



The Handheld • Applications Guidebook

● *Getting Started Deploying and Supporting
Enterprise Applications on Handheld PDAs*



Published By

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Introduction

Handhelds are a liberating technology for the mobile worker. The same cannot always be said for IT administrators grappling with the swirl of issues surrounding enterprise handheld deployment - or worse, turning the other way as handhelds creep in their back door. The journey into handheld deployment doesn't have to be a perilous one. Emerging enterprise solutions are empowering IT managers to take control of their mobile future.

Getting A Handle on Handhelds

The key to success is thorough planning. Begin with your existing infrastructure, and think about how you want extend your information assets out to mobile devices. And, how will you integrate them into your existing processes and systems? Early development of a mobile network backbone capable of supporting future growth and proliferation of new devices is essential to the long-term success of your mobile program.

The following is an introduction to enterprise handheld deployment issues, from getting started to nurturing and protecting your investment.

Getting a Plan in Place

Indeed, many IT shops have been reluctant to embrace and support enterprise handheld deployments. But the time to move is now. Handhelds have invaded the organization, with senior management some of the early adopters. They know the benefits of having personal information available anytime, anywhere. They want to see this technology multiplied and adopted throughout the organization.

The wave is coming

The mandate to mobilize business data is clear. Mobile commerce is the *new* benchmark. And just as companies have scrambled to do business on the Internet, the evolution of technology continues through handhelds and smartphones. The benefits of pervasive information access and the ability to do business anywhere are evident in organizations that have seized mobile commerce opportunities.

How will your company measure up against the m-commerce benchmark? Are you supplying business data via handheld devices? Are you supporting critical business functions with mobile technology? Is your IT shop providing support to end-users?



There is a light at the end of the tunnel: it's mobile commerce coming your way. Meet it head-on with a proactive mobile deployment strategy that includes a comprehensive, enterprise-endorsed platform and basic device synchronization. Kick off your learning curve by offering basic services to internal users. Those bedrock elements will enable you to meet the rapidly evolving demands mobile commerce.

Delve into mobility with an easy-to-implement, rapid ROI mobile solution: Consider your sales people. Most of them carry PDA devices already. In just a few weeks, you can build a simplified version of your existing sales force automation tool, including the infrastructure to synchronize SFA data onto handhelds. Synchronization eliminates time consuming and cumbersome imports and exports and duplicate data entries.

For more information on this type of mobile solution, read the Synchronologic whitepaper "Improving Account Manager Productivity at Cisco Systems, Inc. - A Case Study in Enhancing a Best-of-Breed eSales Application Through Addition of Bi-directional Data Synchronization Capabilities for PDA Devices". It is available on our website.

Take a Step Back

The first step toward planning a mobile enterprise system is to take a step back. When it comes to mobility planning, many fail to see the forest for the trees. They consider devices ahead of applications, often at the behest of non-IT decision makers educated by the marketing schemes of handheld manufacturers and the media. Start by looking at how and why the system is going to be created, not which devices will fit into that system.

Get some perspective

- Why are you going mobile?
- Which mission critical applications will flourish?
- Which business functions stand to benefit?
- What applications will you need for your mobile initiative?
- Will they be shrink-wrapped or fully-customizable?
- Will you build custom applications?
- What kinds of devices will you need to run those applications?
- Who will use and support this technology?
- How are you going to train users? The support team?
- How will you manage the mobile applications and data?
- How will the handhelds be brought into the fold of the existing IT environment?



The very best handheld deployment strategies are developed from the back-end forward by answering the preceding questions. Yet in many cases, IT is not even consulted before handheld devices are doled-out to the masses. Start with the basics and work forward from there. Avoid purchasing the devices before planning for how they will be used.

Begin by capitalizing on quick-win opportunities. Build out your mobile network capability with easy, fast-turnaround projects that guarantee rapid returns. Use tools and technologies that will serve you well in the future - comprehensiveness is key. Avoid getting stuck with a hodge-podge of administrative tools and integration issues.

Budgeting for Handhelds

Don't underestimate

The typical handheld device itself is relatively inexpensive when compared to traditional enterprise computing assets. But don't be fooled. The total cost of ownership of an enterprise handheld device is much more than the initial cost of the hardware. Even so, the investment for handhelds is still comparatively low and the return on investment for handheld projects is often measured in months, versus years for traditional IT projects.

Nevertheless, it is important to budget realistically so that the project is not waylaid by budgetary constraints. When budgeting, keep in mind the following costs:

- Initial device purchase
- Communications and networking
- Synchronization software
- Replacement devices
- Systems management software
- Enterprise application purchase/build
- End user and support staff training

Since this is emerging technology, seek out expert industry advice and explore how it applies to your organization and support structures. For example, Gartner Group has built an interesting TCO model around handheld deployments. Likewise, the vendors you call on for assistance with various IT components should be prepared to help you understand the costs and benefits of each element.

This is new ground for most IT shops. Don't be afraid to leverage the experience of technology vendors and systems integrators. Think about working with a service provider to build out your budget and project plan. Though handhelds are relatively new to the enterprise IT world, there is a growing industry of systems consultants who are experienced in the space and can help you budget, justify and plan your project.



Take Inventory

It's a virtual given that handhelds have penetrated your enterprise. Most of your executives and sales team carry Palm devices. Pocket PC's are gaining in popularity. Your help desk takes support calls on devices they may not even know exist. These handhelds walk out your doors everyday, carrying your company's valuable information assets. The question then becomes whether or not to bring those devices into the fold.

Survey enterprise & non-enterprise assets

Survey your employees to find out who is currently using a handheld device. What platform are they using? What applications are they using? What types of information assets are stored on these devices? Then create a mobile business plan that addresses the integration of existing devices into the system or prohibition of non-enterprise handheld assets. Consider the security implications of allowing non-enterprise assets into your system.



A first step is providing basic device synchronization capabilities linked to a systems management effort. Users will be mercifully spared from the task of duplicate data entry and rewarded with pervasive access to their day-to-day information. You'll be backing up devices to the server in preparation for the inevitable. And you'll emerge as a hero when a user's device fails or gets lost. At the same time, you can start gathering device inventory information upon which to build your mobile network plan.

The Reality of Multiple Devices

Just as in the early days of PCs, handhelds of all different flavors are creeping in the back door. To get on top of the situation, you need tools which accommodate a range of devices types – Palm OS, Windows CE, Pocket PC, RIM Blackberry, EPOC phones, etc. And you don't want a different set of management tools for each platform or a different set to provide different types of synchronization support. Look for the vendor with the most comprehensive set of tools and a clear vision for providing the most comprehensive mobile management solution.

Why not just pick a single handheld standard and enforce it? Unfortunately two factors come into play. Due to the relative low-cost of the handheld device itself, users have and will continue to purchase



them on their own and begin storing corporate data on them. Within any organization there will be different user classes or profiles. Each of these users stands to benefit from added mobility in different ways, and a variety of factors (see the next chapter) will dictate the type of handheld device that is appropriate for any given user class.

Applications must consider individual user patterns if the device is to achieve maximum assimilation into the enterprise.

Many of those who have purchased their own PDA also use a laptop. The laptop has not been replaced by the handheld, rather, it serves as an adjunct device. This pattern will continue as new devices spring up to complement existing IT assets. You'll want a comprehensive suite of products to keep all these new and existing assets in sync and adequately supported.

Speaking of existing IT assets, you'll need to make sure the devices you setup with enterprise applications are able to smoothly integrate with the current environment. Nobody is going to trash their current CRM system running against an Oracle data warehouse to accommodate a new handheld project. Rather, you should look for an infrastructure layer designed to link typical existing systems with the new crop of handhelds. This layer should serve to arbitrate between the back-end systems you employ and the variables inherent to the different mobile devices you must support.

Device Selection

In choosing devices for mission critical applications, consider scalability and robustness. If you purchase an underpowered handheld simply because of the attractive hardware price, you may sacrifice the return on your much larger infrastructure investment. Many organizations will find that different departments and divisions require different devices. As stated earlier, start with the high level business objectives, move to application requirements, and then consider the most appropriate hardware platform.

And still, there is the deployment of handhelds as companions to laptop and notebook PCs. Handheld devices are increasingly augmenting, not replacing, portable PCs. Certain functions such as serious document editing require mobile PCs. The advent of handheld devices will further differentiate between luggable versus portable technology.

Handheld devices are often application specific devices. They may be extending a specific application, almost becoming an appliance or utility. The burgeoning consumer handheld market has flourished

largely as an extension of personal information management. Today, organizations are looking to these same devices to extend supply chain management, sales force automation, inventory management, facilities management, point of care applications, law enforcement, scientific data collection and production data collection.

Each application will influence device selection, which should consider these fundamental issues:

- battery life
- display size
- data input
- form factor
- processing power
- storage
- communications options
- security
- application development tools



Choose a device that meets users needs

Form should follow function in device selection. Choose a device that will fit the primary application of your user group. Then look for ways to augment functionality and extend other applications and information to that device. Leverage the device's full potential and look for ways to deliver the most value to each user. Inexpensive add-ons can add significant value to the user's experience and multiply your productivity gains.

Also consider the nature of the application and the application development tools that will be required to build the app. For Palm OS handhelds, a variety of tools are well known in the marketplace, each with their own pros and cons. Some are incredibly easy to use, but may not support the full functionality you require. For Windows CE and Pocket PC handhelds, the development tool options are more limited, though the tools themselves tend to be more powerful.

Each additional platform you support may require additional development effort to create a separate version of the application, and to test the app on that platform. Even HTML forms based application often require different versions of the forms optimized for different display and input capabilities. The good news is that developing apps for handhelds is almost always far simpler than doing so for PCs.

The Importance of Training

Early-stage handheld deployments require training to ensure success. Handhelds are new to most IT organizations. And while users may be accustomed to the native PIM applications that ship with most handhelds, running a handheld enterprise application is likely a new experience. The good news is that handhelds are generally easier to work with, easier to build applications for and require a shorter learning curve than traditional IT technology.

Empower users: Budget for training



Consider the training components required for your project. In the beginning, you may need help learning about the issues and milestones inherent to handheld deployment. Look to vendors and integrators for insight on how to budget and plan for an enterprise handheld initiative.

Systems analysts charged with translating business objectives into a production deployment may need training on application development tools, supporting infrastructure technologies, typical integration points with existing systems and the tools and techniques to bring it all together. Your support staff will need training on the device and application, frequently-asked user questions, and how to address issues that arise regarding handhelds.

Finally, end users will need training on device basics, as well as how to “manage” their devices – keeping them secure, synchronized and integrated smoothly into their daily processes and activities.

In order to realize a quick return on your investment, which can be surprisingly fast with handheld applications (anywhere from 1 month to 3 months is not uncommon), industry experts advise earmarking at least 12 to 15 percent of the total cost of ownership for training. Enterprise-wide success rests on a holistic approach to training and support that includes training on applications, as well as devices, and attention to IT staff and applications analysts, as well as users.

Synchronization Overview

Synchronization is an integral and necessary component of the mobile infrastructure. The notion of mobility in and of itself creates the need for synchronization. For a variety of reasons, synchronization has been sporadically embraced for laptops, perhaps because they are so often used in environments where a landline is readily available. User inconvenience was traded for network simplicity, often resulting in expensive shelfware.

Forward thinking companies that did sync laptops have realized increased performance, greater information availability and decreased communications costs when compared with running a constant network connection. With the accelerating adoption of super-mobile handhelds, synchronization became a recognizable necessity, and in turn, a hot market in and of itself.

The many faces of sync

Recently, increased focus on wireless data access has grown, including here at Synchrologic. Yet, even with a wireless network in place, a server connection is not always available. Until pervasive wireless bandwidth becomes a reality in the coming years, applications and systems absolutely must be fashioned to deal with low bandwidth and spotty coverage. This generally requires offline applications and data access as an option. And if critical business information is to be stored locally at the device level, there is an inherent need to synchronize changes and updates when a connection is possible and the adequate bandwidth is available.

Handhelds are inherently more mobile and more accessible than any preceding device, so the need for synchronization has become obvious. In the handheld world, synchronization is a loosely-used term that can mean a variety of things. In the following chapters we'll look at some different flavors of synchronization



PIM & Email Sync

Perhaps the most obvious service desired is that of maintaining individual calendar, contact and to-do's across devices. This information is commonly referred to as PIM data, short for Personal Information Manager. It has immediate value to users when offered on a portable device that is always accessible such as a Palm handheld. Therefore, centralized management of this service is often the first requirement considered by corporate IT.

Covering the basics

Most calendar and contact management software (e.g. Microsoft Outlook) already supports mobile PC clients, thus this function is probably already supported by corporate IT. It follows that synchronization of this information would be immediately desired by PDA and smartphone users.

Like PIM synchronization, the corporate maintenance and support of email is another obvious user demand. Email is widely considered to be the "most killer" of killer apps -- the one that users are most addicted to. As users adopt more mobile devices, they generally want IT to provide support for email on these devices.

Despite the obvious limitations of screen size, text input methods and capacity for attachments, access to email will be an important and necessary service to offer across all mobile computing platforms.

More tips for application selection

Look for an application will that will sync native device applications with the existing Exchange or Notes server. It should provide administrators with the ability to authorize certain users and handhelds, determine which PIM/Email information will sync, and set defaults or enforced profiles with a variety of sync options -- such as maximum number of records, maximum record length, yes/no for text attachments, and what data to backup to server. These will help protect the limited storage of the device.



Stick with enterprise-specific products. Is it an individual, personal handheld-to-PC sync utility that has been retroactively improvised into an “enterprise” product? These products typically lack the necessary administrative features and ease of administration inherent to enterprise-developed products.

Don’t buy your PIM sync from a vendor that can’t support other advanced sync needs, such as those outlined in the following chapters. The inevitable result is a hodge-podge of tools requiring redundant administrative work and continuous reconciliation and integration of different systems.

File Synchronization

At many corporations, a vast amount of information is stored in desktop application file formats created by word processing, spreadsheet and presentation programs. These are typically distributed through email or via an intranet site. Both approaches require proactive effort by the mobile user to maintain the current version of the document on their mobile device.

Distributing personalized file content using profiles

Instead, a mobile computing infrastructure should provide the capability to automatically deliver personalized file content to users depending on their profile. The current version should be maintained automatically on their device without any effort on their part. Typical examples of such files include sales call reports, benefits information, product pricing, HR forms, contracts, presentations, expense reports, company policy statements, sales literature, company positioning, press releases, etc.

In addition, a catalog of optional documents should be made available for users upon request. Users should have control over their synchronization sessions, so that they can bypass optional activities to keep their session length down when preferable, and to manage the storage capacity on their device.

This capability should not require any change to the way the information is maintained and stored on the corporate file server and network. Instead, it should offer convenient graphical tools to define the information to be published and to note which users receive specific information on each of their mobile devices.

Delivery of key files should be guaranteed along with extensive logging to track “who got what.” File backup capability for harvesting



important documents from the mobile devices should also be included.

Finally, the ability to translate common file formats for viewing and editing on non-native platforms is extremely important. A common example is the out-of-box inability of a Palm OS-based handheld to view MS Word or Excel documents without special user intervention.

When evaluating content synchronization and delivery technologies, use the following features as a starting point for building your criteria:



- Basic enterprise infrastructure platform features (see below)
- Publish & subscribe model for distribution logic
- A publication wizard for configuring the logic
- Publication availability scheduling
- Device-to-server file backup
- Overwrite vs. rename configurations
- Automated scanner to detect new/updated files
- File translation/transcoding for multiple platforms
- File delivery logging
- File versioning capabilities
- Scripting wrappers for file delivery specs
- Part of a total mobile and wireless infrastructure solution

Data Synchronization Options

Data synchronization requirements for handhelds generally fall into one of two categories. Basic data synchronization requirements are common for relatively simple data access and collection applications which are usually new and replacing paper-based systems. The basic data sync server acts as a communications server, managing the simultaneous connection of many users and passing information between the device's data store and a server database through a conduit. A variety of communications modes is supported. Thus, users may connect through desktop cradles, wireless communications, dial-up or direct network access.

Basic synchronization capabilities include:

- Basic enterprise infrastructure platform features (see below)
- Integration with the standard device sync mechanism such as HotSync for Palm handhelds
- Multiple communications modes
- Field level change posting
- Full device refresh
- Refresh from an intermediate repository
- Support for standard IP protocol
- Detailed logging and alerts
- Extensive administrative control and configurations
- Part of a total mobile and wireless infrastructure solution



Basic sync servers typically have a documented API. The IT organization writes the conduit mentioned above. This conduit is custom code written to the API of the sync server to define the data mappings, data sharing and synchronization logic and supporting functionality. For straightforward applications, the conduit coding effort is easily accomplished. With more complex requirements, it is more efficient to utilize an advanced data synchronization server than to try to write additional functionality and management tools into your conduit.

Typical requirements that favor the robust functionality and rich management tools of an advanced data synchronization server include the following:

- Support for PC or laptop clients is also required
- Business processes evolve rapidly
- Connected users share enterprise data
- Information flows between mobile users
- Data refresh/realignment is required
- A complex data model is being synchronized
- Very large transaction volumes
- Processes run against the central database
- Mission critical transactions are synchronized
- Robust administrative tools are required

Basic data collection applications, such as inventory, warehouse, shipping, inspections, meter reading, etc., often find basic sync solutions adequate to meet their requirements. When the above criteria are present, purchasing an advanced data synchronization engine will provide significant cost savings when compared with the cost of writing, supporting and debugging a large amount of custom

conduit code written to define sharing rules and provide the features mentioned below.



If your needs require an advanced data sync solution, look for the following features to be sure you are getting everything you'll need:

- Basic enterprise infrastructure platform features (see below)
- Support for heterogeneous databases
- Store & forward architecture
- Fast synchronization sessions
- Rich administrative tools
- Change capture including triggers, ODBC, and logs
- Transaction support – serialization and rollback
- Flexible conflict management and resolution
- Support for multiple communications layers
- Full bi-directional synchronization with sharing logic
- Parameterized sharing rules
- Field level synchronization, partitioning, and data mapping
- Performance tuning utilities
- Support for complex database schema
- Non-intrusive architecture to easily integrate
- Sharing realignment and full client refresh capabilities
- An API for custom modifications
- SQL function trapping to preserve integrity
- Client side error logging
- Part of a total mobile and wireless infrastructure solution

Building-in all these features via custom coding to augment the basic data synchronization communication server can drain significant resources. However, these capabilities are vital in managing your mission-critical enterprise data. As a result, organizations should look to buy, rather than build, an advanced data synchronization engine.

With basic PIM & email sync, personalized file distribution, and data synchronization set up, you'll be providing users with most of the information they need to be productive, and you'll be effortlessly gathering and consolidating data from the field. Next we'll address some of the administrator's needs.

Systems Management and Inventory

Synchronization of corporate data often requires that related applications be deployed on the mobile devices. Management of application software and systems quickly also becomes a major requirement of a mobile infrastructure strategy.

Applications management

LAN based approaches to systems management of mobile devices are usually unworkable. Mobile users are intermittently connected through unreliable communications and require event driven synchronization sessions. These factors introduce unique requirements. Support staff are unable to physically access the machine and must somehow keep track of overall inventory and the individual characteristics of each device.

Thus, mobile and wireless devices demand a different type of systems management solution, one that complements existing systems, but meets the unique needs of the occasionally-connected user. Key features of a mobile systems management solution should include:

- Basic enterprise infrastructure platform features (see below)
- Self-upgrade support and healing
- Delivery logging
- Publish & subscribe model
- Software package wizard
- Device history tracking
- Software inventory
- Scripts able access to inventory data
- Scanner utility
- Byte-level file differencing
- Offline installation
- Versioning
- Part of a total mobile and wireless infrastructure solution



Utilizing software distribution capabilities makes IT staff more efficient at managing the mobile devices, protects user productivity, lowers costly support incidents and prevents user downtime.

Managing the Mobile Network

A comprehensive mobile infrastructure solution is necessary to achieve consistent and efficient management of your mobile network. Reactive and fragmented support is not an option. Deployment of one integrated mobile computing suite, complete with common administrative and user interfaces, will provide a host of benefits.

Demand comprehensive and fully integrated

Working with a single vendor means a single contract and a single source for support. Integrated administration reduces duplicated efforts, provides for a simple and efficient end-user interface and reduces training for IT staff by eliminating multiple tool sets. Cost savings are also realized through the elimination of application integration costs and reduced license, maintenance and support expenses.

Look for a strong underlying platform in the solutions you consider. Must have features include the following:

- Support for all major handheld devices
- Integrated management
- Multiple connection modes
- Remote server administration
- Administrative database
- Compression
- Scalable architecture
- Alerts and notifications
- Microsoft Management Console plug-in
- Directory services integration
- NT domain authentication
- Manage performance thresholds and load balancing
- Server-side process execution
- Encryption
- Open APIs
- Check-point restart in communications
- Standard internet technologies
- Guaranteed delivery
- Logging and reporting
- Administrator set scheduled connections



Administrative console



The administrative console is the focal point for configuring and managing your mobile and wireless infrastructure. It should offer a robust administrative interface for maintaining the settings and rules that drive the behavior of server based engines.

Ideally, you can have one administrative console that manages all functions for all mobile devices you support. This console should allow system managers to:

- Define the user base
- Define Activities (file, software, email & data distributions)
- Subscribe users to Activities
- Prioritize the order of Activity execution
- Review extensive system logs
- Review mobile device inventory
- Set alerts and notifications
- Troubleshoot and address problems

The administrative interface will allow you to interact with the mobile network, provision new users, model changing business processes, track down problems, monitor the aggregate device inventory for planning, and complete all the other day-to-day tasks involved in supporting mobile users. It's important to have one central console, instead of learning a variety of administrative interfaces and duplicating tasks such as assigning a new user to a profile. Ideally, you can manage the entire mobile network from one GUI.

Communications Options

A variety of communications options are available for connecting handheld devices to company servers for synchronization. It is very likely, and often advisable, for your organization to employ a mix of the following:

- Cradle to PC sync, requires some sort of staging on PC
- Cradle through PC to network sync
- Network cradle sync
- Network dialup (wired and wireless)
- Wireless direct to server over internet sync (also wired)

The specific options available will vary for different handhelds, and for different communications/networking providers. A full review of these is beyond the scope of this paper. The important thing to keep in mind is that the networking and connection options must serve the user. And mobile users need options to stay connected when they are out of range of a wireless connection, or have only a low bandwidth dialup connection available from a hotel for instance.

So your handheld infrastructure solution, including the synchronization and management tools will need to support a range of communications protocols and transport mechanisms. The vendor should be committed to providing a total solution with the flexibility you need today -- and tomorrow.

Security Concerns

IT is ultimately responsible for the integrity, confidentiality and availability of the enterprise system. A comprehensive infrastructure plan will include the early integration of security solutions. The most basic and inherent security risk posed by a mobile device is that it is not bolted down. It walks out your doors every afternoon. It is left in your sales person's car. It is carried on planes, trains and automobiles and left in hotel rooms around the world. And, it contains information critical to your business.

Security on the new frontier

Mobile enterprise security is founded in policy and supported by cutting edge technology. A comprehensive mobile enterprise security solution will include:

Broad platform support. From enterprise and e-commerce servers, to desktops and Java, all the way down to PDAs, smartphones, and Internet appliances.

Standards Compliance. Support for all the current and de facto standards, and complete interoperability with past, present, and planned installations.

Network Independence. The ability to build a solution for Internet, intranet, wireless and even non-standard networks.

Mobile, Handheld, and Embedded Specialization. Toolkits optimized to provide full strength security that is small, fast, and efficient even in the smallest devices.



Client Authentication. Provide the highest form of security on any platform, even handhelds - a must-have feature for enterprise data access and financial transactions.

Closing Summary

The mobility epiphany

In midst of challenges to launching an enterprise handheld deployment, how are companies realizing success? The answer is something of an enterprise epiphany: whenever CEO's and CFO's say to themselves, "we are going to have a mobile network and we are not afraid to support it." The moment strikes when decision makers realize that to become more effective, more efficient and more competitive, they don't have to develop big pieces of software. They discover that mobility is less about moving people and more about moving information. They discover that smaller pieces of software can be rapidly deployed to handhelds which link back to their server and effectively push critical data out into the field where users interact with the market.

Now, the person you could have given a \$4,000 laptop is doing the same effective work with a \$149 Palm OS handheld because you have harnessed the information technology power of your existing back end infrastructure. It's a small price to pay when you stand to gain a full return on your investment in as little as 2 months. And having deployed a flexible mobile and wireless infrastructure platform, no matter what new mobile device is coming, your network is prepared to meet it head-on.



About Synchronologic

Synchronologic, the leader in synchronizing Business Data Anywhere, offers the most comprehensive mobile and wireless enterprise infrastructure software, thus providing the essential synchronization platform required for managing mobile devices and enabling anywhere access to vital business data and applications.

Synchronologic's secure, Internet-based infrastructure solutions are ideal for supporting mobile and wireless devices used by employees, customers, partners and suppliers. Smart phones, Pocket PCs, Palm devices, PCs, e-mail pagers and laptops all connect to central servers via wireline or wireless Internet, dial-up or Local Area Network. Synchronologic's iMobile Suite server solution manages the devices, keeping them updated with the latest application data, e-mail, files and software. The company's ReadySyncGo! Enterprise server keeps basic user data (such as address book, calendar, to-do's, etc.) synchronized across multiple devices, and also provides valuable, personalized content based on travel and appointments.

Synchronologic also offers ReadySyncGo! as a free public service through www.ReadySyncGo.com.

Synchronologic's mobile and wireless technologies are licensed by corporate and OEM customers including Cisco, Hertz, Citicorp, 3M, JD Edwards, Nintendo and Vantive.

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This whitepaper was prepared with the assistance of several Synchronologic business partners, who are listed below as additional resources for the reader in planning for handheld deployments.



Contributing Partners



Synchronologic is very grateful to the following business partners for their involvement and assistance in the creation of this guide.

Certicom Corp.

Certicom is an encryption technology company specializing in security solutions for mobile computing and wireless data markets, including mCommerce. Certicom's solutions use less processing power and bandwidth than conventional encryption technologies, and are therefore more suitable for many mobile and wireless environments. Certicom's customers incorporate its patented technology into their applications for handheld computers, mobile phones, two-way pagers and other Internet information appliances.

<http://www.certicom.com>

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Revolution Consulting Group, Inc.

The Revolution Consulting Group (RCG) provides software products and consulting services to corporations with hundreds or thousands of remote locations, mobile travelers, or both. It delivers detailed audits, assessments, system designs and implementation expertise specifically geared for the remote and mobile space. As a strictly results oriented group of business professionals, RCG measures success by solving the challenges their clients have with mission critical applications.

<http://www.rc-group.com>

For information: Rob Lowery, (480) 396-0606, info@rc-group.com

Technocrats, Inc.

Technocrats Consulting is a full-service mobile computing solutions provider specializing in enterprise deployments of handheld mobile computing devices including Pocket PCs and Palm organizers. The Chicago-based company offers Mobile Enterprise Resource Planning (MERP), a complete deployment solution which includes hardware, software, consulting, training and systems integration for enterprise clients pursuing handheld computing initiatives.

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