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tor that can be turned on or off — to signify 1 or 0 — and that can be identified by its unique "address" in the wire grid, much like a house in a suburban subdivision. Each digit, letter, or punctuation mark is represented by 1's or 0's stored in eight-cell strings. (See ASCII.) The word "chip" takes up 32 cells in a memory chip. Most PCs sold today have at least eight one-megabit DRAMs.

It's the job of the logic chips to turn those transistors in the DRAMs on or off, and to retrieve and manipulate that information once it's stored. The most important and complex logic chips are microprocessors like Intel's 80386DX, the brains of the more powerful IBM-compatible PCs sold today. If the structure of a memory chip is a suburban subdivision, the layout of a microprocessor is more like an entire metropolitan area, with distinct neighborhoods devoted to different activities. A typical microprocessor contains among other things:

- A timing system that synchronizes the flow of information to and from memory and throughout the rest of the chip.
- An address directory that keeps track of where data and program instructions are stored in the DRAMs.
- An arithmetic logic unit with all the circuits needed to crunch numbers.
- On-board instructions that control the sequence of microprocessor operations.

Other logic chips in a computer take their cues from the microprocessor millions of times each second to draw images on the screen, to feed instructions from a spreadsheet program, say, out of the disk drives into DRAMs, or to dispatch data to a modem or a printer. Perhaps most amazing of all, memory and logic chips can accomplish all this with just a trickle of electricity — far less than it takes to light a flashlight bulb.

Ted Hoff at Intel invented the microprocessor in 1971. See also 1971 in the beginning of this dictionary.

Microprocessor Controls A control system that uses computer logic to operate and monitor an air conditioning system. Microprocessor controls are commonly used on modern precision air conditioning systems to maintain precise control of temperature and humidity and to monitor the unit's operation.

Microsatellites Unlike traditional satellites, which can weigh tons, microsatellites are the size of a suitcase and weigh about 220 lbs. Since it costs "a bar of gold to launch a can of Coke," according to the New York Times, lightweight microsatellites will be much cheaper to launch than their obese precursors. The U.S. military's goal is to send microsatellites into space in flocks. In this cluster, they would be reprogrammable, able to switch to new tasks when the Pentagon required it.

Microsecond One millionth of a second. A microsecond is ten to the minus six. One microsecond — a millionth of a second — is the duration of the light from a camera's electronic flash. Light that short freezes motion, making a pitched ball or a bullet appear stationary. See Atto, Nanosecond, Femto and Pico.

Microsegmenting The process of configuring Ethernet and other LANs with a single workstation per segment. The objective is to remove contention from Ethernet segments. With each segment having access to a full 10 Mbps of Ethernet bandwidth, users can do things involving significant bandwidth, such as imaging, video and multimedia.

Microsegmentation Division of a network into smaller segments, usually with the intention of increasing aggregate bandwidth to devices.

Microslot The time between two consecutive busy/idle flags (60 bits, or 3.125 milliseconds at 19.2 kbps). It is used in CDPD only. A cellular radio term.

Microsoft Founded in 1975 by Bill Gates and Paul Allen as Micro-soft (now called Microsoft) it is (or was at the time of writing this edition of this dictionary) one of the largest software companies in the world. See the next few definitions.

Microsoft At Work A new architecture announced by Microsoft on June 9, 1993 and then put into retirement a couple of years later. Many of its features and ideas surfaced in Windows 95. It consisted of a set of software building blocks that will sit in both office machines and PC products, including:

- Desktop and network-connected printers.
- Digital monochrome and color copiers.
- Telephones and voice messaging systems.
- Fax machines and PC fax products.
- Handheld systems.
- Hybrid combinations of the above.

According to Microsoft, the Microsoft At Work architecture focuses on creating digital connections between machines (i.e. the ones above) to allow information to flow freely throughout the workplace. The Microsoft At Work software architecture consists of several technology components that serve as building blocks to enable these connections. Only one

of the components, desktop software, will reside on PCs. The rest will be incorporated by other types of office devices (the ones above), making these products easier to use together with one another and compatible with Microsoft Windows-based PCs. The elements, according to Microsoft, are:

- Microsoft At Work operating system. A real-time, preemptive, multi tasking operating system that is designed to specifically address the requirements of the automation and communication industries. The new operating system supports Windows compatible application programming interfaces (APIs) where appropriate for the device.
- Microsoft At Work communications. Will provide the connectivity between Microsoft At Work-based devices and PCs. It will support the secure transmission of digital documents, and it is compatible with the Windows Messaging API and the Windows Telephony API of the Windows Open Services Architecture (WOSA).
- Microsoft At Work rendering. Will make the transmission of digital documents, including formatting and fonts intact, very fast and, consequently, cost-effective, while ensuring that a document sent to any of these devices will produce high-quality output referred to as "What You Print Is What You Fax Is What You Copy Is What You See."
- Microsoft At Work graphical user interface. Will make all devices very easy to use and will make sophisticated features accessible; will provide useful feedback to users. Leveraging Microsoft's experience in the Windows user interface, Microsoft At Work-based products will use very simple graphical user interfaces designed for people who are not computer users.
- Microsoft At Work desktop software for Windows-based PCs. Will provide Windows-based PC applications the ability to control, access and exchange information with any product based on Microsoft At Work. Desktop software is the one piece of the Microsoft At Work architecture that will reside on PCs.

See also Fax At Work, Voice Server, Windows, Windows CE, Windows 95, Windows Telephony and WOSA.

Microsoft Exchange A family of products that offers enterprise computing and information sharing. According to the Windows 95 Resource Kit, Windows 95 includes the Microsoft Exchange client, an advanced messaging application that retrieves messages from one inbox from many kinds of messaging service providers, including Microsoft Mail, the Microsoft Network and Microsoft Fax. Its integration with Microsoft Fax software allows you to send rich-text documents as faxes or mail messages. With Microsoft Exchange you can do the following:

- Send or receive electronic mail in a Win 95 workgroup.
- Include files and objects created in other applications as part of messages.
- Use multiple fonts, font sizes and colors, and text alignments in messages.
- Create a Personal Address Book or use address books from multiple messaging providers.
- Create folders for storing related messages, files, and other items.
- Organize and sort messages in a variety of ways.
- Send and receive messages to and from the following service providers: Microsoft Mail, the Microsoft Network (online service), Microsoft Fax and other messaging services that use MAPI service providers.

Microsoft Fax I plucked the following explanation from the Windows 95 Resource Development Kit: With Microsoft Fax, users with modems can exchange files and documents as easily as printing a document or sending an electronic mail message. Microsoft Fax is compatible with the millions of traditional Group 3 fax machines worldwide and provides advanced security and binary file transfer (BFT) features that make communication by means of a fax easier and more powerful. To use Microsoft Fax you need Microsoft Exchange. Microsoft Fax has been integrated into Microsoft Exchange and uses the Messaging Application Programming Interface (MAPI) service provider. All messages sent to Microsoft Fax are received in the Microsoft Exchange universal inbox. You can send Microsoft Fax messages by composing a Microsoft Exchange message, or by using the Send option in the menu of a MAPI-compatible application (such as Microsoft Excel or Microsoft Word).

Microsoft Solution Provider This is Microsoft's definition of Solution Providers. Solution Providers are independent organizations that have learned and mastered the technology to solve business problems for companies of all sizes and industries. The Microsoft Solutions Platform of products as building blocks and other services, such as integration, consulting, software customization, hardware and applications and technical training and support. All Solution Providers have a Microsoft

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