

Voice over IP Yields Unexpected Benefits

Voice over IP Combines with Advanced Technologies for Greater Value

“Now that we have migrated our voice, data, and video traffic onto a single corporate network we are seeing benefits from this convergence, but what additional benefits can we gain?”

Many chief information officers (CIOs) are asking this question as they seek to maximize the value from their initial investments in voice over IP (VoIP).

Initially, Cisco IT also expected to see big gains from applications developed to run on IP phones. But the early gains have actually come from combining VoIP with a variety of other IT technologies in unexpected ways. Cisco IT has deployed the new technologies to respond to other business challenges after Cisco employees combined these technologies with VoIP in creative ways with impressive results. Now, by using the corporate network to integrate voice with a combination of new unified communications tools into a variety of new locations, employees can work anytime, anywhere, and collaborate more effectively with colleagues, customers, and partners.

“At Cisco, we know that delivering a new integrated workforce experience will deliver sustainable productivity, innovation, and growth across our entire ecosystem of employees, partners, and customers.”

Sheila Jordan, Vice President of IT Communications and Collaboration, Cisco

Challenge: Increasing Network Value to Serve New Business Demands

After the initial deployment of IP telephony, in response to new business challenges, Cisco IT continued to equip employees with additional tools available at the time to help them succeed in their work. These challenges did not necessarily relate to voice applications, but the technical solutions from Cisco IT, when combined with voice applications, provided surprising benefits.

Challenges of the last several years include:

- More flexible work schedules and the need for employees to access company resources outside of regular business hours
- Heightened emphasis on increasing workplace productivity and reducing real estate costs
- Need to control travel costs
- Greater need for workplace collaboration using Web 2.0 tools to help teams to work together and share information more easily
- Increased customer demand for responsiveness

To meet these business challenges Cisco needed to provide solutions based on new communications technologies, as well as new work places and processes. The new solutions needed to empower Cisco employees to work more efficiently and productively, and to collaborate anytime, anywhere with their colleagues, customers, and partners.

Enabling Collaboration: Network, Environment, and Tools

Enhancing the Network for Collaboration

The story begins before the initial deployment of VoIP, with the preparation of the network foundation. The Cisco Media Ready Network is the foundation for the working environment and a variety of communications tools. Aside from simple convergence, today the Media Ready Network supports not only VoIP, but also rich media applications such as video and remote data-sharing which enable user mobility and collaboration over the corporate network. Cisco gradually evolved its converged network to a Media Ready Network through architecture decisions, implementation of quality of service (QoS), and expanding bandwidth where needed. This network, expanded beyond its traditional enterprise boundaries with remote access and wireless and Web 2.0 tools, supports significant changes to the way that Cisco employees perform their work.

Helping Employees Work Anywhere

Determined to be as productive as possible, Cisco employees required more flexible work schedules and the ability to access company resources outside of regular business hours. Most employees opted for laptop PCs over desktop devices and became far more mobile as a result. An increasingly mobile workforce required Cisco IT to provide secure access to the corporate network and applications from locations away from the traditional workplace, such as customer sites, homes and hotels, or wherever else Internet access was available. Secure VPN technology enabled this additional mobility, but was only available for access to data applications. Employees still used mobile phones for their voice applications, resulting in greater business expenses. However, with the introduction of software-based telephony on the laptop using Cisco IP Communicator software and more recently Cisco Unified Personal Communicator software, mobile employees

reduced costs by using the corporate IP network for both mobile data and voice applications.

Today about 20 percent of Cisco employees access the corporate network using secure VPN technology from remote locations at any given time, and Cisco employees work more hours, with greater satisfaction, than ever before.

Employees working from their homes requested the added convenience of an office phone at home. They found that working globally meant working earlier in the morning or later at night, and that it was more convenient to attend conference meetings from home during off-business hours. This practice required a home router that could connect multiple IP appliances (e.g., laptops, IP phones, and IP video cameras) over a secure VPN tunnel. Cisco IT developed tools to automate the deployment of tens of thousands of routers and IP phones to support this service, the Cisco Virtual Office solution, for home and small business locations. Today more than one-quarter of the Cisco global workforce uses the Cisco Virtual Office solution to work flexibly and globally, with the Cisco IP network providing secure and high-quality services for voice, video, and data from the homes of more than 17,000 Cisco employees.

This support for nontraditional work environments improved productivity, allowed employees to work more often at their own convenience, and had other unexpected and significant benefits.

“The secure VPN access provided by the Cisco Virtual Office solution allows me to participate in late evening or early morning calls and web conferences that strengthen my relationships with global customers and colleagues,” says Lance Perry, vice president of IT Customer Strategy and Success at Cisco. Continues Perry, “I learned this firsthand last year before my father passed away, when I spent most of my time with him in New Jersey. I had full virtual office capabilities in the apartment upstairs from my father and spent significant time with him while still being engaged at work. My work location did not matter.”

For employees, the ability to work anywhere increases job satisfaction and reduces commuting, which in turn reduces Cisco's CO₂ emissions. And, because Cisco employees can work easily from home or another location during an emergency, the company has improved business resilience when a traditional business office must close in an emergency.

Redesigning the Office

Improving employee productivity outside the workplace focused more interest and attention on increasing workplace productivity in the office and reducing real estate costs. It started with employees demanding more mobility inside the office environment. Cisco IT responded by providing wireless access at the workplace to all Cisco employees. This workplace wireless LAN became very popular with employees; more than 40 percent of Cisco employees use wireless as their primary or only network access, and find themselves able to be productive more than one additional hour each day. It also had another unexpected result. Early studies showed that employees at work spent more time meeting with each other and less time in their dedicated work cubes and offices: These spaces were in use less than 40 percent of the business day.

Cisco Workplace Resources (the Cisco facilities group) realized the high cost of dedicating expensive real estate to employees who were not using it. Because employees were not using their dedicated space productively, Workplace Resources and IT teamed to build a workplace environment to enhance employee productivity and satisfaction. They found that employees spent most of their time collaborating with each other in small and large teams, from a few minutes to several hours at a time. To keep pace with these new work patterns, Cisco created different types of office areas where space is not assigned to a specific person, but instead is available to any employee or group as needed.

The Cisco wireless LAN allows employees to access the corporate network anywhere in the workspace, but also provides needed mobile access to voice services. Cisco IT enabled

employees to log into shared hardware phones using an extension mobility feature on IP phones, or to use the Cisco Unified Personal Communicator softphone for their voice needs from any location. This new workplace concept can be redesigned in many different ways to enable a variety of different collaboration methods for different employee groups. In buildings where the concept has been implemented, Cisco has significantly reduced costs for real estate, construction and maintenance, equipment, furnishings, cabling, and electrical power. More importantly, employees reported that they can collaborate more easily and flexibly, and reported improvements in both productivity and job satisfaction. Cisco Workplace Resources is continuing to expand this environment worldwide, working closely with work groups to customize office space to meet local requirements.

Reducing Travel Through Video

Travel costs have always been a significant part of the budget, and as Cisco added more global locations to meet its expanding customer base, travel costs increased. Cisco IT looked for different ways to reduce travel needs by providing video services to Cisco employees. Cisco IT deployed more than 1200 video conference meeting rooms and 30,000 small portable video cameras to connect teams across the IP network, with some success. But by far the greatest success came from deploying a few hundred TelePresence sites, which combine the ease and reliability of a phone call with the virtual reality of high-definition video and audio.

Even with growing numbers of TelePresence rooms being built within Cisco (more than 300 by the end of 2008), Cisco employees take advantage of these rooms at more than 45 percent utilization, day after day. About 30 percent of these meetings avoid costly travel, and Cisco estimates that it has avoided more than US\$90 million in travel costs through the first half of 2008. Perhaps more importantly, Cisco employees have been able to meet with each other, and with partners and customers, at times

and places when they would never have been able to work together before.

Using Unified Communications Solutions for Collaboration

The previous examples point to the unexpected gains achieved by combining voice over IP into new areas that extend the traditional limits of the business network into the home and remote areas, into the wireless spectrum, into new work environments, and into virtual-reality video connections. More recently, new benefits are being gained by adding new Cisco Unified Communications tools to the VoIP solution. Although the solutions are initially attractive for their simplicity, performance, and cost-effectiveness, Cisco has learned that using unified communications for collaboration delivers even more business value.

For example, giving employees the ability to communicate easily wherever they are is essential to collaboration. A phone call might seem to be the simplest choice, yet an employee's multiple phone numbers, multiple phones, multiple message boxes, and even just-missed calls can make voice communications complicated. To reduce this complexity, Cisco employees use Presence information to show when they are available, and use a variety of Cisco Unified Communications solutions to make themselves available more often:

- **Cisco Unified Personal Communicator** application integrates phone calls, voice messaging, instant messaging, presence information, and web-based conferencing sessions on the employee's laptop PC, making it easy to communicate over any network connection.
- **Cisco Unified Presence** platform interacts with the Cisco Unified Personal Communicator as well as IP phones, calendar software, and other applications to identify an employee's current availability and contact preferences. Presence information makes it easier to know when colleagues are available, and to reach them on the first attempt, especially for issues

that need an immediate response.

- **Dual-mode phones** can reduce the costs of mobile communications by automatically shifting calls from the more costly cellular network to a corporate wireless LAN whenever available. Cisco employees report that they work more efficiently by using a single wireless phone. Combined with **Cisco Unified Mobility**, which provides single-number reach and other features, dual mode allows employees to receive calls on their desk, mobile, or home phones with a single phone number, and move calls from office to mobile phone and back again with ease. This capability avoids missed calls and increases customer satisfaction, saving time for both Cisco employees and customers.
- **Cisco Unity®** messaging integrates voicemail with email packages, and enables employees to retrieve mobile phone and business phone voicemail and email messages from a single inbox.

As these solutions have been widely adopted by Cisco employees, the company has created an increasingly collaborative work culture. Collaboration is increasing with the addition of Web 2.0 tools that are transforming jobs, organizational structures, and information-sharing across the company.

Expanding Collaboration with Web 2.0 Tools

Most recently, by integrating Cisco Unified Communications solutions and Web 2.0 tools, Cisco IT is creating even more resources for collaboration among employees, customers, and partners. Chief among these tools is Cisco WebEx® Connect, a virtual workplace that supports online meetings, audio and video conferencing, file sharing, presence notification, instant messaging, and online chat.

“With its many tools for information sharing and collaboration, our employees are demanding an integrated experience and we believe that WebEx Connect will become the “one place that you live” for Cisco's workforce to work together

collaboratively,” says Marisa Chancellor, director of IT Communications and Collaboration at Cisco. WebEx Connect has been effective in helping reduce the amount of email that people receive at Cisco, while providing a more effective way to share information within workgroups and with partners and customers. Cisco IT supports other Web 2.0 tools such as blogs, wikis, and online discussion forums that expand this information sharing within and among employee teams. Among the hundreds of wikis used within Cisco is Ciscopedia, which allows employees to explain technical concepts to others within the company. In another example, a product development team uses wikis to build requirements documents and solicit reviews and feedback from team members and other company experts. By using the dynamic and collaborative nature of a wiki, the team has significantly accelerated the document writing and approval processes, which in turn speeds product development.

Building Unified Communications and Web 2.0 into New Applications

When Cisco IT first deployed IP telephony, we expected that the greatest benefits would come from deploying new applications on the new IP phones. Today we are discovering that almost the opposite is true: the greatest benefits are likely to come from deploying Unified Communications capabilities in new applications.

An early example of applications integrating Unified Communications capabilities, along with Web 2.0 tools, comes from a few new sales applications, which are supporting new changes to the organization of sales support groups within Cisco. It began as a response to the challenge of scaling technical sales support in a growing sales organization. When salespeople are on the phone with a customer, they may not know the answers to all of the customer’s questions. Getting the right answers to customers quickly accelerates the sales process and increases the customer’s confidence in the company. Cisco salespeople rely on product specialists to answer these questions, but in many cases it was difficult

to find the right person quickly. Skilled technical sales specialists are hard to find.

Today, using collaboration tools such as an expertise locator application, presence, and click-to-talk features, Cisco salespeople can find and contact the right expert immediately, even while participating in a customer call. They use a new application to search for the right kind of expert across a large, shared sales support group. They use presence information to determine who is available at any moment. They use WebEx Connect to bring in the nearest available expert, answer customer questions, and share documents immediately. This collaboration capability has resulted in more interactions with customers and technical experts, which in turn accelerates the sales cycle and increases Cisco’s revenues with more sales.

Based on the success of these new tools in direct customer sales, Cisco is extending collaboration to another new tool, the Partner Deal Registration application. This application guides the approval process for sales deals initiated by channel partners. It uses a similar expert locator with presence information and click-to-talk capabilities, to locate the right sales manager to update and approve partner deals within minutes rather than days, speeding the sales cycle and improving customer satisfaction.

Transforming the Business with Collaboration

Cisco IT continues to identify additional business processes that could benefit from collaborative tools to encourage easier, richer communications among Cisco employees, partners, and customers.

Cisco’s emphasis on collaboration comes from a recognition that the definition of the business “edge” is blurring. To compete and scale globally and foster innovation, enterprises need to collaborate closely with customers, vendors, partners, and employees. They need to provide the tools that help everyone interact with each other at the right time, from anywhere, on any device.

“At Cisco, we know that delivering a new integrated workforce experience will deliver sustainable productivity, innovation, and growth across our

entire ecosystem of employees, partners, and customers,” says Sheila Jordan, vice president of IT Communications and Collaboration at Cisco.

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