How Cisco IT Upgraded Its ERP Purchasing Module

New ERP platform for Cisco quote-to-cash business process improves purchasing for customers and partners.

Cisco IT Case Study / < Business Applications / ERP Purchasing: This case study describes Cisco IT's process of designing, deploying, and ensuring the adoption of a new ERP platform for Cisco's quote-to-cash business process. This project was vast in scope, affecting one out of three employees and more than 30,000 customers and partners. The new platform gives Cisco a strong foundation for the future; customers gained functionality that will support tailored user experiences and streamlined operations. Customers can draw on Cisco IT's real-world experience in this area as a model for similar large-scale projects.

"Everest was called an upgrade, but it was so much more. It was a huge project with a long-term vision—to create a world-class purchasing experience. One out of every three employees was affected by the project. Everest had a global impact on business processes, and its effects extended out to our customers and partners. The scope of the project was the biggest challenge—we upgraded several Oracle 11i modules, replaced a large amount of custom code with standard 11i modules and tools, and changed 37 of our 69 major business processes along the way."

– David Murray, Director for Release Management, Oracle Projects, Cisco IT

BACKGROUND

At Cisco Systems®, the Everest project was the final phase of a multiyear series of foundational software releases relating to the move from Oracle 10.7 to Oracle 11i software. The previous deployments and enhancements carried out as part of this companywide initiative included:

- System integration refinements across multiple functional areas
- Manufacturing and finance data platform upgrade (Cisco IT case study "ERP Manufacturing and Finance Platform" at http://www.cisco.com/web/about/ciscoitatwork/business_of_it/erp_manufacturing_and_finance.html)
- Issue-to-Resolution (I2R) foundation and order configurator software upgrades
- Service and support system migration (Cisco IT case study "ERP Technical Support" at http://www.cisco.com/web/about/ciscoitatwork/business_of_it/erp_technical_support.html
- Service reporting using Oracle 11i capabilities
- Service part planning system replacement and update of online service request tool
- Oracle iProcurement implementation
- Upgrading, merging, and implementing iProcurement for international operations

"Naming this Oracle 11i project was easy," says Laura Coon, the Everest release manager within Cisco IT. "The upgrade of our ERP foundational software looked as formidable as an expedition to scale Mt. Everest. With the upgrade to Oracle 11i, we knew that many functional areas within Cisco would have to seriously evaluate and change crucial business processes. The companywide support was phenomenal and this challenge turned into a huge

opportunity. Our goal with the Everest project was to end up with a world-class purchasing experience for our customers and partners, and the entire company shared the commitment to this vision."

The Everest project, like the other Oracle 11i upgrades and migration efforts, resulted from a combination of driving forces. In response to market changes, Cisco experienced:

- Growing recognition of the power of cross-functional collaboration, and internal demand for systems and processes that facilitate better interactions.
- Increasing demand for collaboration with suppliers, distributors, partners, and customers.
- Opportunities for enhancing enterprise resource planning (ERP) systems in support of online business models.

Several internal drivers added momentum to the project. Oracle 10.7 had reached end-of-life status, creating support challenges and introducing escalating cost of ownership across the company. The outdated technology platform slowed the introduction of enhancements and made it difficult to respond to changing business requirements. A growing base of customized software and tools further complicated support and increased complexity within the infrastructure that handled vital corporate business processes. The technical and business challenges were further complicated by new corporate requirements for Sarbanes Oxley compliance; these collective forces drove an executive-level decision to upgrade the ERP software foundation.

CHALLENGES

Goal Setting

The main purpose for the Everest project was to simplify and standardize customer-facing processes and controls. This included order management, pricing, invoicing, tax, and collections—all the functions that rely upon the Oracle-based ERP systems. With the new, more stable, and standardized Oracle 11i foundation, global business processes could be streamlined, application customizations reduced, and out-of-date tools retired. The project goals included addressing the latest requirements for Sarbanes Oxley compliance, and improving the outsourcing model by developing collaborative problem-solving processes that could result in stronger, more productive vendor partnerships.

As project planning progressed, it became clear that success would require the development of cross-functional partnerships for process and policy optimizations. The project definition also included process and system integration requirements to increase productivity and enable corporate growth. Automated compliance and governance solutions were included in the Everest project, with the goal of establishing a companywide architecture supporting these critical functions.

Understanding and Defining the Scope of the Project

The IT release team focused on meticulous data gathering during the global design review process. The team first determined that the Oracle 11i upgrade would affect 37 business processes, and then identified and analyzed the subprocesses. Approximately 1000 questions were posed and discussed with relevant teams and departments. More than 300 points of feedback were captured during the review process, 122 action items identified and documented, and 11 potential showstoppers raised and analyzed.

While large in scope, the technical upgrade was more straightforward than the business process changes. The upgrade would involve:

- Oracle instances: 2
- New Oracle modules: 4
- Legacy systems retired: 9 (spanning order management, accounts receivable, and pricing)

- Reduction in customizations: 35 percent
- Custom reports eliminated: 400+
- Boundary systems: 140+
- Developer days (without reports, as of January 2004): 40,000+ (across 500+ work units)
- Business processes retired (changed to “end of life” status): 6
- Internal Cisco users: 10,000+ users and stakeholders across six business processes, globally
- Partners and customers: approximately 30,000
- Significant change to customer interface for technical support organization (changed from text-based to browser-based)

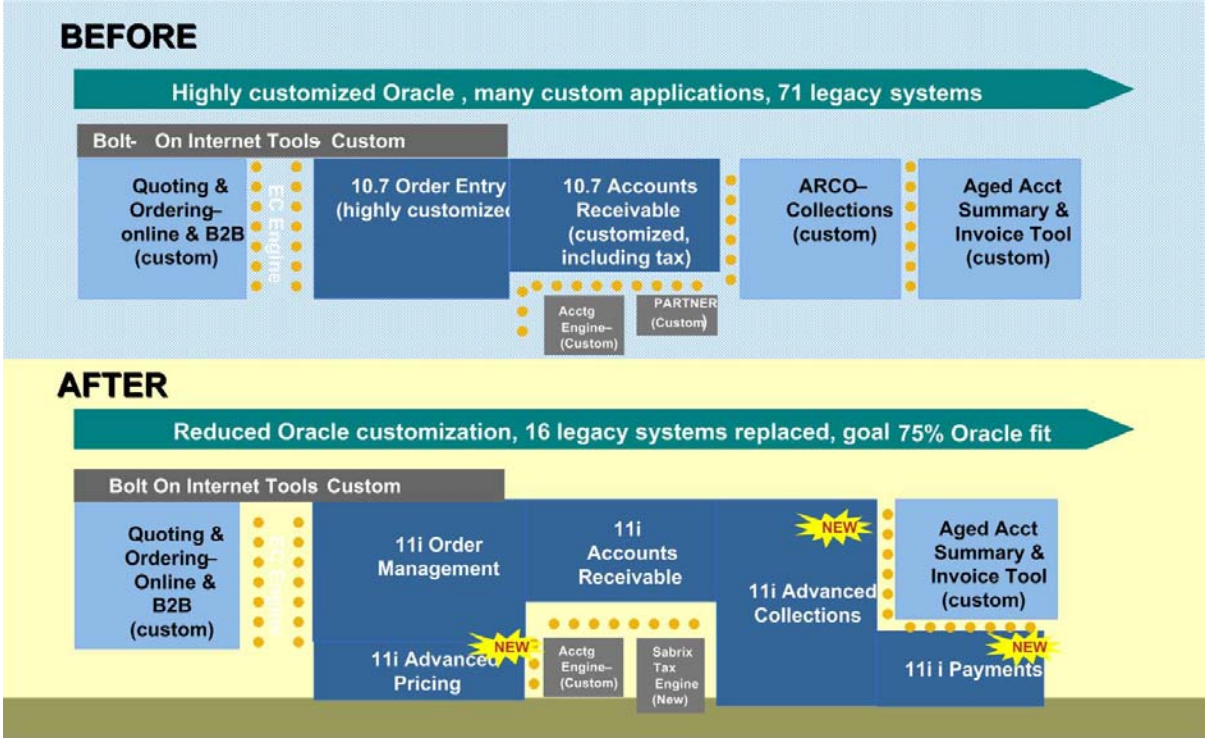
Ensuring Adoption

Changing foundational systems and processes required continuous evaluation to ensure user acceptance and broad adoption of the new software and procedures. Team building, communication, and training were vital components of the overall project.

SOLUTION

Before and after diagrams of the Cisco Quote-to-Cash (QTC) software foundations (Figure 1) summarize the extent of the changes. Project success was measured in terms of the smoothness of the overall deployment and the minimization of disruption to the businesses of Cisco and its customers during the actual changeover. The project achieved success by maintaining focus on priorities, people, and processes. Extensive preparations clearly defined every step of the project—before, during, and after the actual go-live event.

Figure 1. Upgraded Quote-to-Cash Architecture



Priorities

- To keep the team unified and the project focused on the goals, priorities were defined for regulating compromises:
- **Top priority:** Robust implementation of Oracle 11i quote-to-cash processes and systems to create a solid, long-term foundation for corporate initiatives.
- **Second priority:** Robust system-to-system integration within the foundation.
- **Third priority:** Optimization of quote-to-cash process (quote-to-book, book-to-revenue recognition, invoice-to-cash) where possible given release constraints.

These priorities were defined by the release team, and buy-in was achieved at all levels, beginning at the executive level. This corporatewide support of the project priorities was deemed critical for success, and especially necessary for overcoming the challenges relating to assigning and scheduling subject matter experts to various tasks.

People

More than 10 major organizations—including manufacturing, finance, sales, customer service, and customer advocacy—were affected by the upgrade. Cross-functional teams came together to share information about joint planning, business and system requirements, analysis, and approvals. Organizations loaned some of their most knowledgeable staff members to support the project, and information was shared across all groups through participation in weekly release forums, all-hands meetings, readiness reviews, guidance and steering committee meetings, and functional forums. At the highest strategic level, the steering committee provided executive-level visibility for issue resolution and resource allocations, meeting every three weeks for the duration of the project and coordinating monthly executive-level reviews. This multitiered approach facilitated consistent and timely analysis and communication of program impacts, status, and risks. Executive-level participation strengthened cross-functional relationships, allowed the release management team to make decisions quickly, and helped the Everest team determine the right priorities at the right time to effectively utilize all resources.

Cisco IT created a release management team for the day-to-day management and implementation tasks, driven by the project goals and directives from the steering committee and functional management teams. The release management team was responsible for providing regular status reports back to the steering committee and functional management teams, as well as disseminating information as needed to company executives and employees.

The collective project team of 1000 people was distributed geographically, requiring global collaboration. A central repository was created for documentation and an increased focus was placed on documenting discussions and decisions. In some cases, deliverables were assigned wholly to a non-headquarters location in order to provide improved efficiencies for the deliverable.

Design and development phases of the project were improved by sharing resources and information across organizations. Specifically, the team created centralized and dedicated system performance and setup teams, established cross-functional design reviews, and held regular cross-track forums to keep the lines of communication open and to resolve issues quickly as they arose.

Cross-process business readiness and organizational adoption teams were formed to identify affects of the system upgrade, to prepare internal stakeholders for the release, and to effectively manage partner and customer expectations.

Due to the magnitude of the project and the number of people involved in the actual implementation and deployment, a formal decision making structure was defined, and critical roles identified (Table 1).

Table 1. Project Roles and Responsibilities

Critical Roles	Responsibilities
Release manager and team	Overall coordination across teams Issue/risk management Milestone tracking Ensuring the ability to audit the program
Infrastructure	Test environment development and management Support Code migration
System/transition readiness	Dependencies and sequencing of the cut-over tasks
Business readiness	Ramp-down and down-time requirements Post go-live support Business normalization support
QA	Testing and change control processes Database and application performance testing
Boundary readiness	Coordination across affected ERP boundary systems
Data migration	Business decision making process Technical tasks required for the core upgrade and data conversion
Business and IT processes	Requirement gathering Functional designs Development for business processes

Organizational adoption	Communications and training needed for internal users, customers, and partners

"Everest involved so many organizations," says Susan Stemel, IT project manager for the QTC implementation. "The project brought everyone together with excellent communications and team building. The groups worked together well and the decision-making process was effective. This was only possible because everyone knew their own roles and the roles of the others on the team. The clarity of the responsibilities and the common goals kept us all moving in the same direction."

Team members agreed to negotiate and collaborate in order to meet their objectives. Active listening and clearly documented processes helped everyone understand the end-to-end processes and project implications. Analysts and project managers from cross-functional organizations worked together to propose jointly agreed-upon solutions to their management teams rather than expecting managers to make final decisions from an organizational point of view.

Ownership was shared by jointly investing in the release and by making individual team agendas subordinate to project team goals. For example, at the highest level, the steering committee made directed moves to support the project with the best resources, and made decisions as a team to defer new scope requests in favor of supporting project priorities. In order to facilitate a greater sense of belonging and ownership, the project team empowered team members worldwide to act as representatives during local hours. To give special recognition to team members that made significant contributions to the release efforts, a peer-to-peer recognition program was put in place.

The attention paid to team building was considered a two-fold investment: it would ensure a smooth deployment, and would also optimize the rate of end-user adoption. Several best practices formed the foundation of the project teams:

- Executive sponsorship helped business groups understand the impact of the upcoming changes.
- Templates drove consistent business readiness plans to monitor and correct course as needed.
- Business normalization metrics defined "normal" so that business and project teams had a clear understanding of success criteria.
- True partnerships were created between project teams and functional areas to build a sense of personal investment into the transition.

End-user adoption was carefully analyzed throughout the project. To make the transition as comfortable as possible, the release management team employed numerous best practices:

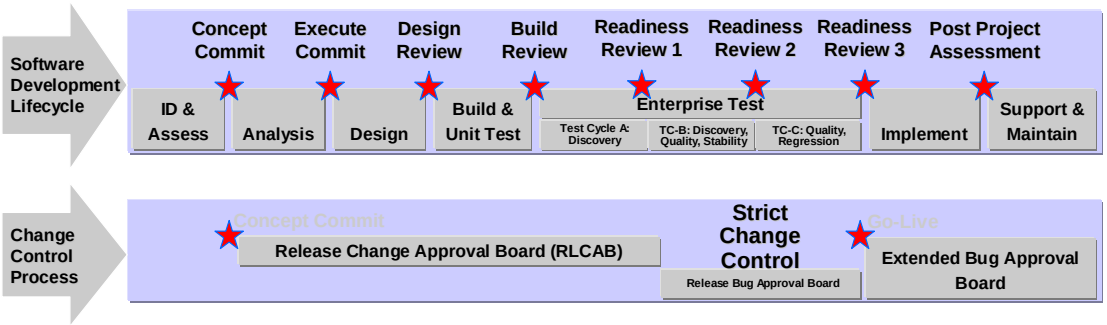
- Up-front communications: Users were made aware of objectives, changes, impacts, and benefits, which generated readiness for project milestones and activities.
- Stakeholder impact and readiness data: A Web-based knowledge management database gave each functional area and job role 24x7 access to up-to-date information on the release impacts, activities, and status.
- Sponsorship and end-user network: Functional-level ambassadors were identified and recruited to ensure that users in each affected area were prepared and empowered during the change process. Ambassadors communicated with their user communities and solicited feedback about the impact analysis and business readiness plans. Theater visits were conducted with groups most impacted by the release in order to solicit their thoughts and concerns. As a result of the valuable feedback from user groups, management, and guidance committee members, plans were adjusted.
- Training and support: Training courses were creatively developed and delivered, and progress was monitored to ensure completion by stakeholders. A total of 120 hours of training modules included 13 instructor-led and 32 Web-based modules. Training and collateral were created in multiple languages in order to increase understanding by the culturally diverse group of customers and internal stakeholders.

Process

The Cisco release management methodology (Figure 2) brought a quality approach and industry best practices to the Everest project. The milestones required sign-off at the steering committee, functional management, or executive levels (as appropriate for the specific milestone):

- Concept commit: After the initial project assessments, the release team articulated a proof of concept and process improvement opportunities to the management team. Initial estimates for resource allocations were reported and approved.
- Execute commit: A consolidated summary by the business processes (quote-to-cash, etc.) for all areas was reviewed before design work began. At this sign-off point, the project scope, risks, timelines, and resource requirements were defined and approved.
- Global design review: This milestone confirmed the assessments of project impact and the ability of the changed processes and solutions to support Cisco's global operations. At this point, it was also confirmed that no global showstoppers remained. This review was integral to identifying conflicting priorities and requirements, resolving the differences, and reaching agreement about how joint decisions would be made.
- Readiness reviews: Each of the readiness phases were aimed at evaluating the project in terms of the organizations' ability to successfully deploy the changes, and to ensure that acceptable levels of risk were not exceeded. Three formal business readiness reviews were held so that each organization could present their readiness status, risks, and launch preparation challenges.

Figure 2. Cisco's Release Management Methodology



Preparations

The Everest project team prepared three platforms for the development, testing, and staging of the new ERP software. These platforms provided stable environments for the distinct phases before actual deployment within the Cisco production environment. In addition to three enterprise test cycles for testing the new software, a final test was carried out as the first step in the actual implementation phase. During this fourth and final test phase—or transition test—a team of 200 rehearsed the steps required for the go-live event. The seven-day 24x7 test allowed tasks to be practiced after the required cross-functional planning and training was complete. The transition test included the thousands of actual steps later followed to bring up the Oracle 11i ERP solutions. Processes, communications, and scenarios were refined after the transition test.

"The Everest project, in terms of the cross-functional requirements and interactions, was the most unbelievable event that I've ever seen," says Guillermo Diaz, Jr., director of IS and IT project leader for the Cisco customer advocacy organization during the transition to Oracle 11i. "Everybody in the company—even though we were in different organizations and part of different business processes—shared one vision to get to the top of Everest. We learned a lot about our company's ability to work together and to accomplish amazing results."

The Go-Live Event

The exhaustive preparations and rehearsals resulted in a system cutover that had minimal impact on Cisco and its customers and partners. The go-live event took less time than anticipated—only four days of downtime for the key systems, and only seven days total for all of the tools and applications involved. All of the affected organizations were ready and prepared, with workarounds and alternative tools in place to smooth the transition. A central “war room” made release team experts available to support deployment teams, and a help desk was staffed with trained support teams to assist end users as soon as the new systems went live.

The new Oracle 11i deployment included:

- Replaced Oracle modules—Order Management, Accounts Receivable, Collections, Credit Card applications, Pricing, Tax Engine, plus legacy ordering and commerce tools.
- Retired software—400+ ERP reports, nine legacy applications, seven programs (a 20-percent reduction of customizations).
- Enhancements—Re-engineering 37 out of 63 QTC subprocesses.
- Enhanced integrations—Service contracts and installed base; manufacturing; service logistics.
- Business process optimization—Customer data (better validation and standardization of data across functional areas); standard order (improved accuracy, tighter business controls); standard return (closed loop receipt process); trade-in and asset recovery (better enforcement of expiration dates); credit card (more automation for validation and authorizations); commerce tools and business-to-business impacts (consolidation of tools, better business controls, improved customer experience); bundles (increased customer visibility of discount netting); and program retirement (identified several programs).

Post-Deployment Efforts

After the go-live event, teams throughout Cisco continued sharing responsibility for normalizing the business. Cross-functional “Tiger Teams” were put in place to address issues quickly. The Tiger Teams prioritized, assigned, and tracked the issues through to resolution.

RESULTS

Despite the large scope and impact of the Everest release, the Cisco business was normalized on schedule within one quarter. The new foundation will be the basis for many business enhancements, enabling future collaboration between organizations and outside partners. “The overwhelming success of the Everest project has given Cisco management confidence about large-scale projects,” says Murray. “It surpassed our expectations in terms of collaboration and results. Our teams were able to sustain exceptional performance over a long period of time, and demonstrated that communications and a common vision can inspire teams to reach for high goals.”

Cisco customers are also beneficiaries of the new ERP foundation. With the consistent platform, reduction of customizations, and process improvements, Cisco customers gain an improved purchasing experience.

Some of the immediate results enjoyed by the company include:

- Better financial controls and tax applications
- Supportable global procurement
- Simplified pricing systems for product and service
- Scalable order fulfillment, order management, and accounting
- Scalable, integrated service logistics and case management

The results are best summarized in terms of the reactions from the various teams within Cisco that were most affected by the release, shared in the following sections.

The Executive Team

"The implementation was world-class. It showed the results of excellent planning, excellent follow-through, and excellent execution. The team minimized the business risk involved and really focused, in a positive way, on the leverage we can gain from cross-functional collaboration to reduce business impact." *John Chambers, President and CEO, Cisco Systems*

"Oracle 11i, and specifically the Everest release, is unquestionably the most complex and sweeping system change Cisco has made in its history. Despite that complexity, the team did an outstanding job of delivering the project on time and with minimal impact to the business. The ability of the team to complete problem identification and resolution post go-live was outstanding. The success of this program is clearly attributable to the quality of the team and their dedication to meeting their commitments." *Randy Pond, Senior Vice President, Operations, Processes and Systems, Cisco Systems*

Customer Service

"Where to begin…The Everest implementation had a scope beyond immense, unprecedented complexity, and an execution totally dependent on the cross-functional cooperation and collaboration between hundreds of geographically dispersed people. What this team has pulled off is totally impressive. I credit the excellent preparation and training of the team, the multiple test cycles, and a response center team that had a plan ready for every situation." *Dan Smoot, Director, Customer Services, Cisco Systems*

The new platform has given the Customer Services organization the stable, efficient platform required to handle hundreds of millions of dollars in orders each quarter. During the transition to go-live, the organization queued up 1700 orders. With the previous Oracle 10.7 foundation, processing the backlog would have required the dedication of their systems for 12 to 18 hours. When the new Everest release was turned on, the service team saw an immediate improvement: the backlog was processed without taking over the entire system, and was accomplished in only six hours. The smooth transition and fast normalization resulted from training more than 1100 employees during the months prior to the actual go-live.

Finance

"Participation on the guidance committee was crucial for our organization. I received feedback from the release experts in my area, and had weekly opportunities to provide that feedback to the release management team. That regular communication and exchange of information between my team and the release management team kept us up to date and we resolved issues quickly. Our team was in the right mindset for the transition, and we were able to anticipate problems ahead of time, making it a much more positive process." *Cesiah Tiran, Director of Corporate Finance, Cisco Systems*

With a multiyear project like Everest, the mission-critical QTC business process represented a major challenge. The implementation touched order entry and accounts receivable modules, affecting the revenue recognition for the company. Decisions had to be made without the ability to fully estimate the impact when the system would be deployed years later. With difficult-to-predict requirements, the finance team recognized the need for contingency planning. Success was achieved by focus on the rehearsals, and having a team and escalation process in place to address any surprises during the go-live event.

Sales

"The Everest project was a huge endeavor for the sales organization—more than 200 market-to-order applications touch the ERP system. We had to adjust all of those interfaces and redo our business processes. We adopted many new Oracle 11i tools and reduced our reliance on customized tools. This was all carried out with minimal impact on our customers. The preparation paid off and we had no surprises during the go-live transition. Perhaps even more important, the Everest project forced a major change in our organization. Where we had been previously separate from corporate—with independent projects and systems—we have now formed relationships with other functions in

Cisco. We are stronger today with our new understanding of related business operations, and stronger ties into other Cisco groups." *Mrinalini Ingram, Director of Finance for U.S. Sales, Cisco Systems*

The entire Cisco sales force was affected by the upgrade of the ERP system. New tools and changed interfaces required extensive ongoing communications and training. By establishing stronger ties with corporate IT groups and other boundary organizations throughout Cisco, the sales organization gained a solid understanding of the potential challenges they would face during the transition. The collaborative preparation efforts resulted in reduced downtime for the sales team, and many enhanced business processes.

Customer Advocacy

"Collaboration is part of the Cisco culture—the Everest project is a great example. Without effective collaboration, this project could never have succeeded. Early on, the project leaders raised the profile for this program and got everyone aligned with the objectives. We could all look at the challenges and the tasks from a companywide perspective. Within Customer Advocacy, we learned a lot about how to manage a major IT implementation. The Everest release gives us the foundation we need to deliver a next-generation service contract solution—we will be applying what we learned to a follow-on project that will greatly streamline our operation." *Steve Blunt, Director of Customer Advocacy, Cisco Systems*

The new ERP platform required many changes in the interfaces facing the boundary systems such as the Customer Advocacy systems. This required the team to understand the integration issues for enabling data flow to the new ERP platform, and the performance requirements for meeting the service-level agreements (SLAs) of customers. In addition, the team had to ensure that the new interfaces would accommodate enhancements and new capabilities anticipated as needs for the future. By evaluating the Everest project in terms of both current and future business requirements, the Customer Advocacy team was able to inject their needs into the project design and planning phases.

LESSONS LEARNED

As project team members returned to pre-Everest roles or moved on to new roles, they took with them a better understanding of teamworking behaviors that help to drive a more seamless customer experience across Cisco. At the same time, this project team is taking an increased understanding of customer impacts from internal Cisco projects back into their organizations' roadmap discussions and planning exercises. Many teams have commented on the increased levels of proactive cross-functional planning. Their inter-Cisco network has expanded to include contacts for answers to business process questions. Team members have also increased their appreciation for the value of end-user participation throughout project lifecycles.

Instead of deferring to individual team messaging, Everest team members developed a new teamwork behavior and model—allowing messaging to come from a sponsoring business process and then being tailored to meet their groups' needs. This approach was used extensively by the Organization Adoption teams and is now accepted as a best practice for future initiatives.

Universally, the Everest team has gained an increased sensitivity to team members in non-headquarter locations and how important it is to follow basic principles for meeting etiquette and scheduling. The company has also recognized the need to establish a site-project coordinator to streamline cross-functional discussions.

Many lists of lessons learned have been shared in post-event presentations, with some highlights included here:

- Align organizational priorities and initiatives.
- Optimize use of subject matter expert time (off-load detailed deliverables and project management activities whenever possible).
- Actively mitigate risks to ensure release priorities are met.

- Ownership must be driven by the business function.
- Collaboration brings results.
- Well-managed business rules and smooth order processes are directly related (affecting design and normalization).

NEXT STEPS

This last phase in the multiyear migration to the Oracle 11i platform now becomes the beginning of a new multiyear journey to take full advantage of the new platform. All the affected organizations are focused on getting back to business as usual, while looking forward to many innovative advances in business processes made possible by the enhanced technology foundation. Highly efficient cross-functional business processes now characterize Cisco's operations, and every team enjoys confidence in the company's ability to cooperate across functional areas to overcome business challenges.

Some of the planned enhancements enabled by the new platform include:

- Global, segmented pricing models, policies, and processes
- Integrated offers: hardware, software, service, financing
- Improved and segmented ordering experience
- Widescale automation of financial controls
- Productivity improvements for sales, partners, and customers

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