Mobile Unified Communications: Minimizing Cost, Maximizing Value

A Farpoint Group White Paper

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After those relating purely to the vast array of technologies involved in implementing wireless and mobile IT strategies, questions relating to the cost-effectiveness of mobility have dominated the inquiries received here at Farpoint over the past few years. The reasons for the popularity of this topic are obvious – while technologies and the products and services based on them continue to evolve at a rapid pace, there is little doubt today regarding the viability, reliability, and applicability of broadband wireless and mobile computing. As the transition from working in fixed locations (historically constrained by a fundamental dependence on wired telecommunications and network resources) to location-independent IT mobility enabled by advances in wireless has rapidly accelerated over the past decade, the essential capabilities of mobile technologies have been proven. Demand for mobile solutions from staff served by IT has been overwhelming in many cases, and we are now seeing what was unthinkable during the dawn of the enterprise wireless era roughly two decades ago: not just the augmentation, but rather the replacement of wireline services of all forms with wireless, both wide-area (cellular services from carriers) and local (enterprise-class Wi-Fi solutions). Wireless is today the default or even primary access in many organizations for all forms of enterprise communications – data, voice, messaging, and video.

But even given the rapid advances in technologies, it is fair to ask if the mobile networking solutions being deployed today are really cost-effective. We can begin here with attempting a definition of exactly what cost-effective is, but such will depend heavily, of course, on the nature of a specific organization’s mission and, given a high degree of variability is labor costs, even where the organization is located geographically. As we’ll explore below, other factors in this calculation include savings on carrier expense, reduced capital-equipment costs, and even the elimination of expenses related to equipment required to boost or distribute a cellular signal indoors. There are enormous opportunities for numerous hard-dollar cost reductions.

But a good definition of cost-effectiveness in this context, we believe, must be based upon the gains in productivity realized by those who are using contemporary mobile IT solutions. As a “soft-dollar” element, productivity is often hard to quantify. But networking is at its core fundamentally about improvements in productivity; the network is the circulatory system of the enterprise, with the effective distribution of information essential to profitability, competitive advantage, and the overall success of the firm – these ultimately gauged via the productivity of those who depend upon that information. More efficient access to information improves organizational responsiveness, customer service, and many other operational aspects of any type of organization.

One of the most interesting directions in enterprise communications of the past few years has been the evolution of traditional, non-integrated and distinct modes of communications, including telephone, fax, many forms of carrier- and network-based messaging, e-mail, cellular services, and more, from point solutions to elements in a unified communications (UC) strategy. The motivation here is simple, and, as with mobility, directly related to productivity – the time spent using, managing, and monitoring (for example, checking multiple services for messages) the many distinct
channels and services available to individual users can be reduced, and thus productivity enhanced, when all of these modalities are unified under a single service infrastructure and user interface. It’s also important to mention here that the rapidly-increasing dependence upon collaborative systems (historically known as “groupware”) further motivates the adoption of unified communications. Group productivity depends upon effective multi-modal communications. And, of course, any successful UC implementation will work across any contemporary network, wired, or wireless, while providing identical facilities independent of the specific network in use at any given moment by any given user. And this uniformity is also important for the broad range of subscriber units (mobile devices) available today, especially as smartphones and tablets become the vehicles of choice, augmenting if not replacing the venerable notebook PC in many venues.

Still – it’s fair to ask: while UC is one of the most important directions in communications today, what components are required? How are both capital and operational cost affected? In short, what are the costs, the benefits (which we can quantify as return on investment, or ROI), and how can total cost of ownership be evaluated and, importantly, minimized?

**The New World of Mobility**

As we’ve noted over most of our history, work must be defined in terms of what is done, and not, in the case of knowledge workers, anyway, where it is done. In other words, work is something you do, not a place you go, unless the nature of a specific task requires one’s presence in a given location. Freedom from having to be in a particular location to be productive has always been a key motivator for mobility, provided all of the computing and communications facilities required are available in that location-independent context.

The rapid evolution of wireless networks, both local and wide-area, is of course key to realizing this vision, and, indeed, today’s multi-megabit wireless wide-area networks (WWANs) and wireless local-area networks (WLANs), with hundreds of megabits of capacity per radio channel, are well-suited to almost any business communications task. The cost/performance profiles of all forms of wireless continue to improve, along with geographic availability, capacity, and reliability.

But also key has been the rapid evolution and proliferation of mobile devices, particularly, as we noted above, smartphones and tablets. While these devices have historically represented significant compromises in functionality, they can indeed replace PCs and even desktop telephones in many applications thanks to a few major advances:

- **Essential hardware** – Advances in very-low-power microprocessors, battery technology, display screens, and radios have resulted in highly-mobile form factors with little compromise in functionality (the most obvious of these being the screen size of handsets, but this essential limitation regardless has no impact
on mobile UC). The larger displays of tablets and their ability to connect to cellular networks and wirelessly tether to handsets easily enhances both value and appeal.

- **Operating environments and applications** – Mobile subscriber units have desktop-like functionality here in terms of support for a broad range of data types and applications. And those applications, in addition to being numerous, can be quite robust, even in support of mobile UC.

- **Broad functionality** – The “cell phone” has evolved into a powerful device capable of replacing not just the PC, but also the digital camera (still and video), GPS receiver, music and video player, and much more. Users thus almost always carry (or have a strong incentive to carry) a handset, most commonly today in the form of a smartphone.

- **Performance** – In terms of both responsiveness and support of high-functionality browsers and applications, modern mobile subscriber units have no practical limitations (beyond battery life, anyway, and that factor continues to improve).

- **Convenience** – Most importantly, modern mobile devices are easy (and even fun) to use, and thus encourage their owners to stay engaged and connected not only in their personal communications and applications, but also in meeting the needs of their employers – again, independent of location, organizational type or size, and application.

Of course, if we are going to realize enhanced productivity and ultimately a return on investment from mobility, and particularly with respect to mobile unified communications, the facilities made available while mobile must be the same as those provisioned at the desk (see Figure 2). We have long argued that compromise in essential functionality presents opportunities or frustration and a disincentive to make the most of mobility. We used a similar argument during the era of the microbrowser, when the benefits of the Web were routinely oversold in the form of software with far more marketing value than production usefulness. And, again, with collaboration now key, ease-of-use and full functionality must be at the top of any checklist of mobile UC functionality.

A final requirement is now becoming evident – support for the personal liability or “bring your own device” (BYOD) model of operations. Whereas it was once a given that subscriber devices (again, PCs, tablets, and handsets) used for enterprise tasks would need to be provided by the organization for reasons of security, cost control, and management, today the opposite is true – users want to carry the minimal number of devices to suit their needs, and, as personal activities now require the same degree of functionality as those of an enterprise, and as the choice of handset reflects the identity and values of the user, those devices will be increasingly personal. We have written previously that mobile device management is key to success here, but users should be allowed and even expected to use their own handsets and related equipment for enterprise
functions and on enterprise networks. It is therefore important that a successful mobile UC strategy embraces this concept with, again, full desktop-class capabilities.

**Mobile UC: Features and Requirements**

So, if mobility is the preferred mode of operations for many workers today, and mobile subscriber units are more than up to the task of supporting desktop-class communications, what are the application functions required for a complete mobile UC solution? We see these as the following (see Figure 1):

- *Telephone* - The single most important element of mobile UC, this includes all of the common telephony functions that have become essential over the years, including dialing directory, dial by extension, transfer, voice mail, and many more. And it’s important that all data required (like the dialing directory) be unified across the wired and wireless domains. This in itself is a vast leap in terms of value of these services when provided by a carrier.

- *Presence* – The ability for an individual to apply their availability of other status to communications also enhances productivity.

- *Messaging* – This includes all manner of instant messaging (IM), text messaging, chat, and more (possibly including e-mail) depending upon local preferences. Note again how keeping these under the control of the enterprise enhances security, as well as message integrity and tracking.

- *Calendar* – Again, with a common database. Note that keeping the calendar under the control of the enterprise enhances information security.

- *Videoconferencing* – While not necessarily part of a unified communications strategy, videoconferencing is now possible on many mobile devices and may enhance productivity in some cases, although we tend to believe the opportunities here are at present more limited, and costs higher, than many espouse. Still, real-time video can be invaluable in many situations.
• **Document conferencing/group apps/collaboration** – And, similarly to videoconferencing, document sharing and collaborative applications may be implemented separately from a mobile UC system, but we suspect such capabilities will become more integrated over time.

Note that not all of these functions are available today in any single mobile UC solution, and only a subset may be required in any given enterprise. We believe, however, that this set of features will eventually converge in specific UC solutions.

Beyond user-visible functionality, the following features and capabilities are also required in production mobile UC solutions (see Figure 2):

• **Management and control** – This includes such elements as automatic network selection, configuration, monitoring, reporting, policy definition, and even software updates, all centralized under a single-console interface.

• **Security** – Included here are authentication, encryption, and related policy management. Security is just as vital in the case of mobile UC as it is for any other sensitive corporate information. In our view, security must be integrated into the mobile UC solution, including the ability to separate business and personal communications.

• **Battery management** – An often-overlooked element, the mobile UC client app must be highly-respectful of battery consumption, and we have encouraged app vendors to place an emphasis on optimization of this parameter.

**Figure 2** – A mobile UC solution must support a broad set of user, management, and networking functions. At its core, mobile UC provides connectivity between a universe of mobile devices and essential telecom functionality, typically via a PBX. *Source: ShoreTel, Inc.*
• **Scalability** – Mobile UC solutions often start quite small, with a pilot or other limited deployment. But we have universally seen the initial popularity of the facilities of mobile UC ultimately drive much larger deployments, and often quite rapidly. It is therefore important that initial deployments be designed for scalability and much larger workloads than are often considered initially.

• **Resilience** – As with other mission-critical IT resources, planning for single points of failure is important. While failures of mobile UC equipment *per se* are rare, the nature of networks is that a failure anywhere can produce a significant (and potentially damaging) reduction in capability unless this aspect of a deployment is carefully considered.

• **Multi-device, single-client** – For ease of use (and consequential lower operating costs), having a single client application that can run across multiple platforms is a huge plus. Training and support costs can thus be minimized.

• **Open Implementations and Standards** – We recommend that potential vendors be quizzed on their commitment to extensibility through APIs and other related features, as well as industry standards where applicable.

• **Ease of Use** – An application of any form is of little value if the intended audience finds it too difficult to use. An initial pre-deployment test can confirm just how inviting a given mobile UC app is in operation. And functionality must be uniform independent of location, even while roaming globally.

**Building a TCO Model of Mobile Unified Communications**

With the features and requirements and benefits of mobility in general and mobile unified communications in particular now quantified, we can turn our attention to determining the value of mobile UC. Key to this calculation, of course, is understanding the costs involved in pursuing a mobile UC strategy.

IT costs are usually framed in the context of *total cost of ownership* or TCO. TCO consists of two components, as follows:

• **Capital Expense (CapEx)** – In general, CapEx includes all equipment required, including both hardware and software, planning, installation, initial setup and verification, and integration with other systems as required, the services required here usually referred to as non-recurring engineering (NRE). Note that CapEx declines over time, as the faster/better/cheaper phenomenon typical of high-technology products continues to apply in the form of improving price/performance, new features, and the always-present competitive market. In short, hardware and software costs almost always represent improving value over time, and the NRE involved in getting mobile UC operational is usually quite minimal.
Note that some mobile UC CapEx can be amortized across an existing wireless LAN infrastructure. As we noted above, the increasing capacity of contemporary WLANs allows them to handle, in most case, the additional load of mobile UC with only minimal, if any, additions to the WLAN physical plant and essentially no impact on its OpEx (see below).

• **Operating Expense (OpEx)** – These are the costs involved once a given service is operational, and, unlike capital equipment, which is on a constantly-decreasing price curve (or constantly-improving price/performance curve), are always dominated by the cost of the people required to provide ongoing operational management, user education, support, troubleshooting, and related labor-intensive services. These, unfortunately, only increase over time, as personnel costs only seem to rise, and, while improvements in productivity, as we noted above, can help here, there are limits to the productivity gains possible with any given individual.

For this reason, we almost always advise making a greater investment in CapEx, achieving higher functionality and performance, and even operational automation where possible, maximizing the productivity of operations staff (and, of course, ultimately end-users as well) and thus minimizing the contribution of OpEx to TCO. The only exception here would be via a software-as-a-service (SaaS) or similar strategy, which we are now seeing in applications and even network management, and which may eventually become a possibility for a given mobile UC cost calculation.

A properly-implemented mobile UC strategy will see other cost benefits, as follows:

• **Service cost optimization** – It may be possible to realize a significant reduction in the cost of certain services related to UC, mostly notably with respect to WWAN (cellular) services, via system policies that select lower-cost options (most notably Wi-Fi) when appropriate. Many cellular calls are made from a user’s desk indoors, resulting in the need to purchase much more cellular capacity than is really needed. Depending upon the size of the organization in question, a reduction in cellular expense alone can easily pay for the deployment of a mobile UC solution! The cost of international roaming can also be reduced significantly.

• **Reduction in other capital expenses** - It may also be possible to eliminate other telecommunications elements, even including desktop telephones, further benefiting the TCO calculation in many cases. Of course, such a choice, where the mobile handset replaces the wired phone, must be carefully evaluated wherever proposed, although the cost benefits, the challenge considered here, are in fact easy to calculate and uniformly positive.

Note that BYOD, as discussed above, can represent another major opportunity for a significant reduction in CapEx, and, often, in OpEx, as service costs are shared with the staff who own the phones. Again as noted above, it is important that a
common mobile UC client be available across all popular handset and tablet platforms so as to minimize training and support costs.

• **Policy management** – The mobile UC console should provide the ability to specify service preference, user access to sensitive information resources, and other policy matters. Centralizing this function can result in a significant reduction in cost, to say nothing of enhancing peace of mind.

• **Integration, deployment, and ongoing operations management** – Similarly, mobile UC products should be easy for operations staff to understand, configure, deploy, manage, and integrate. It is important to discuss this element with potential vendors, as capabilities vary widely here.

**Conclusions**

Farpoint Group views mobile unified communications as the next stage in the evolution of the enterprise overall, adding a key capability that will eventually lead to the complete location-independence of all enterprise communications functions – again, the essential objective of mobility. While implementations vary today, mobile UC products with the characteristics and capabilities we have discussed in this White Paper today provide both reduced operating (and often capital) costs, improved cost-effectiveness, and competitive advantage for enterprises everywhere. It is safe to say that the convergence of today’s wireless networks, remarkably-capable subscriber units (particularly smartphones), operational strategies like BYOD, and, of course, highly-functional mobile UC systems has changed enterprise communications forever, and furthers the benefits realized when mobile communications are the primary or default access for as large a portion of staff as possible.

At this point we see the education of enterprise IT, network, and telecommunications staff as the key opportunity for mobile UC vendors. There is still much to do here, and, of course, such education is a key goal of our White Paper series. With the requisite networks and devices now in place, however, we expect a dramatic increase in the adoption of mobile UC until it reaches that position of a primary or default strategy all by itself.

While this White Paper has primarily been about cost, again motivated by the number of questions we receive related to that topic, we can find no critical cost issues remaining with respect to mobile UC today. Indeed, given that the capital costs of many of the components required (most importantly, wireless networks and subscriber units) can be amortized across a large number of applications beyond mobile UC, and given that mobile UC systems are very cost-effective from a CapEx perspective, the primary concern is on the OpEx side. Successful mobile UC vendors, though, are addressing the opportunities for OpEx cost management and even cost reduction we noted in this document. While a precise cost calculation in any given case will depend both upon the specifics of a given organization’s requirements and a given mobile UC vendor’s
capabilities, we doubt that any cost-related argument can be made against the deployment of mobile UC today. With time-sensitive access to information in all forms – the Web, voice, messaging, collaboration, and more – now an essential competitive differentiator, mobile UC is poised to play a pivotal role in the future success of organizations and enterprises everywhere.
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