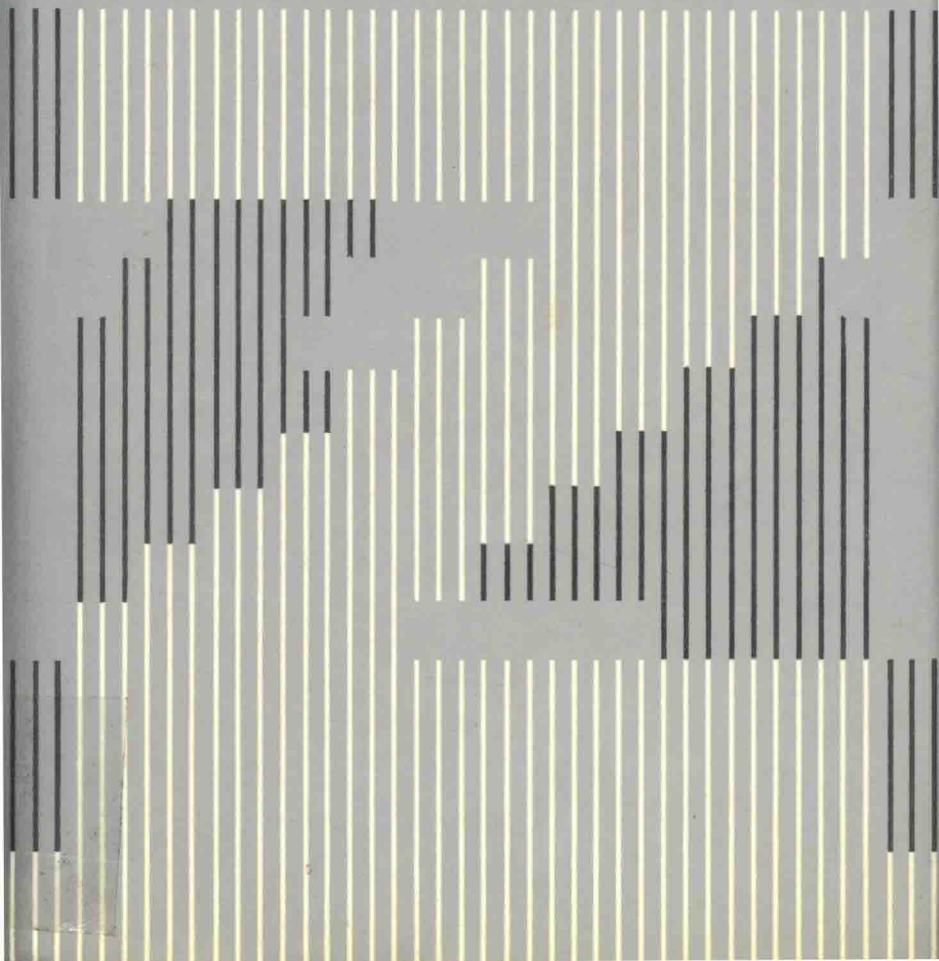
dictionary of COMPUTING AND NEW INFORMATION TECHNOLOGY

A.J.Meadows M.Gordon A.Singleton



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DICTIONARY OF COMPUTING AND NEW INFORMATION TECHNOLOGY

Introduction to First Edition

Information technology, as a general term, was introduced only recently, but forms of information technology – for example, the telephone – have been familiar for years. What distinguishes new information technology from the older types is the way it combines a variety of communication channels with the information-handling capabilities of computers. New (mainly electronic) methods for dealing with the generation, transmission and reception of information are proliferating rapidly. At the same time, methods of communication which have traditionally progressed separately (for example, telephone and television) are now being drawn together. The rate of development is such that even active participants in the communication system find it hard to keep up with progress outside their own particular sphere. Members of the general public are often, quite naturally, totally confused by what is happening. By way of introduction to this dictionary, it is therefore worthwhile describing briefly some of the techniques that are involved in new information technology. This should also serve to give some indication of the dictionary's intended scope. (Italicized words indicate that the term is discussed, usually at some length, in the body of the dictionary.)

We can start with *computers*, since these represent one of the basic elements of the new technology. Reasonably powerful computers have been decreasing rapidly both in size and cost over the past decade. With the advent of the *microprocessor*, computers have been developed which can sit on a desk top, where they can be used for generating and transmitting information. A typical example of this use is in handling the vast quantities of text generated in the modern world. Specialized computers (called *word processors*) that can automatically produce a range of letters and documents are beginning to revolutionize office work. They are spreading into every field – for example, publishing – that involves the generation and handling of text. The *output* from such computers can be produced as traditional print-on-paper; but, since the computer holds the material in electronic form, it can be transmitted with equal ease through other communication channels, eg a telephone *network*, to a distant receiver. A letter can thus by-pass the traditional mail system, to be delivered by *electronic mail*.

This is just one example of information handling with the new technology. Methods both for the *input* of information to, and the output of information from a system are diversifying at a bewildering speed. Most information is still converted to electronic form via a *keyboard*, as with a typewriter. But it is already possible to talk to a computer, and for some speech to be accepted directly (*voice input*). It is confidently expected that current limitations, eg in the computer's vocabulary, will at least partly disappear during the 1980s.

At the output stage, computerized systems can deal with so much information that new methods must be found for storing it all. The development of the *videodisc* may make it possible to store a small library on a few discs, each the size of a gramophone record, within the next few years. Videodiscs will be viewable via ordinary television screens, and TV may provide the normal basis for finding and using information in the

home. It is already possible to track down factual information via a television set using *videotex*. The next step is to employ the system in various other types of transaction. For example, mail order catalogues can be put on television, goods ordered and the money paid from a bank account, all while the viewer is sitting at home.

Just as methods of handling information are becoming more diverse, so, too, are the methods of transmitting it. One of the most spectacular advances in communications during the past two decades has been the growth in the transmission of messages via Earth satellites. *Satellite communication* is now about to make a major impact on the transmission of television programmes, and so on the home viewer. But it is equally significant for the part it can play in the world-wide transmission of very large quantities of *data* of any kind.

Some of the more complex developments in electronic communication still require large (mainframe) computers. For example, translation from one language to another (computer translation) is still only moderately advanced, even with powerful machines. Computers that try to duplicate the problem-solving capabilities of human beings (*expert systems*) are likewise at an early (but already useful) stage.

This short account of new information technology is far from comprehensive, but should serve to illustrate its diversity. Almost inevitably, the rapid changes within the field lead to a rapidly changing vocabulary. Confusion results: not only because the new terms may not be easy for all participants to understand, but also because the same term may be used in more than one way. A major purpose of this dictionary is to help dispel such confusion by bringing together and codifying the most important specialized terms currently in use in the various parts of this diverse field.

The diffuseness of the subject matter has made decisions on which items to include and which to exclude particularly difficult. Basic computer technology has been limited to the minimum required for an understanding of most information technology. Terms with a restricted application (such as most manufacturers' brand names) have generally been excluded. Since the emphasis is on information, techniques which are mainly used for entertainment receive less emphasis. For example, 'videotape' is treated for the purposes of this dictionary as less important than 'videodisc'. The main criterion has been that the term should be likely to have a reasonably wide usage for a reasonable period of time.

So far as our intended audience is concerned, it would be true to say that this dictionary is intended for the non-specialist, but it would not be very helpful. Few people would consider the whole of new information technology as their specialism. Rather there are computer specialists whose acquaintance with information terminology may be limited, librarians who may be uncertain of the meanings of some computer-related terms, publishers who may need to learn the jargon of new methods of information handling, and so on. Hence, the contents of this dictionary not only are aimed at non-specialists (that is, at readers with an interest in the

field, but with no expertise in any of its branches); they are also designed to aid the various specialist groups whose concerns overlap in the field of new information technology.

Our selection of the words included in this dictionary stems mainly from our own acquisition and vending of periodicals and advertising literature in the field. We hope that, if nothing more, it will help the unfortunate reader through some of the flood of jargon these contain. To give some coherence to the field, a few topics are treated at greater length than the remainder. Such longer entries are intended to act as foci for particular parts of the field: cross-references from and to them allow more specialized entries to be placed in their appropriate context.

Equally, a reader who works through the longer entries should gain a good overall picture of the present state of the art ... Graphics have been introduced whenever it seems necessary to enhance the verbal descriptions.

A few words should be said in conclusion about the use of this dictionary. An italicized word in any entry means that there is a cross-reference to that word: it can therefore be looked up if you feel unsure as to its meaning. Some words, eg 'computer', have entries in the dictionary, but occur so frequently that they are only italicized in special circumstances. Many words can occur in different forms, eg as a noun or a verb. Only one form is normally given in this dictionary; so it is advisable to check under different headings. Several terms have variant meanings: these are distinguished in their respective entries by separate numbers. If there is likely to be any ambiguity of meaning, cross-references include the relevant entry number. As a general rule, acronyms have been printed in block capitals.

Introduction to Second Edition

The original version of this dictionary included computing terms only where these were very commonly used in information technology. This present edition introduces several hundred additional terms, particularly in the area of computing, with the intention of making the dictionary as self-standing as possible. The change in coverage has been matched by a modification in the title of the book. It should now be possible for a user to follow most discussions involving computer jargon, as well as those concerned with information technology, from this dictionary alone. We have also taken the opportunity to modify and extend some of our original definitions and to introduce new terms in information technology. These have proved necessary because of the extremely rapid changes in terminology which are occurring throughout the field.

My colleagues and I would like to express our thanks to Arthur Phillips, Dave Adams and Kate Waters for their help in compiling this dictionary. We would greatly appreciate comments from users of this dictionary on any problems they encounter.

Jack Meadows, *University of Leicester*

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