How Cisco IT Reduced Telecom Costs Through Centralized Invoice Tracking

Invoice reconciliation and reporting solution reduces annual telecom expenses by millions.

Cisco IT Case Study / Business Management / Centralized Telecom Billing: This case study describes the Cisco IT team's internal deployment of a networked solution to centralize and control the billing of voice and data services. This IT solution provides corporate finance and department managers with decision-making information, identifies instances of erroneous charges and over-billing, and educates users regarding their own expenses and how to make best use of expensed telecommunications resources. Cisco customers can draw on Cisco IT's real-world experience in this area to help support similar enterprise needs.

"When we started, we had individual cell phone users whose bills exceeded [US]$1500 per month. Now, these top spenders have reduced costs to roughly half of that monthly spending level, and are able to justify these costs, through usage during times of international travel, for example. Everyone has become more aware and users are being smarter about asset usage. The drastic change in behavior has come from the visibility and from the knowledge of the costs. The Cisco culture has shifted dramatically—previously, it wasn't considered a problem if your service costs were high. Now, it is not acceptable. Everyone knows that they can't spend excessively on any service and they know the options available to avoid that."

– Pam Lisotta, Cisco IT Project Manager

BACKGROUND

More than a decade after the company was founded, the management team at Cisco Systems realized that more than US$200 million per year was being paid out to a broad range of telephony and data service providers, and that these \ costs were essentially unmanaged. Each business group received its own invoices, which were paid without any approval process or corporate-wide policies in place. "Most companies today set up a telecom infrastructure, and then walk away from the ongoing management of it," explains Mark Edmondson, manager of IT services expenses for Cisco. "But telecom is a dynamic part of any company. When our company's growth translated into an extremely large operating cost for telecom, management started asking for ways to track and control these telephony and data expenses. It became clear that we needed to adopt a strategic approach for the analysis and management of telecom costs so that we could make informed decisions about future operations."

CHALLENGE

In 1997, the Cisco finance team created the Telecom Cost Management (TCM) program to effectively manage the company's exponentially increasing telephony and data service costs. Cisco IT Project Manager Pam Lisotta became the first TCM employee and was tasked with centralizing all U.S. invoices. Lisotta recalls the situation she faced: "Managers would come to me about their department costs—they were being charged back for pagers and phones but had no idea how the money was being spent. They wanted to know the costs being invoiced by each vendor, the cost of each service from those vendors, and how much each of their employees was spending. They also wanted to know how to negotiate better contracts with the vendors, and other ways to drive down costs. We set out to get answers to all of these questions."

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Finding answers began with gathering data. Vendors were directed to send all invoices directly to Lisotta. Initially, an Excel spreadsheet sufficed for managing all the invoices. Lisotta confirmed charges, ensured that services were still needed, and cancelled unnecessary services for vacant buildings and other warranted situations. Once the invoices were centralized, a senior financial analyst was hired to look at the data. The analyst examined the telecom costs collectively and developed metrics to track where money was being spent, where costs were increasing, and at what rates; evaluate overall telecom spending trends; and identify problems. Together, Lisotta and the analyst generated reports summarizing costs by service, and created tools to track and analyze variances. All of this work was done manually.

This initial phase of the TCM program—one person processing all invoices, and one analyst summarizing the invoices and extracting insights—changed the overall company view of these operating costs. Telephony was no longer viewed as a fixed expense, but as an operational variable that could be managed strategically to contribute to the company's future success.

The program ran in this manner for approximately five years. All invoices, once processed and analyzed, were then approved and sent to accounts payable for payment. But several factors made it apparent that a new solution for telecom billing was essential for continued success:

- The company growth taxed the current process, and an automated solution was necessary for both processing and analyzing telecom invoices.
- As the numbers of employees increased, so did the number of services being purchased by company employees. Employees were using company-paid cell phones, pagers, and calling cards without oversight, and Internet access costs for telecommuters were increasing. The TCM group was processing invoices for the expanding service offerings from this ever-increasing collection of vendors.
- Differences in vendor business practices added layers of complexity to the billing management task. Vendor accounting and invoicing processes, service product structures and bundles, accrual practices, and many other variables were taxing the manual tracking and analysis processes.
- Internal IT databases and tools had been developed over recent years, but were not being employed to streamline telecom billing. The databases provided consolidated information about employees and reporting structures. The tools, built as Web applications, automated employee requests for services, provisioning of services, and the management of in-place services and related inventories of telecom equipment. These Cisco IT-developed tools worked within the enterprise management (EMAN) framework, a workflow solution built for the Cisco global network. EMAN tracked and logged the status of every asset, assigned asset identifiers, and provided a foundation for routing requests to vendors, tracking requests from user initiation through to service deployment, and resolving problems arising at any point in the process.
- Taking into account these conditions, the TCM group set out to implement an automated telecom billing solution. They faced several challenges during this process:
- Global diversity of practices—Data collection in the United States was relatively straightforward, but telecom billing practices varied greatly in other countries. Different countries used different ledgers, and an international solution also required an in-depth understanding of global currencies. The TCM group initially designed the solution for the U.S., with plans to roll it out globally as soon as possible.
- Data inconsistencies—Dozens of different accounts payable teams meant resolving differences in payment timing, accrual practices, spending categories, and other parameters.
- Vendor technology variances—Supported media, Web access, electronic data entry capabilities, and other characteristics varied widely, with some vendors still completely reliant on paper invoicing.
- Data complexity—Some invoices contained charges for multiple services, such as vendors that billed local calls, long-distance calls, calling cards, and ISDN lines on the same invoice.

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- Attitude adjustments—Education was required to overcome the perception that telecom costs are simply "a fixed cost of doing business" and to provide users with the information they needed to make wise decisions about resource usage. For example, many users routinely used their cell phones even when in an office where lower-cost landlines were available.
- Entitlement policies—No policies existed and service allocations were left to managers' discretion. Many users believed that everyone should be entitled to every service.

SOLUTION

The new telecom billing solution takes advantage of a centralized provisioning database previously set up as part of a vendor services solution (see the Cisco IT case study "Vendor Management" at http://www.cisco.com/web/about/ciscoitatwork/business_of_it/vendor_management.html). All employees, when they join Cisco, are entered into the database with details regarding the telecom assets for which they are approved. As equipment and services are provisioned to that employee, the database is updated to track status and inventory. For telecom billing, the database also includes information regarding the accounts to be billed, the managers that approve the related invoices, and the receivers of the reports generated regarding the service.

An important change for the new telecom billing solution was the introduction of an outsourced vendor. The invoices are now processed and entered by the vendor, freeing the internal team from the data entry tasks. While a vendor performs this initial step, the information is immediately returned to the Cisco IT team where the bulk of the invoice billing solution is carried out on the Cisco network. The invoice workflow (see Figure 1) is automatically linked to the Cisco Enterprise Management (EMAN) system, which has been enhanced to complement reconciliation methods for identifying asset-billing discrepancies. Web-based applications analyze the invoices and reconcile them against EMAN's inventory database. With the reconciliation function in place, vendors are quickly notified of billing errors including overcharges, deviations from contract terms, and charges for previously cancelled services. Vendor management teams are armed with accurate, up-to-date data when they regularly meet with vendors to review services and contracts.

Another new Web-based tool—the Services Expense Reporting Tool (SERT)—generates reports about telecom costs and makes that information available to the global Cisco community. Individual usage reports are sent to users and their managers, and monthly billing summaries are available to various management teams. The tool has allowed managers and corporate executives at Cisco to gain in-depth understanding about telecom spending and the impact of new services on operating costs. By utilizing an internal solution for expense reporting, they retain the ability to get real-time access to expense information in a variety of formats. Reports can be modified to suit operational needs without waiting for a vendor to respond. Security is also more effectively managed and maintained with the internal reporting function.

The new SERT reports have had an impact on both users and management at Cisco. Users now receive detailed expense reports, which are also sent to their managers. Creative communications from the IT team have increased awareness of telecom expenditures and have resulted in dramatic decreases in spending. Initially, a "Top Talker" report was sent out each month, with the names of the Cisco employees within each manager's department with the highest phone charges. E-mail reminders were sent out to the top 20 spenders for each service, with copies sent to the employee's manager and the group's controller. The report and e-mails raised awareness of phone costs, and the links between telephone usage and corporate expenses, within the U.S. offices.

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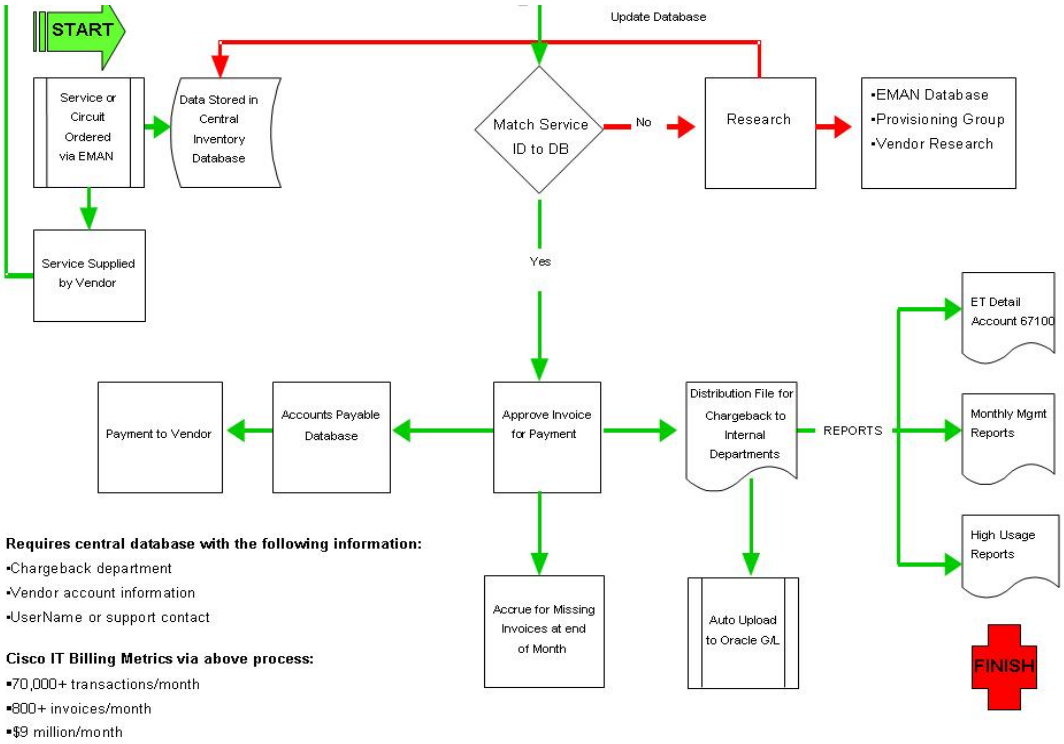
Figure 1. Cisco Telecom Invoice Processing Flow



RESULTS

Industry watchers report that approximately 7 to 12 percent of billed telephony services are in error. The TCM program has achieved cost savings in line with these industry estimates, and will exceed them as the program continues to evolve and grow to include international Cisco operations.

In its first years with manually managing the invoices and initial spending reports, dramatic cost savings resulted from the identification of billing errors and changes to spending habits within the Cisco user base. The automated telecom billing solution is now well established in the U.S. and continues to trim telecom costs from quarter to quarter. Since its inception, the TCM program has delivered an overall 15 percent reduction in networking, telephony, and PC vendor services spending. Several years ago, these services accounted for more than US$300 million in operating costs, and therefore the 15 percent reduction translates into millions of dollars of trimmed expenses. This savings can be considered even more dramatic when considering the technology and business changes that have taken place over the same time period:

- Headcount has increased.
- Major technology innovations have been introduced, including numerous improvements to the network infrastructure, the introduction of IP telephony, and the migration to a companywide mobile desktop platform.
- The numbers of service providers has increased significantly, with many more services now offered to Cisco employees. For example, when choosing a network access solution, an employee has almost twice as many options available today compared to early days of the TCM program.

In its first year, the automated EMAN-based invoicing solution yielded savings of 5 percent annually, or more than US$10 million. Edmondson says, “We are continuing to enhance our tools, and expect to easily increase our savings another 2 to 7 percent per year. Part of this increase in savings will come from the continued drop in service prices, and part will come from our extension of the program to our global operations. Other increases will come from new tools. Eventually, we want to entirely automate the handling of all invoices and allow our internal personnel to focus

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exclusively on analysis and the identification of strategic cost-management opportunities. In the short term, there are hundreds of small telco shops and providers. Many still invoice on paper, so the data entry and data processing tasks remain more labor-intensive. As we work with these providers to encourage automation on their side, future savings will be realized. With the larger vendors, we already get all of the invoice information electronically, feeding it directly into our system."

Cultural Changes

The new telecom invoice management solution has also changed the culture at Cisco. Increased visibility—reports to users and managers, regular reviews with executive management teams, and creative vehicles such as the "Top Talker" reports—has raised awareness of spending at all levels in the company. The potential for savings was huge—savings of more than US$10,000 per month could be achieved by cutting back the "Top Talkers" alone. But this awareness did not always generate positive feedback. Initially, when the first reports were issued, the TCM program group was flooded with e-mails. Some users were shocked to learn what they were spending, and upset that their managers were also sent the information. But most managers and users just had questions—what the charges meant, how their costs compared with other groups or users, and how they could reduce their costs. Lisotta explains, "We started sending out tips and tricks—for example, don't call a Cisco toll-free number from a cell phone or use a calling card from a cell phone, since we end up paying for those calls twice. By targeting big spenders and sending out tips and tricks to everyone, we saw significant changes in usage and big savings as a result. When we started, we had individual cell phone users whose bills exceeded [US]$1500 per month. Now, the top spenders have reduced monthly spending levels by almost half. And the top spenders now can justify their charges, through using their phones during times of international travel, for example. Everyone has become more aware and users are being smarter about asset usage. The drastic change in behavior has come from the visibility and from the knowledge of the costs. The Cisco culture has shifted dramatically—before, it wasn't considered a problem if your service costs were high. Now, it is not acceptable. Everyone knows that they can't spend excessively on any service and they know the options available to avoid that. We routinely advise users about best practices and negotiating better services and pricing."

Armed with information, and accountable to management for their spending, employees have adjusted to the corporate changes surrounding telecom usage. Changes have also been made in the form of corporate entitlement guidelines. There are no automatic dispensations of services—for example, not everyone gets a phone. For every telecom service, the employee must justify the need for the asset, and usage is monitored to verify that the justification was valid. As needs or usage change, the system automatically flags situations that should be reconsidered.

Going Global

The TCM automated solution for telecom billing has been in use for U.S.-based Cisco operations since 2003. Last year, the company began deploying the solution and best practices outside of the U.S. In August 2004, a global database was deployed with initial coverage handling telecom billing information for the company's locations in Europe, the Middle East, and Asia (EMEA). The goal was to automate, track, and report on telecom spending by carrier, function, service type, employee, and country.

Spanning approximately 45 countries, the EMEA database has to be built one country at a time. Beth Gesson, the Cisco IT project manager for the EMEA deployment, works with the Cisco team in each country to identify the service providers being used. Gesson then contacts each vendor, gathers the billing process and service information required, and incorporates the information into the database. Gesson explains, "Before we included the EMEA vendors, U.S. managers could only see the total telecom costs for their EMEA reports. International services are much more expensive than in the states—sometimes ten times the price of the domestic offering. Now, managers can see the expenditures for each individual employee. While we were extremely effective with our U.S. deployment, it was when we went global that we had the biggest impact on the way that management could control costs. We

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gained complete visibility of the total cost picture."

As in the U.S., the EMEA rollout initially raised some eyebrows. Gesson says, "Typically, users are initially shocked when they see what they are spending. Lots of problems come to the surface—people are contacting us to ask why we are still paying for service to the house they sold five years ago, or managers are surprised to find out that they are still paying for lines assigned to employees that left the company a couple of years ago. It has also been surprising to discover the great variance in best practices—we have realized that we have no consistency between countries when it comes to who gets a mobile phone, for example, or what kind of phone they get, what kind of subscription, who pays for a lost phone. In the U.S., there is an entitlement program that applies to 45,000 employees. In EMEA, each country has a different set of policies."

Raising the visibility for these issues creates the opportunity to establish more effective policies and best practices. In the future, the company is optimistic that it will be able to enjoy cost savings by establishing service policies and guidelines that span broad regions. "Management is really excited—now they have the data and can act to save money. While it has been shocking to face the cost situation, managers are fast to respond. For example, in the United Kingdom, we identified very high spending on corporate calling cards. The monthly charges were in excess of 30,000 pounds. The management team established new policies for calling cards—cards were centrally purchased, billed, and managed. Spending was made visible to individual users and their managers. The costs immediately dropped 80 to 90 percent. When people saw their costs and had to pay the charges out of their own budgets, the behavior changed rapidly."

LESSONS LEARNED

The success of this solution can be attributed to high-level support. "We have received support all the way up through both finance and IT chains of command—up to the CIO and other executive management in finance," says Edmondson, who says that kind of support ensured the success of the program. "We can report on numbers all day long, but unless someone takes action, the reports are not meaningful. At Cisco, the senior management team recognized the potential for this program and has enthusiastically received our reports and attended quarterly meetings for evaluating both the program and the telecom spending. The results have been in direct proportion to this management involvement."

The centralization of the coordination efforts was also essential to success. Establishing a solution that would work for all groups and defining best practices would have required more time and resources if the efforts had been distributed throughout the company. Likewise, it was decided that the project should be kept as an internally managed effort for reasons of efficiency. With the dynamic operations environment at Cisco, an internal project could better respond to changing needs and real-time requests, and helped avoid potential conflicts with vendors, since the candidates for outsourcing the management of invoicing are also Cisco customers. Protecting overall customer relationships was a high priority.

From a technology standpoint, the solution has been a resounding success. The tools operate as applications with Web-based front ends that interface to the corporate databases. The Cisco network is fully utilized to efficiently gain a global view of the telecom assets and usage., "The network was never the limiting factor," Lisotta explains. "Every application and every tool had access to the information required. If we had outsourced the task, we would have needed partner links into the network. This would have increased our start-up development efforts and introduced a delay into our flow of information. We would have had to wait on information coming back from the vendor. Today, we know in real time what the expenses are and what future liabilities are—all at the touch of a button. The Cisco network gives us the timing and the access freedom that we need."

The Cisco culture has traditionally given a lot of freedom to every employee," says Edmondson. "In the case of controlling telecom costs, this freedom led to some unwise usage patterns. If we had put the telecom billing solution in place from the beginning, even before the costs warranted strict controls, we could have avoided the need to adjust

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user attitudes and habits. Relearning can be a painful process for a group of assertive, creative individuals!"

NEXT STEPS

In its first phases, the TCM program handled client services. Now, the solution is being extended to handle network circuits and other departmental services such as WAN links, shared network expenses, and call centers. Geographical coverage is also being extended, as the globalization efforts continue. As the telecom billing solution expands to encompass more of the complete cost picture, the management team continually receives new types of information. For example, the introduction of EMEA cost information presents managers with the ability to monitor and analyze the results of variations in international exchange rates. Fluctuations can be monitored and budgets better managed by taking into account the international variables that drive expenses.

The analysis of telecom costs has spread to a new group within Cisco—the security teams have recognized that they can now spot resource abuse by monitoring the costs for site assets. The ability to identify improper calls has flagged the need for new rules and best practices. Already, the security teams estimate that they are reducing approximately 10 to 15 percent of improper calls with the initial steps that have been taken to make use of the new data.

Edmondson summarizes, "We continue to look for new ways to automate our billing solution and to make use of the data that we now have at our fingertips. Questions and ideas continue to come in from every part of the company, and as we respond to these, our solution will continue to grow in terms of the value that it delivers to the company's success."

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Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

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