

# Mobile Enterprise **OUTLOOK**™

BROUGHT TO YOU BY  
*MOBILE ENTERPRISE*  
MAGAZINE AND  
**OUTLOOK 4MOBILITY**

WRITTEN BY ANDY SEYBOLD

**SPRING 2005**

VOLUME 1, ISSUE 2

---

## HIGHLIGHTS:

---

BECOMING THE  
WIRELESS DATA  
EXPERT WITHIN YOUR  
CORPORATION PART II

---

WIRELESS E-MAIL  
AND BEYOND

---

ADVANCED VOICE  
SERVICES

## WELCOME BACK! A LOT HAS HAPPENED IN THE WIRELESS INDUSTRY SINCE OUR FIRST ISSUE

was published in January. There are more cities in which high-speed wireless data services have become available and there have been two major trade shows: 3GSM held in Cannes, France, in February and CTIA Wireless 2005 held in New Orleans in March.

New devices and services have come to market, more partnerships have been announced and there is a new understanding that implementing third-generation wireless networks is different from the first and even the second time around. The first wireless networks built in the early 1980s in the United States were based on analog wireless technology and were designed strictly for voice services. As second-generation networks were deployed here and in the rest of the world, we began seeing the migration of analog services to digital technologies (GSM and cdmaOne).

These digital networks started out with voice and support for text messaging. Over time, they evolved to be able to support other forms of data applications, albeit at less than dial-up data speeds. The transition from analog to digital or first- to second-generation networks was driven by the need for wireless operators to be able to provide more efficient systems within the limited amount of spectrum available to them. These new digital technologies enabled three to ten times the number of voice calls to be made within the same spectrum used for analog systems.

The network operators were willing to

spend the money to build these new digital systems because spectrum was and still is a scarce resource. No more spectrum can be manufactured, so we have found ways to make better, more efficient use of what is available.

In each case these networks were funded by network operators and built by their engineers and technicians. They were assisted by the engineers and technicians employed by the companies that made the antennas, radios for the cell sites and the other pieces of hardware needed to put these systems together. The next step was to move from second-generation systems to what is, today, being called 2.5G systems. These were based on the original digital voice systems that were enhanced to provide for text messaging (SMS) and packet data services at speeds of up to 30 Kbps.

Still, the model was the same. The network operators ordered the gear, the equipment vendors built it and the networks were built. Then it was up to the network operators to convince their analog customers to move to these new networks. In the early days of digital networks, there were few incentives other than to offer customers better pricing and lower per-minute charges.

## ENTER THIRD-GENERATION SYSTEMS

However, as we fast forward to the past several years when network operators began upgrading their second-generation

IT IS DIFFICULT TO KNOW  
WHAT IS REAL AND  
WHAT IS STILL A LONG WAY  
FROM BECOMING A  
COMMERCIAL OFFERING.

systems to third-generation systems, we see that the matrix has been changing. This time around the networks are capable of higher-speed wireless data services, as well as voice and multimedia messaging. As you saw in the last issue, data speeds have climbed from the average of 30 Kbps to between 100 and 400 Kbps and are still on the rise.

Therefore, this transition from second- to third-generation systems is occurring differently. In addition to the network operators and hardware vendors, other players are now taking part from the early planning stages through the deployment and commercialization of these networks.

First are the device vendors that are responding to the added capabilities of these new networks with more powerful wireless devices including PC Cards, wireless PDAs, smartphones, voice phones with embedded cameras, audio and video capabilities, higher-resolution screens and even removable storage. The object here is to have a variety of new, more sophisticated devices available when the networks are first turned on and ready for customers.

Another group has become involved in this process as well: content providers. At both of the shows held in the first quarter of 2005, content providers were more in evidence than at any of the previous wireless conferences. Not only did companies such as Disney, Oracle, Sybase and Microsoft have their own booths at the shows, they were included in demonstrations being shown in the booths of network operators, equipment suppliers and, of course, systems integrators.

The wireless industry realizes that this time around the networks are much more than antennas, radios and back-end infrastructure. The technology has now become only a part of the solution being provided to the business and consumer communities, or "prosumers" if you are into new buzzwords. This bodes well for IT folks who want to use the networks to extend the reach of their mobile workforces.

As the new third-generation networks continue to be built, the services that will run over them and make our lives easier and more productive are coming along for the ride. Once again, the network operators understand that in order to pay for the systems they need to entice their voice customers to move over to them. But they also realize it is equally important to provide applications, services and solutions that make the networks compelling. They have addressed any hesitation that might have been keeping corporations from implementing data services across the networks from day one.

## THE HARD PART

The most difficult part of this expansion of the wireless industry to embrace end-to-end solutions will be sorting out what is real today, what is a promise for future enhancements and what is just plain hype. This is tough, especially within the confines of trade shows where demos are being conducted in controlled environments where companies have, for example, set up a single cell site, tuned it for optimum performance and spent weeks practicing and polishing their pitch to ensure that their message is on point and their vision is clear.

It is difficult to know what is real and what is still a long way from becoming a commercial offering. That is not to say that companies are guilty of using smoke and mirrors during demos and the explanation of their vision. Rather, I consider some of what I saw to be demonstrations of what companies believe is possible and the direction in which the industry is heading. Each vendor wants to provide those who attend with a feeling that it is the one leading the pack when it comes to innovation and vision.

## A CASE IN POINT

There is a vision shared by most within the wireless industry that we are heading toward an all IP-based world. Air links and back-end services will make use of IP-based

I BELIEVE THAT PART OF  
THE CHARTER FOR THIS  
PUBLICATION IS TO  
PROVIDE YOU WITH THESE  
VISIONS IN ORDER TO  
GIVE YOU A VIEW OF THE  
FUTURE SO YOU CAN  
PLAN FOR WHAT IS COMING.

packets that can be mixed and matched between voice and data services and between networks. (One of the new buzz acronyms is IMS, which stands for IP Multi-Media Subsystems.)

In this IP world we will be able to provide devices and services that run over wide-area and local-area wireless and wired networks, mix and match content and move packets at will over the best possible medium. To those of you who work with IP-based systems in your own shops or provide IP networks for your companies, this sounds like an ideal solution. Your existing IP-based systems can be easily and quickly tied to these wired and wireless networks, bits will flow in both directions and middleware or other software will not be needed to make all of this work seamlessly.

We will have intelligent networks that will know where each of your mobile workers are, what type of connections are available to them and, therefore, how much and what types of data they can use. If they are using a low-bandwidth network, they can continue to receive their e-mail and other small amounts of data. As soon as they drive or walk into an area served by a broadband connection, the network will know and automatically adjust for this.

There are already examples of this type of seamless integration. The Berkeley, Calif., police department (and others) have several different networks available to them in their patrol cars. When they are sitting in a PD parking lot, they are connected via secure Wi-Fi so they have a high-speed data connection and can receive mug shots and other graphical information. However, when they are on patrol and making use of a lower-speed wide-area network, they can still receive information about driver's licenses and check license plates, receive text-based dispatches and even information about a suspect. In this type of system they mix and match the content they receive with the speed of the connection.

At both 3GSM and the CTIA show this vision of IP everywhere was evident. Some demonstrations were real—the ability to move between Wi-Fi and wide-area networks in some cases—but other elements of IP everywhere are still far from coming to market. There is a lot of work to be done to get this right. Most wireless networks built their back-end systems to handle circuit-switched calls and have adapted them for packet-data services. Voice over IP is still a technology that is in its infancy and tying it all together, while a worthwhile vision, will take longer than expected and be fraught with problems and delays.

Add to this the fact that many of these systems appear to rely on unlicensed spectrum, which is susceptible to interference, and the Internet, which I do not believe is a truly mission-critical network, and you can see that many issues remain to be resolved.

But the vision is exciting and it should make the use of wireless devices and services easier than ever. The question is: When will it be ready for prime time? I believe that part of the charter for this publication is to provide you with these visions in order to give you a view of the future so you can plan for what is coming. We will continue to share the vision of the wireless industry with you, but we will temper it with reality—what can be done today and what you can do to implement your own wireless voice and data plans without strapping yourself with technologies and services that become obsolete quickly or that put you at risk of being too far ahead of the curve.

## IN THIS ISSUE

This second issue continues where part one of "Becoming The Wireless Data Expert within your Corporation" left off. We take a look at the 3GSM and CTIA shows and discuss what we learned that can be of value to you and your company in the next 12 to 18 months and take a look at advanced data and voice services that are or will be available soon.

## GETTING IT STRAIGHT

For those to whom it does matter, CDMA2000 1xEV-DO is the technology pioneered by Qualcomm. CDMA stands for Code Division Multiple Access and EV-DO stands for Evolutionary, Data Optimized. UMTS stands for Universal Mobile Telecommunications System, which is a different type of third-generation network based on Wideband CDMA or WCDMA. HSDPA stands for High-speed Downlink Packet Access.



*Here's a sneak peek at the rest of the issue:*

- BECOMING THE WIRELESS DATA EXPERT WITHIN YOUR CORPORATION PART II
- WIRELESS E-MAIL AND BEYOND
- ADVANCED VOICE SERVICES
- THE FUTURE OF PTT SERVICES
- ONE SERVER: MULTIPLE NETWORKS

*To read more subscribe now:*

### Mobile Enterprise OUTLOOK

#### **SPECIAL OFFER!**

*Good until May 31, 2005*

INDIVIDUAL RATE: \$199 per year

CORPORATE LICENSE: \$1,299 per year (includes this issue and the next three issues.)

#### **FOR SUBSCRIPTION INFORMATION VISIT:**

[www.MobileEnterpriseOutlook.com](http://www.MobileEnterpriseOutlook.com) or call Matt Collins at  
(212) 813-2614 x 216.

*Mobile Enterprise OUTLOOK is published 4 times a year by MOBILE ENTERPRISE MEDIA and Outlook for Mobility.*

*Reproduction or use of the contents in whole or in part without permission of the publisher is prohibited.*