



## PDA's and Handhelds: Toy or Tool?

The PDA has morphed from a must-have accessory to a serious business tool. Can your business benefit from the use of PDA's? Read on.

PDA's (personal digital assistants) fall into two major categories: *hand-held computers* and *palm-sized computers*. Hand-held computers are larger and heavier than their palm-sized counterparts and come with a mini-keyboard along with some touch-screen technology. Palm-sized computers, on the other hand, are smaller and lighter and rely on stylus/touch-screen technology and handwriting recognition programs.

### Inside the PDA

Regardless of the size, they all share the same major features: a microprocessor, an operating system, memory, LCD display, an input device (keyboard and/or touch-screen), input/output ports, and desktop PC software.

**Operating Systems.** PDA's typically have one of two types of operating systems: Palm OS or PocketPC. To be technically correct, PocketPC is a platform whereas MS Windows CE and Windows XP Embedded are two operating systems that can run on the platform; the terms, however, are often used interchangeably. Palm OS takes up less memory and runs faster, and most users say it is easier to use

Considering how to develop custom applications for PDA's? Palm has published the Palm OS® SDK version 4.0, a set of libraries and headers for building applications for Palm Powered® handhelds. The most popular development environment is Metrowerks CodeWarrior. There is also PRC-Tools, a free development environment supported by Palm.

Microsoft's PocketPC easily supports color displays, graphics, miniaturized Windows packages (e.g., Word, Excel), and other devices (such as built-in MP3 players or MPEG movie players). Microsoft has published Pocket PC 2002 SDK, which, in conjunction with the Microsoft eMbedded Visual Tools 3.0, delivers a complete development environment for creating applications for Pocket PC 2002 mobile devices based on Microsoft® Windows® CE. The Windows CE operating system is based on the Microsoft Win32® application programming interface.

**Handwriting Recognition.** Until recently, most palm-sized devices didn't really recognize handwriting as-is. Letters and numbers had to be "handprinted" using a specialized alphabet *one at a time* to enable recognition software such as Graffiti to "recognize" the letters. It was slow and required some training. The technology has improved. A number of handwriting recognition systems are available that do not require training or adjustment; they are easy to use right after installation.

**Voice Recognition.** The forecast is that most PDAs will eventually incorporate voice recognition technology, where the user can speak into a built-in microphone while software converts the voice waves into data.

**Communications.** PDAs are able to communicate with a PC. Such communication between PDA and PC is referred to as *data synchronization* or *syncing*. Typically it is done through a serial or USB port on the PDA. Some PDAs have a cradle that enables communication with PCs.

Many PDAs also have an infrared communications port that uses infrared light to beam information to a PC or another PDA. Some PDAs also offer wireless methods to transfer data to and from a PC/PC network through a wireless e-mail /Internet service provider such as those available on new cell phone models. Some PDAs offer telephone modem accessories to transfer files to and from a PC/PC network. Examples of data transfer or synchronization utilities are: HotSync for Palm OS and ActiveSync for PocketPC. Normally, these utilities also come with desktop/laptop software that must be installed on the PC as well.

## **PDAs and Business**

How can PDA technology be harnessed to benefit businesses? PDAs were originally designed to serve as personal information organizers. They could store addresses and phone numbers, keep track of appointments, and carry lists and memos. PDA have become more versatile, and with this versatility comes the ability to leverage the technology across your business.

*Does your business require quick access to critical information?* Imagine the data needs of health professionals. Physicians, nurses, and pharmacists must keep accurate records of orders, test results, and other patient data. They must interface many databases to access the data required for their critical roles. Many hospitals have terminals on rolling carts so that health professionals can access needed information quickly. PDAs have given many health professionals the ability to access this key data anytime, anywhere. Nurses can note patient information at the patient's bedside into the PDA for later upload to a PC. Physicians can download drug and procedural reference materials to a PDA for consulting at bedside. Key operations documents, such as hospital policies and procedures, can be managed effectively in electronic versions. Not in healthcare? PDAs have been implemented in many industries where the ability to access and review mission critical data is a major business requirement.

*Are your employees on the move?* Employees are increasingly mobile as the traditional office routine changes. New advances in software mean that mobile professionals can make better use of PDAs than ever before. Technicians, auditors, sales representatives, and truck drivers increasingly use new technology to communicate with their companies. These professionals are now able to consult e-mail, review work orders, communicate status, review records, maps, and schedules via PDA. The transition from bulky laptop computers to PDAs can be a

positive one for these highly mobile employees. More software vendors are releasing versions of critical applications that ease the transition to PDAs.

Pepsi is a good example of a company who has implemented PDAs and seen a significant return on investment. Routine repairs to soda fountains and vending machines generated 3 million pieces of paper per year. After a yearlong rollout of wireless handheld computers, that paper mountain has completely disappeared. Employees worldwide can now access data that was once available only in paper form. Managers can now make critical operations decisions based on data in real-time.

Can PDAs make a difference to your business? If your workforce is mobile, data-dependent, and communication-oriented, PDAs could provide some significant advantages. Go beyond the cool email and calendar functions of PDAs that made them a toy. You will find that PDAs have become a serious business tool.

### **Read More**

SDK for PalmOS developers:

<http://www.palmos.com/dev/support/docs/palmos>  
<http://www.palmos.com/dev/tools/sdk/sdk2452534/sdk40.html>

PocketPC OS (and SDK) developer info:

<http://www.microsoft.com/mobile/developer/techresources.asp>

PenReader, available for various PDA operating systems and platforms:

<http://www.penreader.com/WinCE/PenReader.html>

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