



## BUILDING BUSINESS TRANSPARENCY AND AGILITY

Despite enormous IT investments, many organizations find that vital networked resources and information assets remain largely unlinked. In fact, it is not uncommon for organizations to have hundreds of “siloe” applications and databases that cannot communicate with each other. The result is an inability to share information efficiently across the organization. Customer records, for example, cannot be accessed easily by sales, customer service, or purchasing departments without creating different overlay networks that join applications and information. This lack of transparency exists because most IT infrastructures have grown without systematic planning. Many organizations have found that this unplanned expansion has left them with multiple systems and distributed resources that are uncoordinated and underused. These disparate systems are also difficult and costly to manage.

With its vision of the Intelligent Information Network (IIN), Cisco Systems® is helping global IT organizations correct these problems and address new challenges such as the deployment of Service-Oriented Architectures, Web services, and virtualization. IIN articulates the evolving role of the network in facilitating the hardware and software integration that will make it possible for organizations to better align IT resources with business priorities. IIN is more evolutionary than revolutionary. By building intelligence into an existing network infrastructure, IIN will help organizations realize benefits such as reduced infrastructure complexity and cost. IIN will also give organizations the enhanced functionality they need to develop enterprisewide visibility and organizational agility so they can respond rapidly to changing business and market conditions.

# WHY INTELLIGENCE IN THE NETWORK?



**“Increasingly, customers are looking to consolidate and simplify their IT infrastructure, often moving functions closer to the network. IBM and Cisco are working together to help customers become more flexible, to use their IT infrastructure in support of their business goals. Facilitating strong integration between IBM’s WebSphere software and Cisco Application-Oriented Networking infrastructure is logical and will enable both companies to serve its current and future customers better together than we can independently. (Source: Robert LeBlanc, application and integration middleware software, IBM)**

**In a recent Computerworld online survey, 32 percent of the 765 respondents said they are pursuing, piloting, or have deployed an on-demand computing model, and 30 percent are investigating the option.**

To eliminate the technology islands that are found in today’s IT environment, the infrastructure must be more closely linked to, aware of, and responsive to the needs of the applications, resources, and devices connected to it. Cisco® is working with industry leaders—IBM, HP, SAP, and many others—to integrate business processes tightly with IT and to allow computing resources to be dynamically allocated to users as needed. This will require more sophisticated functions, such as better content awareness, transparent encryption and filtering, greater quality of service (QoS), and more adroit traffic shaping. But these greater functions can’t be realized without rethinking the network, the foundation on which an IT infrastructure is built. After all, the network is the one element of the infrastructure that touches all others, from the applications and middleware to the servers and users. Therefore, it is in a unique position not only to monitor the transfer of information but also to enforce policies coherently and cost-effectively.

The Intelligent Information Network transforms an existing infrastructure with all its interconnected “components” into a single integrated system. This systems approach extends intelligence across multiple products and infrastructure layers and more closely links the network to the rest of the IT infrastructure. A systems approach allows organizations to deliver security- and other system-level capabilities—so that security is built into network elements (routers, switches, wireless access points, and standalone network appliances, for example) rather than being bolted-on. Built-in security allows the network to systematically identify, prevent, and adapt to threats. A systems approach will also reduce network complexity and operational costs, allow more efficient scaling, and promote better oversight to help ensure the enforcement of business policy and compliance with industry regulations.

By adding intelligence to the network, the network can actively participate in the delivery of applications and services. Active participation in service delivery makes it possible for the network to effectively manage, monitor, and optimize application and service delivery across the entire IT environment. Networkwide intelligence also allows infrastructurewide policies. Enforcing policy with the network lets organizations link business objectives and processes to network rules so they can closely align the IT environment with business goals and more effectively use IT resources to improve business operations. It also gives organizations the ability to adapt quickly to the IT

“The nature of the enterprise network is evolving from a low-function communication service to a high-function enterprise nervous system (ENS). This is changing application design and IT management practices in fundamental ways. In a conventional architecture, intelligent application systems interact through a low-function, fairly ‘dumb’ network. In an ENS-based architecture, by contrast, the network is as intelligent as the applications. The ENS offloads logic from the application systems by transforming and redirecting messages and providing other services as appropriate.”  
(Source: Roy Schulte, Gartner, Inc. vice president and research fellow)



environment to respond to changing business requirements. These three capabilities—an integrated system, active participation, and enforcing policy with the network—are the distinguishing attributes of an intelligent network.

### **BUILDING AN INTELLIGENT NETWORK**

The Intelligent Information Network distinguishes Cisco architecturally from its competitors. This technology vision offers an evolutionary approach that consists of three phases in which functionality can be added to the infrastructure as required:

#### **PHASE 1—Integrated Transport**

Everything—data, voice, and video—consolidates onto an IP network for secure network convergence. By integrating data, voice, and video transport onto a single, standards-based, modular network, organizations can simplify network management and generate enterprisewide efficiencies. Network convergence also lays the foundation for a new class of IP-enabled applications delivered through Cisco IP Communications solutions.

Early adopters of IP Communications have realized substantial savings in toll charges, maintenance, and support costs. But recent studies reveal that the principal reason for adopting IP Communications isn't just cost savings; it's the potential for deploying new applications that transform communications and build competitive advantage. (Source: Sage Research, IPC Productivity Report, March 2005)

#### **PHASE 2—Integrated Services**

Once the network infrastructure has been converged, IT resources can be pooled and shared or “virtualized” to flexibly address the changing needs of the organization. Integrated services help to unify common elements such as storage and data center server capacity. By extending virtualization capabilities to encompass server, storage, and network elements, an organization can transparently use all of its resources more efficiently. Business continuity is also enhanced because shared resources across the Intelligent Information Network provide services in the event of a local systems failure.

“In today's global marketplace, with its shrinking product lifecycles and shorter time-to-market windows, business success is measured by the speed with which an organization can gather and analyze data and effectively execute plans based on that analysis. The fundamental reason IT exists is to help companies succeed with that endeavor by providing two things: business transparency and agility.” (Source: Robert Redford, vice president of product and technology marketing, Cisco Systems)

#### **PHASE 3—Integrated Applications**

With Application-Oriented Networking (AON) technology, Cisco has entered Phase 3 of building the Intelligent Information Network. This phase focuses on making the network “application aware” so it can optimize application performance and more efficiently deliver networked applications to users. In addition to capabilities such as content caching, load balancing, and application-level security, Cisco AON makes it possible for the network to simplify the application infrastructure by integrating intelligent application message handling, optimization, and security into the existing network. This integration delivers the information transparency and organizational agility needed to succeed in today's fast-paced business environment.

### **THE BENEFITS OF THE INTELLIGENT INFORMATION NETWORK**

The role of the network is evolving. The intelligent network of tomorrow will offer so much more than basic connectivity, bandwidth for users, and access to applications. The intelligent network will offer the kind of end-to-end functionality and centralized, unified control that will promote true business transparency and agility. Active intelligence within the network is currently providing organizations with benefits such as networkwide system security, faster deployment of services and applications, efficient use of computing resources, reduced complexity, and lower total cost of ownership. With the integration of business processes, applications, and the network, organizations will be able to collect and share data anytime and anywhere, whether it is external

information from partners and customers or internal data across business functions, product groups, or geographies. The Intelligent Information Network will make it possible for IT organizations to act quickly and efficiently on that information by adding, removing, or changing business processes to adapt to new market conditions.

**“The challenge for IT today is: How flexible can your system be? Can you change your business processes to respond to a challenge from your competitors? Can you do that to your competitors? That’s what Cisco and SAP are working together to create, in the combination between SAP NetWeaver and Cisco AON.”**

**(Source: Shai Agassi, president, Product and Technology Group and executive board member, SAP AG)**

#### **FOR MORE INFORMATION**

**For more information, visit <http://www.cisco.com/go/intelligentnetworking>**



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