

How Cisco Enables Electronic Interactions with Sales, Manufacturing, and Service Partners

Business-to-business drives productivity, growth, and an improved customer experience.

Cisco IT Case Study/Business Management/Cisco Business-to-Business: As a rapidly growing company, Cisco® needed ways to automate interactions with its largest sales channel partners, manufacturing partners, parts suppliers, and logistics providers. By developing internal support and standards for business-to-business integration, Cisco and its partners have reduced costs for routine transactions, increased employee productivity, improved the integrity of exchanged data, and strengthened partner relationships. Cisco customers can draw on Cisco IT's real-world experience in this area to help support similar enterprise needs.

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—Kris Cowles, director of Enterprise B2B, Cisco

CHALLENGE

Cisco's growth has resulted in more and more sales orders to process, product units to manufacture and deliver, spare parts to track, service calls to dispatch, and invoices to produce. Handling this volume of information would be quite challenging if Cisco used only manual processes, such as receiving orders that are faxed or entered individually on a Web portal. It is also critical for Cisco to track the large amount of continually changing inventory and manufacturing data to control costs,

track order status, and match product availability with sales forecasts.

In the area of product service, Cisco must comply with contractual commitments for parts availability and repair times, while dispatching thousands of spare parts and technician visits daily. A key challenge is to maintain high levels of customer satisfaction and operational efficiency as the volume of service activity increases.

Historically, these business data and processes varied according to the systems used by Cisco and its partners, and according to local business requirements. None of the manual processes could scale as Cisco received more orders, added more products, and authorized more partners and suppliers. For Cisco's largest partners, the high volumes of transactions and data created substantial costs and operational burdens. For example, a channel partner company that placed orders with Cisco valued at US\$40 million each year could incur administrative costs of US\$500,000 for manually entering those orders.

“Cisco wanted to be a leader among corporations in the drive to conduct business electronically, and we also wanted to make it easy and economical for our partners to conduct business with the company,” says Kris Cowles, director of Enterprise B2B [Business-to-Business] at Cisco. “If our partner community cannot scale to meet Cisco's sales and operations levels, then Cisco cannot achieve its goals for business growth.”

In the late 1990s, the Cisco B2B Operations group began to create automated data links and processes between the Cisco enterprise resource planning (ERP) and related systems and the counterpart systems of channel partners, contract manufacturing and logistics providers, and third-party service companies. The goal of this effort was to implement B2B integration between Cisco and selected partners for:

- Automating and optimizing routine business processes

- Seamlessly exchanging data about orders, availability of parts and finished product units, and invoices
- Integrating back-end systems, such as those for sales orders and inventory tracking
- Collaborating with partners on process improvement

The initial solution for automating these Cisco business commerce processes was a sales portal on the Cisco.com Website. Although this portal served nearly 50 percent of Cisco channel partners, the portal functionality was not adequate for the needs of the largest partners, who often entered a large quantity of very complex orders that covered hundreds of products and options. Just one of these large orders could require two to three hours of data entry by the partner.

To avoid this time-consuming step, many large partners would fax these complex orders to Cisco, which placed the time-consuming burden of manual order entry on Cisco and did not allow the company to grow its business at the targeted pace.

Enabling Online Interactions with Suppliers

Although the Cisco.com Web portal continued to be adequate for many orders, a true B2B integration effort would be necessary to handle the interactions between Cisco and its largest partners. To enable its virtual supply chain, Cisco launched the Manufacturing Connection Online (MCO) initiative in 1999 to create an online interaction with suppliers and contract manufacturers.

MCO instantly communicated customer orders to suppliers and manufacturers, which reduced Cisco's operating costs. MCO also shortened payment cycles for suppliers and eliminated paper-based purchasing, which saved Cisco US\$24 million in material costs and US\$51 million in labor costs annually while achieving a 45 percent reduction in inventory.

Now called the Engineering & Manufacturing Connection Online (EMCO), this platform is a secure, customizable portal and a private network that connects more than 15,000 users and hundreds of companies for Cisco's supply chain management activity.

SOLUTION

As part of the evolution of EMCO, the Cisco B2B Operations group began to consider how processes could be automated throughout the entire sales cycle. The group determined the potential for process automation in the areas of order entry, product manufacturing and delivery logistics, spare parts management, service requests, and invoicing. Over several years, the group has integrated numerous and increasingly complex types of information and processes.

Cowles explains the thinking behind the Cisco approach to B2B integration: "When we started, B2B was very much a tailored and all-or-nothing model because of the high levels of investment required," she says. "In the last few years, the emergence of new technology for enabling B2B integration has given us more options to automate tasks and reduce the complexity of information exchange. We can separately handle the parts of a process that lead to other decisions or activities, which allows us to support B2B for new types of partners and processes."

Today, the Cisco Enterprise B2B team has created automated and standardized processes in the following areas:

- Sales orders: Allows Cisco channel partners to submit product orders automatically over a B2B link between the Cisco sales system and the partner's sales system, leveraging RosettaNet, Extensible Markup Language (XML), and Web Services technologies. Partner systems can also automatically receive pricing, catalog, and

order status data from Cisco, which helps ensure that salespeople have up-to-date information before placing a new order.

- Manufacturing and shipment logistics: Connects with Cisco’s contract manufacturing and logistics providers for fulfilling product orders, managing current inventories of components and finished products across the supply chain, and forecasting manufacturing needs based on projected product sales.
- Spare parts tracking: Tracks parts inventories and sends orders to spare-parts depots.
- Service dispatch: Sends service orders to third-party maintenance providers, which dispatch technicians to customer locations for making on-site repairs. Partners can maintain Cisco business rules and validations in their own systems to eliminate redundant entry of service orders, verify that the correct service is ordered based on product eligibility, and synchronize data about a customer’s installed products to confirm service eligibility.
- Finance: Automates delivery of Cisco sales invoices, which allows partners to avoid rekeying the data into their purchasing and accounts payable systems for invoice reconciliation and approval.

“Cisco was a founding member of the RosettaNet board and remains active on several of its global councils,” says Holly Fredricks, senior director, Manufacturing, Engineering, and Quality IT at Cisco. “While we have adopted the RosettaNet standard and Partner Interface Processes [PIPs], the Cisco Enterprise B2B team continues to follow developments in all standards and B2B practices. This helps Cisco maintain our leadership in providing our trading partners with the most effective B2B solutions possible.”

Cisco’s manufacturing strategy is evolving from a “push” model, which estimates market demand when building products, to a “pull” model, in which a product is built only after a customer order is received. This “just-in-time” manufacturing approach, called the Cisco Lean model, is possible because Cisco has integrated ordering processes with its contract manufacturers using B2B technology. Business-critical information, in the form of purchase order transactions and supply chain data, is exchanged automatically between Cisco and its contract manufacturers, which allows for better inventory management and fewer material shortages. Additional benefits of this model include reduced process duplication and greater predictability of product lead-time, which increases customer satisfaction.

Cisco’s B2B integration encompasses many processes and partners across multiple functional areas (Table 1).

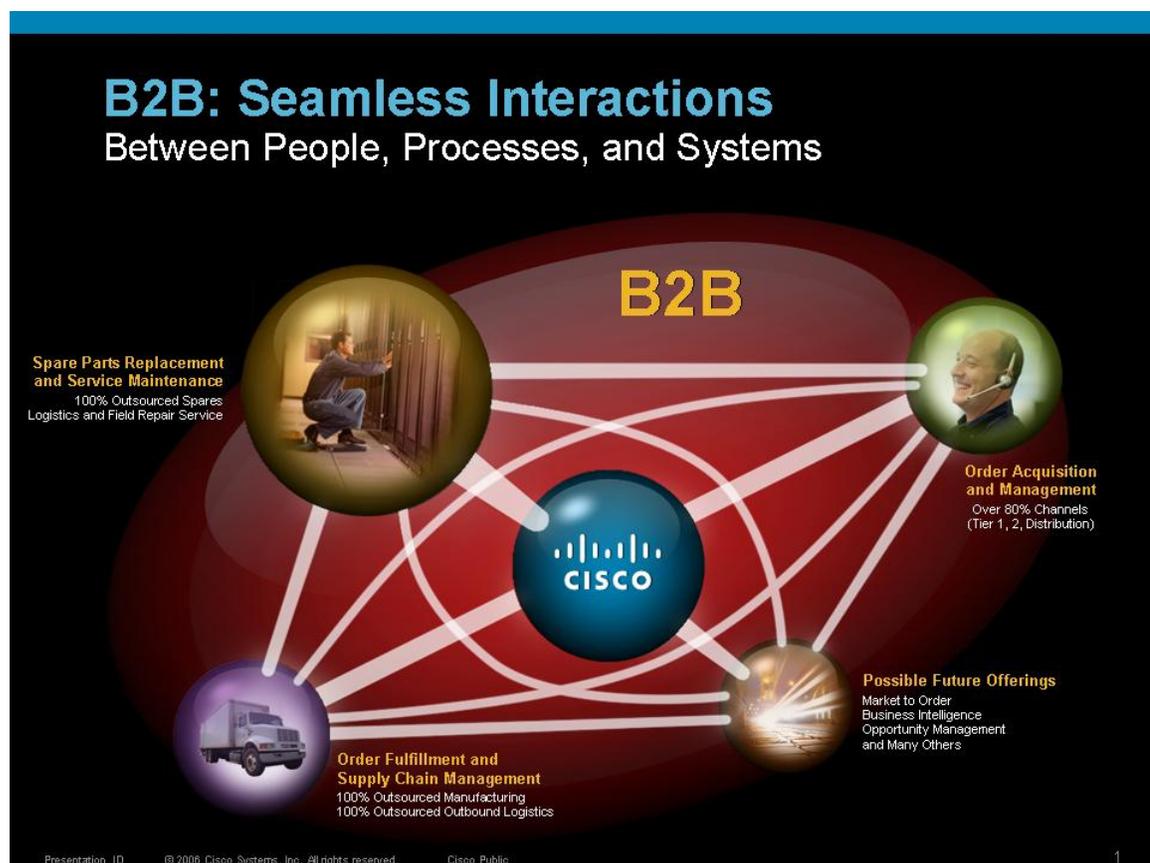
Table 1. Data on the Scope of the Cisco B2B Integration as of Mid-2007

Distributor Sales and Inventory Status	Sales Orders	Manufacturing Supply Chain and Logistics	Spare Parts and Service Calls	Finance
3 Processes 5 Partners	15 Processes 65 Partners	10 Processes 135 Partner Channels	18 Processes 20 Partners	5 Processes 123 Partners
468,000 transactions per quarter	39% of total order volume	341,000 product work orders per quarter	500,000 transactions per quarter	Accounts payable transactions
Distributor inventory status reports in the U.S.	96,000 sales orders per quarter	Supply chain planning and forecasting	Integrated parts replacement and labor logistics	Treasury and banking transactions
		Supplier purchase orders and invoicing	Damaged goods receiving and repair	
			Service request management	

The Cisco Enterprise B2B team and Cisco IT have established a foundation of standards for integration processes, data types, and information exchange methods. These standards are grouped into solution sets that address five major corporate activities: distributor sales and inventory status, sales orders, manufacturing supply chain and logistics, spare parts and service calls, and finance.

The systems and processes at Cisco and its partners communicate with each other over the Internet, using secure gateways that are maintained by third-party providers (Figure 1). The automated processes use industry standards such as RosettaNet, EDI, XML, AS2, Web Services, and others. The Cisco network and Cisco networking products support this communication at the network layer.

Figure 1. An Overview of B2B Links between Cisco and its Suppliers, Resellers, and Other Partners.



Support for Partner Integration

When a new partner or process is added for a B2B link, much of the integration work must be completed by the partner because the necessary standards, processes, and data are already in place at Cisco. Partners are expected to perform much of the integration to control their systems and applications and maintain the integration behind their firewall.

The Cisco Enterprise B2B team provides planning, project management, and applications engineering support for the partner's integration activity. In specialized circumstances, Cisco will work with the partner to create any custom processes that are required for integration.

“The importance of pre-implementation planning and testing of these automated processes cannot be underestimated. It is critical that both business and IT staff within Cisco and the partner’s company are actively engaged as collaborators for this planning and testing,” says Fredricks. “And to help ensure a successful automation, the end-to-end business process that is being automated should be fully tested, not just the data interchange.”

The amount of time required to configure the data connections and automated processes varies according to the integration project defined for each partner. Factors that influence the automation schedule include:

- Partner’s goals for the integration
- Readiness and complexity of the partner’s back-end systems
- Number of partner systems that must be accommodated
- Whether the partner operates in multiple countries. For the largest partners, which operate multiple ERP systems and sell Cisco products in multiple countries, process integration with Cisco can be an ongoing activity that spans many years.

For ongoing support of B2B integrations, Tier 1 support calls from Cisco partners are handled by an outsourced support provider. The Cisco Enterprise B2B team provides Tier 2 and Tier 3 support to the partners involved and relies on the Cisco IT organization for supporting the integrations on Cisco’s internal systems.

RESULTS

Cisco’s B2B integration has been highly successful. In 2006, more than 50 Cisco partners used some form of B2B integration, and approximately 254,000 sales orders (35 percent of the total) were submitted to Cisco via automated processes and links with partner systems. As shown in Table 1, Cisco is now processing 39 percent of total order volume—or 96,000 sales orders per quarter—using B2B automated processes. The automated B2B processes at Cisco can handle transaction volumes of up to 40,000 messages per hour.

Cisco and its partners have also gained significant benefits from B2B integration. Chief among these benefits:

Reduced costs. Transaction costs are lower both for Cisco and the partners because of automated processes for order entry and inventory tracking. Implementing B2B integration helps Cisco achieve a productivity savings of more than 70 percent compared to manual order processing costs. Considering that 39 percent of all Cisco product orders are now handled by B2B processes, this automation leads to significant cost savings and improves profitability.

Increased employee productivity. By minimizing manual processes, Cisco and its partners can increase employee productivity. Cost and time savings multiply when the partner automates several processes with Cisco. One Cisco partner estimated that using an automated process for entering renewals of service contracts reduced costs by 70 percent and increased employee productivity by 88 percent.

Reduced cycle times. Automated processes reduce the time required to accept, process, and ship product orders or initiate service visits. Cisco also gains the scalability to easily add new partners, handle more orders, and support other business processes that are vital to accommodate company growth.

Improved data integrity. Automated information exchange minimizes the errors that can occur in manual entry of sales orders, prices, order status, and other types of routine data. Automated submission of Cisco invoices to a customer’s accounts payable system means faster reconciliation, processing, recognition of any discrepancies, and easier settlement of disputed amounts. This benefit of automated invoices has a multiplier effect because most orders involve multiple shipments, with a separate invoice generated for each shipment.

Strengthened partner relationships. B2B automation has increased partner satisfaction because partners can focus less on administrative tasks and more on revenue-generating activities. Cisco can create long-term, stronger, and more productive relationships with its partners because of the high level of partner commitment involved in B2B integration.

B2B integration has produced other significant results for Cisco and its partners, as indicated by the examples in Table 2.

Table 2. Examples of Results Achieved by Cisco and its Partners from B2B Integration

Order Processing (partners)	50-60% decrease in order-processing time 20% reduction in calls to determine order status
Vendor and Process Management (partners)	Consolidated global purchasing into a single process and system
Cost Savings (partners)	2003-2006 savings reported by one partner: US\$4.2 million savings in employee costs US\$3.8 million savings in processes Savings reported by another partner: US\$1.7 million per year savings with electronic orders (compared to cost of faxed orders)
Productivity (Cisco)	IT scalability: The equivalent of 20 full-time employees built and maintained US\$12 billion per year in processes
Velocity (partners)	Minimum 60% reduction in cycle time Eliminated dual order entry Compressed business processes from 15 to 4 steps

LESSONS LEARNED

Based on its experience with multiple process integration projects, the Cisco Enterprise B2B team has gained valuable insights for other companies that want to automate sales and supply chain processes.

Choose the right environment. “B2B requires significant investment by both Cisco and our partners, so B2B makes the most business sense for large strategic partners,” says Cowles. A B2B solution is ideal for companies that:

- Send e-mail notifications or faxes to many partners
- Deal with scalability and compliance issues for sales, manufacturing, and service activities
- Share electronic files with partners as part of a complex, manual workflow
- Exchange heavy volumes of transactions with partners and outsourcers
- Incur high labor costs that make manual processes very expensive

B2B integration is sometimes best suited to more mature markets (e.g., North America, Europe, and some parts of Asia). Emerging markets are affected by different market conditions and need to consider different business drivers as they are evaluating potential B2B opportunities. For example, partners in emerging markets may not have sophisticated ERP systems, and their low labor costs could mean that automating processes is less important as a cost-saving measure.

Focus on transactions. B2B integration offers the greatest potential benefits for handling transactional activities, such as product and parts orders, service requests, and routine updates of inventory data. “Automated processes

have a bigger payback when a company must track numerous, smaller orders and other information exchanges instead of fewer but larger transactions,” says Cowles.

Review partner’s readiness. Complete an in-depth review with each partner before deciding to integrate processes and data. This review should include the partner’s business strengths, integration plans, and systems environment. A technical review should consider the partner’s experience in process automation and ERP systems. “B2B requires end-to-end process re-engineering to be truly successful. Given the high amount of partner involvement required, we conduct this thorough analysis with every potential B2B partner,” says Cowles.

Plan for long-term relationships. Automating processes and data exchange cannot be viewed as a one-time project. Instead, these efforts involve ongoing integration between Cisco and the partner, with continued enhancements to accommodate changes in technology and business activity. The partner also needs to be able to implement very controlled change management procedures for their systems. In cases where certain process or data issues cannot be resolved quickly, Cisco and the partner may agree to proceed with a partial integration.

Prepare internally and set realistic expectations. Cisco had to prepare internally for process integration with tasks such as completing and validating defined processes and resolving any issues with data integrity. It is critical that the Cisco Enterprise B2B team works very closely with Cisco IT because of the integrated nature of processes and systems, both internally and with Cisco’s external partners. Any change to those capabilities requires a collaborative effort to assess the impact, then plan and execute the changes.

NEXT STEPS

The Cisco Enterprise B2B team will expand the scope and capabilities of B2B integration in the following three key areas:

Improve business integration resiliency. As the Cisco B2B environment scales with business growth, it is important to help ensure that the process continues to deliver the highest levels of performance and availability. For example, the Cisco Enterprise B2B team is developing a “universal front door” solution that will create a single entry point into the Cisco environment for all partner B2B integrations. This solution will use Cisco network technologies to automatically route transactions, data, and processes to one of several third-party gateways, giving partners an additional entry point for communication with Cisco ERP systems. This design will also allow re-routing of transactions and data if an outage occurs in the primary gateway. When combined with industry-standard processes, the new B2B universal front door will enhance Cisco’s business continuity and agility.

Leverage Service Oriented Architecture (SOA) and Web services. A more agile and flexible B2B architecture, enabled by an SOA design and selected Web services, will allow the Enterprise B2B team to integrate new and near-real-time business capabilities between Cisco and its business partners that were not practical with the traditional B2B infrastructure. “The Service B2B Program leverages the principles behind SOA and Web Services to provide our trading partners with the flexibility and alternatives to help them grow their services business,” says Guillermo Diaz, vice president of Customer Commerce, Services and Solutions IT at Cisco. “Our vision is to provide multiple options to our partners so they can easily transact business with Cisco.”

Expand B2B capabilities. The Enterprise B2B team will automate and integrate additional business processes with Cisco business partners in the areas of sales channel interactions, technical service management, global logistics, and virtual manufacturing.

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