Out Behind the Barn
Dans le feu de l'action

Personal digital assistants

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Handheld computers (aka: personal digital assistants, or PDAs) are a practical tool for providing "point of care" medical information and recording patient information, in addition to their basic calendar, address book, and memopad functions. This article reviews some factors to consider before purchase.

Usage

How will you use the PDA? If you just want a basic organizer, an entry level model may be adequate. If you want a medical reference tool, you need a large memory capacity. If you'll use it for data entry, compare models with handwriting recognition to those with a built-in keyboard.

Transport

How will you carry it? In a pocket, on your belt, or in a purse or briefcase? This will help determine the most convenient size and shape of PDA.

Palm OS models

The Palm Operating System (OS) is used on PDAs made by Palm and Sony. Palm brand models have a simple interface: all available programs are located in one main menu. Newer Sony models have a customized interface that takes advantage of their "jog dial" navigation feature, a wheel that allows one-handed scrolling. If you find this interface confusing, it's possible to reset it to match the "classic" Palm OS interface.

Pocket PC models

Pocket PC (aka: Mobile Windows) models are made by Hewlett–Packard, Toshiba, Dell, and Viewsonic. They're more powerful but it may take longer to learn to use all the available features.

They're particularly useful if you want to exchange Microsoft Office files (Word, Excel, PowerPoint) between a desktop and handheld computer.

Software availability

Most major medical software programs are available for both Palm OS and Pocket PC devices.

Display

Most models have a colour display, which is bright and easy to read but uses more battery power than a monochrome display. Colour screens vary in quality, so get a side-by-side comparison if possible. Back-lit screens are easier to view indoors and "trans-reflective" screens are easier to view outdoors. Look for a display that has both.

Processor

Processor speed ranges from 16–400 megahertz (mhz). Most suitable models are in the 100–300 mhz range. A novice may not need the faster processor used on high-end models.

Random access memory

RAM is the main device memory, ranging from 8–64 megabytes (mb) on a Palm OS and 32–64 mb on a Pocket PC. Not all of this memory is available to the user; some is reserved for the OS.

Expansion memory

If you wish to use a PDA as a medical reference tool, purchase one with a slot for a memory expansion card. These cards are sold separately and typically have a capacity of from 32–256 mb. Common formats include Secure Digital, Sony Memory Stick, and Compact Flash (older). Most medical programs can read their data

files directly from the memory card, without first moving the file into RAM.

Battery
Almost all PDAs have a rechargeable Lithium Ion or Lithium Polymer battery, which have important differences from the older nickel–cadmium (Ni-Cad) type. They should be recharged whenever possible. If they are fully discharged, it's possible to damage the battery. A built-in battery is difficult or impossible to replace if it fails, so consider a model with a user-removable battery. You will then be able to switch to a second battery if you use your PDA for prolonged periods and can't recharge it.

Data entry
Most models provide handwriting recognition, where the user draws "print" characters on the PDA display screen, using a stylus (pointer). A few models recognize script handwriting. All models offer a virtual keyboard, where you tap letters, numbers and symbols on an on-screen keyboard display.

Built-in keyboards
A few models have a built-in keyboard. The keys may be small and awkward to use, so try different models. If you do a lot of data entry, consider buying a folding external keyboard. It's also possible to enter text on your desktop computer and then transfer it to the PDA.

Synchronization
All PDAs come with either a cradle or cable for recharging the battery and sharing data between the device and your desktop computer. A cradle is more convenient for connection to a desktop computer, but a cable is more compact for travel.

Infra-red beaming
All PDAs have an infra-red (IR) port for "beaming" information to other devices. This allows you to share data files or "shareware" programs with other PDAs, IR-equipped printers or desktop computers. Most commercial medical software is copy-protected and cannot be transferred to another PDA.

Bluetooth wireless
Some models offer "Bluetooth" wireless to communicate with other Bluetooth-capable devices. Bluetooth has a longer range than infra-red, but may require several set-up steps before communication is possible. I still find it quicker to use infra-red.

Wi-Fi wireless
A few models offer longer-range "Wi-Fi" wireless communication, which allows the PDA to communicate with a wireless base station. This feature is most useful in a "wireless office" or institutional setting.

Cell phone wireless
Some PDAs can communicate with cell phone networks, allowing them to receive email or download information from the Internet. Combination PDA/cell phone devices are improving, but tend to be compromise devices without the full features of either a PDA or a cell phone.

Voice recording
A few models allow you to record short voice messages, which may be more convenient than typing memos. The sound quality is not as good as dedicated digital recorders and is not suitable for prolonged dictation or transfer to speech recognition software.

Cameras
Some models include a digital camera, but usually do not have a built-in flash. Some physicians may find this feature useful for medical purposes, such as following the progress of a rash or other skin condition.

Music
Some models can store and play music files in the MP3 format. This may be useful, but can use precious memory capacity and battery power.

Display protection
It's easy to scratch or damage a PDA's display. If the device doesn't come with a screen cover of some form, be sure to buy a protective case.

Spare stylus
It is also easy to lose the stylus that fits into a special slot on your PDA. Consider buying spares. PDA models change rapidly and you may not be able to purchase the matching stylus if you lose it later.

University of Calgary Medical Information Service (www.ruralnet.ab.ca/medinfo/)
Our "Handheld Computers" page provides a wide range of up-to-date information about handheld computers, including current models, features and prices, reviews of medical software, and links to other sources of PDA information.

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