

WHITE PAPER

Seamless Communications: Simplicity, Efficiency, and Transparency Achieved Through Integrated Wireline and Wireless Services

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IDC OPINION

As enterprises recognize the strategic importance of enabling their remote and/or mobile workforce with mobility solutions, they need to determine how to best extend their existing wireline services into the mobile environment. Today, many service providers offer converged solutions that help businesses bring together their office-based telecom solution with their mobile environment. Enterprises must consider the following key points when evaluating these types of solutions:

- ☒ **Simplicity.** Enterprises should examine the simplicity and availability of a common dialing experience regardless of workspace device, be it a mobile phone, desk phone, or video interface. They should also look for solutions that have a single identity for calling and messaging yet are flexible enough for the business' needs — in other words, solutions that provide a single point of communication.
- ☒ **Efficiency.** Over the past several years, enterprises have engaged in large initiatives to migrate from legacy to IP networks. The opportunity to build a converged solution actually leverages the IP network as it was meant to be leveraged — from any-to-any device or network — and facilitates the true integration of distributed IP networking and leverages growing investment in mobility solutions.
- ☒ **Transparency.** Globally, the mobile workforce is growing. Enterprises should pick a solution that enables this segment to cut the cord if necessary while augmenting access options and allowing IT to control and enforce all of the aspects of mobility. Transparency provides the enterprise with the ability to deliver true mobility without rules — calls can start, end, or be transferred seamlessly, regardless of the communication pattern or starting device. And, transparency also means that particular verticals can achieve regulatory compliance standards by including mobile phone calls in call detail records and ensuring all business voicemails are maintained to meet compliance requirements.

IN THIS WHITE PAPER

This IDC White Paper provides analysis of the convergence between wireline and wireless technologies and the opportunities this evolution offers to enterprises looking to reduce costs, minimize complexity, and improve worker productivity.

The document discusses the high-level trends around fixed-mobile convergence (FMC) as well as the opportunities and challenges that this market presents to enterprises. It also showcases the Sprint Wireless Integration solution and highlights some ways in which certain industries can benefit from the offering.

SITUATION OVERVIEW

FMC: What It Is and What It Is Not

FMC has come and gone, and come back again, over the past several years. Frequently it is used to describe solutions that are bundled together rather than truly integrated. IDC defines the term *enterprise fixed-mobile convergence* as follows:

FMC solutions utilize elements of both fixed and wireless telecommunications infrastructure to offer a consistent feature set and a seamless communications experience to corporate end users. Examples include PBX extension services that allow users to access features typically associated with desk phones on their mobile phones or solutions that allow users to hand off voice calls from fixed-line phones to dual mode- or cellular-enabled mobile devices and vice versa.

There has been a lot of debate recently around unified communications (UC) versus FMC. IDC sees FMC as an enabler of UC solutions by extending presence and collaboration tools to a mobile device. While the origins of FMC are voice applications, FMC aptly applies to extending data functionality from the fixed environment — or from within the four walls of the enterprise — to the mobile environment so that mobile workers can experience access to calling and data functionality while working outside the office.

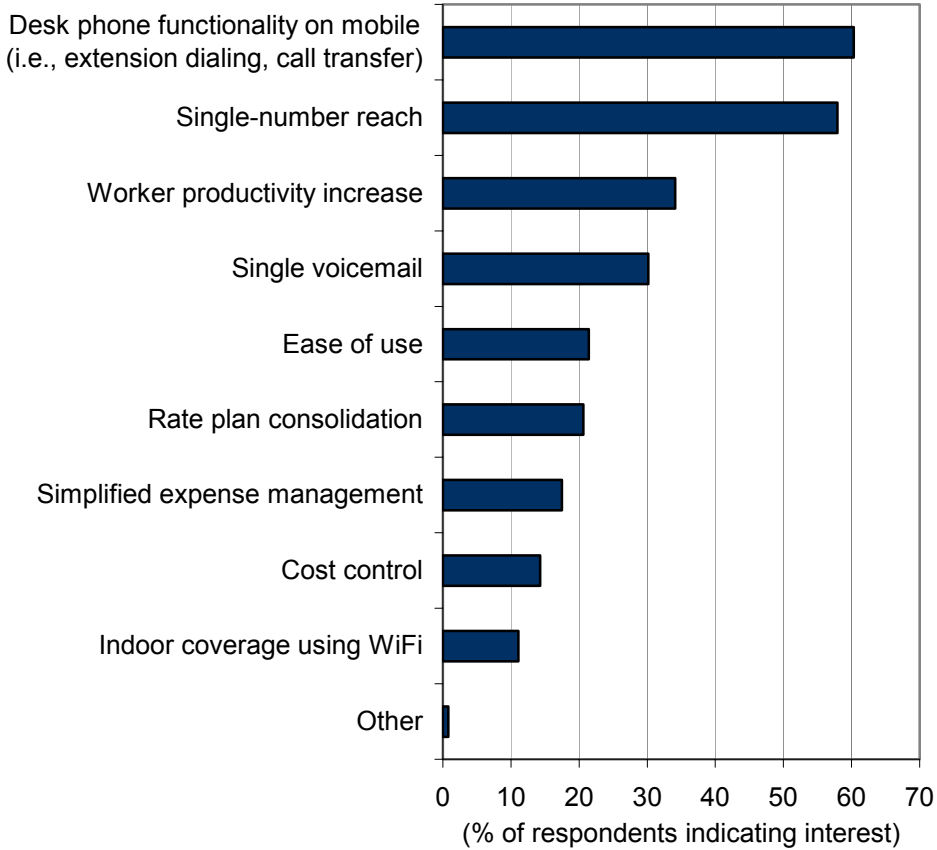
The U.S. Market: Are We There Yet?

The convergence of wireline and wireless assets has begun in many enterprises. Organizations in the United States are seeing their workforces become increasingly mobile. As these organizations become more strategic about their mobility investments, they are recognizing the synergies that can be achieved by bringing together their wireline and wireless assets. They are looking to incorporate wireless technologies into their existing networks and blend wireline features into wireless solutions. Already familiar with the added productivity gained from rolling out wireless voice and data solutions (such as email and instant messaging), enterprises are now interested in exploring the benefits of other solutions — particularly converged services (see Figure 1).

FIGURE 1

Top Benefits of Fixed-Mobile Convergence

Q. Which of the following would you categorize as the top 3 benefits that a fixed-mobile convergence solution provides?



n = 338

Source: IDC, 2009

As shown in Figure 1, the potential benefits of FMC are readily understood, namely the enhanced productivity gained by extending PBX calling features to mobile phones, the added convenience of having single-number reach regardless of which phone number is called, and the simplicity and efficiency of a single voicemail. As employees spend more time away from their primary work location and their desk phone, they face the challenge of managing both a desk phone number and a mobile phone number as well as voicemail for each. FMC solutions allow enterprises to better manage this challenge through the following features:

- ☒ Creating single-number reach functionality — leveraging an employee's primary business number to reach employees regardless of device (A frequently overlooked advantage is keeping the business phone number — up until now, an unappreciated, yet extremely valuable corporate asset — under the control of the enterprise.)

- ☒ Extending PBX features to the mobile phone — including single voicemail, extension dialing, seamlessly moving a call between desk and mobile phones, enhanced call management features, and user groups

The idea of single-number reach and single voicemail resonates with CIOs and is the leading message for many converged solutions. However, enterprises are reluctant to accept solutions that require further buildout or acquisition of new infrastructure. The focus is on ways to improve productivity, save costs, and drive revenue opportunities. Solutions that leverage existing infrastructure and address these enterprise concerns will gain the most traction. In light of the current economic climate, these concerns are heightened. A quick return on investment (ROI) after implementing in a timely fashion becomes even more critical.

From a provider perspective, fixed-line carriers are interested in helping customers move calls from mobile phones to the enterprise WLAN, or the fixed network, in the hopes of achieving better indoor call quality and at the same time moving minutes from higher-priced cellular networks to lower-cost fixed networks — all while leveraging existing investments in wireline infrastructure and IP networks. Mobile operators are eager to increase mobile phone feature functionality. By making traditional desk phone call management features available on mobile phones, they hope to improve customer productivity, promote wireless usage, and possibly even encourage users to disconnect desk phones entirely and make their mobile device their sole office phone.

Network providers — either fixed-line carriers or mobile operators — are continuing to deliver products that address the surge in employee mobility, growth in IP adoption, availability of WiFi networks, and — most important — employees' need for tools that help them do their job efficiently and with the greatest ease.

MARKET CHALLENGES AND OPPORTUNITIES

As with any technology, there are both pros and cons to deploying an FMC solution within the enterprise. This section touches on a few key challenges and opportunities for the network provider as well as the enterprise and its internal network.

Challenges

U.S. Wireless Market

Several factors differentiate the U.S. market from other regions and impact the adoption of FMC solutions. Mobile phone penetration remains lower in the United States than in Europe, but more important, mobile phone coverage is poorer — particularly inside buildings. This means that mobile phones are often not considered reliable enough, or of high enough quality, for important business calls, particularly conference calls. This makes the majority of U.S. businesses unlikely to cut the fixed-line cord completely, creating an even greater need for converged — instead of wireless-only — solutions.

Well-Rounded Network Providers

Looking for a provider that is able to offer a well-rounded FMC portfolio is critical for enterprises that want to have an end-to-end solution that may include data service, managed services, any necessary wireless coverage augmentation, and/or handset deployment components. In a world moving to IP and outtasking, enterprises want to work with a provider that can supplement their IT staff, is forward looking, and can ensure access to new and emerging technologies. Not all providers are ready to make this end-to-end commitment, and it is imperative that organizations understand this up front.

User Bias and Training

When enterprises implement a new technology solution, it is critical that end users understand the business benefits in addition to the feature functionality. User resistance or lack of usage will significantly impede the success of the implementation. Finding a provider that can help train the affected workforce and offer assistance during the initial stages of the implementation will result in a quicker return on investment.

User Experience

Even if a solution works from a technical perspective, if it is clumsy or makes the user's process more complicated, the likelihood that it will continue to be used lowers. How PBX functionality is extended to the mobile device can vary greatly. However, the best user experience for an FMC solution is to have it work on a variety of mobile phones, not just specific smartphones or WiFi-enabled phones, which may require soft clients. Only solutions that are simple and can be executed with nearly the same ease as a typical call from a mobile phone will have a greater chance of being adopted. This is crucial because no IT manager wants to spend money on rolling out a new solution that employees will use once or twice and then resort to their original behavior.

Potential for Major Resource Drain

While a wireless integration solution might initially sound like a good idea, many businesses will shy away from products that will rely too heavily on enterprise resources, and they do so with good cause. In this type of economy, where making the most of one's resources is crucial to staying afloat, a solution that demands much money, time, and effort can be the difference between keeping the business' head above water and slowly drowning in debt. A resource-efficient solution is needed to capture the business' attention and to be sustainable.

Opportunities

One Point of Contact for Services

In addition to managing the network, IT managers typically also manage myriad business relationships with network providers and vendors alike. If a wireless integration solution can combine wireless and wireline services under one umbrella of services, an IT manager's plate of responsibilities becomes a little lighter.

If there is ever a problem with the service, there is one point of contact from a provider perspective. This can potentially reduce the complexity of the problem and shorten the length of time it will take to resolve the problem on average.

More Efficient Management and Logging of Calls

One challenge to delivering mobile solutions to employees is the difficulty in managing and logging the calls on the mobile device. For some industries, like financial services, this is particularly troubling. Wireless integration with wireline infrastructure such as the PBX offers businesses the ability to manage and log phone calls from the mobile device in a central location in the network. In addition to making compliance with regulatory policies and internal procedures easier, wireless integration saves the business time and money.

One Number, One Voicemail

Business cards today look more and more like a directory than they do a simple way to extend contact information to a business associate. Simplifying communication to one number makes it easier for users to communicate how to be reached and makes it simple for others to contact users. And, regardless of which phone is used to make a call, the end user's caller ID will be that of his/her associated desk phone number, even when making a call from a mobile phone.

A single voicemailbox for both mobile and desk calls simplifies correspondence, allowing a user to focus more on productive work than on dialing into multiple mailboxes.

Cost Reduction

On-net calling can be extended to the mobile phone. This includes calls to and from an internal office number, other mobile workers, voicemail, and conferencing services built on the same PBX platform. Mobile subscriptions can come down to a fraction of their original size.

Other cost savings can be found in optimizing the network infrastructure, eliminating the need for excessive trunks to the PSTN or the need for unused desk phones.

Foundation for More Advanced Solutions

Unified communications has taken over the limelight in the past few years. One of the most complicated challenges for a full end-to-end UC solution is how all UC functionality — PBX functionality in addition to conferencing, presence, messaging, etc. — is extended into the mobile environment.

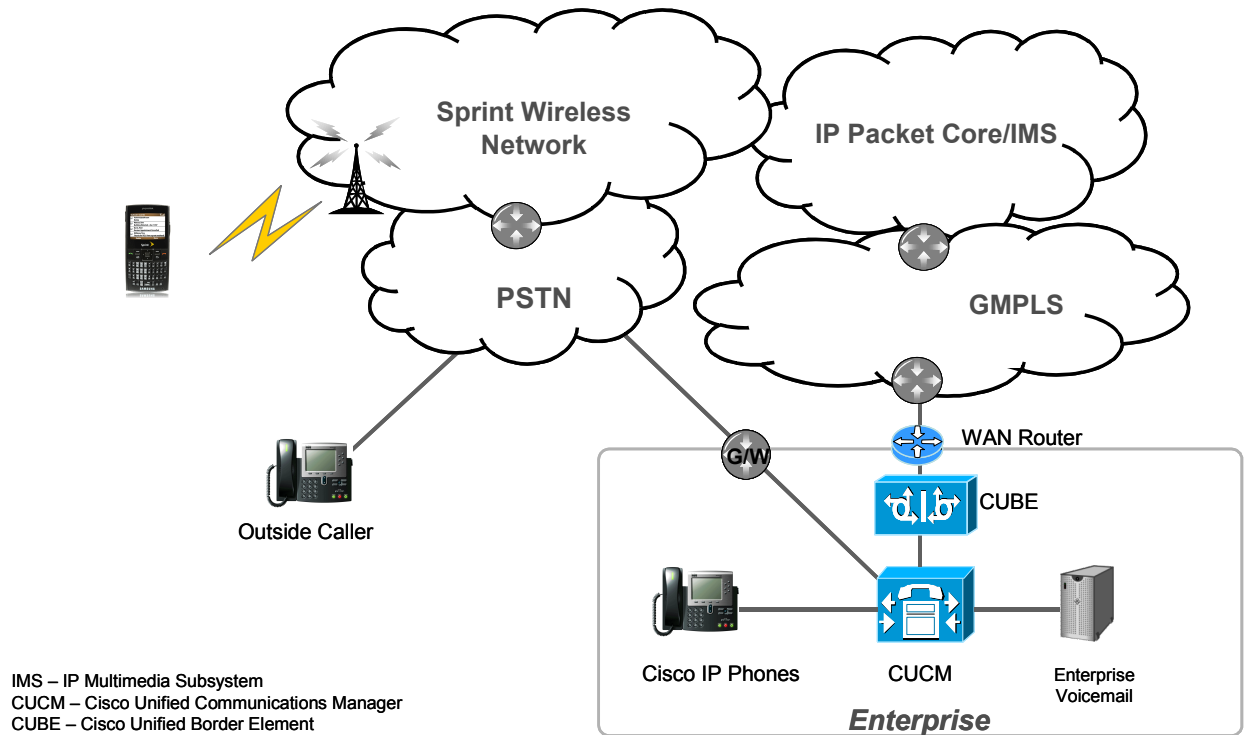
Wireless integration, if done right, can become a solid foundation for delivering UC services to the mobile phone. IDC believes UC is integral to businesses looking to stay competitive in the market going forward. Unified communications solutions that extend to the mobile environment, thanks to wireless integration, can be the competitive advantage enterprises need to capture a leadership position in their respective marketplace.

SPRINT WIRELESS INTEGRATION SOLUTION

In partnership with Cisco, Sprint has launched a wireless integration solution for enterprises. Sprint services are joined together with Cisco infrastructure to create a seamless solution between wireless and wireline technologies within the enterprise (see Figure 2).

FIGURE 2

Sprint Wireless Integration Architecture



Source: Sprint, 2008

Technology

Sprint Wireless Integration is a hybrid solution in which both network-based services and premise-based infrastructure are combined to create a more effective, integrated solution. The following components form the foundation of Sprint's Wireless Integration solution:

- Sprint
 - Sprint Mobile Voice and Data Services**
 - Sprint "Wireless Integration"**
 - Sprint® IP MPLS VPN Network**
- Cisco
 - Cisco Unified Communications Manager.** This is the session processing component of the Cisco Unified Communications solution. This component can be managed by the enterprise or by Sprint.

- ❑ **Cisco UC Mobility Manager.** This component extends session control of Cisco Unified Communications Manager from a mobile worker's primary workplace desk phone to any location or device of the worker's choosing, adding mobile functionality to the platform such as simultaneous ring, unified voicemail, and midcall transferring.
- ❑ **Cisco Unified Border Element (CUBE).** The CUBE product is a network border element that facilitates connectivity between independent UC networks. In this offering, CUBE enables the enterprise UC environment to connect to Sprint's GMPLS network. It is provided and managed by Sprint.

The enterprise network and Sprint network link at the Cisco Unified Border Element, at which point a SIP trunk extends Sprint Wireless Integration services to the MPLS network. Mobile-to-enterprise and enterprise-to-mobile calls are routed as VoIP calls using the MPLS network and are considered on-net. Mobile-to-mobile calls are routed over the Sprint Wireless Network and are also considered on-net; thus, they do not use any wireless voice minutes.

The solution is device agnostic, provided the wireless service is Sprint CDMA. Integration is also available on Sprint's PowerSource™ devices, which are hybrid devices capable of using the Nextel National Network for Nextel Direct Connect® service and the Nationwide Sprint PCS Network for voice and data services. The mobile phone is considered an extension of the enterprise telephony network, according to Cisco Unified Communications Manager. As such, abbreviated dialing (e.g., four-digit) is available from the mobile phone.

Features / Functionality

The following list identifies a few key features and functionalities of the Sprint Wireless Integration solution:

- ☒ A single number is used for both desk phone and mobile phone, regardless of which number is called.
- ☒ A common dialing plan and feature set for both office and mobile environments creates a more cohesive experience for the end user. Dialing is simple — it doesn't require calling an enterprise access number first or setting up a data session.
- ☒ Calls can be seamlessly and transparently moved between mobile phone and desk phone.
- ☒ All messages go to a unified voicemail, regardless of whether a mobile phone or desk phone is called.
- ☒ All mobile call tracking and logging is done with Cisco Unified Communications Manager.
- ☒ If an employee leaves the company, the phone number — a valuable but often unappreciated resource — remains tied to the business.
- ☒ Sprint's CDMA network is consistently more secure than a combination of public and private WiFi networks.

Resource Efficiency

The Sprint Wireless Integration solution presents enterprises with a way to extend enterprise communications functionality to the mobile device without huge up-front costs, continued internal maintenance, or increases in resource expenditures overall. Sprint's partnership with Cisco delivers savings to the enterprise in the following ways:

- ☒ All calls within the company are considered on-net, regardless of whether either party is using a mobile phone or a desk phone. The company can optimize its wireless rate plans based on this on-net calling feature and how the employee uses his/her mobile phone.
- ☒ Mobile calls to or from the enterprise traverse the MPLS network, which can reduce the number of trunks from the PSTN to the business site. PSTN trunk savings can occur for mobile-to-enterprise, mobile-to-mobile, and mobile-to-PSTN (off-net) calls.
- ☒ International calls placed from a mobile phone are routed through the company's enterprise facilities and billed as on-net so that mobile usage charges are not incurred.
- ☒ Because much of the integration happens within Sprint's network cloud, deploying the solution for the business is more straightforward. It requires less time to deploy and relatively fewer up-front costs, and it decreases the time needed to set up individual users on the network.
- ☒ Class of control applied to the desktop extension is always extended to the mobile phone, allowing the company to control costs. This restriction is enforced without relying on the user to call an enterprise access number or setting up a data session.

Sprint's Business Strategy and Partnerships

A few key overarching themes run through the Sprint Wireless Integration solution that give us key insight into Sprint's overall strategy in delivering services to business customers:

- ☒ **Consistent user experience.** Users can be tough to win over when it comes to adopting a new service. This has everything to do with behavior: The more users have to change their behavior, the less likely they are to try a new solution. Sprint created a solution in which the user experience is seamless across both wireline and wireless platforms. IT managers can be more at ease knowing that adoption is more likely.
- ☒ **Improved service.** Because both wireless and wireline services are delivered by Sprint, troubleshooting problems becomes much easier. Enterprises will see trouble tickets closed more quickly, and IT managers will not have to worry about which provider to call when something goes wrong. This is especially important because IT managers are increasingly juggling maintenance of their own networks and the relationships they have with service providers and vendors. If wireless and wireline services are delivered by Sprint, the IT manager has one less relationship to manage.

- ☒ **Compliance.** Compliance is one of the more complex issues an IT manager has to handle. This includes compliance not only with federal policies and regulations but also with policies and procedures integral to keeping the internal business network online and secure. As businesses become more and more mobile, extending this compliance outside the office walls has proved complicated. Offering management, logging, and control over mobile devices and phone calls exponentially eases the burdens of IT managers. This is also true of entire industries. With a solution such as Sprint Wireless Integration, financial and legal institutions can leverage the value of unified communications in a mobile environment to help them with their compliance goals.

- ☒ **Interoperability with existing infrastructure and existing handsets.** In this economy, fewer businesses may be looking to spend money on communication solutions. Those that are still interested in new services are expecting a quick return on investment and a low total cost of ownership. Sprint Wireless Integration works with one of the leading IP communications solutions; the likelihood of a CUCM already existing in the enterprise network is high. Sprint's solution also does not constrain users to smartphones or WiFi-enabled phones, which can be difficult for IT managers to enforce internally. The initial up-front costs of deploying the solution are minimal — as is the total cost of ownership — making it easier for businesses to realize the value of Sprint Wireless Integration and mobile unified communications.

As one of the longest-tenured alliance Cisco partners, Sprint has built a strong relationship with the vendor over the years. The service provider has achieved Cisco Quality of Service (QoS) certification for its MPLS VPN network. Sprint is also the first provider with a 100% Cisco IP next-generation network. Through partnering with one of the top unified communications vendors, Sprint positions itself to deliver a strong mobile solution to enterprises looking to push unified communications into the mobile environment.

IDC CASE STUDIES

IDC highlights some ways in which implementations of Sprint Wireless Integration can bring value to the financial, insurance, and architectural/engineering industries.

Seamless Mobility Pays Dividends for the Financial Sector

A major financial institution looked to Sprint Wireless Integration to help provide its loan officers, financial consultants, and other team members — in other words, its mobile workforce — with real-time access to corporate information as well as the capability to take and answer customer calls regardless of work location. The financial institution was also looking for an efficient means for its mobile staff to contact the main office when additional expertise and information was needed.

The solution involved deploying mobile devices supplied by Sprint to the mobile workforce and integrating them into the financial institution's wireline environment. Through this implementation, workers were able to seamlessly move calls between

the desk phone and the mobile phone, which resulted in enhancing the customer-facing experience and creating immediate results during business meetings by making decisions quickly or obtaining approvals in real time.

The deployment of Sprint Wireless Integration resulted in the company reducing the number of desk phones for some of its workforce — making workers rely solely on their mobile phone. With the seamless integration between the wireline and wireless environments, workers were able to provide only one number, thereby simplifying the process of reaching a representative as well as protecting a corporate asset — the phone number — from leaving the company when a representative resigns. The integrated voicemail, simplified extension dialing, and ability to be available for calls with the flexibility of using either desk or mobile phones improved worker satisfaction. Customers also noted increased satisfaction with being able to reach representatives at one number — regardless of whether the call was handled on the mobile phone or desk phone.

"Insuring" Seamless Communications for the Insurance Sector

This insurance company's workforce comprises a highly dispersed group of underwriters and claims and sales professionals who are mobile a large percentage of the time. These mobile workers require instant access for corporate applications, which hold customer information. They also require the capability to be available for calls from customers and claimants while out of the office. While dealing with a specific claim, these agents need to be able to communicate with office-based personnel to acquire approvals and additional information to make decisions quickly and solve customer problems on the spot.

As a means to solve the challenges of maintaining good customer service and finding quick resolution to claimant issues, this insurance company looked to the Sprint Wireless Integration solution to solve its problem. The mobile workforce of claims agents, underwriters, and salespeople was equipped with Sprint CDMA handsets that were integrated with the company's wireline environment — allowing for the seamless, transparent moving of calls between desk and mobile phones.

Since deploying Sprint Wireless Integration, the insurance company has enjoyed the benefit of reducing the number of desk phones associated with its mobile employees. It has also seen an increase in productivity by its mobile workers who are busy processing claims and issuing policies, as they are reachable regardless of their location. For those customers who have time-sensitive requirements, the company's mobile workforce is reachable and able to deal with issues more efficiently since the company implemented the solution, leading to increased customer satisfaction and improved retention rates.

Building Reachability in an Architectural/Engineering Firm

With the demands of managing multiple worksites and keeping a mobile workforce in contact with the head office, an architectural, engineering, and technology company looked to Sprint Wireless Integration to provide its workforce with real-time access to

client information, project specifications, and client requests as well as maintain open communications channels between office-based and worksite-based personnel.

This firm looked to Sprint Wireless Integration to provide seamless connectivity to its voice communications, and it also has introduced conference calling and Web-based videoconferencing to discuss projects with office-based staff and clients.

The solution has helped the firm reduce the number of desk phones and has provided worker productivity improvements through one-number reachability, integrated voicemail, and simplified dialing, and customers have noted improved satisfaction with being able to reach the appropriate personnel regardless of where they are located. This firm has also taken the solution to a higher level by using audioconferencing and videoconferencing to help improve the ease with and speed at which to get answers to construction questions and get answers promptly to customers while working in tandem.

CONCLUSION

Educating businesses about FMC solutions and their benefits will remain the key challenge to overcoming enterprise skepticism around these types of offerings. Businesses need to better understand what the solutions can do for them — for their business operations and processes, their productivity, and/or their competitiveness. Furthermore, they need assistance pulling together a cost/benefit or ROI analysis. Down the road, advantages will be less about hard-dollar cost savings and more about efficiency gains — and quantifying these gains will be imperative to justifying monthly subscription fees and driving enterprise adoption.

Enterprises looking to implement FMC solutions should keep in mind that multiple options are in the market today. Organizations should carefully evaluate their options. They should keep in mind that any solution should provide simplicity, efficiency, and transparency throughout all aspects of the solution: cost, design, deployment, use, and maintenance.

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