White Paper Overview

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# *Developing an IT Strategy for Mobile Devices*

## Introduction

The number of mobile devices, such as handheld computers and mobile phones, entering the corporate sector has grown exponentially over the past year, and, according to market research, this number is only going to increase. The entrance of key players such as IBM, Compaq, NEC, Hewlett-Packard, Nokia, Ericsson and Microsoft signals that the handheld has potential for much more than just personal use. Indeed, corporations can realize key objectives by providing mobile devices to their workers – such as streamlining business processes and increasing productivity. The challenge now facing organizations is how to leverage all the benefits of mobile devices into the corporate environment – without losing functionality or control.

The challenges of enterprise connectivity are many and varied; they are defined both by practical usability criteria and the technical limitations of today's infrastructure. In order to utilize handhelds effectively, corporations must develop clear strategies for the use and deployment of mobile devices within their existing infrastructure. The goal of this white paper is to explore the issues surrounding the integration of handhelds within the corporate environment, including:

- Supporting multiple devices with different applications and operating systems
- Synchronizing data with the server
- Integrating into existing systems
- Management and administration of business-critical data
- Using and developing handheld applications

- **Multiple Devices, Operating Systems and Applications**
- **Data Synchronization with the Server**
- **Integrating into Existing Systems**
- **Management and Administration**
- **Using and Developing Handheld Applications**

## Multiple Devices, Operating Systems and Applications

Although many organizations would like to standardize on a particular device and operating system, this is quickly becoming impossible. Individuals are purchasing mobile devices and then bringing them into the office, wanting to access their e-mail, calendars, and contacts. This diversity will only increase, due to new cellular phones and communicators from Nokia, Ericsson and Motorola. In addition to the multiple operating systems, each corporation has a variety of business-specific applications that must also be supported. It's clear that an effective solution must be platform independent in the broadest sense of the term. Not only will it need to support multiple devices and operating systems, but it must be able to support a myriad of applications as well.

## Data Synchronization with the Server

When developing a mobile computing IT strategy, organizations must resolve the issues associated with data synchronization. Until recently, synchronizing personal information was accomplished directly between a handheld and a PC. In this case, a serial cable or modem physically connected the handheld to the PC. The most recent technology enables synchronization via a modem, but it still relies on two premises: 1) The user has a PC; and 2) This PC is left on while the user is out of the office.

In the corporate sector, these requirements raise major issues. It's often not cost-effective to equip mobile workers with handheld devices because they may not have access to a PC with which to synchronize. Leaving a PC logged into the network is an unacceptable security risk. And synchronization designed for personal data may not be effective for multi-user interaction. For instance, how does a company manage hundreds of people all trying to update the same database at once? Data integrity becomes paramount, and synchronization products must also work in a multi-user, secure environment. For the corporate sector, the solution is clear: Synchronize between the handheld and the server, not the handheld and the PC.

## Integrating into Existing Systems

It is important to realize that any new mobile computing system does not stand alone; rather, it must be tightly integrated into an existing system. In order to achieve full integration, businesses must incorporate existing business-logic into data transfers to create a seamless solution. And they must be able to trigger specific tasks in response to company-defined requests that can be transmitted to and from the mobile devices. For example, an expense claim transferred from a mobile device to the server would be automatically entered into an existing workflow system for automatic authorization and payment.

## Management and Administration

### *Managing applications and devices for total cost of ownership*

One of the key lessons of the client-server revolution was that support costs greatly outweighed hardware costs. This is doubly true with handhelds. Imagine the costs to a distributed organization if every device had to be recalled to headquarters every time the application software needed to be upgraded. In order for handhelds to be effective, the system must be able to remotely install or upgrade applications. It must also be able to manage devices remotely. Every time a connection is made, the system should take a "snapshot" of the handheld's status. If a handheld is running out of memory, for example, this can be anticipated and fixed before the user is even aware of a potential problem.

### *Ensuring proper security and backup measures*

Managing and controlling the information accessed by mobile workers is a key challenge to the corporate organization. For the sake of security, it is essential that all transactions are written to a log file so that management can be sure who had what information and when.

For IT staff, ensuring that systems are backed up is a major concern. PCs connected to a LAN can use file servers. For the handheld community, however, there needs to be a standard method for automatically backing up and restoring information.

### *Enabling accurate data transfer*

Server connections may be slow and unreliable. Since most wireless connections run at relatively slow data transfer speeds, data synchronization must be as efficient as possible. The synchronization mechanisms must transfer minimum amounts of information while ensuring data integrity. And since wireless communications can be easily interrupted, the synchronization process must continue where it left off, rather than starting from the beginning, while maintaining data integrity.

### *Accessing multiple data stores*

Very few organizations keep all their data in one place. Typically, it is stored in a variety of places and in different data structures. The user experience must be simple when synchronizing these diverse stores – one button synchronizes them all.

## Using and Developing Handheld Applications

The easiest handheld applications to use within corporate settings are already built into the handheld's system. These devices come complete with e-mail, contact, calendar and task applications, which can be easily synchronized with corporate groupware servers such as Microsoft Exchange and Lotus Domino. This is a simple first step whereby handheld deployment is merely an extension of the current business process.

The next step is building applications that take enterprise data out to the user. These are likely to be custom applications that reflect the needs of the particular organization. They don't need to be complex, but they do need to be effective. Perhaps the biggest mistake developers make when they start building handheld applications is to try and replicate desktop applications. They assume users need to have the same experience. In reality, applications must be rethought for the handheld. That means paying careful attention to balancing the data required with the limited screen real estate.

# Conclusion

In order for organizations to take full advantage of the benefits of a mobile computing system, a comprehensive IT strategy is required to develop the appropriate framework. This framework must include a server-based solution that integrates into an existing infrastructure to synchronize a wide range of data seamlessly and easily. The strategy must also ensure the mobile solution is fully and properly managed.

Despite the seeming complication of developing a mobile computing strategy, the return on investment can be phenomenal. Payback is often in weeks rather than years. Effective mobile computing offers corporations the opportunity to radically improve their business practices, whether it's streamlining internal processes, increasing employee productivity or decreasing customer turn-around time.

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