

How Cisco Accelerated Product Development Using Quad

Collaboration platform significantly shortens time to market, and produces cost and productivity savings in scale, flexibility, and process replication.

Cisco Case Study / Collaboration / Enterprise Platform: This case study describes how the Cisco Enterprise Collaboration Platform Business Unit used the Cisco Quad platform to form a working community to integrate their work processes, resulting in tangible business benefits and productivity and communication improvements in the product development process. Cisco customers can draw on Cisco's real-world experience in this area to help support similar enterprise needs.

“Today, results and action items from a stress test [rapid testing of the platform] are collated across 20 to 30 people in an hour. . . . The same work would have taken us at least 4 hours in the past.”

— Joseph Khouri
Cisco Director of Quad Engineering

BACKGROUND

With the internal deployment of Cisco Quad™, the Cisco Enterprise Collaboration Platform Business Unit (ECP BU) developing the new collaboration platform faced a common imperative: It needed to accelerate time to market and time to revenue generation. In addition, the group wanted to control costs while scaling, as well as engage various stakeholders across Cisco, including working closely with Cisco IT and the Collaboration Business Technologies groups, key sources for

internal business needs. All of these objectives had to be accomplished while fostering a culture of innovation. The cross-functional development group knew what it would take to be successful:

- Deploying a new development methodology in a distributed team environment, involving two third-party software development and management tools
- Increasing engineering team productivity
- Reducing process latency
- Providing improved visibility to key stakeholders
- Speeding new employee training and time-to-effectiveness
- Motivating and empowering world-class talent

The group (including team members from program management, product management, user experience, engineering, quality assurance, and executive sponsors) decided to use the comprehensive Cisco® Quad platform to form a working community and integrate their work processes, while meeting individual and group needs. The annual productivity improvement for ECP BU was approximately 28,000 hours. The results were impressive, with the first major release achieved within 12 months versus the 24 to 36 months that it usually takes, thus reducing the time to market with an estimated US\$89 million increase in net present value (NPV) over five years. The group achieved equally successful results, driving an average 12 percent productivity gain per employee within the development team

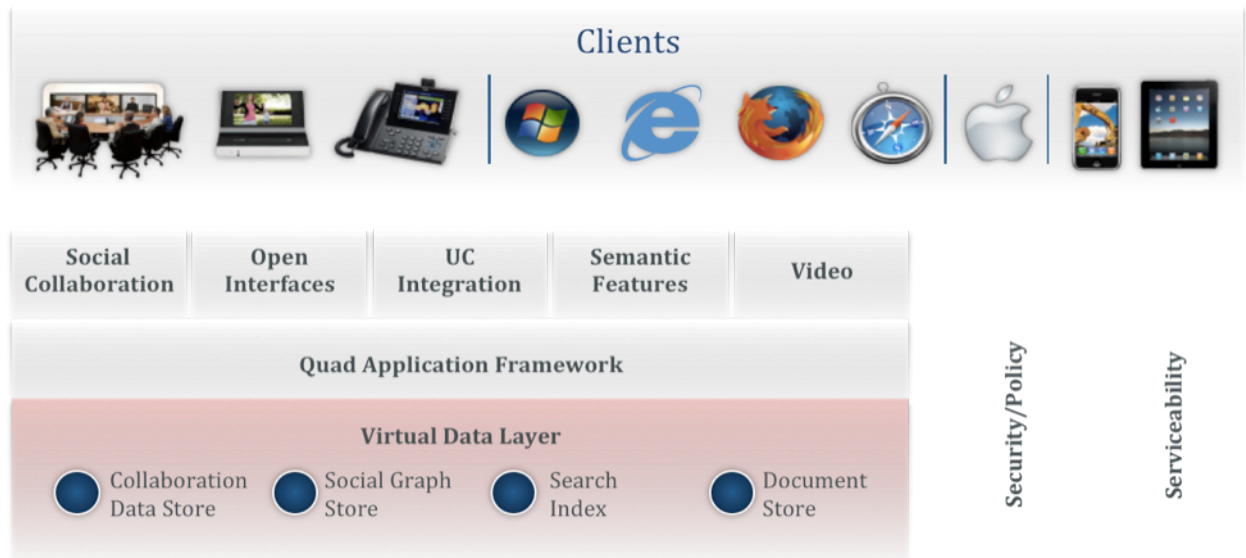
(translating into a recurring benefit of approximately US\$2.9 million per year) and greater cross-functional and

executive visibility, enabling a new way of collaborating with greater business value.

About the Enterprise Collaboration Platform BU

The Cisco ECP BU community reflects the diversity of talent required to bring new software solutions, such as Quad, to market. No fewer than six different areas of expertise came together in one community and in one virtual place. The Cisco community has evolved over time, with the entire business unit invited to participate. In addition, teams affected by or interested in the group's work have joined. Cisco Quad is a comprehensive collaboration platform that includes social, content, process, and communication capabilities. In Quad-enabled communities, user collaboration is powered by context and is always actionable, thus improving productivity and speeding results. Groups can benefit from integrated content management and open social solutions, with future plans for embedded policy management. With a fully customizable interface, teams can easily access enterprise-level, highly available social solutions (directory profile, blogs/wikis/forums/posts, social tagging, search, dynamic communities, micro-blogging, activity feeds/notifications) and unified communications (click to call/IM/Cisco WebEx®, presence, visual voicemail, web communicator, video, and third-party integrations). Each member of the team can create a linked, personalized workspace with a dashboard to facilitate role-based activities and team- and group-based communication (Figure 1).

Figure 1 Cisco Quad High-Level Architecture



CHALLENGE

Software development is a complex process involving program management, product management, user experience, engineering, and quality assurance teams, as well as executive oversight and leadership. Individually and as a working group, the members required streamlined collaboration processes that could help them remove challenges and meet their goals.

Cisco program managers were spending an inordinate amount of a week's time (6 to 8 hours) manually gathering team updates and communicating. Meetings then focused on verifying these updates, rather than problem solving.

Cisco product managers also were deluged with updates of a different sort: email- and meeting-driven requirements gathering, feedback from customer meetings, and input from executive review meetings. They also felt they wasted time responding to multiple, duplicate requests for the same information and updates.

Because user experience (UE) design tools were not available to engineering and product development teams, the UE team was working with little transparency. Emails used to share design documents made collation of opinions and

version control difficult. As a result, input was delayed, iterations increased, and design validation slowed. By receiving inputs from engineering and quality assurance too late in UE design process, the team was forced to rework much of the previous design.

Quality assurance had its own difficulties with the existing process. Issue tracking via email resulted in multiple independent threads, while data collection and collation was tedious and time-consuming. Until the team met in its formal meetings, only the data consolidator could see all the issues that were identified and submitted. Thus, the larger team had to wait see the final, consolidated output to understand all the issues and receive their assignments. To help ensure that all issues were captured and new issue assignments made, the team participated in long meetings.

The highly skilled engineering team struggled with too much time spent administering and managing rather than developing. Poor visibility into other team members' progress hampered proactive work load balancing, while it was also difficult to locate subject matter experts dispersed throughout the business.

Executives also reported too much time spent in status update meetings. Despite those meetings, they still felt they had limited visibility into daily progress, which reduced their ability to identify and avert issues before they became critical. Executives also wanted mission-critical visibility, better metrics tracking, and more frequent communication to maintain organizational alignment and focus.

Some of the shared, cross-functional challenges were reducing the time spent in administrative tasks, whether updates or version management; recapturing time spent in responding to duplicate requests and in status update meetings; replacing asynchronous, latency-prone email with a presence-aware solution; and facilitating access to subject matter experts in a synchronous fashion. The goal was meeting these individual, roles-based, functional, and group collaboration requirements, while improving best practices and realizing business benefits and metrics-based value.

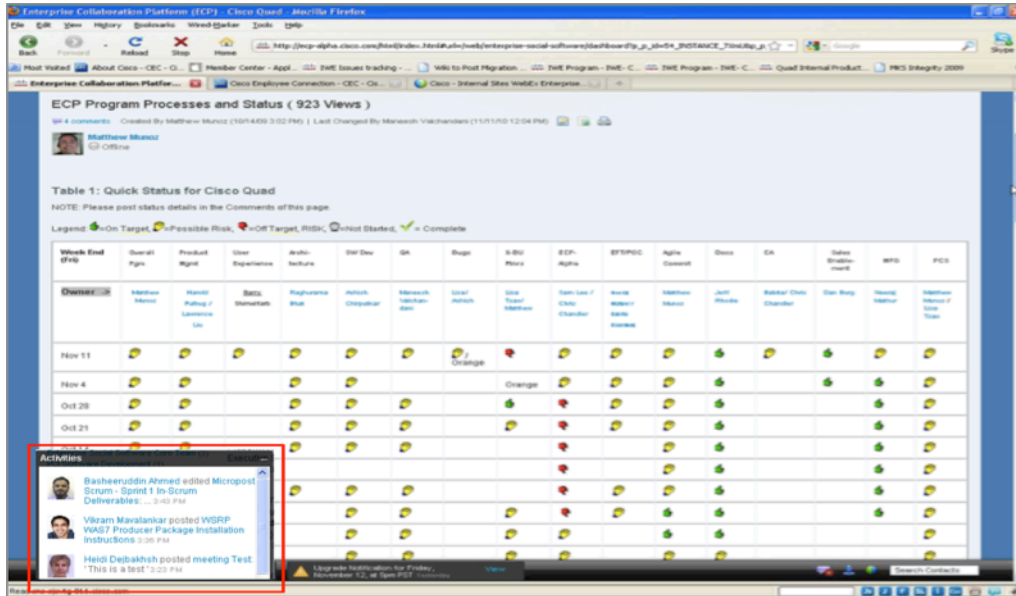
SOLUTION

By creating a community on Quad, the group was able to address functional and common challenges that slowed successful completion of the goals for reducing Quad's time to market and time to revenue.

Program Management

Program managers faced two challenges: current asynchronous communications and the latency that they produced in resolving issues. With the Quad-enabled personal workspace, the team was able to utilize posts, presence, and click-to-collaborate functionality, which includes Cisco WebEx and unified communications, to enable synchronous collaboration and help reduce latency (Figure 2). Based on presence information, a team member could walk over to a cubicle for in-person resolution or conduct a quick virtual meeting. They also were able to free up administrative and management time with real-time status updates via Quad posts. Updates were collated and reposted in minutes versus 6 to 8 hours. As a result, team meetings could focus on problem solving, feedback was streamlined, and process latency was reduced. With presence and posts, the team resolved issues faster by efficiently collating feedback and eliminating some 50 reports. Because a team member could see that an issue had been reported, redundancy in reporting was eliminated, and the cycle of emails and calls ceased. In addition to product management, engineering, and quality assurance, executives also found the Quad watchlists especially helpful in sharing critical issues.

Figure 2 Program Management via Status Review Posts and Activity Updates through Activity Streams



Product Management

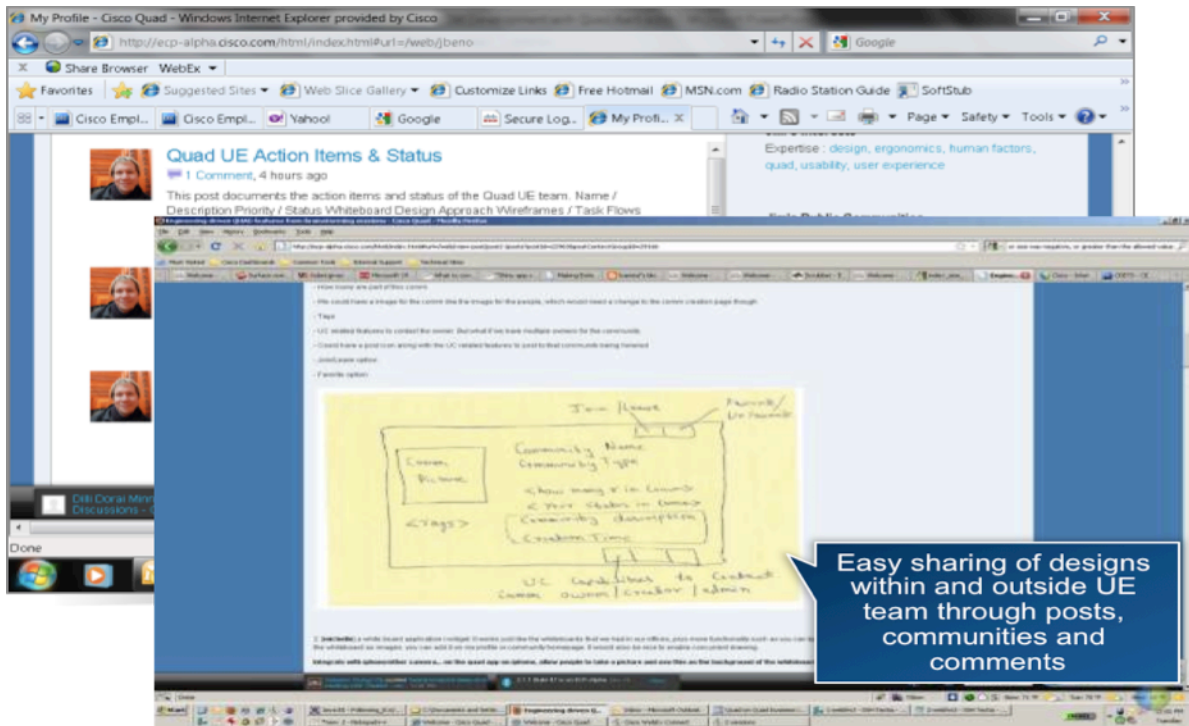
Cisco product managers routinely spent most of their time working within two third-party software management and development tools. By integrating these tools, the team turned Quad into their personal workspace, as well as a go-to community location. With Quad, managers experienced earlier and more transparent engagement with engineering and UE teams and reduced the time spent preparing for executive review. Managers even streamlined the requirements management process using Quad posts to finalize user stories. Quad also became the single source of truth for customer feedback. Instead of merely adding technical documents and documentation, the managers decided to record short instructional videos for customer viewing and training. Customer feedback was added in the Quad comment streams, which were immediately available for team review and resolution. The community environment thus replaced multiple customer discussion forums that team members previously had to check daily.

User Experience

The UE team needed to increase transparency around evolving UE designs with engineering and other teams. By using the Quad post functionality, the UE team was able to broadly share and collaborate on designs from the outset by embedding design images rather than uploading full documents. The images helped everyone save time opening, downloading, and then reloading documents. In addition, the embedded images could be commented on and shared quickly.

By establishing a single post for design sharing, receiving feedback in a timely manner, and micro-blogging about design issues, the team was able to remove the barriers that had isolated team, group, and functional information across Cisco and prevented collaboration among those affected by or simply interested in Quad development. Because the community was open, anyone within Cisco could post a comment, thus expanding the review process. Several commentators outside of the original development group whose comments were useful and insightful joined the group. Through the posts, the team could also track design iterations and rapidly resolve design issues, thus completing design validation in six versus eight weeks (Figure 3). In addition, meetings were transformed; the team now spent more time discussing the new design rather than multiple, proposed changes.

Figure 3 User Experience Impact: Reduced Design Iterations with Sharing and Richer, Rapid Feedback from a Broader Team



Engineering

The Quad engineering team wanted to better utilize engineers and engineering talent to accelerate issue resolution and system upgrades. With Quad, the team saw improved visibility into task status and faster, better interactions through posts and microblogs. In fact, team members often identified issues as they were occurring, in addition to the regular testing process. The posting of issues drew the attention of the product managers and other engineers. Everyone was able to see updates from cross-functional colleagues in the Quad activity feed. Often engineers with the required expertise simply fixed the issue even without formal task assignment, but search capabilities also helped locate expertise when needed. Overall, Quad helped to significantly improve productivity by 1 to 2 hours per day per engineer, reduced task completion by 20 percent by reducing the overhead of status update meetings, and decreased the time required for system upgrades by 40 percent because of the rapid response and focus capability enabled through Quad.

Quality Assurance

The quality assurance team needed to find another way to track and resolve bugs and issues. Quad's posting capability facilitated the tracking of reported problems, thus reducing redundancy and repetitive tasks. The collated posts also reduced surprises. Resolution was faster and collective. Meetings once devoted to updating participants were shorter or eliminated. The visibility of issues also encouraged faster resolution through peer pressure and improved cooperation, with team members helping each other with open issues. For example, with Quad, the time required for a minor release decreased from 7 days to 4 to 5 days, a 40-plus percent acceleration.

Executive Team

To manage this large-scale development effort, executives required oversight capabilities with the ability to follow issues across all teams, as well as to track metrics achievement. Quad proved to be valuable in maintaining accurate and clear executive communication and messaging by eliminating the need for others to repurpose and recommunicate content. With Quad, executives provided and received input at all levels of organization, as well as made or drove faster decisions. Executive posts and blogs within the community let the community know quickly what was most important, thus enabling better alignment and more effective, interactive internal communications. For

EXECUTIVE SUMMARY	
BACKGROUND	Cisco Enterprise Collaboration Business Unit needed to accelerate time to market and time to revenue.
CHALLENGE	<ul style="list-style-type: none"> • Reduce the time program managers spend manually gathering and communicating team updates. • Reduce the time product managers spend on email and meeting-driven requirements gathering. • Improve cross-functional collaboration, design validation, and decision-making.
SOLUTION	<ul style="list-style-type: none"> • Created a working community using the Cisco Quad platform to integrate work processes, and address functional and common challenges.
RESULTS	<ul style="list-style-type: none"> • Time to market 12 months versus 2 to 3 years, US\$89 million increase in estimated 5-year NPV • Average 12 percent productivity gain daily per employee, translating to US\$2.9 million savings per year. • Enhanced cross-functional visibility and communication; 6-month release cycle versus 3 years for competitors. • Platform easily replicated; US\$97 million in potential savings at 15 minutes per day per employee in Cisco development organization.
LESSONS LEARNED	<ul style="list-style-type: none"> • Obtain executive sponsorship • Ensure consistent use of the platform • Invest in Change Management • . • •
NEXT STEPS	<ul style="list-style-type: none"> • Continue to assess and measure Quad

example, executives used posts and microblogs to recognize individual and team achievements beyond those of their direct reports. Visibility helped the executives identify talent deep within the organization and provided another management tool in addition to performance reviews. Overall, executives felt that the Quad-enabled community helped them to access information faster, provide oversight and direction, better facilitate employee engagement and communication, improve organizational alignment, and quickly resolve emerging issues.

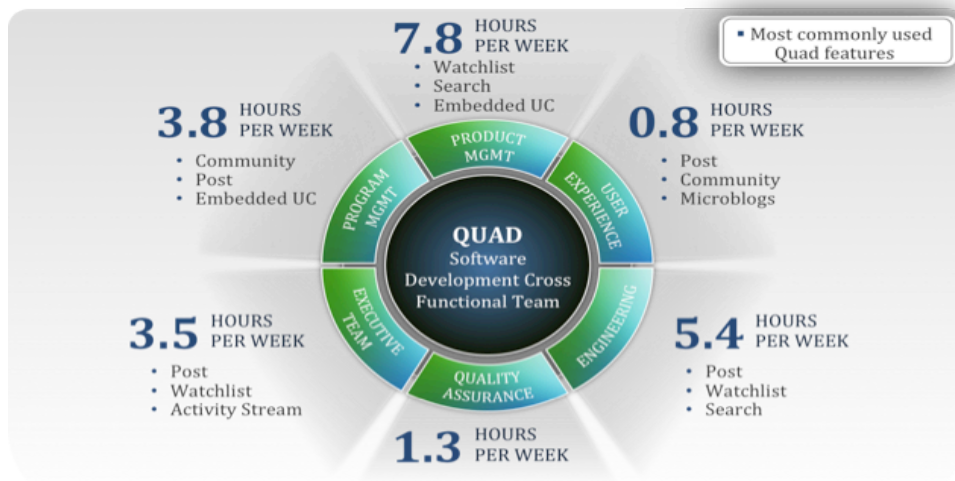
RESULTS

The development group assessed their success with Quad both qualitatively and quantitatively. By enabling collaboration across the group and decreasing process latency, the group improved productivity and access to expertise, both of which were necessary for accelerating time to market. Quad enabled new levels of individual and group innovation, because time was freed up through collaboration ease. Quad's enhanced visibility facilitated faster, collective problem resolution and rapid, informed, mission-critical, and daily decision-making. In terms of business impact, the group saw real, metrics-based results (Figure 4).

- **Speed:** Time to market was 12 months in Quad versus 2 to 3 years without Quad, resulting in an US\$89 million increase in 5-year NPV today versus 3 years later. By coming to market nearly 2 years earlier, the capture of revenue and contribution margins was accelerated.
- **Scale:** Team members experienced a 12 percent productivity savings at about 55 minutes per day, translating to US\$2.9 million in savings per year.
- **Flexibility:** Cross-functional visibility enhanced problem resolution, planning, and decision-making, resulting in a 6-month release cycle versus the typical 2 to 3 years for competitors.
- **Replication:** Quad can be easily replicated by other teams, groups, and functional areas. An estimated a US\$97 million in

potential savings can be realized, with 15 minutes per day per employee saved across the entire Cisco development organization.

Figure 4 ECP BU Employee Time Savings by Functional Team



In addition to benefits such as the approximate 28,000 hours in annual productivity improvement, Cisco Quad helped reduce email traffic by an average of 38 percent and message size by 43 percent, thus increasing employee productivity and time for innovation. With each major release of Quad, a spike in email traffic volume and message size would have been expected. The value of Quad remained with the team; they no longer depend upon email for collaboration.

LESSONS LEARNED

The Quad development group offers the following suggestions to enterprises interesting in creating a working community in their organizations.

- Set goals and milestones that the team continually is working toward, whether it be a team project or an external product launch, before immersing a project or team in the platform. This approach will make it easier for users to determine which tools and features within Quad will be most useful.
- Ensure consistent use of the platform and full buy-in from the team. If other tools besides Quad are being used, information gaps can be created.
- Obtain sponsorship within the executive ranks. Cultural and behavioral change should start at the top with leadership.

NEXT STEPS

The Quad development group is continuing to assess and measure other Quad benefits, such as driving a higher market share with accelerated time to market and time to revenue. Best practices from the Quad collaboration experience can help customers realize business impact and value faster than the group's initial deployment and use of this solution. To capture exponential value from Quad, the group recommends investing in change management and building a systematic, comprehensive deployment plan, including an end vision architecture, a corporate standard, and a roadmap. The platform should be open, scalable, interoperable, and secure. Key to adopting the solution is the ability to rethink the concept of team collaboration and executive leadership. Executive sponsors play an important role in driving accountability and culture change (Table 1). For example, with Quad, executives can focus on transforming formal structures, departments, functions, and hardwired processes to communities of work

and social networks, within and beyond the company, including partners and customers.

Table 1 Executive Leadership Can Foster Quad Collaboration Adoption In Multiple Areas

Before Collaboration	Leadership	With Quad Collaboration
Automated, Mechanized Transaction Process	Business Understanding	Enabling Human Collaboration, How Work Gets Done, Community Focus
Formal Structures, Departments, Functions, Hardwired Processes	Focus of Impact	Communities of Work, Social Networks, Intra/Extra-Company, Customers
Enforce Enterprise Standards	Policy Approach	Proliferate Most Adopted Enabling Technologies
Planned Rollouts Based on Roadmaps Top-down, Efficiency, and Consistency Oriented	Technology Deployment	Experiment, Scale, and Deploy Based on Usage and Adoption
Labor-Capital Tradeoffs, IT Productivity/ROI Efficiency, Throughput	Decision-Making	User-centric, Usage and Effectiveness Oriented
	Economics of Impact	Labor and Capital, Total Factor Productivity, Effectiveness, Outcomes

FOR MORE INFORMATION

For more information about the benefits of Quad-enabled collaboration and its business benefits, visit [www.cisco.com/go/quad](#)

<http://www.cisco.com/en/US/products/ps10668/index.html>.

To read additional Cisco IT case studies on a variety of business solutions, visit Cisco on Cisco: Inside Cisco IT www.cisco.com/go/ciscoit

NOTE

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