

## MODERN TOOLS FOR MODERN MANAGEMENT -- COMPUTERS

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Ever since its development 20 years ago, the computer has been given the public image of the "giant brain", a collection of blinking lights, row upon row of intricate electronic circuitry, rattling high-speed printers - a giant hostile to the layman, too technical for him to understand, and too powerful for him to control. The modern manager, however, must be willing to see beyond this misleading image, and to recognize that the computer is simply another tool for him to work with, a versatile one but a tool none the less.

The Recording and Storing of Data

The electronic computer is a processor of data. Its raw material is the recording of an event or a transaction, which may take the form of a written report, a record, a chart, or a graph. If the volume of data is small, we can deal manually or by business machines with this original or "source data", as it is called. But when large-scale operations have to be performed, electronic means of processing are indispensable. To process data electronically, the numbers or characters in which source data are recorded are converted to a sequence of signals which are either "on" or "off", analogous to the on-off state of a light bulb. Numbers or characters which have been recorded in this binary or two-state notation can be transferred from one device to another rapidly, and can be stored economically.

How a Computer Works

Consider the five recognizable parts into which any computer can be divided:

1. The "memory" of a computer is a collection of devices in which numbers or alphabetic characters can be stored. The characters are converted to binary numbers, and stored each in its own location or cell in such a way that they can be retrieved as required. Usually a computer can store several thousand characters in its main memory. To augment this main memory, cheaper but larger memories are provided on reels of magnetic tape or on magnetic disks. Such tapes and disks can hold millions of characters of information. The important fact about all of these memories is that information, once recorded, can be held forever and can always be retrieved when needed. If so desired, the old contents can be replaced by new data in a fraction of a second.