

Cisco Systems

A Global Networked Commerce Case Study

Highlights

Company

Cisco Systems

Business Challenge

Improve customer and partner satisfaction on 14,000 parts, products and services while reducing cost and growing over 80% per year

Solution

Create robust E-Commerce site for product information, configuration, sales and shipment tracking.

Hardware/Software

- 1- ES Ultra Enterprise 5000
- 2- ES Ultra Enterprise 3000
- 2- SPARCserver 1000.

Key Business Results

List the key results here:

- Improved customer satisfaction
- Reduced costs
- Dramatically reduced operator assisted phone calls
- Reduced delivery cycle
- Eliminated order entry errors

Introduction

Through its extraordinarily successful Cisco Connection On-Line (CCO) website, networking giant Cisco Systems is proving that web-based commerce can offer huge benefits to customers and business partners while creating dramatic savings in operating costs. Cisco, the world leader in networking for the Internet, has enjoyed stunning growth over the past several years. Fueled by the rapid expansion of the Internet and corporate intranets, revenues in FY '97 have exploded to \$6.4 billion. During the coming year, Cisco expects that over \$4 billion of its revenues will be "routed" through CCO thereby ranking it as the undisputed leader in business to business, dollar volume sales over the Web.

To support this level of activity and serve the needs of its customers and partners more effectively, Cisco has deployed an intelligent product configuration tool, from Calico Technology, that has virtually eliminated order entry errors and kept vital fulfillment processes flowing smoothly. CCO also sports true 24 x 7 operation and maintains six mirror sites around the globe (soon adding two more) - all running on Sun Microsystems Ultra Enterprise servers. "We've found that Sun offers superb price performance and reliability," says Mark Tonnesen, Director of Information Systems at Cisco.

Early History of Networked-Based Customer Support Provides the Basis for Global Networked Commerce

Not surprisingly, CCO is the result of a natural evolution of Cisco's pioneering work in electronic customer support systems which dates back to 1989 - long before the web became a fashionable vehicle for service and marketing. Back in the late '80s Cisco initiated a text-based technical support application and ftp service to enable software downloads (upgrades) for its existing resellers and customers. In 1991, after a series of seminal meetings with the University of Illinois' Mosaic team (Andreeson & Bina), Cisco moved to create its first web interface with the goal of extending its service offering across all platforms. In late 1992, the company rolled out CCO's predecessor, Cisco Information On-line (CIO) which included static html pages that relayed support information and technical release documentation.



By 1993 Cisco had laid the foundation for a robust website that offered expanded content, graphics and software downloads - putting it about 3 years ahead of what many companies are just now getting around to. Cisco continued to deepen the service and support aspects of the site by incorporating case information (for service and support), order status checking (for new orders) and a built-in e-mail facility. "We got off to an early start with Sun servers," noted Tonnesen. "Over the years we have found that Sun architectures offer us the flexibility to scale with the requirements of our organization."

In late 1994 and early 1995 Cisco put up its first external web pages that included marketing and product information and soon expanded its web presence to include the immensely successful Cisco employment opportunities web page. This was one of the first interactive tools to be put up on Cisco's external site and because of the high volume of traffic there was an opportunity to learn more about how people used the web interface and how to improve upon it for the benefit of the support organization.

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Cisco Systems.*

Acquisitions Fuel New Customer Service Paradigm

Commencing in 1992, Cisco's sales skyrocketed to a growth rate of 80-90% per year (which continued to be true through 1996) and from a series of acquisitions beginning in 1994, so did its number of products. This presented a major challenge to the company's order management and technical support infrastructure. Management now recognized a key opportunity to leverage the experience it had gained over the past five years. The convergence of Cisco's own customer support experience, the increasing ubiquity of the web, and the pressing need to keep up with the demands of its customer base were now distilled into two primary business objectives for its website:

- Improve customer satisfaction - By leveraging the experience of previous years, Cisco would find ways to give customers easier access to product information, pricing and updates.
- Create a scalable solution for the technical support organization - By centralizing information with a new technology Cisco would scale its support services to keep pace with the company's rapid growth.

Web-Based Solution Empowers the Customer, Improves Satisfaction, and Reduces Internal Costs

Cisco identified three significant ways in which web-based solutions could improve the flow of information to both customers, partners and prospects. All three centered around enhanced order management that would reduce high call volumes and eliminate errors in the order entry process.

Order status - Checking the status of an order, which previously had been done manually, represented the single highest call volume at Cisco - and the one that generated the most complaints. It was therefore targeted as the first area that could realize the most improvement. The new, on-line order status tool enabled customers and partners to directly check the progress of their order starting with order entry through manufacturing and shipping. Call volumes plummeted while customer satisfaction saw a dramatic improvement.

Pricing information - With over 7,000 SKUs, Cisco needed a way to provide a completely up-to-date and printable copy of its price list. This singular accomplishment carried with it

major advantages which helped in the placing of correct orders, reducing order delays and needless generation of extra paperwork.

Product configuration - Previously, product configuration was a job that required the skill of a knowledgeable sales representative who, by the very nature of their jobs, are often on the road and not easy to reach. The ensuing repetitions of “phone tag” became a vexing problem for Cisco reps and its customers alike. The company needed a way to adapt its vast body of product knowledge and translate it into an intelligent, web-based format that would be bulletproof, easy to use, universally available and persistent. By giving customers and partners the ability to configure their own products, time could be saved and frustration reduced.

In addition to the web there were other avenues by which the company could “touch” its customers. Marketing professionals at Cisco posited that by delivering identical information across the various distribution mechanisms, customers would enjoy more accurate and reliable “communication” in a format they were accustomed to. This idea gave birth to a new initiative which established consistency across all information delivery mechanisms whether on line, in print, or on CD. All points of dissemination made the transition to HTML-based content from a single source.

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CALICO TECHNOLOGY - Self-Help Configuration Tool Takes Order Efficiency to the Next Level

On a weekend late in December 1995 Cisco put a challenge to several vendors of product configuration tools. The challenge was simple: programmatically take the entire Cisco database of products, feed it into a configuration engine with an HTML front-end and mount it on a UNIX-based web server - all within one weekend.

Prospective vendors stammered and hesitated while citing the necessity for weeks of study to establish system requirements. In the end, all but one withdrew from the challenge. But Calico Technology was confident and up to the task. With its small storage footprint and modest memory requirements its Concinity product had already caught the eye of Cisco’s IT aces. After a long weekend, Monday morning saw Calico deliver a completely operational prototype with over 7,000 Cisco products loaded in. This short turnaround was a “proof of suitability” in Cisco’s evaluation. “We have a continuing need to roll out new products quickly. What other proof do you need?” enthused Tonnesen.

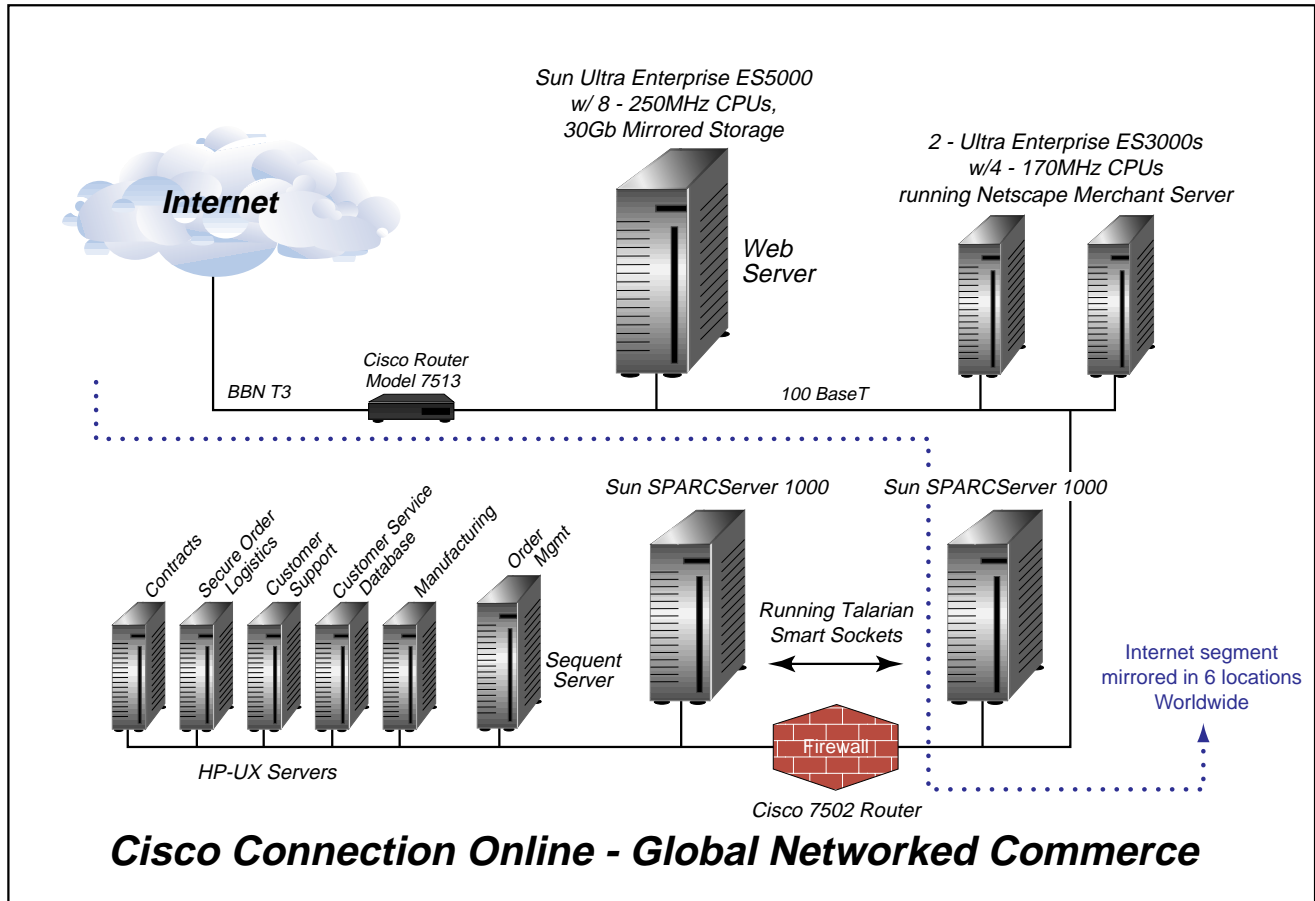
Within two months Cisco implemented a fully operational configuration tool that had refined business rules and graphics capabilities. The Calico solution enabled accurate configuration of complex products and helped to cement the selling activity. Concinity guaranteed accurate product configuration which accelerated the selling process and increased customer satisfaction.

The configurator tool also offers the following benefits:

- Deploys on any web browser
- Constraint-based capability narrows the field of choices and eliminates inaccurate orders. System will not configure any order that is not manufacturable
- Uses guiding behavior to suggest intelligent solutions - superior to bump & steer approach

- Marketing rules are easily layered on configuration logic
- Configuration options can be explored non-procedurally

Deployment Environment



Cisco's runs Apache web software on a Sun Ultra Enterprise ES-5000 server, with 8 - 250 Mhz CPUs and 30 Gb of mirrored storage. The server creates dynamic HTML pages pulled from an Oracle 7 database which is also resident on the ES-5000. For inventory items and ordering Cisco uses Netscape's Merchant Server on a pair of Sun Ultra Enterprise ES-3000s with 4 - 170 Mhz CPUs.

Transactions go secure by traversing a firewall straddled by two SPARCserver 1000s running as Talarian Smart Socket servers. Together they work to encrypt and transfer transactions across the firewall at high speed. Low volume transactions take place behind the firewall on re-deployed HP and Sequent machines. "Because of its open architecture, Sun hardware and software allow us to easily interoperate with our other systems," said Tonnesen.

Results

Today, Cisco Connection On-Line carries over 65% of all the company's customer support activity including information on over 14,000 products. Customer satisfaction sur-

veys have shown a dramatic improvement which is evidenced by a steady 10 - 20% monthly increase in use of the site. CCO now sees over 700,000 log-ins per month and estimates a reduction in telephone traffic of greater than 250,000 call per month.

Cisco receives and processes an average of over 1,500 orders per day (annualized at 350,000). Of these, 10 - 15% would typically have had some type of an error that needed correction. With CCO, the order entry error rate has fallen to zero. This fact is motivating customers, partners and sales reps alike to use the site to enter clean, trouble free orders that sail through the manufacturing process without delays. Cisco estimates that the savings realized from its networked commerce solution may total over \$250 million this year.

Futures

As CCO continues to expand there are some new things on its radar that are in the process of being implemented. First is a needs analysis tool that will enable non-technical personnel to describe their basic network and have a general layout provided for them through an intelligent CCO routine. The needs analysis will then drill down another level to help the user configure each device on the network based on its particular location and operating parameters.

Cisco also plans to deepen the localization process for each of its six mirrored sites across the globe - Amsterdam, Australia, Korea, Singapore, Japan and China (with two more slated for Brazil and Raleigh, NC). At present, localization for 8-10 languages goes three levels deep from the main screens. More detailed information is presented in English. Eventually, Cisco plans to offer complete localized language support for their international clients.

Referring to the Sun computing infrastructure Tonnesen noted, "Sun is now on top. We're going to be looking at Sun as an alternative for all of our servers because of its excellent price performance, and its ability to be re-deployed into almost every part of our network."

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