



Next-Generation Cisco Unified Communications Platform Accelerates Return on Investment

White Paper

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Next-Generation Cisco Unified Communications Platform Accelerates Return on Investment

Cisco® Unified Communications System Release 8.0 more than doubles the cost savings of migrating from traditional time-division multiplexing (TDM) to Unified Communications.

What You Will Learn

Not another VOIP whitepaper!

No, this not another Voice over IP whitepaper. New capabilities take the historic 20 percent average TCO savings from a migration from TDM to Unified Communications (UC) to a new level, and more than doubles it, to average over 50 percent TCO savings. See how a radical increase in ROI justifies accelerating ongoing deployments and revisiting UC business cases of even a couple of years ago to factor in the new savings.

Readers will learn about new breakthrough capabilities including:

- **SIP Trunking:** lowers local voice connectivity costs by eliminating multiple dedicated external voice lines by handling concurrent voice sessions
- **Intercompany Media Engine:** extends savings by routing business-to-business (B2B) calls and rich media interactions over the internet or any IP network with enterprise-class quality and security
- **Session Management:** delivers economies of scale by centralized routing and VOIP management.
- **Mobility Solution:** reduces airtime charges and lowers roaming costs

It's a twenty minute read that could save your organization millions of dollars on a recurring basis, while challenging today's perception of Unified Communication's limits, and helping you learn how to create meaningful breakthroughs for your business. If you are a telecommunications executive, enterprise architect or project manager and have been struggling to justify an investment in the next generation of Unified Communications breakthroughs – this paper is for you. Keep reading...

Introduction

The global economic crisis and rapid economic shifts have forced business executives to review their most basic business assumptions. Downsizing has become necessary for survival and for making more optimal use of existing resources. Current conditions, however, have not affected crucial underlying macro trends that have been evident over the past few years: globalization, increasing dependency on value-chain partners, workforce mobility, and the increased velocity of work.

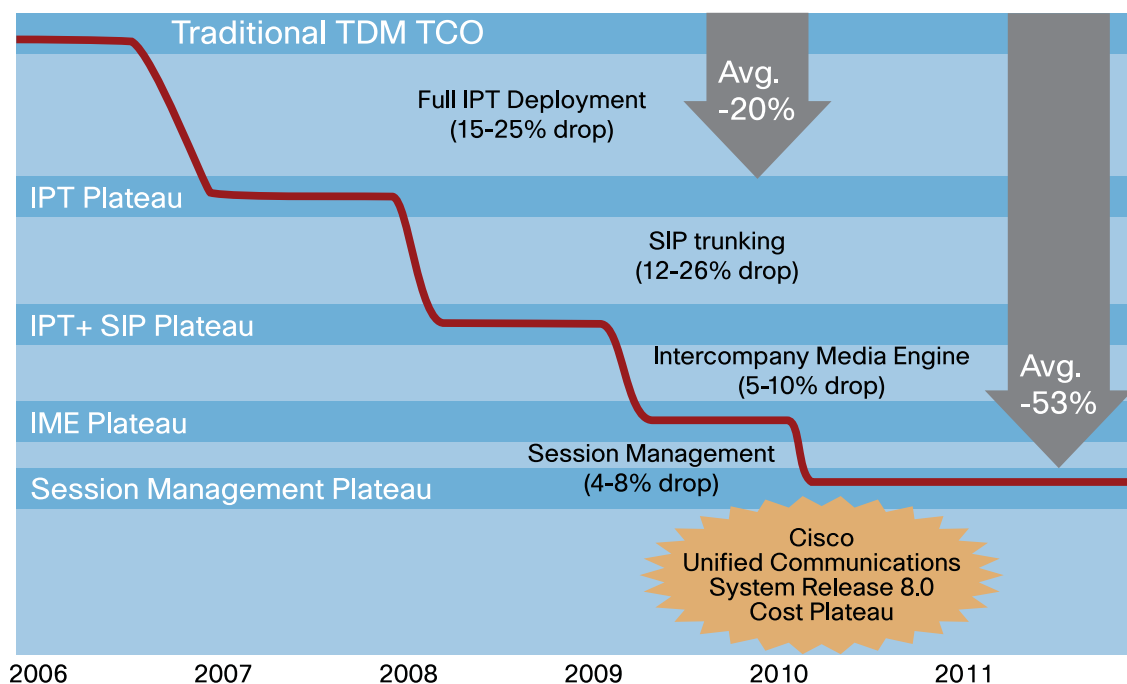
As businesses and governments strive to do more with fewer resources and to better serve consumers, customers, and constituents, collaboration has become more critical than ever. The current economic slowdown provides an opportunity for organizations to rethink how they do business and invest in a collaboration platform that can facilitate organizational agility and help gain a distinctive competitive advantage. However, any current investments must, of course, deliver an accelerated return on investment (ROI) with low risk and must take advantage of existing assets.

This release of Cisco Unified Communications includes next-generation features and capabilities that create a new and exciting total-cost-of-ownership (TCO) math: Increasing ROI for deploying a unified communications platform and justifying the acceleration of a current deployment. For example, by implementing just a subset of the new capabilities (for example, IP telephony + Session Initiation Protocol [SIP] trunking), enterprises are experiencing up to a 75-percent reduction in telecom trunking bills¹ compared to those with their traditional TDM systems.

¹ Voicecon, No Jitter Blog, VoIP/SIP Trunking Savings – Sorell Slaymaker, Unified IT Systems

This new and interoperable unified communications platform allows businesses to collaborate across company boundaries comprehensively, flexibly, securely, and cost-effectively. This situation represents such a breakthrough that even the unified communications business case of a couple of years ago should be revisited to factor in the savings opportunities from the new capabilities. For example, one large financial services company—by revisiting the business case in light of the new capabilities—realized that the payback for migrating from TDM to this new unified communications platform would shrink from 30 months to fewer than 13 months. The consolidation of these new capabilities in a single platform is compounding the ROI and accelerating the payback for customer deployments of unified communications.

Figure 1. New Capabilities in Cisco Unified Communications Change the TCO Math



Cisco Unified Communications delivers these new cost reductions through four major advancements (refer to Figure 1):

Full IP telephony deployment: You can achieve TCO savings of 15 to 25 percent by moving site-to-site voice traffic from the costly public switched telephone network (PSTN) to the internal data network (toll bypass). The savings stem from lower operating costs, toll bypass, and the introduction of least-cost routing. Another new innovation—in-home IP phones with native VPN—makes it possible to lower teleworker implementation and ongoing costs by 40 to 50 percent by using the Internet.

SIP trunking: Additional TCO savings of up to 12 to 26 percent are enabled by lowering local voice connectivity costs—achieved by eliminating multiple dedicated voice lines in favor of provisioning approximately 80-percent fewer SIP voice channels to handle the concurrent sessions. The high end of the savings range can be realized for very distributed companies such as retailers, retail banks, and other companies with multiple branch-office locations.

Cisco Intercompany Media Engine (IME): The Cisco IME helps achieve incremental 5- to 10-percent TCO savings from routing business-to-business calls over the Internet in a high-quality and secure manner. Cisco IME also enables secure, rich-media collaboration and video across enterprise firewalls—transforming collaboration with external customers and partners.

Session management: A foundational component of Cisco's next-generation collaboration architecture, Cisco Unified Communications Manager Session Management Edition allows an enterprise to achieve an additional 4- to 8-





percent TCO reduction through centralized routing and management. For a relatively low initial investment, enterprises can capture savings from existing telephony assets and achieve a rapid ROI. When combined with migration to full unified communications, Cisco Unified Communications Manager Session Management Edition delivers even greater savings.

Mobility: The combination of Cisco Unified Communications Manager Session Management Edition and the Cisco Mobility solution lets companies save 13 to 20 percent on rapidly rising mobile costs. These solutions reduce airtime charges, lower roaming costs with single number reach, and enable easier dialing and lower costs for international calls.

Full IP Telephony Deployment: 15- to 25-Percent Lower TCO

As recently as 5 years ago, when most enterprise voice solutions were TDM-based, Fortune 100 companies were paying approximately \$30–45 per seat per month just for voice connectivity, depending on the industry (refer to Figure 2). This expense included the costs associated with dedicated data lines for each branch office, expensive long-distance charges, and high support costs.

Figure 2. Per-Seat TCO Comparison: TDM vs. IP Telephony by Industry

Highlights of Cost per Phone for 31 Customer Analyses									
Vertical	Cost Category	TDM	IPT	%Savings	Vertical	Cost Category	TDM	IPT	%Savings
	PSTN Connectivity	\$15.55				Tie Lines	\$5.06	\$1.61	68.2%
	Tie Lines	\$28.78	\$24.97	13.2%		Trunks	\$40.90	\$26.37	35.5%
	Trunks	\$27.90	\$19.48	30.2%		Local Telephone Service	\$32.44	\$26.30	18.9%
	Local Telephone Service	\$62.06	\$43.58	29.8%		Long Distance	\$22.29	\$16.60	25.6%
	Long Distance	\$47.99	\$33.61	30.0%		Audio Conferencing	\$18.08	\$5.25	70.9%
	Audio Conferencing	\$11.61	\$4.19	64.0%		Moves, Adds, Changes	\$10.25	\$5.04	50.9%
	Moves, Adds, Changes	\$12.31	\$4.27	65.3%		Maintenance Other than MACs	\$112.38	\$95.50	15.0%
	Maintenance Other than MACs	\$44.17	\$7.65	82.7%		Staffing	\$16.40	\$21.13	-28.8%
	Staffing	\$23.60	\$19.93	15.6%		Cellular Phones	\$28.42	\$28.08	1.2%
	Cellular Phones	\$7.01	\$7.01	0.0%		Total	\$286.22	\$225.87	21.1%
Total		\$265.44	\$164.68	38.0%					
Vertical	Cost Category	TDM	IPT	%Savings	Vertical	Cost Category	TDM	IPT	%Savings
	Tie Lines	\$4.67	\$1.04	77.7%		Tie Lines	\$4.19	\$1.40	66.6%
	Local Telephone Service	\$28.18	\$22.04	21.8%		Trunks	\$9.78	\$4.25	56.6%
	Long Distance	\$33.38	\$23.80	28.7%		Local Telephone Service	\$16.04	\$13.49	15.9%
	Audio Conferencing	\$5.34	\$2.45	54.2%		Long Distance	\$12.40	\$9.62	22.4%
	Moves, Adds, Changes	\$3.64	\$1.90	47.9%		Audio Conferencing	\$5.96	\$2.92	51.0%
	Maintenance Other than MACs	\$27.38	\$10.43	61.9%		Moves, Adds, Changes	\$6.52	\$2.21	66.2%
	Staffing	\$29.39	\$26.81	8.8%		Maintenance Other than MACs	\$21.97	\$7.21	67.2%
	Cellular Phones	\$71.56	\$66.60	6.9%		Cellular Phones	\$4.62	\$2.55	44.9%
Total		\$203.55	\$155.07	23.8%	Total		\$81.48	\$43.64	46.4%

Source: Salire Partners, IP Telephony TCO Comparison database

The advent of IP telephony allowed enterprises to route internal site-to-site calls over the corporate data network for lower long-distance and local PSTN charges. Today, the TCO savings potential related to IP telephony is well-understood. Typical IP telephony deployments result in net voice operating expense reductions of up to 25 percent through a combination of toll bypass; lower maintenance and support costs; lower-cost moves, adds, and changes (MACs); and on-network conferencing.

The Cisco Unified Communications platform enhances the cost-reduction potential from IP-based communications in numerous areas. For example, it simplifies the task of setting up communications for mobile and remote workers. Instead of adding a router, an employee can work at home by simply plugging an IP phone into an Internet connection. The easy and less-costly home deployment encourages teleworkers to move to unified communications, a process that can reduce the implementation and ongoing costs of teleworkers by 40 to 50 percent.

SIP Trunking: Another 12- to 26-Percent Reduction

While the transition from TDM to IP telephony has been taking place over the last few years, another major market transition has also been gaining momentum. Enterprises are increasingly taking advantage of SIP trunking to lower per-seat voice connectivity costs. SIP trunking introduces centralized or distributed connections so that enterprises

need fewer PSTN circuits and less circuit termination hardware. The benefits from SIP trunking grow for companies with a large number of small branch-office sites (for example, retailers). The cost savings from SIP trunking can fund a move to the newer unified communications platform as the preferred alternative versus continuing to spend low-returning older hardware and software to become SIP-capable.

In addition to the direct cost savings, SIP trunking gives enterprises more flexibility and less complexity. New offices can be provisioned quickly, without waiting for an additional trunk, and support costs are also lowered with a converged network.

Table 1. Comparison of Monthly Voice Connectivity Operating Costs per Seat (TDM versus SIP)

Cost Category	TDM	With SIP Trunking
Direct Inward Dial (DID)	\$4-6	\$5-8
Channel cost	PRI: \$27-37	\$3-6.8 (assumes a 5x to 8x reduction in channels based on concurrent call density)
MPLS data service	Not applicable	\$1.4-2.8 (assumes each branch has 10 to 20 users)
SIP equipment	Not applicable	\$1-2.1
Total cost	\$31-43	\$10.4-19.7

These economies of scale for voice are only the beginning. The greatest ROI benefits result when SIP trunking is combined with other collaboration innovations that can now be cost-effectively extended beyond the boundaries of a single enterprise. Video calls can be migrated to use the same interconnects and SIP trunks, and communications can include high-fidelity experiences between two different companies or organizations. Thus, in the future SIP trunking will lead to greater voice, video, and data convergence.

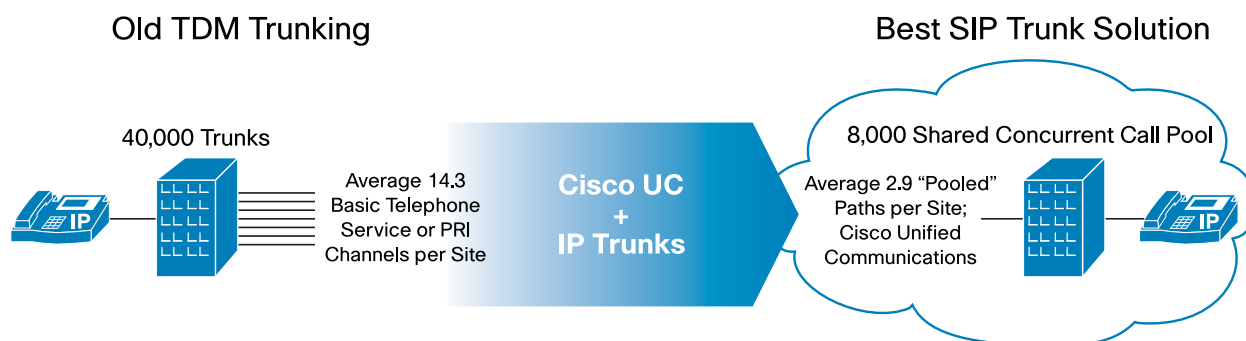
Service providers are also offering solutions that help to maximize the usage of SIP trunks, further increasing the ROI. Verizon, for example, offers Burstable Enterprise Shared Trunks (BEST) to allow idle trunk capacity in one location to accommodate an increase in traffic from another location. With this type of service, enterprises can purchase even less local-call capacity at each location and maximize the use of shared resources to more affordably manage time-of-day fluctuations and peaks.

Actual Cisco customer deployments illustrate the dramatic cost-reduction potential from SIP trunking. With rich SIP interfaces, the combination of the Cisco Unified Communications Manager and the Cisco Unified Border Element helps ensure simplicity for SIP trunking deployments by avoiding the need for software upgrades for the private branch exchange (PBX) at each site. One large financial company gained a 29-percent reduction in voice connectivity costs, for a projected savings of US\$96 million over the next 5 years. Another financial company gained a 31-percent cost reduction with an eightfold reduction in the number of trunk lines.

A community banking company introduced a Verizon BEST solution and was able to replace 40,000 lines with a shared pool of 8,000 concurrent calls. With approximately 3,000 sites, the company went from an average of 14.3 basic-telephone-service or PRI channels per site (with already one T1 data line per site) to 2.9 pooled paths persite. Voice costs dropped by 62 percent and savings now total more than US\$770,000 each month (refer to details in Table 2 below).

Table 2. Community Bank Unified Communications and Verizon BEST (SIP Trunking) Cost Savings

Previous TDM Monthly Telephony Spend		Current unified communications and SIP Monthly Telephony Spend	
\$30/line (or \$420 per PRI) x 40,000 lines	\$1,200,000	8,000 concurrent paths @\$28	\$224,000
Monthly long-distance calls (1.833M min x \$.025)	\$45,833	Monthly long-distance calls (1.833M min x \$.0155)	\$28,417
Additional branch-office basic-telephone-service calls (\$30 x 7,000)	-		\$210,000
ATM machine basic-telephone-service calls (\$30 x 339)	-		\$10,170
Total monthly cost (\$)	\$1,245,833	Total monthly cost (\$)	\$472,587

Figure 3. Community Bank UC and Verizon BEST (SIP Trunking) Summary

Cisco Intercompany Media Engine: Reducing TCO by 5 to 10 Percent

Cisco IME provides a revolutionary way for organizations to extend their Cisco Unified Communications experience to their business partners or customers, delivering feature-rich interoperability through borderless collaboration as well as cost savings.

This worldwide, peer-to-peer network offers the following features:

- Lets partners use calling features that are available between clusters
- Learns new routes, through calls to any business partner who participates in the Cisco Intercompany Media Network
- Offers encrypted signaling and media for all IME calls between partners
- Provides a high level of security, plus spam blocking, to help prevent mining for callable numbers belonging to your enterprise
- Reduces gateways and overhead by moving calls from the PSTN to direct SIP trunks over the Internet or an extranet

Unified communications and collaboration solutions in the past have been relegated to IP islands that are landlocked by the PSTN, a situation that has presented several challenges that impede ROI from IP networks:

- Employees are usually blocked when trying to collaborate with outside parties.
- Even simple telephony features, such as caller ID, do not work well across enterprise firewalls. Going beyond voice, the challenges escalate.
- Other intercompany collaboration services and capabilities—picture IDs for calling parties, meeting rosters, the alert-when-available feature, auto-launching of online meeting sessions, and many others—are limited to teams within an enterprise.
- Video conferencing solutions do not work over the PSTN—even if all of the participants have the same video equipment and software

Cisco IME technology unlocks business-to-business communications and helps businesses realize the full cost savings possible with unified communications. The Cisco business-to-business solution moves calls off of the PSTN to establish direct connections between enterprises over the public Internet.

The more partners that introduce Cisco IME, the more an enterprise will save. Based on the typical savings reported today by customers, Cisco estimates that Cisco IME increases savings in several categories, including trunking or local calls, long-distance calls, international calls, and calls made on mobile devices (refer to Table 3). These savings translate into significantly reduced annual spending; the same table shows an example of annual savings based on a company that spends US\$40 million per year on communications. Cisco estimates that Cisco IME can increase TCO savings for a large enterprise by up to 10 percent.

Table 3. Cisco IME Potential Call Cost Reductions

Spend Category	Cost Savings Potential		Actual Per-Year Savings, Based on Annual Spend of US\$40-million	
	Unified Communications Alone	With Intercompany Media Engine	Unified Communications Alone (US\$ millions)	With Intercompany Media Engine (US\$ millions)
Trunking/Local Calls	10-30%	30-50%	2.0	4.0
Long-Distance Calls	20-35%	40-50%	1.1	1.8
International	60%	75-80%	1.2	1.5
Mobility	10-15%	20-30%	0.4	0.8

Source: Multiple Cisco TCO SIP trunk cost savings analyses

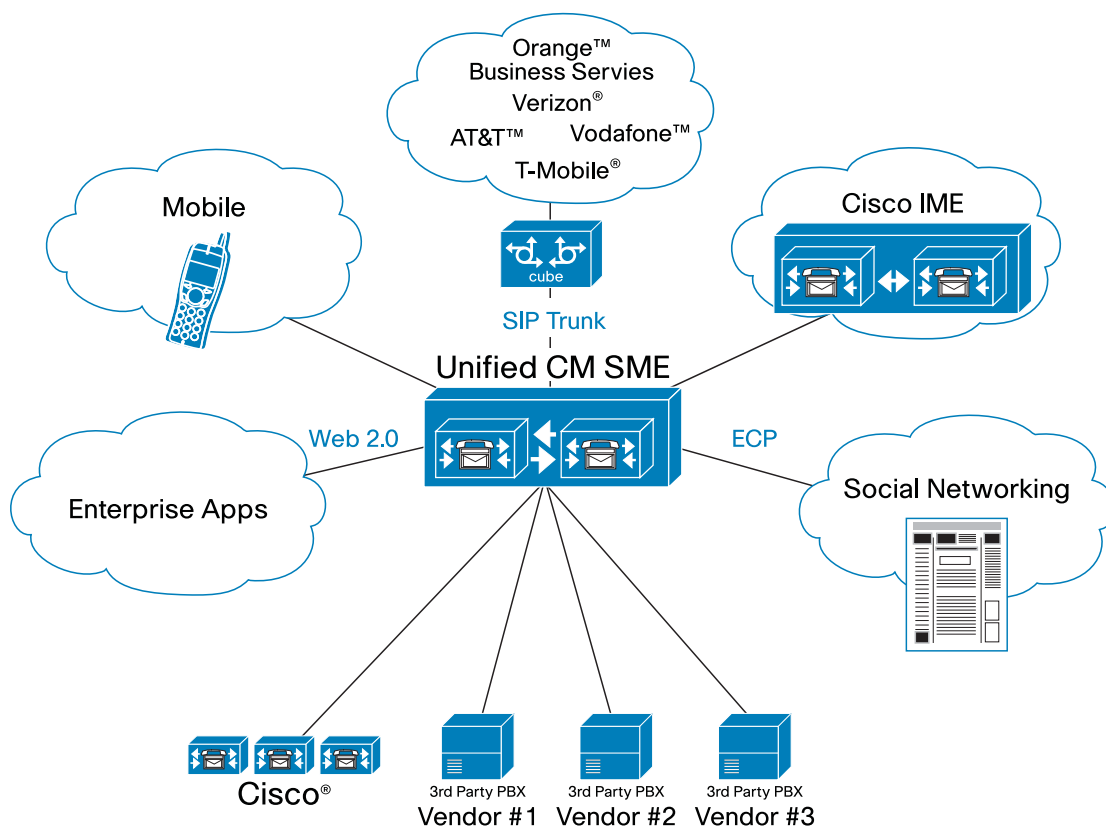
As Table 3 shows for a large enterprise with voice operating expenses (OpEx) of \$40M, Cisco IME can lead to an incremental \$3.4M or (8.5 percent) in savings across four cost categories.

Cisco Unified Communications Manager Session Management Edition

Cisco Unified Communications Session Manager Management Edition helps capture 4- to 8-percent TCO savings during migration to IP telephony, even on sites that are yet to be migrated.

Cisco Unified Communications Manager Session Management Edition is based on a foundation of Cisco Unified Communications Manager to provide centralized trunking, unified communications application integration, policy control, and centralized dial plan, cutting administrative overhead, enabling least-cost routing, and supporting easier migration to a full IP telephony environment.

Cisco Unified Communications Manager Session Management Edition provides an evolutionary path that minimizes change to the infrastructure and reduces retraining costs required for existing IT teams to use session management. To avoid higher costs from spiraling complexity, enterprises need to centralize management and minimize resources required to update existing call-control clusters when introducing a change (for example, dial plans) or new unified communications features or services. Cisco Unified Communications Manager Session Management Edition (refer to Figure 4) allows ongoing Cisco Unified Communications deployments to take advantage of a centralized model, routing all communications traffic through a single management layer. As customers transition from TDM to IP telephony, centralization of call control with the session-management application allows customers to capture an additional 4- to 8-percent TCO savings.

Figure 4. Cisco Unified Communications Manager Session Management Edition

Cisco Session Management in combination with the Cisco Unified Border Element gives immediate cost savings from voice over IP (VoIP). Enterprises can interconnect existing PBXs and centralize access to the PSTN. With the aggregation of existing PBXs, enterprises can continue to evolve to collaboration while gaining additional value from existing infrastructure during the transition. At the same time, centralized routing lowers the cost of deployment and operation for numerous next-generation communication and collaboration capabilities (refer to Figure 5). Cisco Session Management combined with unified communications infrastructure releases most of the TCO cost-saving benefits.

Figure 5. Cisco Session Management Centralizes the Deployment of a Broad Range of Collaboration Services

One of the important requirements for toll-quality SIP trunking is a high-quality enterprise session border controller. The Cisco Unified Border Element provides the necessary services to connect to service providers securely, flexibly, and reliably.

Mobility: Reducing Mobile Telephony Costs by 13 to 20 Percent

The ROI offered by the Cisco mobility solution stems from the ability to converge mobile and fixed-line communications and gives users a transparent experience while delivering communications over the most cost-effective communication channel. The Cisco Unified Mobile Communicator solution supports multiple Smartphone operating systems, including iPhone, Symbian and Windows Mobile.

Figure 6. Cisco Unified Mobile Communicator native iPhone interface



In addition to cost reduction, the Cisco mobility solution has multiple productivity-enhancing capabilities such as presence information (integrated to phone and PC presence), one-touch call handoff between a desk phone and mobile phone, call transfer, multiparty calls, conferencing, hold, and park.

In terms of specific ROI, the Cisco mobility solution includes several features that result in measurable communication cost savings:

- Unique to Cisco, the two-way call handoff of the single-number-reach feature (one-touch transparent handoff back and forth between landline and mobile networks) also avoids airtime expense when employees answer their cell phones while at their desks (IDC and Nokia research shows that up to 40 percent of calls answered on cell phones happen while in the proximity of a desk phone).
- The Mobile Dial Via PBX feature enables international calls initiated on a mobile phone to be routed through lower-cost PSTN or IP networks.
- In addition to the above, secure on-net text messaging over the mobile data services avoids carrier costs associated with SMS/texting between employees.

In actual mobile usage reports from one Cisco customer, using just single number reach alone was projected to save US\$90,000 per year by minimizing airtime use while on campus. Beyond single number reach, international Dial via

PBX with one click and roaming optimization will provide additional savings of more than US\$120,000 per year (requires wi-fi capable Smartphone).

Furthermore, Cisco Session Management can extend the Cisco mobility capabilities and capture a portion of the associated cost savings, even on a traditional TDM PBX infrastructure.

Why Cisco

Compared to the Cisco solution, all competing session-management solutions require new administration, management, and support processes to move to next-generation collaboration platforms. Cisco Session Management allows the introduction of advanced collaboration solutions and services that conform to previously deployed Cisco Unified Communications Solutions. Management tools, interfaces, processes, and procedures relating to the implementation, provisioning, and support of the newest collaboration capabilities will be very familiar to IT teams previously trained on Cisco solutions. For new customers, reference sites and industry proof points will make it easy to directly integrate to your existing session-management planning efforts.

Other differentiators of the Cisco solution include:

- **Simplicity:** Cisco is building on a proven architecture. Competitor solutions require managing with two architectures during transition to the new architecture to protect existing investments while introducing new technologies and services.
- **Protocol flexibility:** Cisco Unified Communications Manager Session Management Edition offers native SIP support and can also fully support other protocols, whereas some vendors force customers to adopt SIP and replace non-SIP devices.
- **Ability to continuously maintain call state:** This ability lets Cisco Unified Communications Manager Session Management Edition uniquely perform tasks such as call recording, advanced Call Admission Control (CAC), and click to call.
- **Web 2.0 application programming interfaces (APIs):** The Cisco solution allows developers to take advantage of Web 2.0 APIs and application-integration approaches, giving customers the benefits of a very broad collaboration foundation compared to less-certain IMS-centric approaches used by other unified communications vendors. By taking advantage of Web 2.0 tools, unified communications can be easily integrated into new social networking tools.
- **Business-to-business extensibility:** The Cisco architecture streamlines business-to-business communications with the availability of the Cisco IME. Other vendors' platforms cannot currently meet this challenge. Cisco considers collaboration to be bigger than the enterprise—it is about the network as the platform between people, regardless of where they work and for which companies. Cisco solutions make the borderless enterprise a reality, allowing users to work from anywhere and connect to collaborators located anywhere.
- **End-to-end solution:** Cisco offers the gateways and other components required for a holistic collaboration platform, enabling a unified approach for dial plans and other aspects of management and support.
- **Security:** Cisco Session Management builds on Cisco security innovations, providing exceptional protection for collaboration environments and company-vital digital assets. The Cisco platform also provides proven scalability to hundreds of thousands of users.

Conclusion

Cisco Unified Communications continues to build on a proven architecture for collaborative interactions. The evolutionary approach provides protection for existing infrastructure investments while simplifying the introduction of advanced services and solutions that can accelerate ROI in the short term and reduce infrastructure complexity over

the long term. Cisco solutions make it possible for businesses to build borderless enterprises and work effectively from anywhere, with anyone.

The Next Steps

The cost-saving advancements that characterize the next generation of Cisco Unified Communications Solutions continue to strengthen the business case for deploying unified communications (more than twice the savings) and encourage innovation and new collaboration services. To capture these benefits, enterprises should:

- Expand focus beyond the IT budget to measure and track the effect of cost savings on the broader enterprise (for example, mobile-phone costs, expensed hotel long-distance charges, and calling-card costs).
- Take advantage of new service provider offerings (for example, put new SIP trunking services).
- Explore new financing models and deployment options that can generate immediate returns and self-fund the migration to a full IP Communications network. (for example, unified communications as a service)
- Focus on how collaboration can improve business processes. Cost savings are just the beginning; productivity enhancements, from greater communication efficiencies, and business-process improvements result in more far-reaching benefits.

For More Information

To learn more about Cisco Unified Communications Solutions, please visit:

<http://www.cisco.com/go/uc>.

To join the conversation on our user community around migrating to Cisco Unified Communications, go to:

<https://www.myciscocommunity.com/community/technology/collaboration/product/uc/migration>.

For a consultation or to find a Cisco certified reseller in your area, please visit:

<http://tools.cisco.com/WWChannels/LOCATR/openBasicSearch.do>.



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