Point of View

Taking Care of Business in the Mobile Cloud

Cisco IBSG Research Uncovers New Opportunities for SPs To Prosper in the Mobile Cloud Market

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Mobile communications have fundamentally changed the way business works. Once the exclusive domain of senior executives, mobile devices are now indispensable to most employees for conducting both their business and personal lives. New devices such as the Apple iPhone, Android smartphones, and RIM BlackBerry bring a host of applications and services to the palm of one's hand, providing access to critical information and improving the way business gets done.

At the same time, cloud computing has become *the* new way of delivering—and charging for—IT services and functionality. Technology services and applications are increasingly being delivered and paid for on-demand from remote data centers, accessible through the "cloud" of interconnected networks that constitute the Internet. Everything from email, content storage, and applications like Salesforce.com, to more complex computing and development platforms, can now be accessed through simple browsers and delivered through the cloud, eliminating the need for end-user applications and high-powered computers.

Ever since the days when executives lugged around brick-like mobile phones, business has been the major driver of success and innovation in the mobile industry. BlackBerry phones brought on-the-go-email, freeing countless business executives from the confines of their desks. Business users were also the first to adopt smartphones and drive the huge popularity of these new devices. In addition, businesses were early adopters of cloud services to more effectively and efficiently meet the increasingly complex technology requirements of their organizations.

The collision of these trends—the "mobile cloud"—stands to significantly increase the overall value of mobility, as well as radically alter the way employees work and businesses operate. Time spent perusing blogs, reading research reports, or attending conferences, however, will confirm that the vast majority of information about the mobile cloud is based on hype and contains little, if any, substantive information for taking advantage of the overall mobile cloud opportunity. In particular, almost no emphasis has been placed on understanding consumers' needs and buying behaviors, or on showing how this information can translate into new opportunities for mobile operators.

To better understand consumers' needs and strategies for success in the mobile cloud services market, the Cisco® Internet Business Solutions Group (IBSG) conducted a *Mobile Cloud Watch* survey of 1,016 U.S. mobile users to understand their current and future needs, and to learn how they prefer to pay for mobile cloud services.[1] The research findings are important because they allow service providers (SPs) to understand the size of the opportunity, develop strategies for success, and differentiate their offerings to become more competitive.[2]

Mobile + Cloud—What Does It Mean?

Before we explore the research findings, it is important to establish a common understanding of what "mobile cloud" means. Cisco IBSG defines it as *mobile services and apps delivered from a centralized (and perhaps virtualized) data center to a mobile device, such as a smartphone*.

Customers access these services on-demand using the browser or thin client on their mobile devices. This contrasts to "thicker" clients that are downloaded from app stores and reside (and run) on the mobile device. Mobile cloud services are agnostic about the type of device or operating system on which they run.

Mobile cloud comprises two categories of services:

- **Traditional cloud services:** The extension of traditional, wired cloud services (Saas, Iaas) to mobile devices (e.g., Mozy, Salesforce.com)
- **Unique mobile cloud services:** Services that exploit features of the mobile device (e.g., camera, voice recognition) and the characteristics of mobility (e.g., location, presence) to create unique, cloud-delivered offerings (e.g., bar-code scanning, real-time translation)

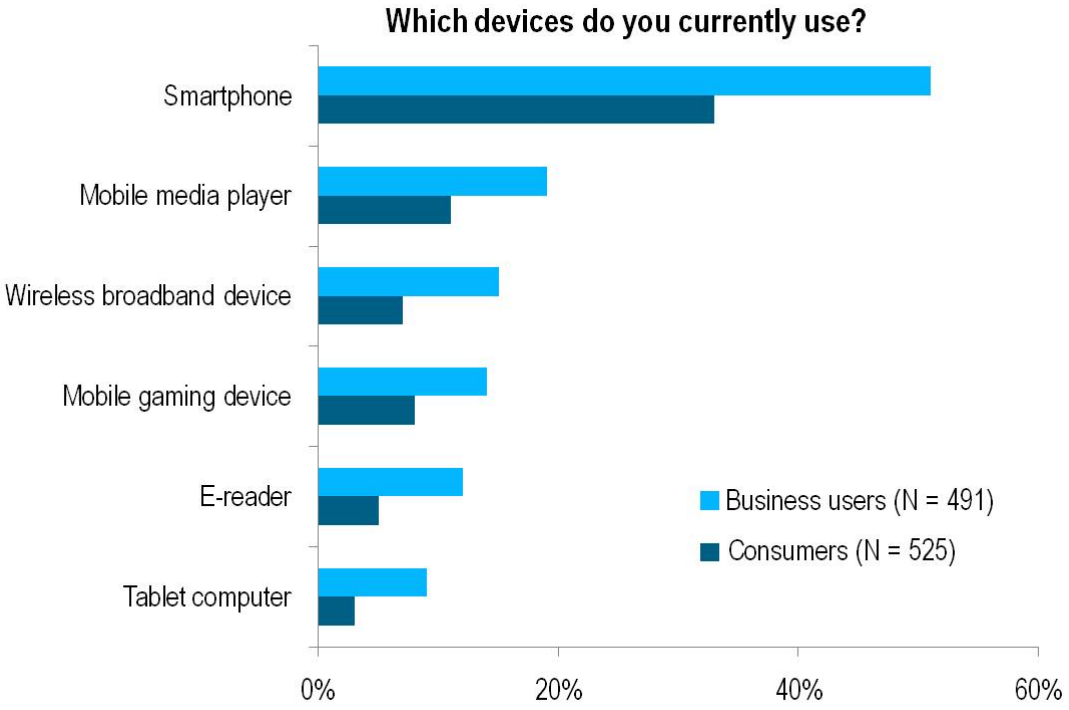
Business Is Mobile

For analysis purposes, Cisco IBSG defines business users as people who are either fully- or self-employed, recognizing they will most likely use their mobile devices for both business and personal reasons. Business users represented almost half (48 percent) of survey respondents and were drawn from companies that ranged in size from small businesses to large enterprises.

As expected, business users typically fell into the 25-to-65 age category, in sharp contrast to consumers, who were highly represented in the under-25 and over-65 age groups. Business users are much more valuable customers for service providers, spending an average of $91 per month on mobile services, with more than a third (37 percent) spending more than $100 monthly. In contrast, consumers spend an average of $69 per month. However, the distribution is highly skewed, with 17 percent of consumers spending less than $16 and 23 percent spending more than $100 monthly.

Business users are also technologically savvy: 40 percent of business users reported they were early adopters of the latest technology products. Non-business users generally tend to be technology laggards, waiting to purchase new technology until it is well proven. The technology savviness of business users is clearly demonstrated by the big divide in the number of devices the two groups own (see Figure 1): more than half of business users already own a smartphone, compared to just one-third of consumers. Not only are business users big adopters of additional devices, including recent introductions like tablets—they also value single-purpose devices for activities such as gaming, media consumption, and e-reading.

Figure 1. Additional Devices Used by Mobile Phone Users.



Source: Cisco IBSG, 2011

BlackBerry is still the smartphone of choice for business users, with 30 percent of respondents carrying a RIM device in their pocket. Apple and Google, however, are quickly catching up, with 28 and 21 percent shares of business users, respectively. Market shares are inverted for consumers, with Apple the preferred smartphone (24 percent share) and BlackBerry placing last among the "big three" with an 18 percent share.

Business users seem much more aware of the broader smartphone ecosystem, with only 7 percent not knowing the name of their smartphone's operating system. This contrasts with consumers, 25 percent of whom didn't know the same information. This suggests consumers are much more interested in specific devices than the brand of operating system.

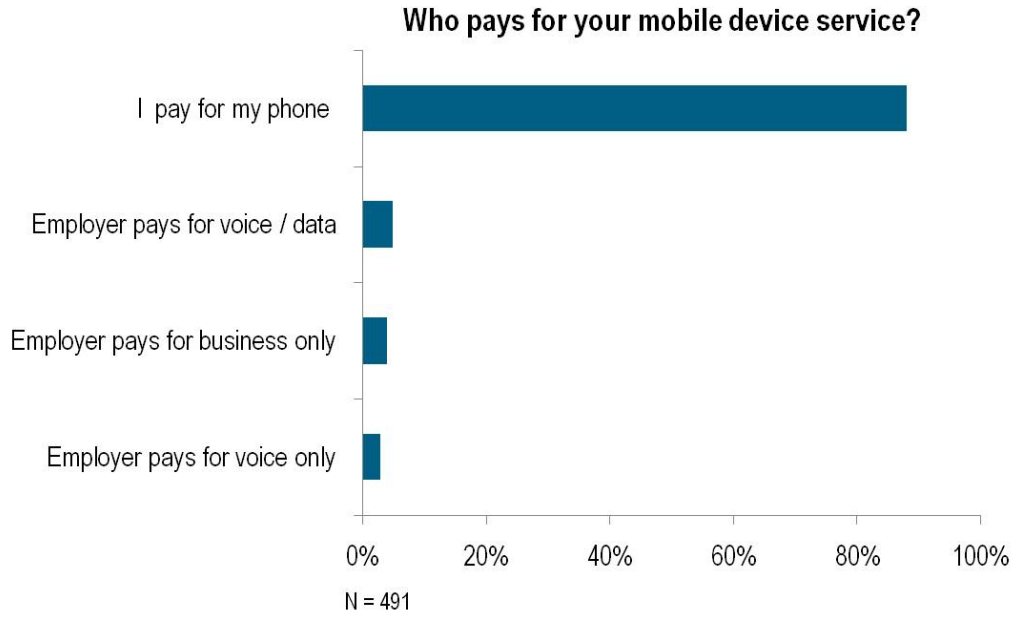
Finally, mobile data is more likely to be used than voice services for business activities. Twelve percent of respondents who used their smartphones for work were heavy data users (80 to 100 percent business use), with almost one-quarter having used their devices at least 60 percent of the time for business data.

Blending Business and Personal Lives

While mobile may be about business, it is also very personal. Among respondents who used their smartphones at work, only 40 percent of their total usage time, on average, was devoted to business; the remaining 60 percent was spent on personal matters. On average, 80 percent of business users own a *single* mobile device—slightly less than the 92 percent of consumers who do. This high level of single-device ownership among business users likely explains the moderate amount of time spent using their device for work (they have one device to address both their business and personal lives).

This mix of business and personal is depicted in who pays for mobile phone usage (see Figure 2): a resounding 88 percent of U.S. business users reported paying for their own mobile phone service (as opposed to their employer picking up the tab)—even though they often use their devices to conduct business. Is it any wonder that business users prefer a converged device for business and personal voice-and-data use?

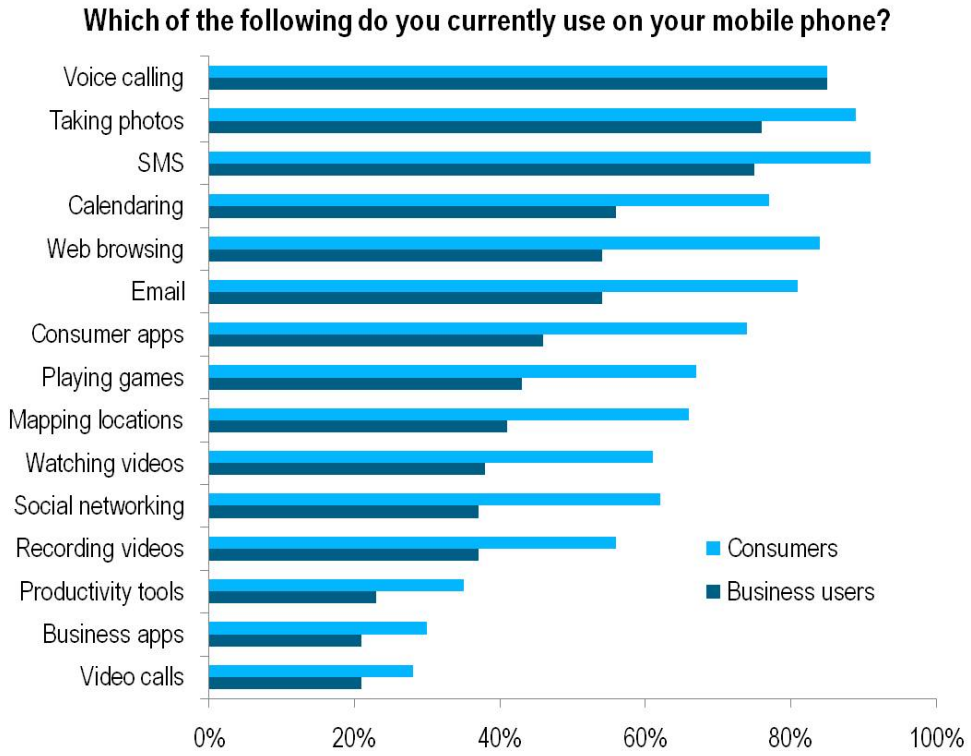
Figure 2. Who Pays for Your Mobile Phone Service (Business Users).



Source: Cisco IBSG, 2011

While the most important smartphone features for business users are email and web access, voice calling is still the feature they use most, followed by taking photos, messaging, email, and web access (see Figure 3). In contrast, consumers are much more interested in using their mobile phones for texting and taking photos, which ranked first and second, respectively. In addition, consumers are the largest adopters of more advanced types of services, such as apps, playing games, mapping, and social networking.

Figure 3. Current Use of Mobile Phone Features.



Source: Cisco IBSG, 2011

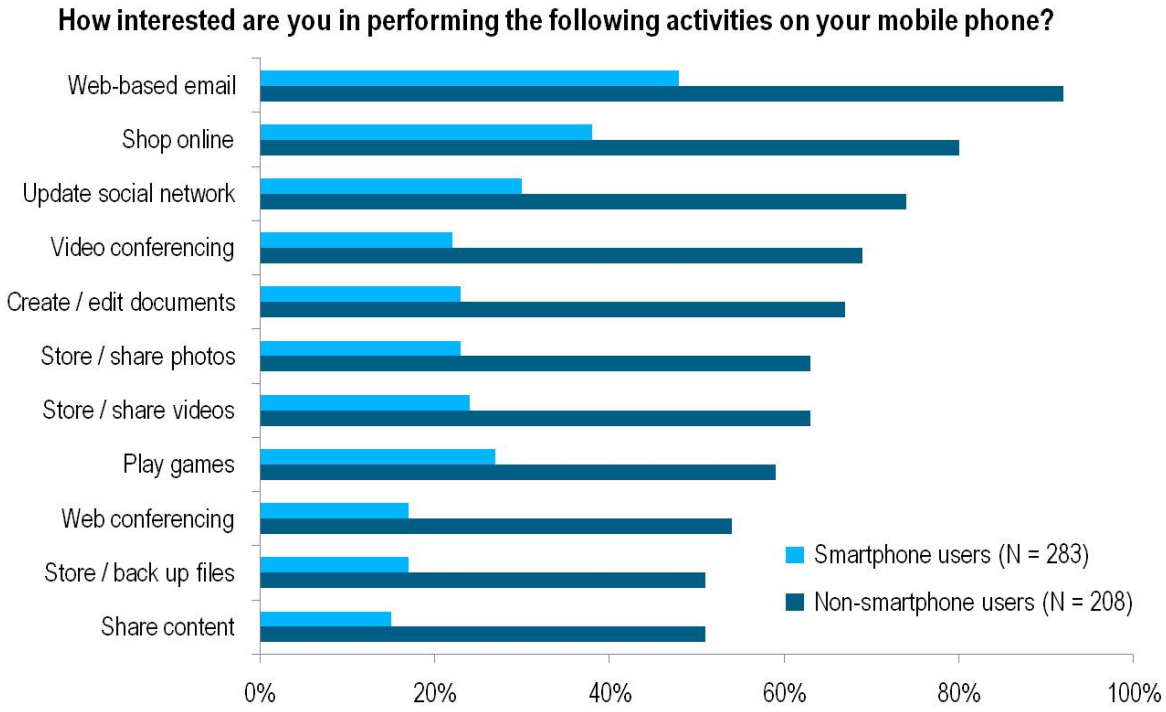
Although more than 80 percent of business smartphone users reported downloading external apps on their devices, few are paying for them. Almost half of respondents used only free mobile apps, while one-quarter paid for between one and five of them. While business users may pay for some apps, heavy app users largely prefer free apps.

Increasingly, users of these apps and smartphone features are employing Wi-Fi to access the Internet rather than traditional mobile networks. On average, business smartphone users reported spending a stunning 34 percent of their time browsing the web on their devices through a Wi-Fi connection rather than over a cellular network. If non-Wi-Fi users are excluded, this number climbs to almost 50 percent.

Business Is Moving to the Mobile Cloud

Business users are already much bigger adopters of PC-based cloud services, such as photo and video sharing, file storing, and web conferencing. Almost all of them are currently using web-based email, and more than one-third are using advanced PC-based cloud services, including web conferencing and content storing/sharing. Business users' understanding of the value of PC-based cloud services will translate into this group becoming key adopters of mobile versions of similar cloud services (see Figure 4). In every case, business users far outpaced consumers when asked how interested they would be in performing a number of cloud-based activities on their mobile phones.

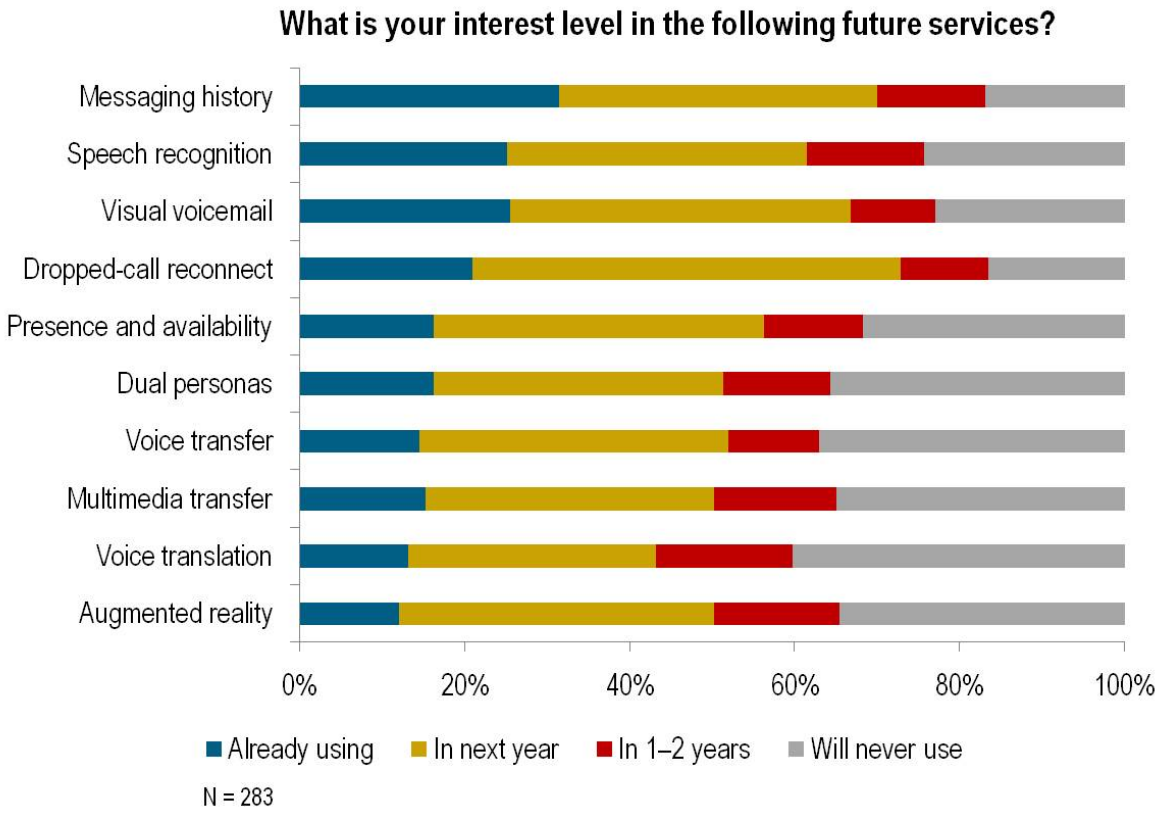
Figure 4. Future Adoption of Mobile Cloud Services (Business Users).



Source: Cisco IBSG, 2011

Business users will quickly adopt next-generation mobile services such as dropped-call reconnect, visual voicemail, and messaging history to become more effective and productive employees (see Figure 5). Equally, they are very interested in dual-persona services delivered through the cloud that will let them use their mobile devices to better manage their work and personal lives. Lastly, business users will be big adopters of mobile conferencing, document management, and specific business apps that allow them to extend the boundaries of their offices. All of these next-generation services will be delivered through the mobile cloud.

Figure 5. Current and Future Use of Next-Generation Mobile Services (Business Smartphone Users).



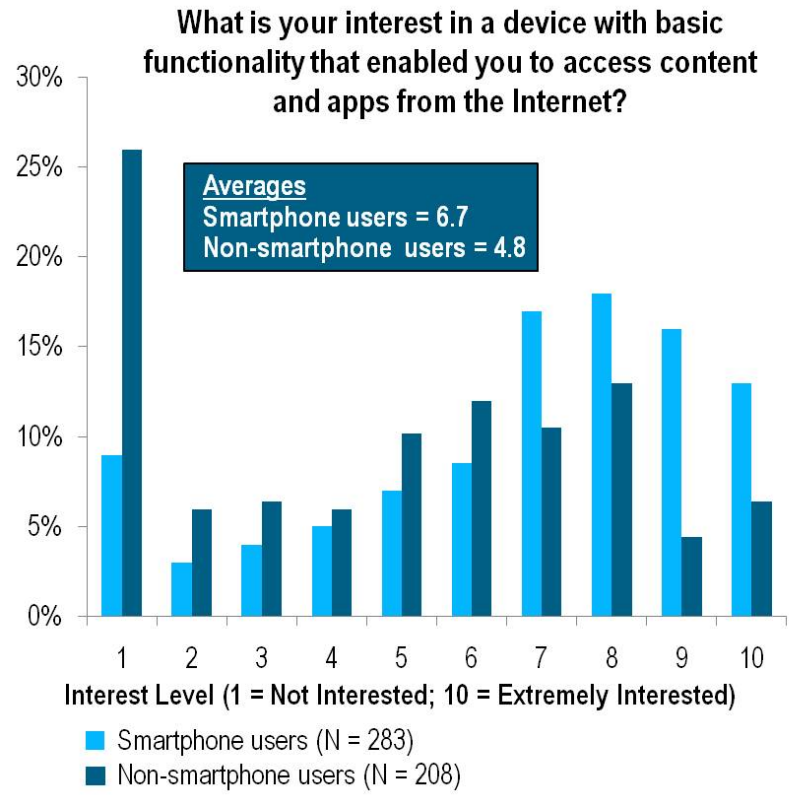
Source: Cisco IBSG, 2011

New Opportunities To Extend the Mobile Cloud To Business

In addition to exploring customer perceptions about—and intent to adopt—mobile cloud services, Cisco IBSG tested business users' interest in several potential cloud-based business offerings. There was a moderate level of interest in a thin-client mobile device to access content and smartphone functionality from the cloud (see Figure 6).

The interest level in this service was considerably higher among business users with smartphones than among those without smartphones, confirming Cisco IBSG's repeated observation that smartphone users are the best target audience for any mobile cloud offering.[3] In fact, one-third of these users were very interested (rating of 7 or above on 10-point scale) in the thin-client offering. Twenty-five percent of smartphone users recognized a thin client would provide greater security than a traditional phone; 24 percent said it would avoid technological obsolescence, and 21 percent suggested it would deliver greater functionality. In contrast, lower cost was the key buyer value for non-smartphone users (26 percent). Cisco IBSG strongly believes that the mobile cloud will create significant demand and opportunities for "dumb" business-centric smartphones, with intelligence delivered through the cloud.

Figure 6. Interest in a Thin Mobile Cloud Device (Business Users).



Source: Cisco IBSG, 2011

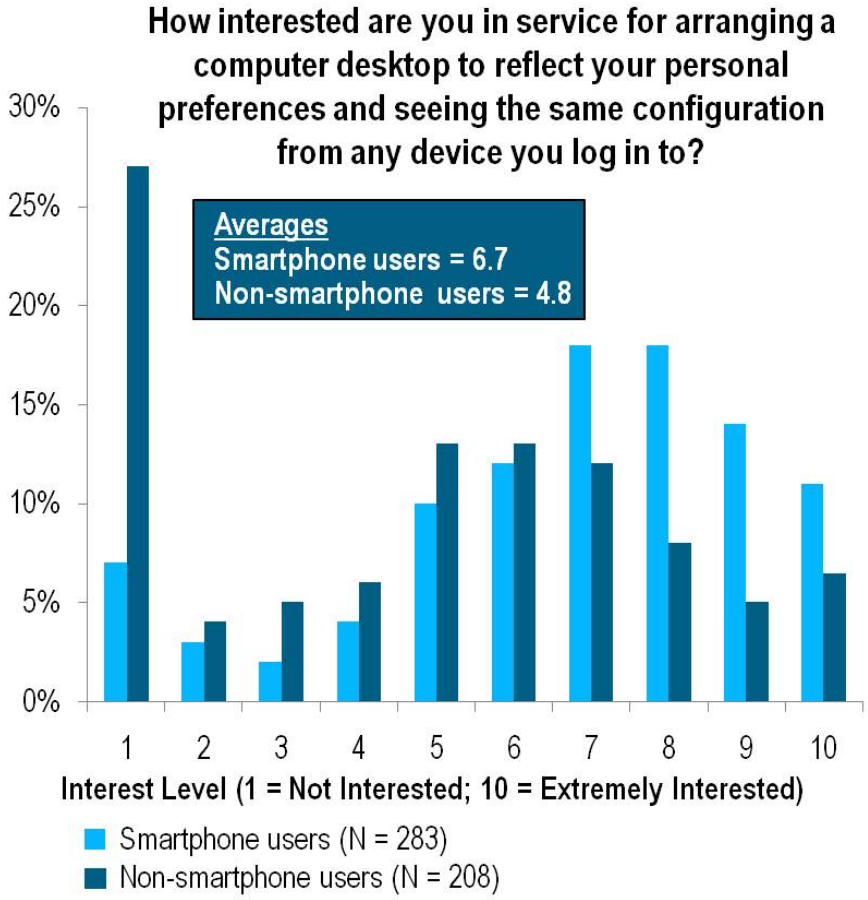
Equally, business users were very interested in a virtual desktop integration (VDI) service delivered over the mobile cloud that would allow them to arrange a computer desktop to reflect their personal preferences and view the same configuration on any mobile or other device they logged in to (see Figure 7). One-third of business smartphone users were very interested (rating of 7 or above on a scale of 10) in this service. These "highly interested" business users saw the real value of this service as being greater flexibility (28 percent of smartphone users) and making them more productive (17 percent of smartphone users). Similar to other mobile cloud propositions, lower cost was the key buyer value for non-smartphone users (26 percent).

Interestingly, while business smartphone users were enthusiastic about a service that would allow them to store and access personal content in the cloud (average rating of 6.9, with a "10" indicating they were "very interested"), they were slightly less interested in storing and accessing business content from their mobile devices (average rating of 6.3 out of 10). This seems to support the dual persona of business users, as well as their desire to readily access elements of their personal lives while they are working.

Aside from overcoming the perceived need for a mobile VDI or other mobile cloud service, one of the biggest challenges will be asking people to part with the comfort and convenience of storing content on their devices. The personal tragedy of losing content loaded on a mobile device, combined with concerns and policies from corporate IT departments, could begin to push mobile users to the security of the cloud. In fact, our

research shows that security (or peace of mind) for critical information stored on their mobile devices is the most appealing aspect of the mobile cloud for business users.

Figure 7. Interest in a Mobile Virtual Desktop Service (Business Users).



Source: Cisco IBSG, 2011

Delivering the Mobile Cloud Promise to Businesses

Not only does the future of enterprise mobility look cloudy (a positive in this case)—the mobile cloud is already at work in business. Cisco IBSG's *Mobile Cloud Watch* research clearly demonstrates that mobile business users are already comfortable with cloud services, and have a hunger for services delivered through the cloud to their mobile devices. Many of them are already using a number of basic and more advanced mobile cloud services, and are eager to use next-generation services and integrated cloud solutions. In fact, the research indicates that, as with other aspects of mobility, business users will be the early adopters and drivers of the mobile cloud.

Business users clearly wear two hats—business worker and personal consumer. This dual persona is very evident and intertwined when it comes to mobility. The good news is that the mobile cloud provides an excellent opportunity to bridge this gap. Services such as dual persona, storage of and access to personal and business content, and ready access to business and personal applications will enable business users to flip between their different

lives—anywhere, anytime. The mobile cloud also stands to become the corporate IT department's best friend. Moving to the mobile cloud provides an effective means for IT departments to meet challenging demands for simplicity, security, and device management, as well as IT's continual quest for lower costs. CIOs no longer have to certify and manage specific devices for enterprise networks; instead, they can allow employees to use their preferred devices to access services and applications delivered through the mobile cloud.

The good news for mobile service providers is that business users are generally satisfied with their current provider relationships and view mobile operators as a natural and preferred source for mobile cloud services. On average, business respondents rated their overall level of satisfaction with their mobile provider as 7.7 on a 10-point scale (with a rating of 10 indicating they were "very satisfied"), and two-thirds rated it as 8 or above. Operators also have a strong brand and relationship with business customers that can be extended to make SPs the premier provider of mobile cloud services.

While the news is very encouraging, several important implications and potential strategies must be considered for mobile providers to capture the explosive mobile cloud business opportunity:

- **Create cloud services targeted at business users:** Develop a range of business-centric mobile cloud offerings such as mobile VDI, mobile collaboration, and video conferencing that allows employees to be more productive. At the same time, befriend IT departments by showing them how the mobile cloud is an effective means of meeting their challenging requirements for simplicity, security, and device management.
- **Develop a holistic and integrated basket of services that meets the needs of both business users and consumers:** Recognize that business users are also consumers. Incorporate this dual persona into segmentation, marketing, pricing, and other elements. Ensure business services integrate with consumer offerings so users can maintain their multiple mobile personas.
- **Deliver on the promise of fixed mobile convergence (FMC):** Cloud services and delivery models are the means to deliver on the long-awaited promise and vision of FMC. Integrated wireline and mobile operators should develop converged offerings based on cloud architectures to provide seamless voice and data experiences between fixed and mobile networks to both business users and consumers.

The mobile cloud is definitely about taking care of business. Business users understand the value of the mobile cloud and represent one of the key drivers of its growth and development. In addition, corporate IT departments can clearly appreciate how the mobile cloud can make their lives much easier as enterprise and consumer IT increasingly collide with each other.

Cisco IBSG believes mobile operators are well positioned to prosper from the huge opportunity presented by the mobile cloud. Successful providers of mobile cloud services will be not only those vendors that focus on technology and innovation, but those who clearly understand consumers' needs and develop offerings, features, and sales-and-marketing tactics that successfully take advantage of the opportunities uncovered in this paper.

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Endnotes

1. Cisco IBSG, with the support of Cisco Marketing and Cisco CTO, launched *Mobile Cloud Watch,* an online survey of 1,016 U.S. mobile users, in February 2010. The survey sought to understand which mobile cloud services these customers use now, which ones they are planning to adopt the future, and from whom they would buy these services. In addition, Cisco IBSG wanted to understand the role and opportunity for mobile operators, and how they might differentiate their mobile cloud offers.

   The survey base was representative of the U.S. population in terms of age, income level, physical distribution, and employment status. In terms of attitudes toward adopting new technology, respondents were well distributed among early adopters (13 percent), early majority (35 percent), mainstreamers (35 percent), and laggards (17 percent). Fifty-six percent of respondents were employed: full-time (40 percent), part-time (8 percent), and self-employed (8 percent). The remaining 44 percent of respondents were not employed: stay at home (9 percent), student (7 percent), unemployed (8 percent), unable to work (4 percent), and retired (16 percent).
2. Based on the research findings, the Cisco IBSG Global Service Provider Practice and the Cisco IBSG Research & Economics Practice created four white papers.
   - "The Mobile Cloud: When Two Explosive Markets Collide"—An overview of the top 10 mobile cloud findings, implications, and opportunities for SPs from the combined perspectives of business users, consumers, and devices.

- "Mobile Consumers Reach for the Clouds"— Research paper focused on the top findings, implications, and opportunities for SPs from the perspective of consumers.
- "Taking Care of Business in the Mobile Cloud"—This paper.
- "Advanced Mobile Devices Meet the Mobile Cloud"—Research paper focused on the top findings, implications, and opportunities for SPs from a device perspective.

3. The characteristics of smartphones users, device trends, and the role of devices in the mobile cloud are covered in the *Mobile Cloud Watch* paper "Advanced Mobile Devices Meet the Mobile Cloud."

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Cisco IBSG Research & Economics Practice

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