

# Cisco Services Helps Lower TCO for Cisco IT

Cisco on Cisco: Case Study

## EXECUTIVE SUMMARY

### Background:

- Cisco IT supports internal networks, systems, and applications
- Over the last five years, Cisco IT has experienced major growth in infrastructure capabilities, leading to a rise in operational expenses

### Challenge:

- Deploy IT budget and investment more strategically
- Lower total cost of ownership, while improving operational efficiency
- Support increased business demands and drive innovation with new technology

### Solution:

- Cisco Services provides full life-cycle engagement, including guidance on design, implementation, operations, and optimization

### Results:

- Reduced IT service delivery times from weeks down to less than an hour
- Achieved six-fold decrease in support hours spent each quarter
- Decreased number of critical issues related to Cisco network by 30 percent

## Cisco IT reduces operational expenses, improves network performance, and accelerates technology adoption by partnering with Cisco Services.

### Background

Over the past five years, Cisco IT has experienced significant growth in its infrastructure capabilities. Although this expansion brings greater productivity and agility for the overall Cisco organization, for the IT department, this growth has meant a rise in operational expenses. This is a common scenario for many large IT organizations. In fact, recent research shows that up to 75 percent of enterprise IT costs are operating expenditures.<sup>1</sup>

Looking to deploy its IT budget and investment more strategically, Cisco IT enlisted the help of Cisco Services to increase business flexibility, reduce costs, and accelerate technology adoption by optimizing its network infrastructure. The ongoing transformation has been a key variable in enabling Cisco IT's goal of offering IT-as-a-service (ITaaS).

### Challenge

Cisco went through a period of rapid growth during the 1990s. Cisco IT built its infrastructure to support the company's expanded business requirements. However, such rapid infrastructure expansion also resulted in some operational inefficiencies for Cisco IT due to a lack of standards, processes, and tools. As a result, Cisco IT's operational costs increased. For any enterprise, the capital infrastructure investment alone does not reflect the true cost of investment. The ongoing operational costs and elements of IT infrastructure, not just the initial investment costs, are important when considering the total cost of ownership (TCO).

Furthermore, unlike initial infrastructure investments, operational expenditures are not fixed and definite. These costs can vary over time as the environment becomes more complex. The uncertainties that this variability creates can have a significant impact on the quality of services offered by IT organizations to the business.

Over the years, Cisco IT was able to improve its operational efficiencies, but it knew that continued growth was on the horizon. As seen in Table 1, there was a significant rise in various IT offerings, including a 1300 percent rise in video endpoints, a 1366 percent jump in telecommuting, and a 255 percent increase in storage over a five-year period (Table 1).

With continued growth expected across all areas, Cisco IT wanted to concentrate on how it could make its current team more efficient and effective. Other key goals were to help ensure predictable performance and free up resources to support increased business demands. Of course, beyond the successful day-to-

1. "IT Metrics: IT Spending and Staffing Report, 2011," Gartner, January 2011 (ID number G00210146).



**“We now have a trusted partner on our side when it comes to complex operational issues.”**

Shawn Shafai  
Head of Global Network Operations  
Cisco IT

day operation of its organization, Cisco IT wanted to drive innovation with new technology for Cisco teams, which would require the ability to both securely and efficiently deploy these solutions. The implementation of a next-generation network infrastructure would allow Cisco IT to meet the needs of both today and tomorrow.

**Table 1. Growth in IT Capability**

Capability	2006	2011	Growth %
Storage	9 PB	32 PB	255%
Bandwidth (Core CAPNET)	11 Gbps	58 Gbps	420%
Servers (Physical and Virtual)	8,000	19,000	140%
Telecommuting: Cisco Virtual Office Users/Routers	~1,500	22,000	1366%
Wireless Access Points	4,500	8,700	93%
Video Endpoints	~500	7,000	1300%

### Solution

Cisco IT approached Cisco Services for help in expanding from a break/fix approach to support a broader set of IT capabilities, while keeping operational and capital expenditures down. Cisco Services offered a full life-cycle engagement that would start with infrastructure design reviews, move to implementation, and eventually focus on operations and optimization guidance. The Cisco IT team found great value in this proactive life-cycle approach, because it would help ensure complete, end-to-end support in deploying ITaaS.

Working with Cisco Services, Cisco IT identified numerous operational capabilities that could be improved by leveraging the people, processes, and technology expertise of various Services teams. Consequently, many parts of the Tier 1 and Tier 2 operations were handed over to Cisco Services, specifically around remote management, incident response, and infrastructure upgrades.

For example, Cisco IT found that it could rely on the personalized, “high-touch” access to industry-leading network and operations specialists on the Cisco Focused Technical Support (FTS) team for help with root-cause analysis. By having Cisco FTS collect this data and feed it into a problem management system based on the IT Infrastructure Library (ITIL), Cisco IT can prevent repetitive technical issues from arising.

### Adopting a Proactive Approach to IT Operations

Cisco IT does an extensive amount of design and compatibility testing that simulates its internal production environment prior to any major upgrades. By having the Cisco Network Optimization Service (NOS) perform the bulk of the activities during this process, Cisco IT is able to leverage the deep expertise and industry knowledge of experienced NOS engineers.

The Cisco network collector and smart analytics capabilities also help Cisco IT in maintaining an up-to-date Cisco network. The network collector performs periodic audits to report on end-of-life/end-of-sale products, and the reports are sent to IT management and engineering teams for action. Smart analytics takes this one step further by providing a real-time dashboard based on the dataset. This helps Cisco IT be proactive and anticipate the unexpected.

Cisco IT recently deployed Cisco Smart Net Total Care (SNTC) for assistance with proactive management of its installed base of devices, whether used in the data center, for collaboration purposes, or as part of its core network. The solution's ability to discover all network devices, determine moves and changes, assess security vulnerability, and even perform remote diagnostics, helps significantly lower administrative costs and avoid unnecessary network risk.

The Cisco Services Application Dependency Mapping (ADM) team further extended this proactive approach by helping Cisco IT migrate major commerce applications to a new Cisco data center. Using the ADM service allows Cisco IT to gain a solid understanding of the assets in the data center and their interdependencies. In just three weeks, the ADM service discovered 4469 hosts and 1636 associated Cisco applications. This data played a large role in the success of the planning and migration phases of the project, and gives Cisco IT greater visibility into its infrastructure moving forward.

#### **Enabling ITaaS through an Internal Private Cloud**

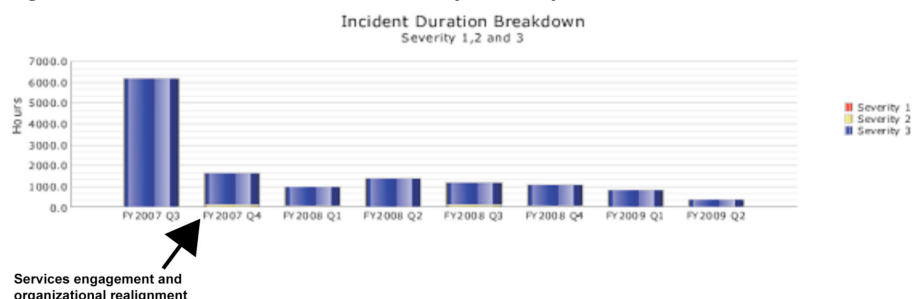
As part of its ITaaS strategy, Cisco IT deployed an internal private cloud: Cisco IT Elastic Infrastructure Services (CITEIS). Cisco Unified Computing System™ (UCS™) and Cisco Nexus® products, as well as the Cisco® Intelligent Automation for Cloud (CIAC) solution, were key in supporting the infrastructure. The Intelligent Automation solution uses Cisco Tidal Enterprise Orchestrator software to automate the provisioning of virtual environments, including network, storage, and compute resources. It also includes Cisco Cloud Portal, the self-service interface and service catalog software from newScale, to enable on-demand provisioning from a menu of standard service options.

Cisco Services also worked with Cisco IT to create internal process improvements and structural changes in the way services are requested, deployed, and supported. In subsequent phases of the CITEIS private cloud, Cisco IT will build upon the IaaS platform and foundation for the delivery of applications, communications, and virtual desktops. Cisco IT is also evolving its investment model, billing, and chargeback systems to align with the ITaaS strategy.

#### **Results**

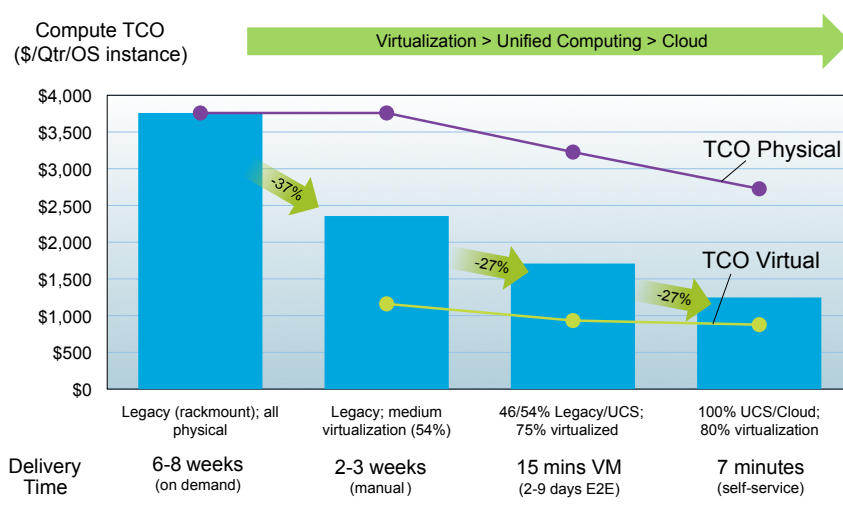
Teaming with Cisco Services has helped Cisco IT achieve significant cost and time savings. For example, with network-wide troubleshooting provided by Cisco FTS, Cisco IT can now resolve support issues much faster than before. As shown in Figure 1, the total hours spent each quarter on support issues showed a dramatic, six-fold decrease, from approximately 6000 hours down to 1000 hours. In addition, the number of critical issues related to the Cisco network decreased by 30 percent.

Figure 1. Incident Duration Breakdown by Severity Level



Cisco IT has implemented a number of positive internal process changes relating to CITEIS, helping reduce TCO for infrastructure operations by more than 45 per cent. Figure 1 illustrates the reduction in both physical and virtual compute TCO from the infrastructure-as-a-service (IaaS) deployment.

Figure 2. Cisco IT Elastic Infrastructure Services (CITEIS) Lowers TCO



Additional operational efficiencies relating to CITEIS include:

- Accelerated provisioning of virtual environments through automation, reducing required time from 20 hours to just a few minutes
- Improved end-to-end service provisioning time for business system owners from several weeks down to just 7 minutes through self-service

NOS network consulting engineers work alongside Cisco IT to help streamline the network testing process as well. Says John Moe, a member of the Cisco technical staff, regarding a recent test case, "Without the NOS design and testing capabilities, we would have spent 40 to 60 hours trying to find the issue, and then would have to repeat the process. But NOS reduces false starts by proactively notifying us of potential issues. And in this case, it freed up the equivalent of a full-time employee for 1.5 weeks."

Working with Cisco Remote Management Services (RMS), Cisco IT not only accelerates time to deployment, it also saves on labor costs. Network upgrades that previously required a time-consuming manual or homegrown process can now be entirely automated. And because Cisco IT no longer has to allocate approximately one hour of employee time to each upgrade, the team regularly redirects this labor to more strategic parts of the business. In 2010 alone, RMS successfully performed software upgrades on 4000 devices without any human intervention.

In addition, the Cisco Wireless LAN Planning and Design Service helped Cisco IT migrate to 802.11n using Cisco CleanAir technology, which provides superior mobility for employees and reduces operational overhead for IT.

For Cisco IT, the partnership with Cisco Services has proven invaluable. "We now have a trusted partner on our side when it comes to complex operational issues," says Shawn Shafai, head of Global Network Operations for Cisco IT.

### Next Steps

With a greater focus on integrating video, unified communications, and internal communication and collaboration portals such as Cisco Quad™, Cisco IT will continue to rely on Cisco Services for architecture and design best practices and expertise. Cisco IT is currently deploying a medianet video architecture to support an even larger video deployment. For this, the group plans to use the Cisco Medianet Readiness Assessment (MRA) Service for an in-depth evaluation of Cisco's current network infrastructure and its ability to support high-performance media applications.

Cisco IT is migrating to an end-to-end IPv6 infrastructure, with Cisco Services providing IPv6 audits and assessments that are helping Cisco IT identify the right areas for that migration.

Cisco Services will continue to serve as a cornerstone of Cisco IT's operational excellence, reducing TCO and driving the technology innovation that achieves true business improvements.



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