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Web Summary:

Choosing a PDA?

by Leon A. Enriquez

Reading Time:
5 minutes

Reader Benefit:
♦Understanding the value proposition of PDAs or Personal Digital Assistants;
♦Insights into PDAs and what are the available systems;
♦Selection criteria for a PDA that makes sense to you.

There is no escaping from one phenomenon – handheld devices like PDAs are very popular nowadays. The mental picture that comes to mind about the Personal Digital Assistant revolves around a tablet with a stylus (or pen for hand written input) and a somewhat square-looking display screen.

Your small investment of time spent reading this article will bring you a practical payback – to enrich your knowledge of PDAs, and help you to better decide which PDA will serve you best. Your purchase decision will evolve around three points, namely, performance, battery power, and price.

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There is no escaping from one phenomenon – handheld devices like PDAs are very popular nowadays. The mental picture that comes to mind about the Personal Digital Assistant revolves around a tablet with a stylus (or pen for hand written input) and a somewhat square-looking display screen.

And yet, many are somewhat confused about such handheld devices. There are now more than a dozen brands to choose from. And just how do you make an informed judgement when selecting a PDA that suits your needs?

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Your purchase decision will evolve around three points, namely, performance, battery power, and price. If your needs or applications are compute-intensive, then you need a high-end and high-performance PDA which will cost you a healthy sum. If you just need to maintain your address book and records, then a low-end PDA with a cheaper price tag will do the job.

Just remember one thing: faster speed and more features do not always mean better performance. Here, "better" is decided by how you will use the device. You should explore your options before making your purchase decision.

Frequently Asked Questions

Here are the typical questions that come to mind when choosing a PDA.

What are the choices of PDAs available in the market today?

Today's PDA choices include:

1. PalmOS-based PDAs using the Palm OS (operating system), e.g., Palm, Handspring, other OEMs – with mostly monochrome display screen (and a few with colour);
2. PocketPC devices that use a stripped-down version of Microsoft Windows, e.g., Compaq iPaq, Hewlett-Packard Jornada, other OEMs – with colour display; and
3. Psion handheld units with a smallish keyboard and screen that use an operating system known as EPOC, e.g., Psion 5MX, Diamond, other OEMs – with monochrome screen.

What do all PDAs have in common?
What all PDAs have in common is the ability to store and retrieve thousands of phone numbers, appointments, to-do chores, and notes. All models can exchange, or synchronise information with a desktop or laptop computer.

What are the basic input styles in PDAs?
There are two basic input styles:

1. PDAs that enter information by tapping on a touch-sensitive screen. These touch-screen models include those from Palm, and clones from Handspring and Sony; as well as PocketPC devices from Casio, Compaq, and Hewlett-Packard; and
2. Models that come with small mechanical keyboards. These are EPOC-based PDAs which include units from Psion and Diamond. Hewlett-Packard offers a colour screen model called HP Jornada which has a keyboard as well, but runs on the PocketPC operating system.

What does synchronising a PDA mean?
PDAs are designed to allow information to be exchanged or synchronised with a desktop or laptop computer. To do that, you place the PDA on a cradle or docking station, and then press a button. The cradle is connected directly to your desktop computer via a cable. You can also synchronise with a computer using Infrared technology which does not require a cradle with wiring.

What are the common types of PDAs?
PDAs are differentiated by the operating system (OS) programs that they run on. There are presently three main Oses, namely PalmOS, PocketPC, and EPOC.

PalmOS-based units are the least expensive, and offer simple operation, compact size, and an easy-to-use interface. Palm and clones like Handspring, Sony, etc. offer a wide range of features and expandability. All PalmOS-based PDAs can work with Macintosh computers. Models with a monochrome screen offer excellent to very good battery life.

PocketPCs are easier to use for basic functions but colour comes at a price – short battery life – and the negative impact is the relatively high price compared to Palm PDAs. Note that PocketPCs don't work with the Macintosh platform.

The EPOC-based PDAs models from Psion have innovative designs and offer good performance – and are compatible with the Macintosh environment.

What are PDA processors?
The processor handles or manipulates data so that your device can do work. One of these manipulators is called a cycle. The more cycles in a second, the faster we say the processor runs – this speed measured in megahertz (MHz). One megahertz is one million cycles per second. A PDA with a 300 MHz processor means that every second the processor completes three hundred million cycles. Here you see that the number assigned to a processor as its clock-speed, has to do with how fast it does its job.

A faster processor does not mean better benefits. Note that a faster processor requires more power. That means that the battery life may be shorter. A higher processor speed is something that many users desire, but is not always needed.

What is the criteria for processor selection?
Consider what you would most often use your PDA for. If you want the device to be a planner replacement, then your device will not have to do much processing. Therefore, a faster processor is not really improving productivity, just lowering battery life.

For instance, if you want the PDA to be able to play music, movies, surf the Internet, or play advanced games, then your device will have to process lots of data so it can display that data to you visually and/or audibly. In this case, a faster processor would still drain the battery like in the first case – but it would actually be well utilised to perform the required functions.

Unlike other functions of a PDA, processor specifications cannot always simply be compared between multiple products. If devices run different operating systems like PocketPC, or PalmOS, there could be a variation in speeds because of their different designs. One OS may require a faster processor to run while the other OS can work with a slower chip.

Just remember, increased processor speed will only increase power consumption, and will also increase the overall price of the PDA.

What is memory?
Compared to a desktop or laptop computer, a PDA's memory is used differently. PDAs contain two types of memory. The first is known as RAM (Random Access Memory) – which is "volatile flash memory." That means it requires power to keep its data which is volatile, and it has no moving parts i.e., flash.

The second type of memory is known as ROM (Read-Only Memory) – and unlike RAM, ROM is "non-volatile," meaning that it does not need power to retain the data stored on it. The amount of memory (RAM or ROM) available to the user for storing data is measured in megabytes (MB). A standard floppy disk can hold 1.44MB of data while a CD can hold up to 700MB. Similarly, a PDA with more memory can store more data and is more desirable.

What is RAM used for in a PDA?
RAM is used by a PDA for two things. The first use for RAM is storage – whereas a desktop PC and laptop PC do not use RAM for this. When you save a document or install a new program, storage memory is used. The file or program data is written to the RAM where it can then be accessed again until it is deleted.

The second use for RAM is as program memory. Program memory is not for the storage of software programs as those are stored in storage memory. Program memory is used when programs are run or files are opened. As a user, you have no control over the data in this area as it is constantly changing – unlike storage memory which only changes through actions by you.

What is ROM used for in a PDA?
ROM is used by a PDA for two reasons. The first reason is all PDAs use ROM for the storage of the OS. This means that you will never have to install the operating system. The ROM cannot be erased by the user. This also means that you cannot simply upgrade the OS. Only devices that state they have a Flash ROM (Writeable ROM) can have permanent upgrades offered for them.

The second reason is some PDAs allow ROM to be used for its file storage by the user (Flash ROM). In this case there is unused ROM available and the operating system allows the user to choose files or programs to write to the ROM.

What does expansion mean?
Expandability is becoming an important criteria in a PDA. A user may want to be able to add more memory, or use the latest technology in his PDA. Unlike desktop computers, the internal components like the processor, memory, and other hardware of the device cannot be changed or modified easily or not at all, by the user.

What is an expansion slot?
Expansion slots are the best, easiest, and cheapest way for memory or expansions to be added. The most common expansion slots found on PDAs are Compact Flash (CF), Secure Digital (SD), and Memory Stick. Some devices include multiple, different expansion slots to increase expandability. Different slots feature different size and style expansions. When comparing devices with different types of expansion slots, it is important to consider what you might use the slots for. If you primary expansion would be memory, any type of expansion would be able to support this.

Why is a wireless solution useful in a PDA?
A wireless solution facilitates a PDA getting connected without the need for wiring. There are three wireless solutions available which enable users freedom from tethered wires, and yet access computers, networks, and the Internet.

Though all these wireless solutions can work simultaneously, usually a device can only utilise one or two because of the need for added expansion. To decide which wireless solution works best for your PDA, it's good to look at what wired connection it will replace.

What are the presently available wireless solutions?
There are three wireless solution that you can consider using:

1. *Bluetooth* is a short range wireless solution. Bluetooth is the wireless equivalent of USB (Universal Serial Bus). It is defined as short range because it only operates at less then 30 feet from another device. Bluetooth is commonly used for connectivity directly to a computer (for syncing) or between multiple Bluetooth devices, e,g., a mobile phone. Bluetooth allows for a connection to the Internet only through another device. This means, you must be connecting to a device that is on the Internet. Some devices may include Bluetooth integrated into them, so the need for an expansion card is not necessary.

2. *WiFi* is a mid-range wireless solution. It is defined as mid-range because it only operates at maximum distance of 1200 to1600 feet from another device. WiFi is the wireless equivalent of Ethernet or a local area network (LAN). Like Ethernet, WiFi networks can be setup in a similar fashion or established networks can be accessed. Access points can be deployed onto a wired network directly via a wireless router, or simply connected to a specific machine. WiFi allows for connection to the Internet through an established connection. If the computer the WiFi card is connected to has an Internet connection, the device can also access the Internet.

3. *GSM/GPRS and CDMA* are two long range wireless solutions. Both are based on the same technology used by cell phones. You don't need to set up your own GSM/GPRS or CDMA network – but you pay the cellular service provider for Internet access. In this way, GSM/GPRS and CDMA is the wireless equivalent of cellular data service.

Which wireless solution should I choose and why?
When comparing wireless solutions, it is best to consider what you wish to access with your device. The possible scenarios are:

- If you are looking to access another device, or do local synchronisation of your device, Bluetooth is the optimal solution.
- If you are looking to access a network or many computers, WiFi is the suitable solution.
- If you are looking to have Internet access anywhere you go, GSM/GPRS or CDMA are the best solutions.

Bluetooth and WiFi expansions are usually cheaper then GSM/GPRS and CMDA solutions, and do not incur monthly fees. Unlike GSM/GPRS and CDMDA which are telecoms infrastructures, both Bluetooth and WiFi networks have to be set up, installed, and configured by the user.

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About the Author

Leon A. Enriquez is managing editor and business manager of Editorial Thoughtscapes – a professional writing firm. Leon can be reached at leonenriquez@et-writer.com.

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