

The CIO's Guide to Mobile Unified Communications


Unified Communications (UC) integrates multiple communications modalities and adds presence features to allow workers to communicate and collaborate more effectively with co-workers, customers and suppliers. Learn about the cost, productivity and reachability issues associated with increased enterprise mobility and the benefits and future directions of Mobile UC.



The CIO's Guide to Mobile Unified Communications

Table of Contents

Executive Summary	2
Introduction	3
Defining Mobile UC	4
Extending UC with Fixed Mobile Convergence	5
Next Generation Mobile UC	6
Benefits of Mobile UC	7
Increased Reachability	7
Reduced Capital Expenditure	7
Reduced Communications Costs	7
Increased Employee Productivity	7
Conclusion	8
For More Information	8



Executive Summary

As enterprise mobility rapidly increases, and workers spend more time away from their desks and on the road, companies around the globe are looking for ways to keep their employees in touch and productive. One solution, Unified Communications (UC), has been rapidly growing in popularity over the last few years. UC integrates multiple communications modalities and adds presence features to allow workers to communicate and collaborate more effectively with co-workers, customers and suppliers. Extending UC into the mobile space on smartphones helps to eliminate reachability issues, and gives the worker that is away from their desk, tools that assist in communicating and collaborating as easily and effectively as they do when they are at their desk. Fixed Mobile Convergence (FMC) can make Mobile UC even easier to use and can significantly reduce telecom costs.

The next generation of Mobile UC is expected to integrate UC capabilities directly within strategic Line-of-business (LOB) applications. Using these applications, mobile workers can be integrated into existing enterprise workflows, or new improved workflows can be designed around them. When properly deployed and supported, Mobile UC can have significant benefits to the enterprise, including: improved

employee reachability, increased productivity and reduced telecom costs. This document will introduce some of the cost, productivity and reachability issues associated with increased enterprise mobility, and provide an introduction to Mobile UC, its benefits and future directions.

Introduction

Enterprise mobility is growing all around the world. Enterprise greening initiatives, quality of life concerns and cost consciousness are driving enterprise mobility wider and deeper into the organization. It is no longer the exclusive prerequisite of company executives and sales personnel, as more workers are spending more time working away from their desks. According to a 2009 report from IDC, *Worldwide Mobile Worker Population 2009-2013 Forecast*, the United States will remain the most highly concentrated market for mobile workers with 75.5% of the workforce being mobile by 2013. Enterprise mobility can provide significant increases in employee productivity and quality of life, but when not effectively supported, worker mobility can erase potential productivity gains, drastically increase telecommunications costs and have a negative impact on worker reachability.

It is not hard to grasp that when workers are away from their desks, they can be more difficult to reach. It is estimated that up to 75% of all business calls are not answered on the first attempt. The majority of incoming calls land in corporate voice mail systems and must be dealt with later. Managing voice mail remotely is very inefficient; sorting through dozens of messages sequentially to find the important one(s) can take a lot of time. Email can also be difficult to process on the road. To remain effective, the mobile worker may need to set up their laptop and dial in to the corporate email system multiple times per day to manage their email. All of these basic workday tasks can be more difficult when the worker is away from their primary workspace.

Communication issues are annoying, but the biggest impact that business mobility has on worker productivity is the interruption of strategic business processes. The mobile worker often has to resort to inefficient communications methods to do their work. For example, calling in customer orders at the end of the day is untimely and more

error-prone than contemporaneously using the enterprise Sales Force Automation (SFA) system in the office. Another important job function often compromised by increased mobility is collaboration. Workers on the road can have a much more difficult time meeting with their co-workers and collaborating with them on important work projects. Reduced efficiency of communications combined with decreased reachability and an inability to collaborate with co-workers can significantly reduce the worker's productivity.

A mobile device can improve the mobile worker's reachability, but handling an additional phone number, IM address and voice mail can make communications more confusing, not less. Laptops, PDAs and smartphones can make the mobile worker more productive, but they can also add considerable expense (capex, telecom, and support costs) if not deployed effectively. This document will introduce the reader to Mobile Unified Communications (UC) and the impact of new technology. It will present the expected future direction for Mobile UC and describe its potential benefits for the enterprise.

Defining Mobile UC

There is a lot of confusion about Unified Communications (UC) in the marketplace. Some of this confusion can be attributed to the lack of any external standards body to manage certification and interoperability issues. In addition, many vendors claim to sell UC solutions, but their capabilities are inconsistent and often incomplete. Thus, Unified Communications is used as a marketing term as opposed to a product category. Despite the confusion around the exact definition of UC, many research companies and analysts agree that the market is growing rapidly. Conventional communication environments - where end users have a separate email client, instant messaging client, desktop phone, fax machine and browser-based web conferencing capabilities - predominate today. According to a 2009 Osterman Research Industry Analysis Report, *Unified Communications Market Trends, 2009-2012*, 83% of users work with such a conventional communication environment, and forecast that this will drop to 71% in 2010, and 52% in 2011. At the same time, the proportion of users employing UC will increase from 17% in 2009 to 30% in 2010 and 53% in 2011.

Although the term 'Unified Communications' has only been in use for the last few years, the concept of UC has been around much longer.

The BlackBerry® Enterprise Server has been providing mobile professionals with a mobile, integrated communications solution for over a decade. It is not the purpose of this document to create yet another definition of Unified Communications, but instead to identify key attributes for an effective enterprise UC solution. These attributes include:

- Encompassing multiple modes of communications, including, but not limited to: voice, video, email, fax, chat and instant messaging
- Integrating the different modes of communications via a common inbox, address book, internal APIs, or even just a clipboard
- Providing a consistent user interface and user experience from the desktop solution and across multiple mobile platforms
- Using presence and/or context to optimize communications efficiency and provide collaboration capabilities

Unified Communications can provide genuine benefits for the everyday office worker, but these benefits can be multiplied significantly when the solution is extended to the mobile worker. An effective 'Mobile' UC solution can eliminate many of the reachability, productivity and cost issues associated with business

mobility. An effective Mobile UC solution would be designed to enable the mobile worker to communicate as easily and effectively on the road, as they can within their office. Price reductions and broader availability have driven the recent growth in the popularity of smartphones. This, in turn, has removed one of the main barriers to the broad deployment of Mobile UC. A smartphone can be said to provide a perfect computing platform to provide the mobile worker with an integrated, multi-modal communications solution. Smartphones are also making significant inroads into the prosumer and consumer market due to lower costs, ease of use and an increase in applications, making them the fastest growing category of mobile device.

Increased smartphone sales into the enterprise market will enable a significant increase in the deployment of Mobile UC; more companies are expected to deploy Mobile UC to more of their workers. As the global number of wireless email users grows, the number of mobile IM users will also grow exponentially. However, it is not just about the numbers. Smartphone growth is fundamentally changing the attitude of enterprise communications. Workers are 'assumed' to be in touch, informed and productive no matter where they are located. Mobile UC is one of the key technologies poised to make this attitude shift a reality.

Extending UC with Fixed Mobile Convergence

Mobile UC enables workers to communicate and collaborate with their co-workers just about anywhere they are located. Many Mobile UC platforms are designed to be so powerful and easy-to-use that the mobile device becomes the worker's 'go to' device for all of their communications requirements. Unfortunately, this dependence can become expensive when the mobile worker is back in the office. Workers are using their mobile devices to make calls even when they are sitting at their desk. Sometimes, they are even calling the mobile device of a co-worker who is also at their desk. This trend is called Fixed-Mobile Substitution (FMS), the tendency toward replacing fixed-line voice communications with wireless voice communications. FMS is even more prevalent in the consumer marketplace, as homeowners are abandoning their conventional fixed line telephones and relying on their wireless phones. The downside to enterprise FMS is the cost. Communications over the public mobile network are usually more expensive than using the enterprise telephone system on an existing desk phone. In addition, enterprise telephony systems usually include powerful features that improve communications and collaboration.

Some recent technology trends are making enterprise communications easier and more effective, while mitigating the cost issues due to FMS. First, the migration to enterprise IP telephony increases the flexibility of corporate telecommunications systems and converges voice and data networks to reduce their cost. IP PBXs are required for low-cost Voice over IP (VoIP) and typically offer more

advanced telephony features than conventional PBXs. Second, the commoditization of 802.11-based enterprise WLAN has created fertile ground for the deployment of Voice over Wi-Fi, also called Voice over WLAN (VoWLAN). VoWLAN provides single-mode and dual-mode mobile devices with the same advanced telecom features as a conventional desk phone. It can also improve in-building coverage for dual-mode phone users. IP telephony and Voice over Wi-Fi are key enabling technologies for another important technological advancement, Fixed Mobile Convergence (FMC).

FMC extends the 'unified' aspect of Mobile UC by enabling workers to use one device, one phone number and one voice mail no matter where they are located. Communications are easier to manage for both the mobile worker, and for anyone trying to reach them. FMC allows dual-mode smartphones to leverage less expensive Wi-Fi connectivity in the office, home, or public hotspot and route inbound and outbound voice traffic through the enterprise IP telephony system. Typically, calls placed through the corporate PBX, local and long distance, cost less than they would over the Public Mobile Network. Redirecting mobile traffic to the enterprise telephony system can improve telecom ROI by increasing utilization of the corporate PBX and telecom infrastructure. FMC can improve the value proposition of Mobile UC, improve reachability and productivity, while helping to eliminate increased costs associated with FMS.

Next Generation Mobile UC

According to multiple analysts and research companies, the next several years should see a surge in Mobile UC deployments. Many of the technological prerequisites for its broad adoption are now in place. New 3G and 4G mobile broadband networks provide increased bandwidth and broader coverage for network operators around the globe. In addition, 802.11-based WLANs are faster, boast a longer range, and because of new standards in wireless security, they can be as secure as legacy wired networks. WLAN and Wi-Fi have become almost universal in the enterprise, at home, and with the growth of public hotspots, at many places in between. Pervasive wireless provides the 'meta' network required for Mobile UC.

The smartphone is another important prerequisite for the proliferation of Mobile UC. Faster processors, increased storage and bigger screens make today's smartphones viable application platforms. Smartphones for the enterprise market provide comprehensive software development kits and well established developer communities that can make it easy for the enterprise to create the custom applications that they need for their business. The bottom line is that with many of the barriers to entry removed, more enterprises are expected to deploy Mobile UC solutions to help improve employee productivity and reachability.

Over the next decade, Mobile UC is expected to evolve beyond presence-aware, integrated multi-modal communications and collaboration. The next generation of Mobile UC is expected to integrate UC features directly within mobile LOB applications. These Communications Enabled Business Process (CEBP) applications will utilize open standards and APIs to provide context-aware applications that will enable a complete overhaul of enterprise workflows. Next generation Mobile UC users can be fully integrated into existing enterprise workflows or they can be used as fresh workflow elements in new and improved workflows. These users will apply embedded communications capabilities such as presence, call control and signaling to help improve customer service, reduce sales cycles and provide real-time production control. CEBP applications will use location awareness to establish context for Machine-to-Machine (M2M) exchanges and to auto route Machine-to-Human (M2H) communications.

Benefits of Mobile UC

There are both tangible and intangible benefits to Mobile UC. The advanced communications features can make it easier for employees to stay connected away from the office and at home. In addition, Mobile UC and FMC are designed to provide the mobile worker with a single corporate identity, one phone number and one voice mail. These intangibles can have a significant impact on the worker's quality of life. The capability of being equally productive at home and in the office can provide the worker with more flexibility and an improved work-life balance. Telecommuting is also in alignment with the green initiatives within many organizations. Providing a Mobile UC solution to telecommuters can help reduce the worker's carbon footprint without affecting their productivity. Mobile UC and FMC also provide significant tangible benefits, including:

Increased Reachability

Mobile UC provides the mobile worker with multiple communications channels and uses presence to help manage these channels automatically. The confusion of multiple inbound destinations - office, home, and mobile - is eliminated. Mobile UC manages all of the different communications channels (voice, video, email and IM) within a single inbox. Even inbound voice can be more effective. A single mobile device with a single inbound number and voice mail makes it easier to call the mobile worker and potentially elicit a more timely response. Mobile workers can be more reachable by the most appropriate modes of communication and would be able to communicate and collaborate with co-workers and customers more quickly and easily. Increased reachability and responsiveness can result in a significant increase in customer satisfaction.

Reduced Capital Expenditure

The economic benefits of business mobility and Mobile UC can include a significant reduction in enterprise capital expenditures. Because mobile workers' communications requirements are satisfied by a dual-mode smartphone with Mobile UC and FMC, the worker may no longer require an expensive desk phone or a Wi-Fi-only phone. In addition, in situations where workers are on the road so much and spend less time in the office, the company may also save money on network infrastructure, office space and furniture. Depending on the size of the company, these savings can add up to millions of dollars.

Reduced Communications Costs

No matter where the mobile worker is located, mobile UC can help them take advantage of low cost enterprise PBX trunks for outbound calls, thus reducing long distance (LD) and international roaming costs. Long distance calls on a public mobile network can cost 10 to 100 times more per minute than LD calls outbound from the corporate PBX. In addition, for companies that have deployed VoWLAN, expensive intra-company cellular calling (FMS) is avoided. Best of all, the mobile worker is no longer dependant on a single mode of communications. Instead of relying on expensive voice communications and more often than not ending up in recipients' voice mail, the mobile worker can use the recipient's presence information and switch to a more appropriate mode of communications such as email or IM.

Increased Employee Productivity

Many studies have shown that Mobile UC can stretch the mobile worker's workday productivity anywhere from 20 to 60 minutes per day. Time normally spent commuting, waiting in an airport lounge or in a taxi on the way to a meeting is now productive time. The mobile worker can read and respond to email, collaborate with a co-worker by voice or video, or use a strategic mobile LOB application. With Mobile UC and CECP, the mobile worker can be just as productive on the road as they are in the office. They can be included in all important business workflows and new, more efficient workflows can be designed around them.

Conclusion

Business Mobility is growing rapidly around the world. Analysts have stated that by 2012 almost three quarters of enterprise employees will be mobile. This trend has the potential to improve the productivity and quality of life for many employees. However, there are potential risks to increased worker mobility including decreased reachability and increased telecom costs. Unified Communications (UC), specifically Mobile UC, has the potential to mitigate any reachability and productivity issues due to worker mobility. Mobile UC can be designed to integrate voice, email, chat and IM into a common inbox, add presence and advanced telephony capabilities to make communications more efficient and workers more productive. Adding Fixed Mobile Convergence (FMC) to Mobile UC can provide additional productivity gains, improve worker quality of life and significantly reduce telecom costs.

The next generation of Mobile UC is expected to see advanced communications features embedded directly into strategic LOB applications. CEBP can leverage UC and the new era of pervasive wireless to provide the productivity enhancing capabilities of desktop LOB applications where they are needed the most - within the rapidly growing ranks of the mobile worker. CEBP applications can help the mobile worker to do their job wherever they are, at whatever time of day it is, without paying a premium for the convenience.

For More Information

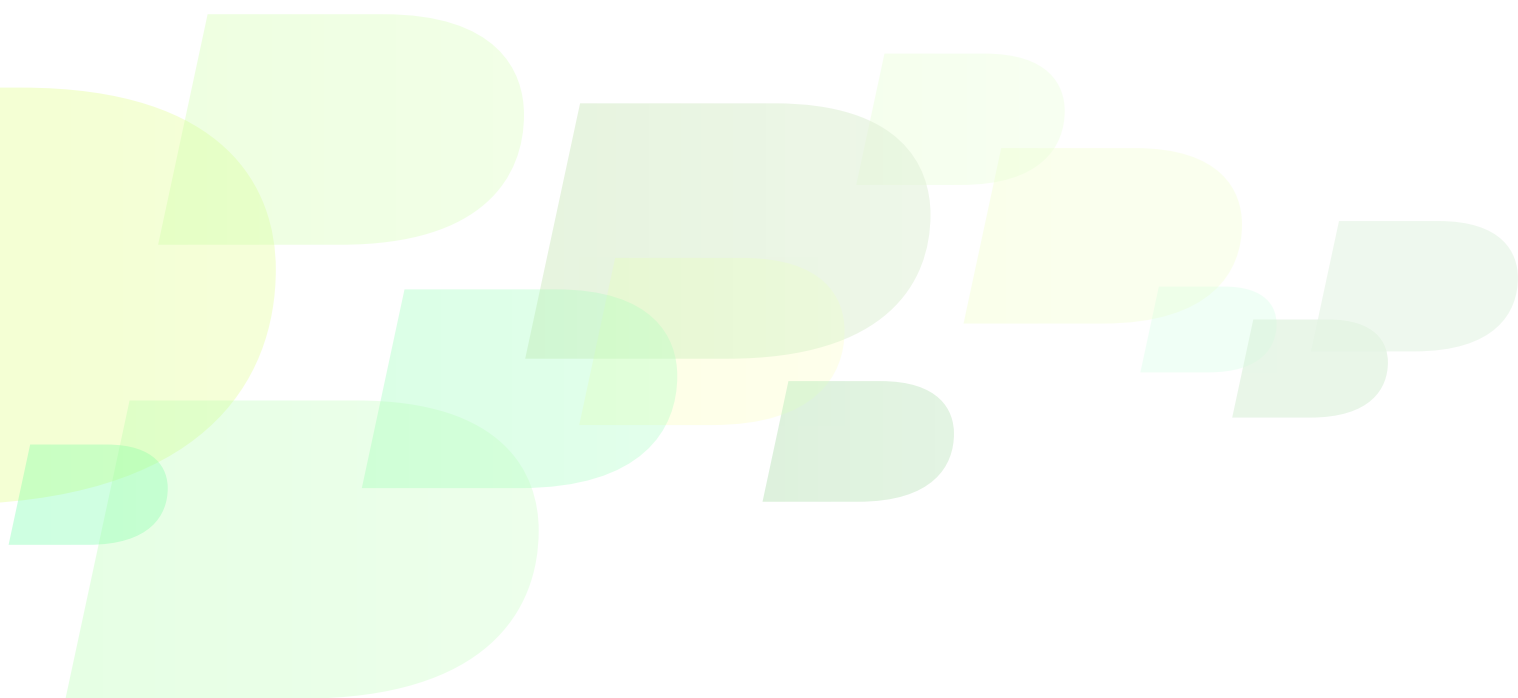
RIM offers a number of different resources to learn more about wireless solutions in general and BlackBerry® solutions in particular.

The web site www.blackberry.com is a good first place to start.

The Technical Knowledge Center www.blackberry.com/support on the site can help you get answers to particular questions.

To find other CIO Guides, including the CIO's Guide to Wireless, the CIO's Guide to Mobile Applications, the CIO's Guide to FMC and more, visit www.blackberry.com/getthefacts.







This material, including all material incorporated by reference herein or made available by hyperlink, is provided or made accessible "AS IS" and "AS AVAILABLE" and without condition, endorsement, guarantee, representation or warranty of any kind by Research In Motion Limited and its affiliated companies ("RIM") and RIM assumes no responsibility for any typographical, technical, or other inaccuracies, errors or omissions in this material and shall not be liable for any type of damages related to this material or its use, or performance, or non-performance of any software, hardware, service, or any references to third-party sources of information, hardware or software, products or services including components and content such as content protected by copyright and/or third-party web sites.

The limitations and exclusions herein shall apply irrespective of the nature of the cause of action and in no event shall any director, employee, agent, distributor, supplier or independent contractor of RIM have any liability related to or use of the material.

©2010 Research In Motion Limited. All rights reserved. BlackBerry®, RIM®, Research In Motion®, SureType®, SurePress™ and related trademarks, names and logos are the property of Research In Motion Limited and are registered and/or used in the U.S. and countries around the world. All other trademarks are the property of their respective owners.

MKT-XXXX-000