



PDA's and Mobile Devices

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The workplace is going mobile, and personal digital assistants (PDAs), Internet-enabled cell phones, and other wireless devices are the new tools of the road warrior. This workshop will explain and demonstrate devices from Palms to Blackberrys, from iPaqs to handheld modems, and discuss how they're used to support the mobile workforce.

What are PDAs?

A Personal Digital Assistant or PDA is a handheld computing device that has a monochrome or color display and a pen-like stylus to navigate and in most cases, to input data. PDA have a processor (206 mhz or less) and a combination of ROM, RAM and storage cards to store applications and data. PDA's do not have hard drives so the operating system and other built-in applications are stored in ROM so they don't take up active RAM space. PDA's today have as little as 2MB and as much as 32MB ROM. RAM is used to store additional applications and all of your data. PDA's come with anywhere from 8 to 84 MB RAM. Storage space can be greatly increased, however, with the use of expansion cards such as CompactFlash, SecureDigital (SD) and memory sticks.

Two primary styles of PDAs are available on the market today:

- Palm-type devices, such as the Palm m505, the Handspring Visor Pro and the Compaq iPaq. These devices are generally less than 5.3 inches tall, 3.2 inches wide and .7 inches deep and use one of two basic operating systems:
 - Palm OS - used on the Palm PDA's made by 3Com, Handspring, and Sony Clie.
 - Pocket PC (PPC) - Microsoft's OS used on Compaq iPaq, Hewlett-Packard Jornada, and Toshiba Pocket PC.
- Handheld PCs, such as the HP Jornada 720 and the NEC Mobile Pro 790. HPCs. These devices include an integrated keyboard and a horizontal rather than vertical screen. HPC's use the Handheld PC 2000 operating system from Microsoft based on the Pocket PC format for handheld PCs. Earlier models used the WinCE operating system.

How Do Palms, Pocket PCs and HPCs Compare?

Price

Devices with the Palm OS are generally less expensive than other PDAs ranging in price from \$150 to \$450. Pocket PC devices cost \$500 - \$600 and HPCs can go as high as \$1,000. Price is directly related to the display type, i.e., monochrome or color, the amount of power, and the expansion capability. In this case, you probably do get what you pay for. However, if a low-end Handspring accomplishes what you need, there is no point in shelling out more for a high-end Jornada HPC.

Functions and Integration with Office

Palm OS devices include basic tools for calendaring, contacts, to do lists and notes. Some of the devices also include connectivity software and e-mail capability. Third-party software for the Palm is a growing market—all types of software are available for the Palm from productivity to games. If all you need is calendar, contacts and task functions, the Palm OS is easy to use. However, you must install additional synchronization software to synch the data with Outlook. Many Palm products come with PocketMirror from Chapura—this utility works pretty seamlessly with Outlook after you set it up the first time.



Palm PDAs

Pocket PCs and HPC's are Windows devices so the software is familiar to Office users. Pocket Word, Pocket Excel, Pocket Outlook and Internet Explorer have many of the same features of their bigger siblings. Although some learning curve exists, most users are able to



Toshiba e740

make the adjustment without too much difficulty. No additional software is needed to synch with a desktop or laptop PC and these devices easily handle synching to multiple machines—a valuable tool in moving data between office and home PCs. The Pocket PC and Handheld PC 2000 operating systems are newer than



HP Jornada HPC

the Palm OS so third party vendors are a little behind in software development. This situation is changing rapidly, however, as more products become available every day.

Size and Weight

Thin and light is in and not just in body image! The Palm m500, m505 and m515 are great examples of products that easily slip into a pocket or purse and are hardly noticeable. For the most part, Pocket PCs are slightly heavier (as much as 2 ounces) and a bit bulkier. The height of a Pocket or Handheld PC can vary as much as a half inch from the Palms. The width may be only three-tenths of an inch but this difference can be significant in a smaller hand. Be sure to hold the device you are considering before purchasing it to see how it feels and how easy it is to hold. A device that's too big can be uncomfortable and difficult to use.

Battery Type and Battery Life

Most PDAs come with rechargeable lithium batteries. Palm-type devices require less energy so batteries typically last longer. Pocket and Handheld PCs, with their color screens and resource intense applications, drain batteries much faster. Lithium batteries last from a week to a month with intermittent use. They recharge easily in a couple of hours by placing them in their synch cradle or plugging them in with a charging cable. Some of the lower-end Palm-type devices use AAA batteries. Battery life can be as long as a couple of months but if you haven't synched recently and you don't change the batteries before they die, you lose all your data.

Connectivity

Land-line Connections

Handheld PCs such as the HP Jornada 720 come with a built-in modem so going online is a piece of cake - just plug in a phone cord and dial. For other devices such as Palms and Pocket PCs, you must purchase modems separately if you want to connect to the internet or your corporate network over the phone. You can purchase modems as CompactFlash cards and other PC cards, depending on the expansion slots available on your device. Ethernet cards are also available to connect directly to your corporate network.

Wireless Connections

Wireless Modems

The latest in connectivity does not involve wires at all. Wireless solutions are available in the form of wireless modems such as the PocketSpider and the Minstrel. Both of these modems use a **CDPD (Cellular Digital Packet Data)** network and require a subscription service to use but offer complete freedom from land-based phone lines in their service areas.

Bluetooth and WiFi

One of the hottest new technologies available for wireless connectivity is called **Bluetooth**. Any Bluetooth-enabled device, including phones, PDA's, printers and computers can exchange data (up to 1 Mbps) with any other Bluetooth device within its range (up to 300 ft). You can add Bluetooth adapters to Palm devices and Bluetooth cards to Pocket and Handheld PCs.

For real speed needs, **802.11b Ethernet networks**, referred to as **WiFi**, can make the job even easier. These wireless networks transfer data at 11 Mbps up to 500 ft. 802.11a Ethernet networks work at 54 Mbps and cover a range of 1000 ft but may be overkill for PDAs because the card slots can't handle data at that speed.

Mobile Phone Connections

Another way to connect to the Internet without a land-based phone line is through a cable or Bluetooth connection to your mobile phone. If you plan to connect with a cable, you must have a mobile phone with Internet capability and a cable designed to connect with you PDA. Not all combinations exist so check out www.mobileplanet.com or your mobile phone vendor to verify that the two can connect.

Multipurpose Devices



**Sprint Palm-Powered
PCS Phone**

Sprint offers a phone that is integrated with a Palm OS device (Palm-Powered Sprint PCS Phone) and Handspring makes a Palm device (Handspring Treo Communicator 180 and 270) that is integrated with a phone. These devices provide the ultimate in integration and ease in connectivity. However, early reports appear to say that they don't do

either thing as well as the dedicated device. Don't let this



**Handspring Treo 270
Communicator**

stop you, though, if you have basic communication and PDA needs—these may just fit the bill.

BlackBerries and Other Mobile Solutions

Research in Motion, Inc. has created a new standard for mobile communication called RIM devices. The first type of RIM device to hit the market is the BlackBerry Wireless Handheld. What's unique about the BlackBerry is that it automatically interacts with your corporate Microsoft Exchange or Lotus Domino e-mail server to send and receive e-mail, update your calendar, tasks and contacts from wherever you are. The Blackberry 5810 also interacts with ISP accounts to send and receive mail. These unique devices provide a higher level of security and instant connectivity from anywhere in the Blackberry service area. Blackberry service is available from AT&T Wireless at



Blackberry 5810

<http://www.attwireless.com/mobilepro/blackberry/> and VoiceStream

Wireless at <http://www.voicestream.com/blackberry/> and in Canada at Rogers AT&T Wireless.

Where It All Began

Although Apple introduced the first PDA to gain popularity in the US (Psion, a UK company has been making PDA devices since the 1980's, long before they were called PDA's), the Apple Newton in 1993, the PDA revolution as we know it today began with the introduction of the Palm Pilot in late 1990's. The Palm Pilot became the darling of the corporate executive because it was easy to learn, limited in scope and functional in use. The Palm operating system (OS) includes four basic applications, Contacts, Calendar, Notes and Outline. It offers a form of handwriting recognition called Graffiti and users can tap the screen with a stylus to access applications, commands and the onscreen keyboard. After the Palm Pilot was purchased by 3Com, the original developers of the Palm OS and Palm Pilot, formed their own company, Handspring. Handspring is now the largest competitor of the Palm, originally coming out with a less expensive Palm-type device and then later with devices that directly compete with some of the higher Palm PDAs.

The name, Palm Pilot, does not exist anymore, despite its acceptance in the common vernacular. When the Palm Pilot was purchased by 3Com, the devices became known simply as Palms or Palm PDAs.

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