans”.



Figure 12: Here you see collaborative planning has now replaced VMI as the heart of Stage 2 CRM.

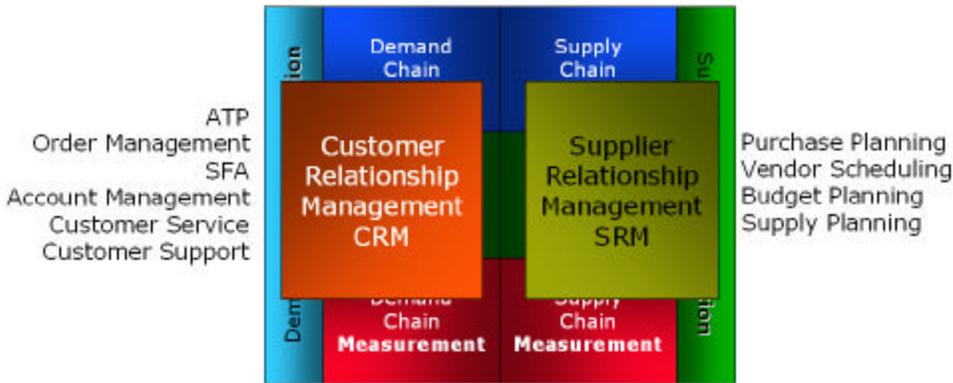
**Summary—The Future of CRM and CPFR**

In past 12 months, I have heard several senior executives at the largest U.S.-based ERP companies argue over the value of a forecast versus a customer order. When evaluating these arguments, it's important to note that these large ERP vendors make their living selling solutions that manage customer orders. The point is this: If one spends enough energy on the up-front business process that results in Stage 2 CRM, particularly a Stage 2 based on the CPFR model, then the actual focus on the customer order/purchase order becomes much less a key business issue and more a simple financial and legal transaction. The implications of this are potentially staggering.

In the case of the early adopters of CPFR, this is exactly what has been observed. With CPFR, sales reps of a manufacturer or distributor no longer have to spend much of their time on order taking, order making, expediting delivery, apologizing for late delivery, and worrying about shipments into the customer warehouse. Their job changes significantly, because these traditional problems are now resolved and reduced. Being very creative, the salespeople may have more time on their hands to work with their customers' sales forces to develop more business for their products further down the value chain. As this occurs more frequently CRM as we know it today will have to evolve to reflect this new process.



# CRM Vying for Vision



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Figure 13: CRM's final position— the elimination of ERP and "ownership" of collaboration. Note that sales force automation is now extended to include various collaboration models and available-to-promise (ATP).

Today CRM has matured into a new software application segment that is subsuming all aspects of a business that touch the customer. The next battle, recognized by AMR Research and GartnerGroup, and a few software professionals, is the land-grab effort underway between CRM, ERP, and APS (read SCM). ERP is the mainstay, the workhorse, and the foundation. ERP is where companies have focused millions of dollars investment over the past 15 years. ERP is the current "flavor" that evolved from MRP, which, back in the 1970s managed our factories. Simply put, many companies today are bloated with big, client/server-based ERP systems with complex order processing and management solutions. These systems are not designed to act as a gateway to collaboration. Rather, they will inhibit at best and prevent at worst true collaboration from taking hold. In this case, why spend millions of dollars on implementing them?

### Where Does CPFR Go From Here?

Discussion about the general concept that CPFR is pioneering raises another interesting question: If CPFR can bring a buyer and a seller together, what next? Basically, it may evolve in one of several ways:

- The structure of CPFR will widen to include additional processes and parties that are affected by the replenishment processes between trading partners. The best-known example of this is Collaborative Transportation Management,

- or CTM. This is a VICS sub-Committee under the Logistics Committee. I call this three-way CPFR because three trading partners (manufacturer, retailer/customer, and logistics provider) are involved in the model;
- Other business processes taking place between the same trading partners will evolve that are truly collaborative in nature, such as product design and promotion planning. The product design efforts will be particularly difficult to standardize and market because the process differs so greatly among industries. CPFR now addresses a set of identified common problems between most trading companies in most industries;
  - Other industry groups will adopt all or sub-sets of CPFR. This can be observed in the High Tech industry (Rosettenet.org) and the Grocery industry (UCCnet.org);
  - CPFR will be adopted more widely across the retail/manufacturing base;
  - CPFR will be deployed "further back" in the value chain between raw material suppliers and manufacturers, possibly with the inclusion of the carriers for a three-way CPFR model;
  - Virtual CPFR: the most exciting possibility is that three *or more* layers of a value chain may get together to collaborate in a virtual value chain. In this sense, an **n-way CPFR** model evolves where real-time data flows between all trading partners. For example, real-time data describing consumer demand is now shared across the whole value chain, and the net response, the forecast, and the replenishment plan is collaborated on and synchronized in real time from consumer to raw material supplier. Such a deployment and evolution would create significant barriers between competing *value* chains as fewer and fewer real "strategic" relations can be forged. Companies that are late coming to this realization will find themselves frozen out of the value chain. This is the end game. This is the goal of end-to-end, real-time integration and collaboration.

## n-Way CPFR extends the original model

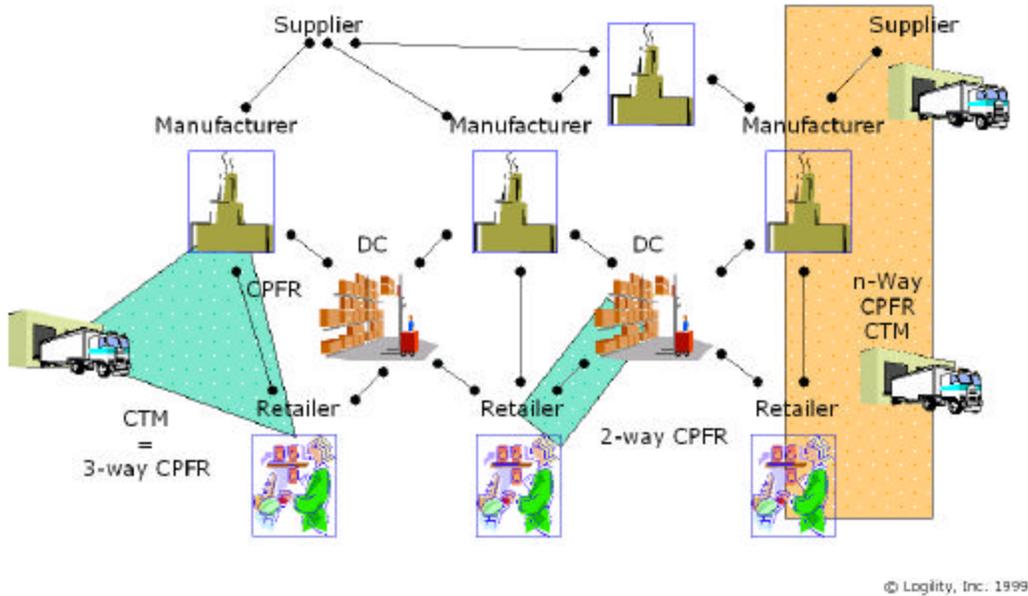


Figure 14: CPFR and its evolution

The figure above illustrates three CPFR models are shown. In the middle is two-way CPFR (as it was originally conceived). On the left is three-way CPFR (called CTM), where the carrier between trading partners is now involved in the process. On the right is n-way CPFR where multiple layers of the value chain are now included. This is probably the most exciting development in CPFR to date. This will be the major focus of the visionaries over the next few years.

One final question arises from all this speculation. Doesn't Customer Relationship Management imply supplier relationship management? If we have a customer relationship process, why should we not have a supplier relationship management process? Otherwise, what would CRM integrate to? Surely the suppliers are just as critical as the customers! Some time in 2000, I expect a vendor to introduce an SRM solution. Perhaps the ERP guys will re-brand their wares as SRM tools. If CRM and SRM live up to their full collaborative potential, we could argue that with robust CRM, SRM, and financial tools, manufacturers won't need ERP at all. The ERP king will be dead. Collaboration will rule. With this move ERP will return whence it came from. It will be relegated back to the accounting systems – from where it originally came.