Section Two: Further Reading

Personal Computers

In 1981, IBM introduced its IBM PC and it legitimized the personal computer as a business tool. Shortly after that, other manufacturers began making PCs that were 100% compatible with the IBM PC; that is, they basically worked like an IBM PC. Most of today's personal computers (over 80%) evolved from these original PC compatibles. Long removed from the IBM PC, they are also called Wintel PCs because they use the Microsoft Windows 9x/NT/2000 (a collective reference to Microsoft Windows 95, Windows 98, Windows NT, or Windows 2000) control software an Intel-Corporation or Intel-Compatible processor. Each of the Microsoft Windows 9x/NT/2000 family of operating systems controls all hardware and software activities on Wintel PCs.

The Wintel PC represents the dominant PC platform. A platform defines a standard for which software is developed.

Conventional PCs: Pockets, Laptops, Desktops, and Towers
Conventional personal computers have a full keyboard, a monitor, and can function as stand-alone systems. These PCs can be categorized as pocket PCs, laptop PCs, desktop PCs, and tower PCs.

Pocket and Laptop PCs, Pocket PCs and laptop PCs are light (a few ounces to about eight pounds), compact, and are called "portable" because they have batteries and can operate with or without and external power source. The pocket PC, sometimes called a palmtop PC, literally can fit in a coat pocket or a handbag. Laptops, which weigh from three to eight pounds, often are called notebook PCs because they are about the size of a one-inch-thick notebook.

The power of a PC may not be related to its size. A few laptop PCs can run circles around some tower PCs. Some user conveniences, however, must be sacrificed to achieve portability. For instance, input devices, such as keyboards and point-and-draw devices, are given less space in portable PCs and may be more cumbersome to use. This is particularly

true of pocket PCs, in which miniaturized keyboards make data entry and interaction with the computer difficult and slow. The display screen on some pocket PCs is monochrome and may be difficult to read under certain lighting si8tuations. Portable computers take up less space and, therefore, have a smaller capacity for permanent storage of data and programs. Laptop battery life can be as little as a couple of hours for older models to 20 hours for state-of-the-art rechargeable lithium batteries.

The 2-in-1 PC can be used both as a notebook and a desktop PC. It has two parts: a fully functional notebook PC and a docking station. Two-in-one PCs have a configuration that allows users to enjoy the best of both worlds, portability and the expanded features of a desktop. The notebook, which supplies the processor, is simply inserted into or removed from the docking station, depending on the needs of the user. The docking station can be configured to give the docked notebook PC the look and feel of a desktop PC that is the docking station can expand the notebook's capabilities and might include more disk storage, a CD-ROM drive, several interchangeable disk options, a full-size keyboard, a large monitor, and expansion slots into which still other features can be added to the system (for example, circuitry that would enable television programming to be viewed on the PC's monitor). Usually, docking stations provide a direct link to the corporate network.

Another notebook option, called the port replicator, works like the docking station in that the notebook PC is inserted into it and removed as needed. Once inserted the notebook can use the port replicator ports and whatever is connected to them. Ports are electronic interfaces through which devices like the keyboard, monitor, mouse, printer, and so on are connected. Port replicators also provide bigger speakers and an AC power source, and some include a network connector.

Desktop and Tower PCs. Desktop PCs and tower PCs are not considered portable because they rely on an outside power source and are not designed for frequent movement. Typically, the desktop PC's monitor is positioned on top of the processing component. The processing component of the tower PC is designed to sit upright, like a

desktop PC's processing component standing on its end. The taller towers (over two feet) are usually placed beside or under a desk, and the smaller mini-tower may be placed in any convenient location (on a nearby shelf, on the desk, or on the floor).

Of the two, the tower has emerged as the most popular, primarily because it has a smaller footprint (the surface space used by the unit). The laptop which costs about twice that of a comparable tower PC, is gaining ground. About one in three PCs sold are laptops.

The Extended PC Family: Slate PCs, PDAs, and NCs
The conventional members of the PC family have several unconventional cousins. These personal computers may be designed for special applications or for use in a particular computing environment.

Slate Computers. Mobile workers in increasing numbers are using slate PCs. Slate PCs, sometimes called pen-based PCs, use electronic pens in conjunction with a combination monitor/drawing pad instead of keyboards. Users select options, enter data, and draw with the pen. United Parcel Service (UPS) couriers use slate PCs when they ask you to sign for packages on a pressure-sensitive display screen with an electronic stylus.

Slate computers are poised to make an entry into the world of many mobile professionals. Handwritten text is interpreted by handwriting-recognition software, then entered into the system. Speech-recognition software, which allows the user to enter spoken words into the systems, is being integrated into high-end slate PCs. Insurance agents and claims adjusters who need to work at accident or disaster scenes have found slate computers more suitable to their input needs, which may include both text and drawings.

Personal Digital Assistants, Personal digital assistants (PDAs), or handheld PCs, may take on many forms and are called by many names, from connected organizers to personal communicators to mobile business centers to Web phones. PDAs are smaller than slate PCs, usually weighing less than half a pound. They can include a built-in

cellular phone that enables the wireless sending/receiving of faxes and access to Internet (including e-mail). Their built-in wireless communications capabilities give their users immediate access to the Internet, colleagues and clients, and needed information, virtually anytime, anywhere. PDA interaction can be via the pen (like a slate PC) or by touching the keys on an on-screen keyboard or a reduced-key keyboard.

Generally, PDAs support a variety of personal information management systems. A PIM might include appointment scheduling and calendar, e-mail, fax, phone-number administration, to-do lists, tickler files, 'Post-it' notes, diaries, and so on. Some PDAs can support a variety of PC-type applications, such as spreadsheets and personal financial management. Also, PDAs are designed to be easily connected to other computers and printers for data transfer, network access, and printing.

Network Computers. In contrast to the conventional PC, the network computer, or NC, is designed to function only when it is linked to a server computer (normally an organization's internal network of computers). The NC looks similar to a PC but with several major configuration differences. First, it has a relatively small processor and considerably less RAM than modern personal computers, Second, it does not have a permanently installed disk. And, of course, it is less expensive than a stand-alone PC.

Workstations: The Hot Rods of Computing

What looks like a PC but isn't? it's a workstation and it's very fast. Speed is one of the characteristics that distinguishes workstations from PCs. In fact, some people talk of workstations as 'Souped-up' PCs. The PC was fine for word processing, spreadsheets, and games, but for real 'power users' - engineers doing computer-aided design, or CAD (using the computer in design process), scientists and researchers who do a lot of 'number crunching', graphics designers, multimedia content developers, and so on-the PC sometimes falls short.

The workstation's input/output devices also set it apart from a PC. A typical workstation will sport a large-screen color monitor capable of displaying high-resolution graphics. Resolution refers to the clarity of the image on the monitor's display. For pointing and drawing, the workstation user can call on a variety of specialized point-and-draw devices that combine the precision of a gun sight with the convenience of a mouse. Add-on keypads can expand the number of specialized function keys available to the user.