

The Wireless and Mobile Market Starts to Mature

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Wireless and mobile technologies are vital for the real-time enterprise. The technology and the vendor landscape are changing fast. However, intransigent mobile operators continue to stifle data growth.

ANALYSIS

Wireless and mobile should take another step toward maturing in 2003. The base technologies are now being offered at reasonable prices and businesses are realizing that continuous supply chains must include a continuous information chain. In 2002, the information chain, which has been the foundation of the "real-time enterprise," has broken when workers are mobile. Truck drivers are out of touch while they transport products to customers, and managers may fail to see important e-mails while traveling on business. Continuous connectivity forms the key technology in completing the information chain.

In the Wireless and Mobile Spotlight, you will find a number of compelling and risky predictions for 2003 and beyond. However, whether the prediction is for 2003 or later, the implications of the prediction manifest themselves in 2003 in some form. The major areas covered within this Spotlight issue are summarized here.

Devices: Device diversity will continue with a vengeance in 2003, as vendors try every possible combination of technological and ergonomic features to entice buyers. IT organizations will have to deal with this issue by developing applications that can adapt readily to varied hardware and network characteristics, a concept Gartner calls "Adaptive Application Architecture."

Dell Computer may create the biggest news as it takes on Hewlett-Packard and Palm. Its new personal digital assistants will be roughly half the price of its rivals in 2003. Windows CE machines continue to attract more enterprise clients, while PalmOS remains strong in healthcare, education, government and price-sensitive areas. How the "Palm Economy" — the community of Palm licensees, developers and solutions providers — does in 2003, a year in which it will undergo the biggest transition of its existence, will determine its long-term future. For Research in Motion (RIM), 2003 will also be a watershed year. RIM must determine how it will restructure itself to participate independently in the e-mail gateway, device and Java 2 Platform, Micro Edition (J2ME) markets. Linux will not emerge as a platform to be taken seriously in 2003.

The incumbent phone manufacturers (Nokia, Sony Ericsson Mobile Communications and Motorola) are set to battle against Asian-supplied handsets comarketed by individual mobile operators. Handsets from the large manufacturers, employing SymbianOS, will be pitted against those from operators running the Microsoft Smartphone platform. The year 2003 could also see the spread of the "corporate standard handset," which would favor Microsoft. Samsung will continue to emerge as a strong handset manufacturer because it can operate in a variety of markets, unlike other market leaders, which prefer to push their own particular vision of the market.

WAN Wireless: Mobile operators, brandishing the new, improved services available through general packet radio service (GPRS) and third-generation (3G) data services, are counting on a good year for wireless data. Voice will continue to be the mainstay of the industry and prices will continue to decline. Serial thinking (solving one problem at a time) will plague the operators, causing data revenue to be less than expected. Operators will believe that faster networks should cause an uptake in data services, but complex pricing and PC-like applications that operate poorly on small handset screens will limit growth. However, multimedia messaging service (MMS) and picture video services will be the surprise success story of 2003. Users will find that, as with Short Message Service (SMS), use is simple and satisfaction high. Gartner estimates that many camera phones will be sold worldwide. Operators will be saddled with handset inventories offering a variety of features, leaving users to wonder if they should buy now or later. Application design, combined with the definition of value to the end user, will remain the greatest barrier to growth in mobile data.

LAN Wireless: The year 2003 should be very active for the 802.11 standard, with expected output from most of the established task groups. At the end of 2003, 802.11a will become viable as the standards around the technology become more stable. Should this happen, Gartner will begin recommending 802.11a for enterprise deployment. In 2002, 802.11b is the only one stable enough to be recommended.

"Hot spots" will continue to expand as travelers increasingly demand, and eventually depend on, broadband access. The sheer number of vendors and lack of interoperability of billing plans pose an area of serious cost escalation for enterprises that do not have policies governing use. Eventually, we will see worldwide integrators — such as iPass, Gric Communications and Fiberlink Communications — combine these networks under a single billing option. Wireless LANs will become so inexpensive that they will be bundled almost as frequently as Bluetooth. Power management will remain an issue but vendors will start to address it in 2003.

Bluetooth will hit the trough of disillusionment in 2003, as products arrive on the market and users attempt to make them work, with intermittent success. The lack of certification from an organization such as the Wi-Fi Alliance will continue to plague the technology. Frustration with this issue will likely lead to an enterprise-class certification or Microsoft taking over the standard by default.

Software: Device software platforms will be split between enterprise and consumer. Enterprise platforms will favor traditional PC development tools, such as C and Visual Basic. Consumer platforms will favor J2ME. Many developers will learn the hard lesson that J2ME — positioned as a "write once, run everywhere" platform — does not live up to its billing. The concept of "open systems" will only partially deliver. Many of the standards bodies are controlled by vendors that continue to leave plenty of room for differentiation and, thus, incompatibility. Microsoft should continue its dominance in the enterprise application space, especially on devices.

Our Adaptive Application Architecture framework remains a key strategy in maintaining costs because devices and network options will proliferate. Yet many clients will ignore this, opting instead for point solutions. Over time, this strategy will raise both the cost of development and the cost of maintenance. Wireless e-mail and Web delivery systems should mature at the end of 2003, providing enterprises with a solid tool to help control costs through servers that deliver to many devices over many networks. Enterprises would do well to make choosing a standard wireless e-mail gateway a priority in 2003.

Security: Security will become less of an issue for wireless and mobile users in 2003, especially in the area of wireless LANs. Here, Wi-Fi Protected Access will replace 40-bit Wired Equivalent Privacy as the encryption standard. Authentication will be tied directly to wired initiatives. Virtual private network technology will continue to be the backbone of wireless WAN access.

Bluetooth security problems will likely come to light and force the standard to expand its scope and eventually implement interoperability testing and certification. End users will continue to have issues with onboard device security as vendors attempt to copy PC schemes into resource-limited devices. However, improvements will be made, making device security less of a problem by the end of 2003. A systems approach to security will still be lacking, forcing users to employ many different schemes to obtain access. IT organizations will be unable to crisply articulate the threats they consider serious and will overspend on security technologies.

Applications: Applications still limit growth in mobile. With powerful but low-end devices, such as the Palm Zire, retailing at \$99, computing power is almost free. But conceptualization of the applications and their development, gated largely by human resource constraints, are the barriers to growth. High return on investment will be available in wireless e-mail, field service applications and inspections, especially in the government sector, healthcare and other, very specific areas.

Application software comes from many small providers that target specific functions in specific departments within industries. The marketplace of suppliers and buyers is heavily fragmented and confusing. Vendor organizations should help this market to function more efficiently by maintaining systems whereby the two can meet. More talent is needed in the field forces of the hardware vendors to assist clients in implementing mobile projects.

Geographies: Asia/Pacific will continue to lead in wireless and mobile technologies and services especially with the emergence of China, the most interesting large-population segment. North America still possesses one of the stronger technology backbones, but its users seem apathetic toward wireless data, primarily because they have so many other choices. Europe remains passionate about mobile but suffers from technology issues around its legacy wire network and the tremendous debt that encumbers the mobile operators, which overbid for 3G licenses.

Device technologies continue their breathtaking advances in 2003. Networks will continue to mature but remain differentiated. IT organizations will continue to have difficulty setting standards and should heed Gartner advice to no longer design systems to last but rather to change (see "The Impact of Mobility on Enterprise Architectures"). Mobile operators, driven by unrealistic goals in average revenue per user and high debts, remain the weakest mobile visionaries, yet are the gatekeepers of progress in this area. Operators would do well to review their entire thinking about market dynamics. IT organizations must work to analyze the deluge of mixed marketing messages and cost structures for mobile operators to ensure that operating expenses for mobile telecoms are controlled.

Features

"Personal Digital Assistant and Mobile Phone Predictions, 2003" — Expect to see cameras attached to mobile phones, not smart phones. **By Todd Kort**

"Wireless WAN Market: Cautious Enthusiasm for 2003" — Plan for the arrival of wireless WAN, but don't expect it in 2003. **By Phillip Redman**

"WLAN and Bluetooth Predictions, 2003" — Recognize the opportunity offered by WLAN "hot spots," but don't count on Bluetooth. **By Robin Simpson, Carolina Milanese and Ian Keene**

"Mobile Applications Can Locate You in 2003" — Watch out for the spread of gaming and location services in 2003. **By Bill Clark**

"Custom Mobile Applications: Thick Is In, WAP Lags Again" — Expect Microsoft to capture the mobile enterprise application market. **By Bill Clark**

"E-Mail/PIM Is Still No. 1" — Choose a personal information manager able to link different mobile devices to the corporate e-mail system. **By Ken Dulaney and Bill Clark**

"Mobile Application Platforms" — Beware of the hype around Java 2 Micro Edition, it will not translate into easy interoperability. **By Ken Dulaney and Bill Clark**

"Asia/Pacific Mobile Data Market Trends in 2003" — Watch out for innovative applications from Asian handset manufacturers. **By Geoff Johnson**

"Mobile Security Exposures, Trends and Remedies" — Defend your networks against exposure through mobile devices that may be hacked or stolen. **By John Girard**

This research is part of a set of related research pieces. See "Predicts 2003: Wireless and Mobile" for an overview.

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