

**All About Mobile  
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**Executive Summary**

Explosive growth in smartphones, tablets, and other mobile devices is creating huge challenges for carriers, ISVs, network operators, and enterprise IT. Gen-Y workforce demanding or bringing their own end-user devices to work is only exacerbating the situation. Smart companies are turning these challenges into opportunities by providing enhanced security and managing a highly heterogeneous end-user environment, instead of resisting the inevitable change in IT landscape that is bound to occur over the next decade.

**The Future of Mobile, Microsoft's Windows Phone 7**

Scott Kerfoot, Senior Director of Technology Evangelism, West Region, Developer and Platform Evangelism, Microsoft Corporation

This was more of a sales pitch by Microsoft in its attempting to catch up with iPhone and Android-based phones. Windows 7 phones are currently being offered in the U. S. by AT&T and T-Mobile, with the devices made by HTC and Samsung. Reportedly, about 40,000 Windows 7 phones were sold on the day (November 8) it was introduced in the U. S. market. In 3Q2010 the leading smartphone operating systems, by unit volumes, were Android (44%), iOS (24%), and RIM (23%).<sup>1</sup> The remaining spots 4, 5...are up for grabs. This trend may continue for the next few quarters.

Microsoft strictly controls some basic features: All phones, regardless of the manufacturer, will have three buttons at the bottom—**Back**, **Start**, and **Search**. So, how will manufacturers differentiate among themselves? By offering larger screens, higher-megapixel cameras, pull-out keyboards, etc. The phone's strengths are its integration with Microsoft Office suite, Facebook, including contacts with Gmail, Facebook, and Outlook, choice of hardware vis-à-vis the iPhone, photo sharing, and location-aware search. Additional advantages include developers' ability to deploy desktop and phone apps using Silverlight and games using xna with Visual Studio and Expression Blend, and cloud services based on .NET.

**Selling Mobile to the Enterprise**

**Moderator:**

Maribel Lopez, Founder & Principal Analyst, Lopez Research

**Panelists:**

Adam Blum, CEO, Rhomobile

John Carini, CEO and Chief Software Architect, iEnterprises

Chris Clark, COO, Fiberlink Communications

Brian Reed, CMO, BoxTone

Traditional ways of just checking emails while on the road have changed since telecommuters and mobile workforce now need access to their CRM, content management, ERP systems, other business services anywhere, anytime. This poses huge challenges for enterprise support of mobile devices.

Most enterprises used to support one or two devices—Blackberry and Nokia—but things are changing with the consumerization of IT and the introduction of iPad, iPhone, and Android phones. "My boss bought an iPhone; I better support it," says IT. Or, "My Gen-Y daughter just joined my company. How can I accommodate what she is used to—Facebook, FourSquare, Google, Groupon, and twitter?" ponders the CEO.

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<sup>1</sup> <http://www.businessinsider.com/chart-of-the-day-android-rim-in-the-last-year-2010-11>

The difficulty IT runs into is, “Who is in charge here—email, CRM, ERP, Sales Force Automation...?” Often, there are many committees making decisions, but then there are people doing their own things. As enterprises move into mobile, are they going to take the same old legacy apps and ‘mobilize’ them? Yes and No: email will be ubiquitous, but larger, memory or I/O-intensive database apps may not run satisfactorily on mobile devices. Healthcare devices, for instance, need to have zero persistence on the mobile device.

Gartner warned enterprises not to bring in the iPhone when it was introduced in 2007; but now, enterprises are adopting it widely. By 2015, the average enterprise will have 30%-40% of its employees bringing their own devices to work. This is akin to a plumber or an electrician bringing his own tools to fix what is broken in your house. This will bring issues of security, manageability, and scalability, and will totally change the whole concept of total cost of ownership—at least of the desktop environment.

Mobile may enable moving to the cloud. Most people are putting middleware in the cloud and using SOAP, REST, etc., for access. Cloud and mobile are joined at the hip. Even some of the heavily regulated industries, e. g., healthcare and FSI, and the federal government are embracing cloud. The question to answer is how will enterprise social network and consumer social network coexist?

### **Enabling the Unwired Enterprise**

Dan J. Mahowald, Vice President, Mobility, SAP Americas, Inc.

SAP is a European company and has always been perceived to be slow to everything, risk-averse...but has learned a lot from Apple and since acquiring Sybase, said the speaker. Apple runs SAP to run App Store and iTunes. The company is making a bold move into the “On Device” world of enterprise computing and feels innovating and managing mobile business applications with a platform approach should be key priorities for all-size businesses across the globe.

At a recent high-school event SAP sponsored in Washington, D. C., 100% of the students had smartphones. They had an average of 27 apps on their smartphones that they used at least once a week. These kids will join the workforce in four years. Are enterprises ready to help them?

There are three key trends:

- Devices expand
- Data expands
- Decision points expand

SAP is doing three key things:

- Building a platform
- Building applications—about 10%-15% internally for customers, the rest by ISVs
- Mobile device management

### **Building & Delivering Your Mobile Solution**

#### ***Moderator:***

Maribel Lopez, Founder & Principal Analyst, Lopez Research

#### ***Panelists:***

Adam Blum, CEO, Rhomobile

Cimarron Buser, VP, Products & Marketing, Apperian, Inc. Enterprise App Services Environment

Tony Kueh, Sr. Director, Mobility Product Management, Sybase, Inc.

Barbara Nelson, CTO, iPass

Raj Singh, Co-Founder, YumYum Labs

The mobile space is exploding with a glut of options profoundly impacting an enterprise’s mobile development strategy, and resulting in a variety of challenges:

- How do you know which platforms to support?
- Can you deliver apps through a browser with HTML5?
- HTML5 doesn’t support 3D, but Flash is trying to get there.
- Do you need carrier support to sell?

- With data tariffs coming, do you have to do on-the-fly data compression?
- Write once, deploy anywhere is still a pipe dream.
- Devices have strengths and weaknesses, but users expect the same experience, which makes it difficult for developers to deliver that experience.
- Many enterprises don't even know what mobile means. They just want to turn PC apps into mobile and don't know where to start. They are still stuck in the connected desktop world.
- Who will decide which platforms to write for—developers, businesses, or users?
- Qualcomm is putting browser functionality in to their chipsets. So, should we choose Qualcomm over all other chipsets?

### **Benchmarking the Mobile End-User Experience**

Vik Chaudhary, VP, Product Management and Corporate Development, Keynote Systems, Inc.

With the introduction of the latest generations of smartphones, tablets, and air-card-equipped laptops, enterprises can deliver the benefits of Web 2.0 to anywhere their users may be. However, paying attention to mobile analytics, testing, and monitoring can optimize the mobile end-user experience. There is a high correlation between performance, user experience, and user adoption. Mobile devices interacting with the Web strongly affect user experience, depending on the multiplicity of devices, mobile operating systems, native apps, browser and browser version, number of concurrent threads, cloud computing providers, application construction, and location.

When deploying a mobile app, consider:

- Mobile device experience—analytics, monitoring, content verification, multiple-device performance testing
- Testing mobile performance
- Analyzing mobile usage
- Facebook has 600 million users, can your app scale?
- There are:
  - Over four billion cell phones around the world, 450 million of them have full mobile access.
  - 2,500 different kinds of mobile devices
  - Six major mobile operating systems
  - Ten connections (GPRS, CDMA, 2G/2.5G/3G/4G...)
- Every one second in delay in loading a website on a mobile device results in 7% less conversion rate.

*Bottom line*

- Choose a device database that allows testing on any device profile.
- Analyze and optimize content and performance of mobile devices.
- Take a look at [Keynote MITE](#) and [Indian Bento](#).

### **Top 5 Lessons Learned When Developing Mobile Applications for the Enterprise**

Rana Puri, Sr. Enterprise Application Consultant, Corporate Developer Program, RIM

Every application is unique, yet the foundations remain the same.

1. Know your audience
  - a. Smartphone ecosystem is diverse
    - i. Screen size
    - ii. Input methods (track pad, keyboard, touch...)
    - iii. Operating systems
    - iv. API capabilities
  - b. Remember, less is more
    - i. Knowing the business reasons behind why a business process works in a particular way is useful
    - ii. The best mobile apps serve one distinct app perfectly
  - c. What can I do?
    - i. Engage the Marketing team
2. Put first things first

- a. Always start with the server side integration...always
- b. What can I do?
  - i. Take a step back...remove mobility from the equation
  - ii. Draw a logical diagram
  - iii. Draw a physical diagram
  - iv. Prove the C. R. U. D.—Create, Read, Update, Delete
  - v. Now add mobile
3. Deployment and Support
  - a. Push your apps out to the user
  - b. Promote your applications
  - c. Provide hands-on training and write your documentation
  - d. Help the HelpDesk help you...
    - i. How about a 'help' screen inside your application?
4. Performance tuning
  - a. A big change from Enterprise development
    - i. Make it work
    - ii. Make it right
    - iii. Make it fast
  - b. "Slow? Just add horsepower!" is not possible in the mobile space
  - c. Responsiveness is important
  - d. If left until the end, you may risk:
    - i. Major application re-architecture
    - ii. Limiting scope and app usefulness
    - iii. User complaints due to battery drain
  - e. What can I do?
    - i. Define success up front
    - ii. UI response is not server response
    - iii. Leverage push technologies
5. Usability is King!
  - a. This isn't a stretch
    - i. If your app is hard to use, people won't use it.
    - ii. "Simple" is not "bad".
    - iii. Usability includes responsiveness
  - b. What can I do?
    - i. Understand how users interact with their devices
    - ii. Don't try to replicate the desktop experience
    - iii. Think about doing small things perfectly
    - iv. Create a common mobile experience

### **The Transformative Power of M2M**

Wayne Ward, Vice President, Emerging Solutions, Sprint Nextel

"Think outside the phone. Paint What if! Scenarios. M2M (machine-to-machine) will be big."

M2M communication can create competitive advantages for enterprises by enabling exiting new business models and also improving productivity and increasing efficiencies. M2M applications are showing an explosive growth; combined with the availability of secure wireless 3G and now 4G networks, this will transform the way workers, machines, the marketplace, and supply chains interact. Enterprises should recognize there are 6.8 billion people, 4.1 billion mobile handsets, and 60 billion connected machines in the world—presenting a huge untapped potential to serve them and generate revenues. Cisco predicts there will be 1 trillion devices connected to the Internet by 2013.<sup>2</sup>

Why M2M matters?

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<sup>2</sup> <http://www.wirelessweek.com/News/2010/03/Devices-Cisco-Trillion-Connected-2013/>

- It is one of the fastest growing areas.
- Wireless networks are reliable, ubiquitous, and affordable.
- Availability of shrinking modules and devices at lower cost
- Clear ROI for businesses
- Large growth opportunities

#### Drivers for Adopting M2M

- Greater Efficiency
  - Fleet management
  - Asset tracking
  - Smart Grid
- New Capabilities
  - Pay-as-you-drive insurance vs. traditional actuarial policies
  - Telehealth
  - Digital signage. Japan already has large electronic billboards that change the display ads depending on who is viewing it. This is personalized and targeted advertising and is no longer *mass customization*, but *mass personalization*.

#### M2M spans several verticals and industries:

- Automation and Control
- Fleet Tracking, Geo-fencing, and On-Board Diagnostics
- Telematics
- Insurance
- Vending. Japan has smart vending machines with cameras that scan the customer as she faces the machine. Depending on her physique and facial characteristics (to guess the age), the machine recommends regular (for Gen Y) or diet soft drinks (for overweight people) or green tea for baby boomers!
- ATM/POS
- Utilities
- Emergency
- Public Transport
- Consumer-Connected Devices
- Telemedicine

#### Managing Mobile Infrastructure

##### **Moderator:**

Jim Szafranski, Senior Vice President, Customer Platform Services, Fiberlink Communications

##### **Panelists:**

Galen Gruman, Executive Editor, InfoWorld

Srinivas Krishnamurti, Director of Product Management and Market Development, VMWare

Peter Barker, SVP, Engineering, Good Technology

Richard Bylina, Product Marketing Consultant, Motorola

According to a survey by *InfoWorld*, 27% of enterprises support one operating system, 17% support two OSs, 22% support three OSs, and 44% support four or more.

“Blackberry is known for security, iPhone is a toy, Android is unknown, the rest don’t matter,” said one panelist. Apple responded to enterprises’ needs and made iPhone more secure, Google has to do the same thing if it wants Android to penetrate the enterprise.

2009 was the first time there were more smartphones than notebook PCs (Fig. 1). Consumerization of IT is more than just emails; there are other apps that run on mobile devices, which have become computers that make phone calls. How do we make them more manageable and secure? Enterprise IT has accepted heterogeneity and the next-generation workforce. In many cases, IT is overwhelmed.

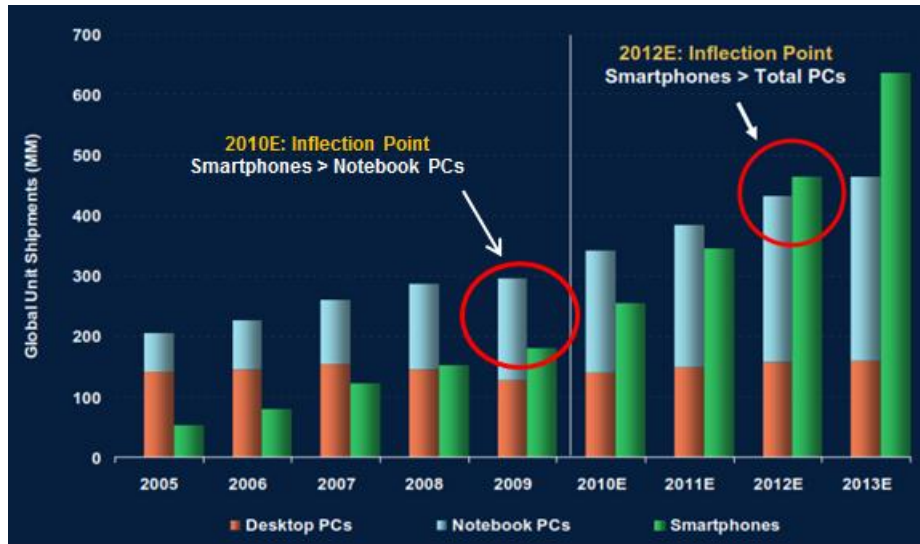


Figure 1. Global Shipments of Desktop and Notebook PCs and Smartphones<sup>3</sup>

The whole point of enterprises buying end-point devices for employees is old-school thinking: Employees should be able to buy and bring their own devices and IT should support them. It should be like a pen or pencil. If you want to buy a blue pen, buy it. At the same time, personal information and corporate information should be separate and secure on the *same* device. These issues can be addressed through virtual machines and sand boxes. IT shouldn't be blocking websites, instead should trust employees' work ethic. IT should be saying, "Bring your own device, we'll bifurcate your data, and ensure privacy and security." But this also raises some controversial issues: If you are doing work-related texting or making a business phone call while driving and have an accident, is your employer liable?

### Bridging Your Mobile and Web 2.0 Efforts

Chuck Ganapathi, SVP, Products, Chatter and Mobile, salesforce.com

Salesforce.com CEO Marc Benioff asked in 1999, "Why isn't all software like Amazon.com?" Today, he's asking "Why isn't all software like Facebook?" sf.com wants to do to the enterprise what twitter has done to consumers in social networking. With that goal, sf.com has introduced [chatter](#), a powerful collaboration tool to meet the needs of its 82,400+ customers. Cloud 1 (low cost), the speaker contended, is Amazon, eBay, and Google. Cloud 2 (social, mobile) is Facebook, YouTube, and twitter. Chatter will move us to Cloud 3—low-cost, enterprise social networks. Chatter Mobile supports Android, Blackberry, iPad, and iPhone.

<sup>3</sup> "Ten Questions Internet Execs Should Ask & Answer," Mary Meeker, Web 2.0 Summit, San Francisco, CA, November 16, 2010.