Location: http://www.zdnetindia.com/help/howto/stories/7758.html.

All you want to know about PDAs

A personal digital assistant is no longer just a fancy toy, it is now a necessity for the business-traveller. Learn how a PDA can help you streamline your life and organize your daily affairs.

Michael Mullen, November 24, 2000

Learn how a PDA can help you streamline your life and organize your daily affairs.

While PDAs vary in appearance, functionality, and available programs, all major PDAs store data that you'd normally write down in an address book, on a calendar, on a notepad, or on a to-do list. These include addresses, phone numbers, appointments, important days such as birthdays and anniversaries, and lists of things you're supposed to pick up at the store after work. In fact, depending on how you set up your PDA, you can have it beep to remind you of important events days, hours, or minutes before they happen. For example, you can enter your mom's birthday, then set the PDA to beep a week before the birthday, giving you plenty of time to find her a good present.

A PDA is like having a computer that fits in the palm of your hand. Once you've entered all your important information, you can easily find anything you've entered using the device's search capabilities. But, unlike a personal computer that can sometimes take up to three minutes to boot up, a PDA can be turned on and accessed instantly. Even better, you can have your PDA interface with your personal computer, which lets you transfer files back and forth or back up critical data.

Do you live in a business-card-swapping world and find that the stack of business cards on your desk takes too long to file and organize? With your PDA, you can beam your paperless business card to other PDAs. The process may seem like magic, but it's actually done with the same infrared technology that a television remote uses to change your TV's channels.

To add even more functionality to PDAs, market leaders offer simple programs that can be downloaded either for free or for a small shareware fee. In addition to calculator software for managing finances and expense report software that exports data to Excel on your PC, there are a variety of challenging games you can download. If you already own a PDA and are looking for a different program that wasn't included with it, your options are virtually limitless. Literally thousands of programs for Palm and Handheld PCs can give your PDA more efficiency or new-found functionality.

All PDAs upload and download information through a process called syncing, short for synchronization.im The process is fairly simple, once you get it set up. Plug a serial or USB cradle into your computer to create a copy of all the information you need on both machines. Palm OS-based devices call the process HotSync; PocketPCs call the same process ActiveSync. By default, the syncing process will back up your datebook, address book, to-do lists, and anything else you want on your PDA or PC.

The syncing process also lets you add thousands of new software programsfrom games to business applications   for more productivity.

Writing on your PDA
Considering the versatility of your PDA, it shouldn't come as a surprise that there are several different ways to enter information. You can type the information into your PC and then download it to your PDA, or you can use a virtual keyboard on the PDA's screen to enter information by tapping the letters with your stylus, the small inkless pen that comes with every PDA. Finally, you can use the handwriting-recognition option, where you write letters onto the PDA screen using the stylus. Handwriting recognition is the easiest solution, but you'll have to learn a slightly modified alphabet that only lets you enter one letter at a time. This may sound a little daunting, but every PDA comes with a program that will get you up to speed in a few short hours.

The two current PDA leaders, Palm and PocketPC, use similar handwriting recognition software for their devices. While both Palm's Graffiti and Microsoft's Transcriber run on the same one-letter-at-a-time method, their lettering schemes are different. A PocketPC may not recognize a Graffiti letter and vice versa. Thankfully, if you're not happy with your PDA's handwriting-recognition software, you can download alternative handwriting software like Jot, Calligrapher, or TealScript.

Palm Inc.'s devices currently command the market with 70 percent of all PDAs sold. Part of Palm's success lies in its simplicity. Unlike with Microsoft's PocketPC OS, you don't pay for features that you may rarely use. The Palm is the easiest way to stay organized, because the models offer an intuitive interface and basic software for a comprehensive price. The other part of Palm's success lies with the wide spectrum of available Palms. There's the no-nonsense, monochrome Palm IIIe (US$149) and the new Palm m100 (US$149) for basic Palm users; the mid-level 8MB Palm IIIxe (US$249) for heavy-duty schedulers; and the Palm IIIc (US$449) for the hard-core Palm addicts. The real surprise is that Palms perform all their functions using only 16 and 20MHz processorspaltry compared to PC processors.

For those looking for smaller devices, the 2MB Palm V (US$299) and 8MB Palm Vx (US$399) feature a rechargeable lithium ion battery and a lightweight metal casing that's compact enough to fit into any pocket. Both units feature the same Palm software you'll find on any unit, so they're compatible with every other Palm device.

Finally, the Palm VII is Palm's first wireless Internet-enabled device. It includes all the basic PDA functions but adds e-mail, a modified light Web browser, and the ability to add programs for Internet banking, stock quotes, and more. Since the system uses cellular phone technology, you'll have to pay for the time you spend online, but if you're an upwardly mobile professional, having your numbers, e-mail, and Internet access in one device may be worth the added expense.

And while Palm was the first maker of Palm devices, Palm OS machines aren't made by Palm exclusively. In the past year, the three original developers who helped make Palm popular left the company, which was purchased by US Robotics and later acquired by networking giant 3Com, to start a new company that licensed the Palm OS for use in a new machine. That company, Handspring, has since released its Visor in two models: the standard Visor with 2MB of memory and the Visor Deluxe with 8MB of memory and a choice of four colors, green, clear, blue, and graphite. Both machines share a fast USB connection to your PC or new Mac along with a Game Boy-like expansion slot. The expansion slot lets users augment the Visor's memory and add applications, digital cameras, digital audio players, and several other expansion cartridges. Although Palms and Visors look drastically different, the two handhelds and their software are completely compatible.

Palm pros:

- Quick access to information
- Thousands of user-developed applications, games, enhancements, and other software programs available
- Requires very little RAM to operate at top speed
- Software is easy to learn

Palm cons:

- Expensive
- Limited options (like plug-in modems and extra cables)
- Models show very little internal change, external look seems to determine cost
- Little overall change from the first Palm machines

Even from its second-place position in the PDA market, Microsoft is a powerful player. Microsoft's latest machines eschew Palm's simplicity; they have added many of the hottest technologies like digital audio playback, eBooks, full-color games, and even video. Their powerful processors start at 70MHz and exceed 200MHz, whereas Palm uses only 16 and 20MHz processors. PocketPCs also come with 16MB of standard memory and top off at around 32MB. Palm OS models range from 1 to 8MB.

The PocketPC environment may take a little longer to learn than the Palm OS, but average Windows users should find the PocketPC surprisingly familiar. In part, the PocketPC's short learning curve owes most of its improvements and enhancements to Microsoft's previous PDA OS failure, Windows CE. Gone are Windows CE's complex interfaces, multistepped procedures to access simple tasks, short battery life, and slower-than-molasses response times. If you're interested in finding Windows CE machines, you can still find them for sale in auctions all over the Web, but we don't recommend them. The new PocketPC OS is a mature yet simple and powerful operating system that bears little resemblance to Windows CE. It is now positioned to be a serious player in the PDA market.

PocketPCs come with the same standard address book, calendar, and to-do lists as Palms, but they also include some very powerful, albeit pocket-sized, versions of Word, Excel, Outlook, Money, and Internet Explorer. The size of the screen may not allow you to view Word documents in their entirety, or see a complete yearly budget in Excel, but with PocketPCs, you do have the option to view any of these file types. Microsoft didn't stop with these standards either; Microsoft Reader and Microsoft Media Player are designed to bring the latest technologies to PDAs.

Reader is Microsoft's attempt at building an electronic alternative to the paper novel. Rather than carrying several books with you, you download books from online bookstores and read them on your PocketPC. Later this year, Microsoft will also release a PC version of Reader that will let you read the latest eBooks on your PC as well. Palms also allow you to read specially formatted eBooks, but you can't read eBooks in the Reader format.

For audiophiles, MediaPlayer is similar to the PC application of the same name. Like with the currently popular digital audio players, you can either download music or encode music from your CD collection into a digital file format. You can then transfer those files to the PocketPC, where you can easily play them through headphones or the PocketPC's minispeaker.

While some PocketPCs can have modems and wireless connection added, none of the current machines come with this capability built in. So if you need Internet connectivity, you're going to have to pay a little more to buy an add-on modem.

Compaq's hot new 32MB, 206MHz processor iPAQ H3650 (US$499) is the fastest consumer PDA ever developed. Besides processing power, the iPAQ comes equipped with a reflective color TFT screen, a great metallic look, and a new lithium polymer battery - for 12 hours of life - and it is only slightly larger than Palm's V series. The iPAQ also has an interesting way to upgrade: Instead of simply adding laptop standard PCMCIA cards to an expansion slot, users buy a special upgrade sleeve that slides over the device.

Hewlett Packard's 16MB Jornada 545 (US$499) shows off its elegant style encased in blue metal. It has an easy-to-hold design and a high-resolution screen.

img src='/artimages/2000/11/24/pda5.jpg' width='116' height='175' align=left>

Casio's 32MB multimedia-friendly Cassiopeia E-115 (US$599) actually plays short movie clips.

One thing to remember: While PocketPCs come equipped with the standard Word, Excel, Internet Explorer, Reader, Money, and Outlook, each company provides varying types of custom software.

Pros:

- Fast processors
- Many features
- Ample application memory
- Headphone jack and digital audio/video playback
- Familiar applications: Word, Excel, Outlook, and Internet Explorer

Cons:

- Expensive when compared to Palms
- Larger physical dimensions than Palm offerings
- Limited software expansion

New technologies and trade-offs go hand in hand; the latest PDAs show off some of the latest enhancements in LCD screen technology. Palm machines with the grayscale display feature, found on every Palm with the exception of the Palm IIIc, offer the greatest contrast and versatility to users indoor or outside, but the display's use is limited to a resolution of 160x160. In the PocketPC camp, only the Compaq Aero 1550 comes with a grayscale screen and a maximum resolution of 240x320. Generally, grayscale screens require far less energy than their color counterparts.

If you're not concerned with battery life and want color, PocketPCs offer several types of color screens compared to Palm's single color device. Here's a quick and easy listing of some of the terminology behind PDA screen technology and what it means to you. If you're happy with the type of screen used on your laptop, the same technologycalled Thin Film Transistor (TFT)is used in the Palm IIIc. Cassio's Cassiopeia E-110 took the TFT technology and produced a better LCD than the Palm IIIC. TFTs work great indoors but are very hard to see outdoors. If you want to use your PDA outdoors, the iPAQ's HR-TFT (high-reflective, thin-film transistor) may not show off as many colors as a TFT, but it is viewable indoors and out. Night owls and indoor users may want to opt for the Jornada, a PocketPC with a slightly dim screened. The Jornada's screen uses an older CSTN (Color Super Twist Neumatic) screen that is good to look at indoors but becomes hard to look at whenever the sun comes out.

To help solve the problem of low-light conditions, PocketPCs come with variable backlighting that allows you to view screens in the darkest of conditions; however, with this option enabled, you can expect your device's battery life to be cut in half.

Monochrome pros:

- Increased battery life
- Easier to see in low- and high-light conditions
- Sharper text

Monochrome cons:

- Hard to see things like gray highlights
- Fewer options for any software with graphics

Color pros:

- Ability to view color pictures
- View and color cues may help users locate information easier
- Short videos look better in color

Color cons:

- Can cut battery charge in half with backlight usage
- More expensive

Many hardware developers view PDAs as a niche item. Because of this, third-party developers have been reluctant to build devices that expand most PDAs. While PocketPC manufacturers have made upgrades relatively easy, Palms OS devices are just starting to catch up.

For example, PocketPCs such as Compaq's Aero, HP's Jornada, and Casio's E-110 feature laptop-like Compact Flash slots that let you plug in some memory and modem devices originally built for laptops. The only downside to the Compact Flash slot is that any device used in it will seriously drain the unit's battery in no time. Apart from CF slots, iPAQ owners can upgrade their machines with expansion packs that slide onto the back of the machine. These expansion packs offer Compact Flash slots, modem functionality, and several other options. And while HP's Jornada looks like a mature luxury car, it offers an interesting upgrade that lets you use an infrared modem to access the Web. The advantage is that you don't have to carry any more wires, and the technology is based on the same method used to change channels on your TV.

Currently, Palm machines are fairly limited in their upgrades and aren't built for any memory expansion. Users of any device from Palm can purchase add-on modems and extra sync cradles, but the most innovative products come from third parties. Some of the most popular devices are a small keyboard that attaches to the bottom of your Palm and a full-color add-on Kodak camera. While current Palm Inc. machines are limited in their upgrades, the company has announced that the next-generation Palms will come with an expandable, postage stamp-sized SD (Secure Digital) slot. Part of Palm's expansion enthusiasm comes from watching Handspring, the company that licenses the Palm OS. Handspring has launched an expandable machine with options for expanding memory or adding peripherals such as cameras, digital audio playback devices, GPS devices, and games that come on special cartridges.

Which battery you choose depends on how much you think you'll use your PDA. All of the PDAs currently on the market use one of two types of batteries: standard AAA batteries or rechargeable batteries. All older Palms up to the Palm IIIe, IIIxe, Palm VII, and Palm VIIx, along with Handspring's Visor, run on two AAA batteries, which usually keep your Palm running for two weeks to four months without a battery change, depending on how much you use your Palm. Both Palm V and Palm IIIc machines use rechargeable lithium ion batteries, which can give you about 12 hours or more of usage.

All PocketPCs come with rechargeable batteries in various sizes and types. PocketPCs need to use proprietary batteries because they have more memory, faster processors, and bigger screens than their Palm counterparts. If a PocketPC relied on regular AAs, they'd have to be replaced every other day. The high-end iPAQ uses an equally high-end lithium polymer battery that has about 12

hours of battery life, while Compaq's lighter Aero uses a conventional lithium ion battery that has about six hours of battery life. Lithium ion batteries also power the rest of the PocketPC machines. While most PDAs don't make battery type optional, Casio's E-110 gives you the choice to replace its lithium ion battery with others in case of extended usage.