



Stay connected: A successful mobile device strategy drives productivity.

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Introduction

Driven to be more flexible and responsive to marketplace forces, enterprises are pushing business processes out to the point of contact with customers and service delivery. Companies are redefining what “in the office” means, because the workplace now extends beyond the physical walls of the enterprise to include mobile and remote workers at a customer site, in a car, in a home office, in a hotel, at the airport or anywhere in between. Many mobile employees still use laptops, but handheld mobile devices represent the next wave of productivity tools that are rapidly becoming a necessary component for long-term business success. The number of enterprise professionals who use handheld mobile devices is increasing every year. With a predicted compound annual growth rate of 64.3 percent from 2004 to 2009,¹ smartphone devices that provide both data and voice features represent the greatest growth segment.

With an effective handheld mobile device strategy, companies worldwide can make more informed business decisions, accelerate transactions, strengthen relationships with customers and business partners, and provide onsite services – at the time and place required.

This paper discusses handheld mobile devices, the implications for IT and how IBM Lotus® software can help your enterprise support the needs of an increasingly mobile workforce.

Delivering a mobile office that's as productive as the traditional office

An infrastructure of services is required to properly support the mobile office. There is a need to replicate the suite of infrastructure and applications that have been developed for the desktop experience since the inception of

the PC in the 1980s. In fact, the growth in employee use of handheld mobile devices is creating an “IT crisis for many companies as they struggle to adopt their technology and support infrastructures to meet a new set of demands.”²²

Employees expect that they can be as productive with their mobile handheld devices as they would be in a traditional office. Therefore, the IT infrastructure supporting mobile devices needs to be reliable, responsive and able to keep up with growing mobile support expectations. The infrastructure must also support a variety of devices and operating systems (OSs), including Palm OS, Research In Motion® (RIM®) BlackBerry®, Symbian (for example, to support Nokia devices) and Microsoft® Windows® Mobile devices, because an enterprise may deploy or accommodate multiple mobile devices used by its employees.

To support wireless handheld mobile devices, companies need the following services:

- *Security-rich wireless access*
- *Enhanced collaborative tools and capabilities*
- *Solutions that deliver applications and data to mobile users*
- *Device management*
- *Extensibility support through a service-oriented architecture (SOA)*

Wireless access with enhanced security features

Productivity begins with a wireless connection, through which mobile users can access key data and applications anytime and anywhere their devices can get a signal. Using IBM Lotus Mobile Connect software, your organization gains the following:

- *A mobile virtual private network (MVPN) tunnel that is Federal Information Processing Standard (FIPS) 140 security certified, which provides the same level of security experienced by users connecting to corporate intranets over public Internets using their laptops or desktops.*

- Support for a large number of mobile devices including Palm OS, Symbian and Windows Mobile devices.³
- Features that allow users to maintain seamless connectivity even while changing wireless connections. For example, when moving from a General Packet Radio Service (GPRS) to a wireless fidelity (Wi-Fi) network connection, the change is hidden from both the user—who doesn't have to reconnect—and the network-based applications running on the mobile device.
- The ability to customize how a connection is established, allowing users to opt for the most affordable mode of network connection—a practice also known as least-cost routing.

Access to realtime collaborative tools

Remote interdependency is prevalent among team members working together on common projects. Therefore, providing e-mail or realtime collaboration is an essential ingredient to equipping the mobile office. IBM Lotus Notes® Traveler software provides out-of-the-box mobile support for IBM Lotus Notes and IBM Lotus Domino® Web Access software users. Lotus Notes Traveler software provides automatic, realtime replication of Lotus Domino e-mail (including attachments), calendar, address book, journal and to-do list.



Figure 1. An open Lotus Notes e-mail running in the Lotus Notes Traveler client

The software initially supports access from Microsoft Windows Mobile devices and works over nearly all wired and wireless connections. Optionally, the IBM Business Partner ecosystem – which includes industry leaders such as CommonTime, Motorola Good Technology Group, Nokia, RIM and Sybase – offers enhanced mobility solutions for Lotus Domino software users.

With the introduction of the IBM Lotus Sametime® mobile client, IBM's real-time collaboration platform can now reach people on the move. A core part of IBM Lotus Sametime 7.5 software, the mobile client delivers many of the features available from the desktop Lotus Sametime client, such as the following:

- *Instant messaging (IM)*
- *Presence awareness*
- *Quick-search and autosort within the IM contact list*
- *Organized view to manage multiple chats*
- *Autostore/autoretrieve chat history between chat sessions*
- *Contact information lookup (for example, contact photos, job title, phone number)*
- *Multiuser (N-way) chat support*
- *Emoticon support*
- *Announcement support*

The Lotus Sametime mobile client delivers additional device capabilities including the following:

- *Sound and vibrate alerts*
- *VoIP-based phone or voice chats*



Figure 2. The Lotus Sametime mobile client running on a Nokia E series device

Plus, you can extend Lotus Sametime IM support to mobile devices without having to purchase a companion application (such as IBM Lotus Sametime Everyplace® software). Currently, Lotus Sametime mobile client supports Nokia, BlackBerry and Windows Mobile devices, and the list will continue to expand with future releases.

Over time, additional Lotus Sametime value will be delivered to mobile devices. For example, the extensible platform will allow Business Partners and developers to deliver realtime business solutions more easily. And it will serve as a foundation for advanced organizational collaboration and social networking tools to help change the way you do business and to improve your organization's ability to accelerate response and increase productivity.

Access to critical data and applications

Access to critical data and applications can be achieved through the following:

- Lotus Sametime IM interfaces using robot (also called BOT) technologies
- Portlets and portals
- Custom offline applications including portal and forms applications

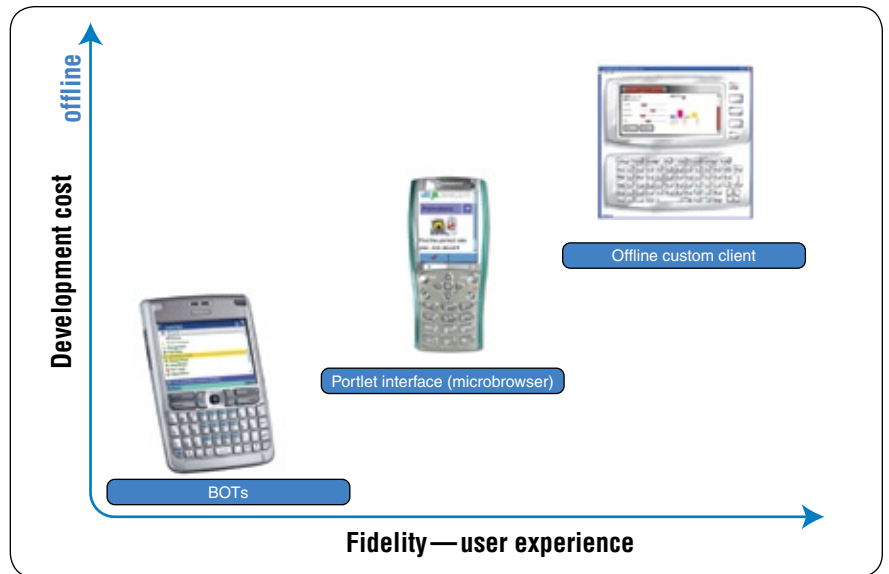


Figure 3. This diagram represents the trade-off between development cost and the richness of the user experience.

Using instant messaging interfaces

BOT technologies provide an automated IM interface to applications. These technologies can deliver high-value solutions to users through a familiar paradigm, by taking advantage of the fast learning curve for IM capabilities. For mobile workers in particular, BOT applications provide the added benefit of displaying and exchanging data through an existing transport layer and presentation layer. For example, sales representatives can query a customer relationship management system in the same way they would initiate an online chat. And the response is then provided in a familiar chat format.



Figure 4. An example of BOT access to a corporate directory from a Lotus Sametime mobile client running on a RIM BlackBerry device

Prerequisites for a BOT solution include the following:

- *Mobile user access to the corporate intranet via a VPN solution, such as Lotus Mobile Connect software*
- *An instant messaging client, such as the Lotus Sametime mobile client, on the device to allow the user to access his or her Lotus Sametime community*
- *A BOT interface (which can be created with a toolset, such as the Lotus Sametime developer toolkits) to provide the IM interface between the mobile user and the desired application*

Using portlets and portal applications

Many mobile devices have a preloaded browser to enable mobile users to access critical applications or data through a portlet on a portal page. As with BOT applications, this method of accessing applications and data leverages a familiar paradigm—a browser in this case—to deliver applications and data to virtually any mobile user location. IBM WebSphere® Everyplace Mobile Portal Enable software provides browser-based, device-independent access to portal content and helps support business-to-consumer scenarios where the business does not know the type of device its consumers will use. Plus, employees gain the flexibility to access intranet applications using their devices of choice.

To access data using portlets and portal applications, you must have the following prerequisites:

- *A Web browser*
- *Mobile user access to the corporate intranet, which can be facilitated by an MVPN solution such as Lotus Mobile Connect software*
- *A portal page that provides the composite applications that can be accessed*

Using custom offline applications

To use browser applications, a mobile worker needs a constant network connection. However, the connection may be unreliable, or the user might prefer to work with applications offline.

Custom offline applications provide the greatest amount of developer control in terms of the user experience and data exchange between the client and the server. This includes control over what data is stored locally on the client and synchronized with the remote server. IBM Lotus Expeditor software provides an SOA-based, server-managed client platform that enables developers to extend existing applications to a variety of mobile devices such as laptop computers, tablets, smartphones and Windows Mobile personal digital assistants (PDAs). By using the Eclipse Rich Client Platform⁴ as a core technology and by integrating security, device management and middleware, Lotus Expeditor software allows applications to be taken offline and used when a connection to the network is unavailable, unreliable or expensive.

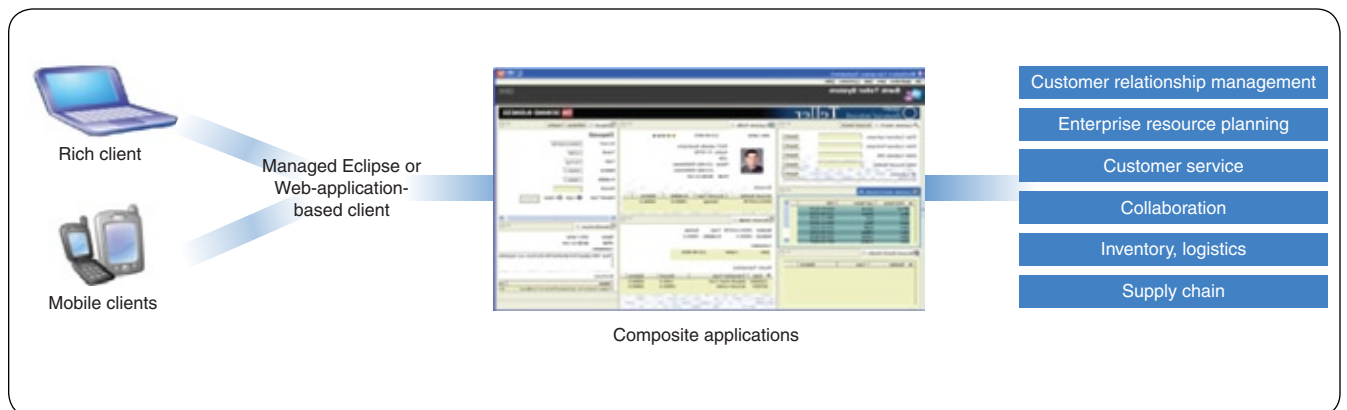


Figure 5. A high-level view of IBM Lotus Expeditor software

The only prerequisite for custom offline applications is user access to the corporate intranet, which can be facilitated through an MVPN solution, such as Lotus Mobile Connect software. The software can help provide seamless connectivity to server-based applications and automatic data synchronization.

Enhanced device management

By centralizing the administration of applications used by mobile workers, you can significantly reduce deployment and software maintenance costs across thousands of devices. Using the optional server provided by Lotus Expeditor software, IT administrators can deploy, update, maintain and remove software on the client device from one central location. The server also provides a comprehensive inventory of the platform elements, middleware and applications so that users and groups of users can have a consistent set of software on their devices. This level of administration and control not only provides centralized management of applications delivered to mobile workers, but also allows end users to focus more on performing the functions of their roles instead of constantly searching for software updates.

Extensibility through SOA to help support your evolving needs

An extensible framework begins with an architecture that is flexible and scalable enough to meet existing and future business needs. With an SOA, heterogeneous systems can work together to deliver key capabilities by leveraging reusable components. A cornerstone to such an architecture is an open-standards-based platform that allows the IT infrastructure to be platform agnostic. IBM Lotus Expeditor software delivers a universal managed client that supports SOA by providing software to develop and deploy composite applications to a variety of devices.



The bottom line: Mobile business is real business

Making the transition from a traditional office to an anytime, anywhere office requires establishing and executing an effective mobile strategy – and supporting a wide variety of handheld mobile devices. The comprehensive suite of IBM offerings described in this paper can help transform a rigid IT infrastructure into a reliable, flexible framework that can more adequately meet the changing needs of the mobile enterprise. And because this approach is built on open standards, companies gain the freedom to use the server technology and devices that best support their long-term goals. With IBM software, you can deliver a mobile office that is as productive as the traditional office – and you can positively impact your bottom line going forward.

For more information

To learn more about mobile solutions from IBM, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/lotus/mobile

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1 According to Venture Development Corporation, April 2005.

2 BPM Forum, December 2005.

3 BlackBerry devices leverage the secure end-to-end connection made available via the RIM BlackBerry Enterprise Server architecture and, therefore, do not require an additional MVPN solution.

4 Eclipse is an open source community whose projects are focused on building an open development platform comprising extensible frameworks, tools and run times for building, deploying and managing software across the life cycle.