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Cisco e-Marketing Strategy Paper

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Cisco E-Business Process Functional Requirements Evaluation

To be successful in today's competitive marketplace, most organizations need an edge, and using Internet technology to solve the critical e-business challenges can create that competitive advantage. MSN.com's MoneyCentral website reports that Cisco Systems controls almost two-thirds of the global market for routers and switches that link networks and power the Internet. Cisco also makes network access servers and management software, virtually dominating the computer networking market. Additionally, the company competes with giants such as Nortel and Lucent in the telecommunications sector with products designed to accommodate data, voice, and video traffic—sold primarily to business buyers. The recent market conditions have caused the company to decelerate its typically rapid acquisition pace and while it still dominates the networking sector, Cisco faces increasing competition from relative newcomers such as Juniper Networks, who are finding new ways of attracting buyers.

Whether any company's e-business focus is business-to-consumer (B2C) or business-to-business (B2B), their ultimate success depends not only on having a healthy Internet presence, but also on having a strong Web foundation. The cornerstones of an effective e-business infrastructure are as much a matter of management strategy as of technology. To navigate a strategically agile corporation that can rapidly introduce and execute business initiatives, the management team must clearly define the role of information technology and revamp the technological infrastructure of the enterprise. A standardized and flexible architecture, with well-managed content, and advanced user management systems that help guide business processes are among the key components of Cisco's successful e-strategy, which they first

implemented on a small scale between 1995-96, and today use to successfully affirm their corporate identity and brand image.

Business-to-business e-commerce is the vanguard of the Internet revolution. Press coverage continues to focus on retail e-commerce, in much the same way (and for many of the same reasons) that it focuses on the stock market instead of the bond market. However, the story of how the Internet is transforming standard line-of-business commerce is being written right now predominately in the business-to-business arena. The stunning success of business-to-business e-commerce ensures that retail e-commerce will soon transform almost all of our everyday transactions, and Cisco has positioned itself to be a dominating force in this arena. With increased bandwidth available, and faster speeds every month, Cisco has developed an e-business infrastructure able to support a universe of e-commerce, and is capable of handling both the business-to-business and retail e-commerce loads.

In addition, as more "best businesses" find increased productivity and profitability on the Internet, more of them will insist that their vendors and customers become fully Internet capable. Savings on the Web are immense--even after you factor in the technological investment--and Cisco's e-business strategy provides those technologies and the necessary support that companies will need to capitalize on Internet glory. These days, if the Internet is not central to your business, the belief among the ranking chieftains is that you will soon be out of business. As Andy Grove of Intel put it recently: In five years, every business has to be an Internet business.

E-commerce in the business-to-business market portends a dramatic shift in the price-value relationship. Big business-to-business e-commerce players like Cisco (and Intel, for comparison) are not hammering their vendors on price, as one might expect them to in typical

process. Instead, they're more interested in maintaining a long-term relationship with a valued member of what they call the "Cisco team."

According to the textbook Electronic Commerce—a Managerial Perspective, there are several indispensable business, technology and human factors that help to achieve the desired level of organizational goals (pp. 310-311). These thirteen major "critical success factors" for e-Business are noted below, with examples referencing Cisco Systems, Inc.:

1. Specific products or services traded
    a. *Offer everything from Access Servers, Hubs, Concentrators, Routers, Switches, Telephony, and Voice Applications to Customer Contact.*
2. Top management support
    a. *All data and research indicates that Cisco has commitment, and it is absolute.*
3. Project team reflecting various functional areas
    a. *The cross-functionality of the website and its content indicates obvious teamwork, and input from all departments toward a new backbone of communication.*
4. Technical infrastructure
    a. *Necessary for Cisco's specific products and service delivery, and overall success sustainability of the business; supports e-Business initiatives.*
5. Customer acceptance
    a. *The dominant leader in both business and consumer markets.*
6. User-friendly Web interface
    a. *One of the easiest websites to use and navigate especially compared with other B2B and B2C sites.*
7. Integration with the corporate legacy systems.
    a. *Took time to integrate a major internal transformation not just in terms of customers, commerce and support, but in operations and communication.*
8. Security and control of the e-commerce system
    a. *Website use (beyond general browsing) requires registration and login; maintain relationships with partners and resellers.*
9. Competition and market situation
    a. *All Cisco products and service information is available online; use data mining, cookies, and communication avenues to adapt to market needs and trends.*

And the final four critical factors of e-Business success are:

10. Pilot project and corporate knowledge

11. Promotion and internal communication

12. Cost of the e-commerce project

13. Level of trust between buyers and sellers

Cisco's Internet website is more than just an information center, it is a virtual partnership with customers and users, and serves as an electronic intermediary for the e-business vehicle. In addition to offering Online Ordering Information, Corporate News & Information, Event and Training Seminar Information, and more, their website is designed to handle technical and customer support inquires through their Internet-based Service & Support Center. While many companies have technology infrastructures and business processes that have developed piecemeal--often resulting in a patchwork of systems that don't work together as well as they should-- Michael Munro, Cisco's solution manager says that "It doesn't matter whether you're buying a router, troubleshooting a router, renewing your service contract, or looking up bugs in the software, [at Cisco] it's a single registration to log in."

For some companies it may make sense to build a new foundation for their e-business initiatives, for Cisco the first step was to implement strategic (tactical) enterprise standards and enforce them across the entire business; this allows the e-business architecture to be built around the entire company's long-term goals with a great degree of flexibility. One B2B and B2C application Cisco has capitalized on is to integrate their Web site with key enterprise applications—both their own and those of their business partners. This enables rapid end-to-end processes. For example, when a customer checks the Cisco Web site to find out about a product's availability, a message is automatically sent to the appropriate back-end systems, so that the current, correct information can be made available to the customer.

The main Cisco homepage at www.Cisco.com as a static view-only Web page, is designed to "empower the Internet generation" to access a wide variety of services and support, and almost all the information a user would need concerning Cisco as a supplier, or a vendor, or a technical support line, or as a stock investment! The website is set up as follows:

- Solutions for your Network
- Ordering Info
- Training, Events, and Seminars
- Corporate News and Information
- Products and Technologies
- Service and Support
- Partners and Resellers

This is the key to Internet commerce of all kinds: any company's customers aren't just customers anymore. The vendors aren't vendors anymore. They're either teammates or someone

else's teammates. If you're not on their team, they'll find someone who is. It doesn't matter if it's

B2B e-commerce or retail e-commerce.

Cisco has properly positioned itself to respond to market changes and--as shown above--

is able to implement the latest tools and techniques to integrate their e-Business strategy with

their standard line-of-business applications. The hardware and software solutions they employ

are designed to provide cost-effective computing power, and can handle both horizontal and

vertical growth without having to immediately change the applications or learn new

technologies. Their infrastructure utilizes standard networking protocols, Web serving, and Web

browsers. In addition, with a felicitously designed e-presence, Cisco is able to integrate

comprehensive tools that allow for a quick response to new demands from their customers, and

to new ideas as they emerge in the marketplace.

Cisco e-Marketing Strategy

Promotion is an integral part of any business. How does Cisco promote their e-

Commerce? They use a wide variety of promotional methods including but not limited to:

provider partnerships, print media, television, and targeted Email and mailings.

(Cisco Systems, Inc., 2001) The partnership relationship can be seen easily thru their

"Cisco Powered Network" program. This program is a carefully planned

relationship requiring potential providers of Cisco equipment and services to apply. The

application process allows potential customers on line to search 19 different services and almost

all countries and regions; additionally they can search for a specific provider.

Cisco uses varied print media. Their choices include targeting trade publications,

business, financial publications, and several national newspapers & magazines. For each type of

publication, the message is tailored for their target. In financial publications, they stress bottom line, while in trade publications the advanced nature of their products along with the reasoning that they are best.

Television and radio are the least used due to the overly broad audience that they reach. Cisco has advertised during major sporting events, just to enhance their general awareness to who and what they are.

The product line of Cisco Systems is vast but all related to connectivity. Cisco provides the broadest line of solutions for transporting data, voice, and video within buildings, across campuses, or around the world. There are 20 product categories, with several hundred hardware and software solutions. Additional products include training and product certification programs. An excellent equipment guide at Cisco - Quick Reference Guide (Cisco Systems, Inc., 2001) gives a complete overview and full product information on all hardware and software solutions.

Product price is determined on a competitive and quantity based scheme. Economies of scale are always a factor in any equipment purchase. From the web page purchases can be made several ways each with a different pricing scheme, individual or corporate direct purchase from Cisco with proper credit approval, individual or corporate direct purchase authorized reseller, or authorized reseller purchase. Additionally Cisco has intergraded into their website links to finance purchases. With Cisco being a leader and at the forefront of interconnectivity technology there are few acceptable substitutes on their complex switching equipment therefore Cisco or one of their authorized resellers set the pricing of goods and services.

Distribution of Cisco hardware and software ordered thru Cisco allows one to monitor the status of your order(s) online in real time. Hardware is distributed direct from Cisco and thru authorized resellers. Software is distributed via download or thru hard copy distribution.

Manuals and technical reference are available online for no cost in PDF format, or can be
ordered direct from Cisco for a fee.

Market segmentation for Cisco covers:

- Internet Business Solutions

(Cisco Systems Inc., 2001)"The Internet Business Solutions Group mission is to
accelerate customer success in the Internet economy and develop long-term customer
partnerships. To that end, the team draws upon Cisco's own best practices, which enabled the
company to see financial benefits of nearly $1.4 billion in FY 2000 alone. Having realized these
returns because of Internet Business Solutions, IBSG is committed to helping customers
transform their own businesses into e-businesses.

Aligning with the mission, IBSG has built an organization comprised of top Internet
experts across a number of industries and solutions. These E-Pioneers meet regularly with senior
executives in Global 250 corporations to help them deploy winning Internet Business strategies.
The results are dramatic:

- Greater revenue generation
- Reduced costs
- Increased productivity
- Empowered employees
- Transformed company culture "

- Large Corporations

Product and service development targeted for large corporations of 1,000+ employees.

Services include:

- o Researching and planning your network
- o Design and build your network
- o Specific support programs for large Corporations

- Internet Communications Software

(Cisco Systems, Inc., 2001)"In the Internet Economy, it is critical that businesses improve the efficiency of all of their communications and maximize the value of each customer contact - whether it is by Web, phone, email or fax.

To that end, Cisco is delivering new-generation Customer Contact and Unified Communications solutions - enabling enterprises, service providers, and application vendors to realize the full potential of converged voice and data networks.

Cisco's solutions are based on a horizontally integrated open model for networking that will help customers leverage their existing communications for competitive gain.

This horizontally integrated open model delivers a number of advantages:

- Allows for the integration of innovative multi-vendor solutions, thus accelerating the pace of service improvement

- Offers flexible implementation options and scalability
- Empowers organizations to build loyalty, increase revenues, and boost profits

- Small/Medium Businesses

Offers the smaller company 3 excellent "wizards" for:

    o Business solutions
    o Technology solutions
    o Product selection
- Service Providers

(Cisco Systems, Inc., 2001) "Cisco's mission is to be the Service Provider's preferred partner & end-to-end network architect enabling the acceleration of the service-enabled Internet.

Cisco's service provider solutions increase Internet reliability and availability, reducing CAPEx, and OPEx expenditures with solutions such as next generation Internet Routing, Optical, Content Networking and many, many others."
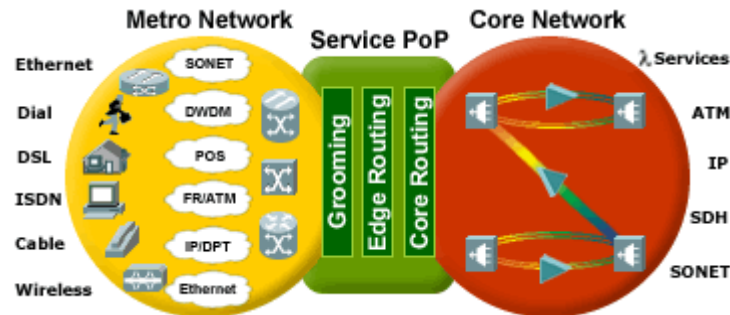
- Home Networking

(Cisco Systems, Inc., 2001) "Cisco believes that the Internet is the next essential home utility, like gas, water, and electricity. For consumers, this Internet utility means a broadband, high-speed, always-on Internet connection, equipping the home with new levels of comfort, convenience, and security through Internet-enabled devices and services."

- Government

(Cisco Systems, Inc., 2001) "Governments across the globe face a unique challenge-how to improve government service delivery and ensure economic development-in a rapidly changing global environment. Cisco offers proven strategies for surviving and thriving in this environment, from networking hardware that sets the industry standard to services and support that make it easy to implement the applications your agency needs."

- Education

(Cisco Systems, Inc., 2001) Cisco Education Ecosystem consists of educational institutions, corporations, government agencies, and non-profit organizations partnering together

to build value through the innovative application of networked information technology to education.

Research into e-Commerce and all aspects of communications is an ongoing process at Cisco. Cisco makes extensive use of data mining and cookie technologies to provide a competitive edge. Communication with customers no matter how small is an important factor for Cisco. In the current economy, business takes a very hard look at revenues and expenses. Cisco is very aware of the importance of innovation and thorough research. With continued research into how the Internet and networks are affecting society and business Cisco can maintain a supreme leadership role in the business world today. (Cisco Systems, Inc., 2001) At Internet Innovations site at Cisco's website there are many white papers dealing with innovation and why companies need to innovate.

Cisco Internal and External Technology Review

Cisco Systems, Inc. is the worldwide leader in networking for the Internet. Cisco's Internet Protocol-based (IP) networking solutions are the foundation of the Internet and most corporate, education, and government networks around the world. Cisco provides the broadest line of solutions for transporting data, voice, and video within buildings, across campuses, or around the world.

Today, the Internet and computer networking are an essential part of business, learning and personal communications, and entertainment. Most messages or transactions passing over the Internet are carried quickly and securely through Cisco equipment. Cisco solutions ensure that networks both public and private operate with maximum performance, security, and flexibility. In addition, Cisco solutions are the basis for most large, complex networks used by

corporations, public institutions, telecommunication companies, and are found in a growing number of medium-sized commercial enterprises.

Cisco was founded in 1984 by a group of computer scientists from Stanford University. Since the company's inception, Cisco engineers have been prominent in advancing the development of IP- the basic language to communicate over the Internet and in private networks. The company's tradition of innovation continues today with Cisco creating leading products and key technologies that will make the Internet more useful and dynamic in the years ahead. These technologies include advanced routing and switching, voice and video over IP, optical networking, wireless, storage networking, security, broadband, and content networking.

In addition to technology and product leadership, Cisco is recognized as an innovator in how business is conducted. The company has been a pioneer in using the Internet to provide customer support, sell products, offer training, and manage finances. Drawing upon the company's own Internet best practices and core-value of customer focus, Cisco has established the Internet Business Solutions Group (IBSG) dedicated to helping top business leaders transform their own businesses into e-businesses. (www.cisco.com)

Cisco's e-commerce site is easy to navigate utilizing hyperlinks to areas of interest. Also available is a key word search engine to link customers to interested web pages. If customers want information corporate news, research, new product lines, resellers and distributors, all that is necessary is to point and click. Cisco's Intranet and Extranet affords employees and suppliers access to human resource information and supply chain management.

Cisco sells its products through the Internet and in approximately 115 countries through a direct sales force as well as distributors, value-added resellers and system integrators. Cisco has major operations in San Jose, CA; Research Triangle Park, NC; Stockley Park, UK; and

Chelmsford, MA as well more than 430 sales and support offices in 60 countries. Cisco uses a direct marketing strategy manufacturing and distributing its own product line. However, as not to categorize Cisco as a strictly direct marketing company, it also uses several business models to achieve success. Cisco has set the standard for business transformation by using Internet technology to integrate its core processes and culture. The results have been phenomenal:

- 90 percent of orders taken online
- Monthly online sales exceed $1 billion
- $1.4 billion in financial benefits have been realized
- 82 percent of support calls are now resolved over the Internet
- Customer satisfaction has increased significantly.

Cisco's experience, expertise, networking architecture and ecosystem of application, and consulting partners has helped accelerate customer success and productivity in the Internet economy.

In today's increasingly competitive marketplace, companies must offer value-added services that will differentiate them from the competition and provide the support their customers require. However, building such a support infrastructure requires a significant investment, and maintaining the bottom line can be a challenge. Consequently, many companies are looking at strategic partnerships to help them serve their customers.

The CBR program offers several features, all of which are delivered through Cisco Connection Online, Cisco's Web-based vehicle for enabling electronic business transactions. The CBR program gives you the flexibility to choose resale options that will best meet the needs of your customers and your business. For example, you can manage the service relationship by monitoring the delivery of Cisco services, or you can simply pass the contract to Cisco and have no involvement in that delivery. Either way, your customers receive the support they require. Moreover, because all CBR resale options enable you to better understand the service landscape

within your installed base, this program helps you become a "one-stop shop" for your customers. Therefore, it increases your account control, your customer satisfaction, and your sales. All service products available through the CBR program provide access to Cisco's four pillars of support. These four core support services deliver immediate, real-time access to expert information and assistance through Cisco's electronic delivery system or through its worldwide network of technical experts.

Cisco Connection Online (CCO)---CCO is Cisco's industry-leading, interactive support and information network. Available 24 hours a day, 7 days a week, it provides convenient, immediate access to a wealth of up-to-date information, Internet Commerce applications, and online support tools. Its self-service capabilities enable you to speed problem resolution and streamline business processes for increased productivity. Therefore, CCO reduces administrative overhead and significantly lowers the cost of doing business, improving your overall margins. Furthermore, with 78 percent of inquiries being resolved on line and ongoing surveys showing a CCO satisfaction rating of 4.2 out of 5, you and your customers are guaranteed a high level of support and satisfaction.

Cisco IOS® software updates---The industry-standard Cisco IOS software is a platform that delivers network services and enables networked applications. Cisco offers maintenance fixes and software updates for all major releases of Cisco IOS software. Available electronically through CCO 24 hours a day, 7 days a week, these updates deliver timely features and enhancements in response to the constant changes you and your customers experience in your networking environments. In this way, Cisco IOS software updates allow your Cisco device to scale upward as your network becomes more complex. Therefore, they provide a low-cost way

to enhance and extend the life of systems, resulting in a highly stable network for you and your customers.

Technical Assistance Center (TAC)---Cisco's TAC can be contacted via telephone or e-mail for person-to-person hardware and software support. Available 24 hours a day, 7 days a week, the TAC is staffed by engineers who have the expertise---with Cisco's product line and with a wide range of networking technologies---required to provide fast, thorough assistance. In fact, over one third of Cisco's TAC engineers have achieved the industry's highest level of accreditation to become Cisco Certified Internetwork Experts (CCIEs). Therefore, you receive all the benefits of working with the best engineers in the industry without the associated costs. The TAC laboratories, located around the world, enable these experts to duplicate most customer environments for efficient resolution to even the most complex networking problems.

Advance Replacement of hardware parts---Cisco offers a wide range of flexible support options that guarantee hardware replacement units when you need them, from the next business day to within 4 hours, 24 hours a day, 7 days a week. In case of hardware failure, the Advance Replacement of parts minimizes product downtime and enables you to recover quickly. Because so few companies deliver comparable services, providing this program to your customers will heighten your competitive advantage and lead to increased sales.

Partnering with Cisco for Success.

 When it comes to offering service and support, Cisco understands that each of its partners has different needs and goals. Some may lack the resources for a large-scale service infrastructure but would like to develop and maintain service relationships with their customers. Others might prefer to focus their resources on areas outside of service and would rather have another company deliver support to their customers. Whatever your objectives may be, Cisco has a

solution. Cisco's goal is to partner with you and help you take full advantage of its service and support solutions. Based on your comments, Cisco has developed a variety of programs that strengthen its channel partnership with you while increasing your customers' satisfaction with your business. One of Cisco's solutions is Cisco Brand Resale (CBR), a program that enables you to offer all the support your customers require while maintaining as much---or as little---of the service relationship as you would like.

Cisco Brand Resale Program

The CBR program lets you leverage Cisco's extensive networking experience and comprehensive service capabilities to support your customers. Designed specifically for Cisco Partners, CBR combines industry-leading service products with automated contract sales and administration. It allows you to offer the services that ensure satisfaction with Cisco products without investing in a complex support infrastructure.

Choosing CBR means, you rely on reselling Cisco's service products to meet your customers' needs. As the expert on their business requirements, you decide your level of support involvement and Cisco delivers its services to your customers as required. In this way, Cisco's networking team becomes a virtual extension of your own staff, helping you improve margins, increase efficiency, and save money that would have otherwise been spent on developing and implementing your own such support tools.

CBR Program Elements

Through the CBR program, you have immediate, electronic access to the data and systems required to manage your Cisco service contract business from your desktop. Cisco offers a variety of tools that enable you to do everything from creating quotes and ordering service products to managing your customers' service portfolios and renewing their contracts. By

working on line in this way, you streamline internal processes and reduce the sales cycle time, resulting in increased service revenue, improved customer satisfaction, and lowered costs.

Using various business models (direct marketing, full cyber marking) has allowed Cisco to take full advantage of its technological and marketing expertise. As a leader in e-commerce, Cisco has made the Internet an essential distribution channel. Many companies will try to emulate Cisco's success in its e-commerce endeavors.

Transactional Relationships in Global e-Commerce

Cisco Systems, owner of the world's largest e-commerce site, has also built one of the worlds most automated and Net-centric internal infrastructures to maximize relationships with customers, partners, and suppliers. Robust, Cisco-equipped topologies carry growing LAN, WAN, and extranet multimedia traffic, fueling the multibillion-dollar business that Cisco has become. The Cisco Connection Online (CCO) Web site serves as the conduit for US$23 million per day in orders. That volume is cause for stockholder excitement, but spiraling growth and bandwidth demands are also cause for forward thinking and careful planning among those responsible for the design and management of Cisco's network infrastructure. (www.cisco.com)

A January 1999 study by Forrester Research Inc. (www.forrester.com) predicts that as Internet sales grow to 9 percent of all sales worldwide -- moving to US$3.2 trillion of global gross sales volume by 2003 -- attendant Internet traffic volumes will make inherent weaknesses in existing network and computing infrastructures very obvious. Unless the infrastructure is not significantly upgraded, packets will drop, servers will crash, and poor response times will drive customers to competitors. Cisco's WAN specialists are faced with the challenge of maintaining consistent international inbound performance, says Alan Etterman, Director of Enterprise Network Services at Cisco. "The Internet doesn't need to get significantly better within the USA,

but it does need to improve from South America to San Jose. Cisco customers are making live

transactions, and any great variability -- such as a 200-millisecond response time degrading to

700 milliseconds -- will cause Cisco to lose customers in the future." As packets travel

throughout the world across the Internet, they encounter various geographic and political peering

relationships that often affect speed and quality of transmission to the end user. By negotiating

service contracts with the major network backbones used by the largest companies in each region

of the world, Cisco can help to ensure that customers in these companies receive the highest-

quality online access possible to CCO. Now concluding negotiations for annually renewable

contracts with three or four such major international service providers, Cisco will rely on these

vendors to provide network redundancy for each other. Such redundancy will allow the network

to provide load balancing and failover to avoid server bottlenecks and to recover from server

failures. By using the Border Gateway Protocol (BGP), Cisco can flexibly configure and

manage the flow of outbound packets to each provider. Multiple circuits to each service

provider's point of presence (POP), in addition to each provider's SONET switching and optical

ring features, can all help maintain unrestricted service of outbound packets coming back to the

service provider from CCO. "How does a customer in Bangladesh efficiently get access to the

Cisco Web site to buy a router?" asks Cisco Senior Network Architect Craig Huegen. "On the

Internet, if you're dealing with four or five network service providers, there's more of a chance of

getting the best service for each customer, wherever the customer is based." Cisco's WAN must

be flexible enough to provide multiple link-layer protocols and services to move IP packets

around the world in the most efficient way. These protocols and services include packet over

SONET, ATM, Frame Relay, Ethernet, Digital Subscriber Line (DSL), and IP over Point-to-

Point Protocol (PPP) used with leased lines. Various constraints and cost efficiencies determine which of these is used in a particular area.
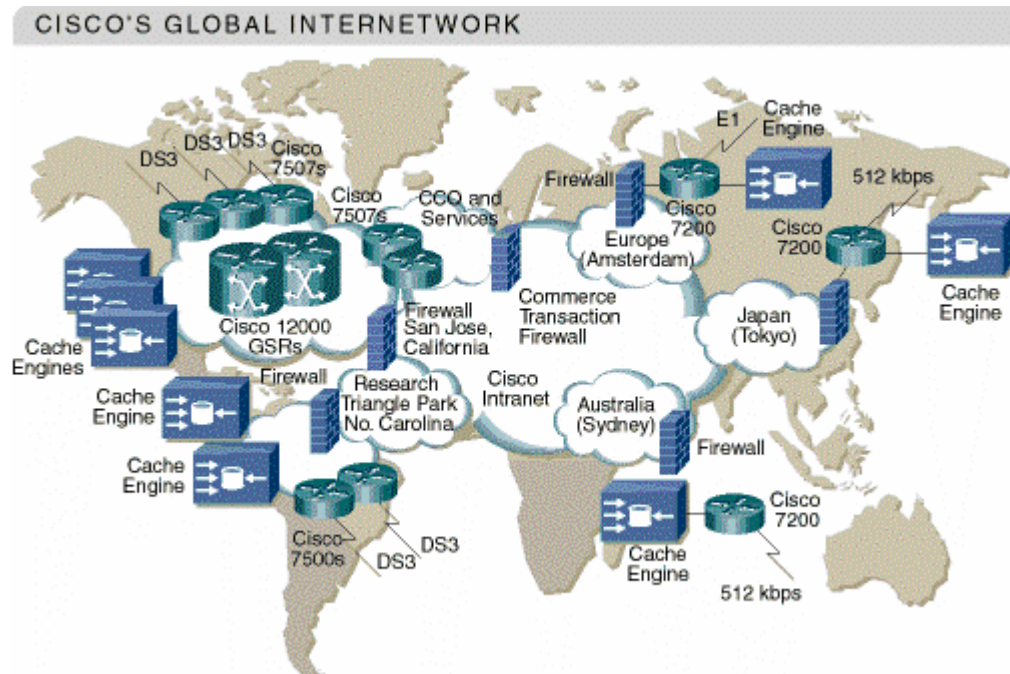
Cisco has negotiated service contracts with several international service providers to give customers the fastest and highest-quality connections to its e-commerce Web site, CCO. Cisco Cache Engines bring static content closer to users via Cisco's major service providers to help reduce redundant transworld traffic. "Cisco's preference is to use the most effective access method based on business requirements and impact," says Brad Bell, Cisco's Manager of Strategic Network Services. "In the USA, our field sales team uses Frame Relay today, but will evolve depending on business drivers. In the European, African, and Middle Eastern theaters, private lines are predominant. We use ATM on our global applications backbone to help support latency-sensitive applications, large traffic flows, voice, video, and e-commerce. For our uses, ATM is the most cost-effective option for our transatlantic traffic." Bell notes that as opposed to

T1 or E1 lines, ATM allows his team to ramp up incrementally as needed, at competitive price points.

With ten locations worldwide, the global applications backbone facilitates connections to hub locations at offices and other Cisco facilities with Cisco 12000 Gigabit Switch Routers (GSRs) and Cisco 7500 series routers. The GSRs have direct connections to routers connected to the CCO Web site, resulting in an average 99.992 percent network availability experienced by users. "It takes the same amount of bandwidth to buy a book from Amazon.com as it does to buy one of our products," says Etterman. "But consider the cost differential on a book versus a router. We have a huge financial incentive to make sure that our customers have superior Internet access to Cisco."

Besides the low cost per transaction, Cisco's e-commerce infrastructure and ERP applications have led to a huge reduction in the cost of doing business overall. Even in the past five years of 400 percent annual growth, Cisco executives estimate that by moving to a self-service model for customers, suppliers, partners, and employees, the company has saved more than US$560 million per year. Similarly, most of Cisco's internal applications are Web-enabled. Besides online financial, sales, marketing, product development, and manufacturing systems, the Cisco Employee Connection Web site supports instant access to benefits information, company events, expense-tracking reports, and other applications such as automated travel planning. Cisco employees and partners can tailor a special Cisco version of My Yahoo! -- The user-configurable Web page fed by "push" technology and information agents. Cisco employees and partners use My Yahoo! to track industry news.

THE COST OF INTERNET COMMERCE DOWNTIME

Web Site	Daily Internet Commerce Revenue as of 1/15/99 (US$)	Lost Revenue per Hour of Downtime as of 1/15/99* (US$)
www.techdata.com	$1,000,000	$18,280
www.amazon.com	$2,700,000	$22,500
www.dell.com	$10,000,000	$91,320
www.cisco.com	$20,000,000	$182,640
www.intel.com (Partner Extranet Site Only)	$33,000,000	$274,980

*Lost revenue assumes a US$1-million-per-day site where 20 percent of transactions are lost during downtime. Costs due to brand erosion and decreased customer satisfaction are not included in these estimates.
Source: Forrester Research

In the next two years, the company will implement the Cisco All-Packet Network, or CAPNET. The company's intranet, extranet, and access network will be replaced with a multiservice-capable internetwork with additional IP virtual private networks (VPNs). "Conceptually it will look like an extranet and intranet over the Internet," says Huegen. "Internet connectivity for all remote locations will be based entirely on IP, via a VPN from a service provider with a Layer 3 network." Transition steps to CAPNET will include replacement of the global applications backbone in the USA with clear-channel DS3 and point-to-point IP. The move from ATM to IP is a major stepping-stone to CAPNET. Cisco will build and showcase Layer 2 capabilities that will enable applications to run over the network with improved quality, using QoS and policy-based management in the Cisco IOS® software to replace old-world methods of QoS, such as separate permanent virtual circuits (PVCs). "Our first step has been to build the network using the available carrier technology that meets our business requirements. We've designed it to provide IP services and QoS using CiscoAssure QoS Policy Manager, and we're integrating mission-critical services such as call-center and e-commerce traffic via IP," says Bell. "The next step is to move to carrier-provided IP VPN services, because we want to move away from being our own service provider."

"We have always used our corporate network as a living lab and we're applying many lessons learned to implement best-of-breed e-commerce topologies," says Etterman. "E-commerce standards are not static; they're changing all the time and upping customer expectations. Besides selling its products and technologies, Cisco's competitiveness hinges on our ability to deploy a global, fully redundant, scalable, multiservice WAN, through which our customers get guaranteed QoS."

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