

# **The Managerial Challenge of New Office Technology**

**Editors:**

**Harry J. Otway**

**Malcolm Peltu**

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A publication from the INSIS (Inter-institutional Integrated  
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## Foreword

It is now generally accepted that information technologies will be a major source of economic growth and social development into the next century. In order to ensure that the technology can be of maximum benefit, the Council, Member State governments and the Commission of the European Communities (CEC) are committed to a strategy for the 'information age' that blends social, political, economic and industrial goals. An important part of this commitment is the Inter-institutional iNtegrated Services Information Systems, known as INSIS. Its main objectives are to accelerate the implementation of advanced information systems within the EEC and to stimulate the growth of European information technology and information industries. Within this programme, co-ordinated projects are being initiated to introduce advanced office technology and communications services into public institutions and representative bodies from the EEC and its Member States.

When introducing new technology, there is always a temptation to try to gain the potential benefits as quickly as possible. The experience of many users of computer-based systems clearly indicates that the benefits will not materialize unless adequate attention is paid to the broad impact of new systems on all aspects of the user environment. Managers hold the key to success: they must know what the technology can and cannot do, be sensitive to the needs of users when guiding the implementation of new systems and, especially, be prepared to become users themselves if the full potential of the technology is to be realized.

The Commission and the INSIS management see this book as another step in the elaboration of an approach that will allow major changes in the way people work and live to proceed smoothly and effectively. We are pleased that such distinguished contributors agreed to work closely with Dr Otway and Mr Peltu to produce this timely book.

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and Chairman, INSIS  
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We are indebted to the INSIS management for having had the foresight to support the preparation of this book. We are also grateful to many of our colleagues in the Commission who helped in various ways, but especially to Ria Volcan, Edith Steffgen, Joep van der Veer and Edward Phillips.

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## The Editors

Harry J. Otway and Malcolm Peltu have also co-edited *New Office Technology: Human and Organizational Aspects*. Frances Pinter, London; Ablex, Norwood, N.J. (1983), as part of the INSIS programme (see Foreword).

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# **The Challenge of New, Managerial Roles**

*Harry J. Otway and Malcolm Peltu*

## **Introduction**

News of an impending reorganization heralds the start of an agonizing period of uncertainty in organizational life. There is a pervasive fear of the unknown: some managers will emerge as winners, others will be losers; power balances will change; long standing work relationships may be disrupted, new communications channels will open, others will close; the context of jobs and work practices will be different. New office technology implicitly brings with it these kinds of far reaching changes, which create a unique challenge to management to participate actively in guiding such potentially revolutionary changes in a constructive way, rather than passively accepting them as occurrences beyond their control.

This chapter explains why the challenges posed by computer-based office systems require that managers must master a number of new and unfamiliar roles. There is a discussion of the nature of management responsibilities for the selection, design, introduction and supervision of new systems, and for their resultant widespread personal and organizational impacts. The subjects and themes developed in the remainder of the book are introduced and the contents of each chapter are summarized.

## **Management and organizational change**

Not only must managers handle the introduction of new office technology, but they must also cope with the fact that the systems affect a different group of people than previous technologies which have automated jobs. This time, managerial staff, including the most senior levels, are being displaced and having to adjust to new ways of working.

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In a survey of middle managers in 1200 major companies in the USA, 85 per cent of respondents reported that computer-based information is essential to their work and that computer access was increasing the number and variety of the responsibilities they could handle'. At about 500 of these companies, middle management had been reduced. Some of this was due to general economic and market conditions, but 41 per cent believed that 'the continued integration of the computer into managerial operations is likely to lead to further consolidations of departments and functions'. Many organizations cannot operate for long without computers. According to a study at the University of Minnesota, modern banks could survive for no more than two days without their computers, distribution industries for about three days, and insurance companies for less than six days.

The importance of computer-based systems in today's world cannot be denied. There have, however, been many other technological developments in the twentieth century that have also led to radical changes in working methods. Techniques for production automation pioneered by Henry Ford in 1914, for example, revolutionized manufacturing. Computers themselves are not new. They were first used extensively in the 1960s. So, why should new office technology be any different? Are the challenges posed by these new systems really more significant than innovations that have already been assimilated?

### The unprecedented challenge

New office technology cannot be regarded as just another step in a long history of technological automation of work. It represents a giant stride, with radical implications for managers, both for their personal development and for the changes it will cause in how organizations function. There is something special about this innovation for the following reasons.

- (1) *This is a potential source of exceptional and unaccustomed stress.* In the past, managers have planned and implemented technological developments that have generally changed, or eliminated, other people's jobs. With new office technology, managers must still do this but, at the same time, they must cope with impacts on their own jobs which may be threatening to their current status, skills and career development.
- (2) *Change is taking place in many activities at the same time.* New office systems are an integral part of other computer-

based technologies which can affect virtually every aspect of an organization's operations. Previous workplace developments in new technologies have tended to have an impact on one prime activity, such as the way factory automation altered production processes, but not on how people communicated with each other. An integrated computer system, however, can be used in factory automation and general organizational communications systems, as well as many other activities

- (3) *Organization structures and work procedures are also in a state of flux.* New office technology means a change of organizations, not just a change in organizations. It leads to new allocations of managerial responsibilities, new departmental structures, new communications methods, new job practices; in short, to new ways of working.
- (4) *Improving management productivity is a prime target.* New office technology was first aimed at improving the efficiency of typing and clerical tasks. In most organizations, however, managers and professionals represent the major (60-75 per cent) and fastest growing sector of office personnel costs. Computer-based technology has evolved to the point that it can be applied to management activities that were previously thought to be untouchable by technology, such as policy formulation and decision making. The drive to cut management costs provides impetus to make quick and radical changes to management jobs, further increasing the likelihood of management stress.
- (5) *Automation is alien to the traditions of office work.* The traditions in white collar office work are very different to those that have prevailed in manufacturing work. Office staff are accustomed to working in a relatively informal environment, with a great deal of discretion in how and when they work, even for the more routine clerical jobs. Office and management work has rarely been subject to the kinds of detailed prestructuring, monitoring and measurement that have been common on production lines, where the concepts and techniques of automation were developed. If these are applied unthinkingly to office work as office automation, rather than computer-assisted office work, staff motivation and work effectiveness will deteriorate, even though there may seem to be gains in the short term.
- (6) *Computers are being applied directly to everyday life on a massive scale.* Early, large computers were used mainly for

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routine information processing on high volumes of data, such as in handling accounts and producing customer bills. They were important to many organizations but were directly used by few people and generally led to slow changes in working procedures. Microelectronics have brought computing capabilities to the fingertips of people in most work functions and ~~into the home~~. This has implications throughout society. For ~~example, a bank's~~ customer can obtain cash and make ~~account enquiries~~ directly from a computer-based device outside the ~~bank~~, reducing the need for many clerical and management staff, providing economic benefits to the bank and ~~increasing~~ the convenience to customers. It is also possible for more work to be carried out from home via computer networks. The technology is therefore crossing boundaries between what had been relatively clear demarcations between working and social activities.

- (7) *There is little experience to fall back on.* The broad scope and rapid pace of innovation that characterizes computer-based developments mean that new territory is being pioneered continuously. As yet, there is very little experience over a long period to determine exactly how office work will change. Previous implementations of computer systems provide the most relevant guidelines, but took place in a period of greater stability, in different kinds of activities, and used technologies quite different to current systems

#### How to cope successfully

When the INSIS programme (see Foreword) first started investigating the human and organizational aspect of new office technology, the first task was to identify the nature and extent of these impacts and what was known about them. This work resulted in a book which summarizes the current state of knowledge in these areas<sup>2</sup>. During its preparation, it became evident that a new issue was emerging which demanded special attention: the challenge to management.

One problem is that the variety of aspects involved have been treated by specialists within the framework of their distinct disciplines. There is a considerable body of analysis and experience of management techniques needed to handle organizational change, staff motivation, effective job design, and so on. There is also much work which described the capabilities of computer-based technologies, how they work and the types of task to which

they can be applied. Management specialists, however, have seldom examined the implications of computer-based systems in detail, while computing experts have rarely looked beyond their own technological horizons.

The work summarized in this book was therefore initiated to bring together both management and technical specialists to explore the key challenges facing managers and to suggest how to deal successfully with these important developments.

## New management roles

Management must play a number of roles in relation to new office technology. Some of these are extensions to existing responsibilities, others are completely new. Many different roles may have to be played simultaneously. The main ones are:

- (1) Developing a strategic plan to set, ~~control~~ and co-ordinate long-term plans.
- (2) Making detailed decisions about where, when, how and what new systems are to be installed.
- (3) Managing organizational changes induced by new office technology especially where many of the changes may emerge only as experience is gained in using systems and in negotiating necessary accommodations to resolve conflicting requirements.
- (4) Using technology in management jobs, leading to new work procedures and job responsibilities.
- (5) Guiding the implementation, operation and continuing development of computer-based information resources, which requires careful handling of the frequent human and technical adjustments that must be made.

## Power and information technology

To some extent, all management is about the power to define agendas, set organizational goals and, thus, to define implicitly what information is valued. Access to information can be an important element in strengthening and extending control by individuals and groups. This is true not only because the control of information is a form of power, but also in the subtler sense that information which is supportive and meaningful to one viewpoint may not be to another. Computer-based information technology, including new office systems, therefore cannot be regarded as

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neutral in practical terms, because it is always applied within contexts where it can reinforce or weaken established influences. Thus, the management of new office technology must be viewed in the context of the overall power relationships within an organization.

This book makes no assumptions about any particular organizational structure or management style, recognizing that decision-making processes vary widely. In some organizations, individual managers, other than the most senior, may have relatively little discretion in choosing or shaping new information systems. In a more open, consensus-oriented organization, all levels of management and staff may participate fully in reaching decisions. Whatever the organizational set up, the new management roles discussed in this and subsequent chapters will have to be performed in the manner most suited to individual circumstances.

### Choosing the route and the signposts

New office technology provides a myriad of options. The prime management tasks are to choose the main directions in which the technology is to travel, its objectives, and when particular journeys are to start. Then, equally important, the manager must specify what criteria are to be used in judging the success of innovations.

Managers often have to decide new courses of action and judge performance according to a variety of indicators. The particular difficulties posed by computer-based systems are the complex set of reactions they trigger throughout the organization, coupled with the unfamiliarity of many managers with the technology itself. As a reaction to complexity, many managers fall back onto simple statements of quantified objectives, which wrongly forces the process of computerization into narrow and short-term perspectives. This will be more pronounced, causing more difficulties, if technical specialists are left to get on with their own design of a system whose implications fall outside their specialized fields of competence. The net result can be systems designed to satisfy technical ambitions and capabilities, rather than human and organizational needs.

The variety of issues involved, and their dependence on specific local circumstances, means that there can be no foolproof management recipe for success. There are, however, some general principles that managers should use in guiding office technology into what is, for the organization and the individuals in it,

uncharted territory. First of all, you must have some idea of where you are going. This seems to be an obvious statement, but many organizations enter into new computer-based systems 'because they are there' and without any real idea of what they want to achieve with them. Once the route is mapped, skill and experience are needed to steer systems in the right direction and to overcome problems that arise, such as the repair and maintenance of systems. Management must therefore take seriously the need to receive adequate education and training in the nature, uses, and consequences of the technology. In order to direct office technology developments effectively, it is crucial that management explicitly considers all relevant performance criteria: organizational, social, personal, economic (long term and short term) and technical. Monitoring a system in terms of only technical and short-term economic factors is like driving a car by looking only at the numbers on devices indicating speed and distance while ignoring fuel indicators, the engine temperature, the state of the roads, and so on.

### **Planning for new systems**

Management must be involved directly in planning the details of new systems, monitoring progress, making adjustments, and generally keeping in charge of developments. This responsibility follows on from the establishment of general objectives in the first phase. It must also encompass a broad range of skills and activities, searching beyond the most immediate and obvious aspects to explore the deeper implications for how the organization really functions. This is a task which can take considerable time and effort.

If management fails to carry out this phase effectively, the system will become unbalanced. It will follow the course determined by particular technological developments, or by the group that has most influence on the design, which may not reflect broader organizational priorities. The very nature of computer technology makes it biased towards particular kinds of tasks which can be measured, thus it can create a spurious aura of rationality and objectivity about its results.

Computer-based systems have a considerable degree of flexibility and adaptability. Once they have been established, however, making fundamental changes can be costly and time consuming. It is therefore important that the main requirements are built into the system from its earliest planning phases.