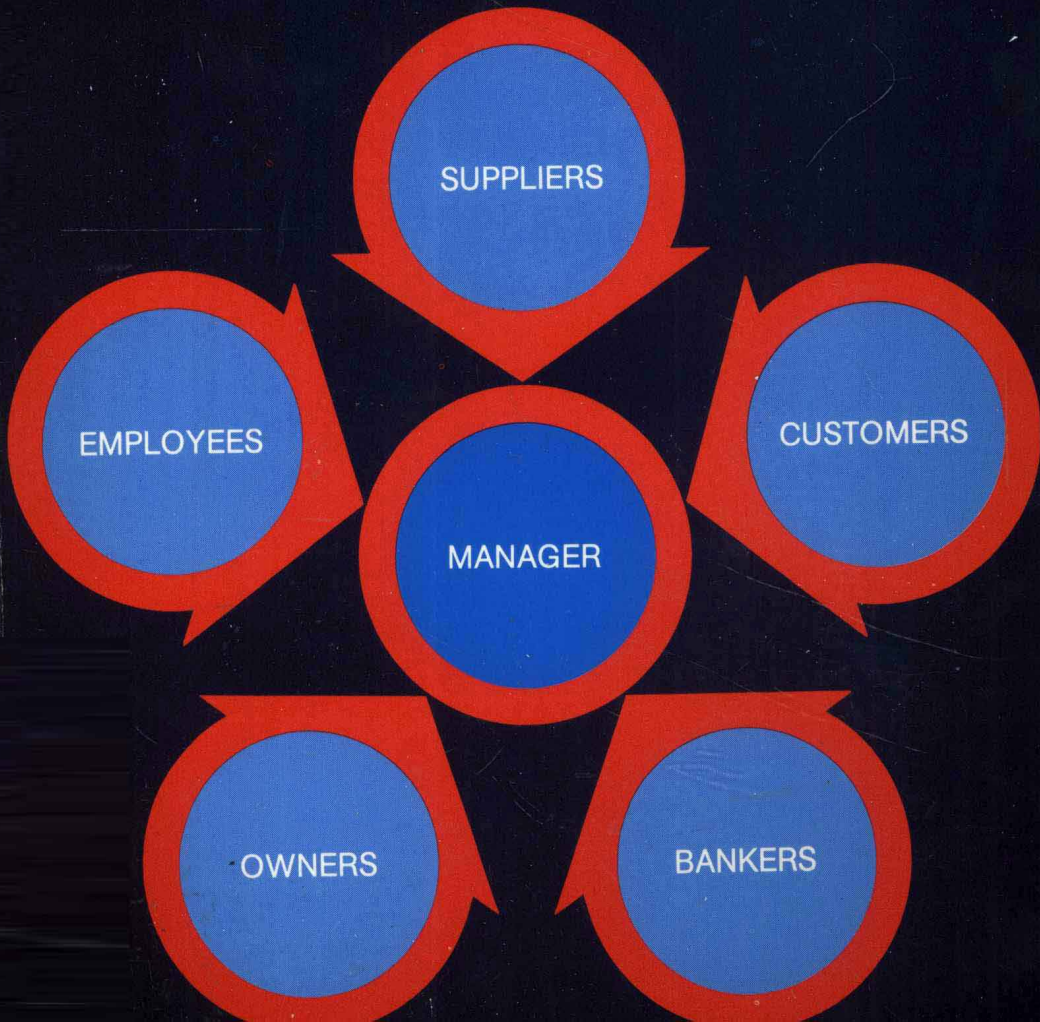


# Managing Industrial Organizations

Brian C Twiss and Theodore D Weinshall



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# Preface

Eight years ago we met on the Brittany coast of France to finish our previous book, *Organisational Problems in European Manufacture*. That was a two-volume book of texts and cases. We have now joined forces again in the preparation of this new text book.

The books of text and cases were basically intended to help industrial managers to run their organizations and, primarily, to manage the manufacturing side of the business. We have felt all along that managers in industry could be served by a book which would help them manage, rather than only teach specific production management techniques. We therefore offer the reader in the eleven chapters of this book, new ways of understanding, analysing and managing the organizational situations he confronts.

In the present book we updated the textual material of our previous joint work. We have specially brought in new problem areas and possible solutions to the dynamic changes which are coming over industry all over the world in this last quarter of the twentieth century and towards the third millennium, following the year 2000. The new issues with which we deal include: the effects of advanced technology on employment (and how to avoid unemployment), the participation of workers in organization and management (which types of participation work and which do not), the process of innovations (how to help organizations keep up with technology), the need to distinguish between different types of planning and control (and where and when to use them), outside help to organizations (in what, and how, consultants could help managers), as well as distinguishing between experts and consultants, and various other issues.

This time we finished our book at our respective universities. Our thanks are extended to all those at the Universities of Bradford and Tel Aviv who gave us so much help.

But for the encouragement and patience of our wives, Pamela Twiss and Yonna Weinshall, this book would not have been possible.

Ilkley, Yorkshire  
Mount Carmel, Haifa  
Summer 1979

B.C.T. and T.D.W.

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# List of abbreviations

CE	Chief executive
DM	Decision making
DMP	Decision-making process
FDM	Factors of decision making
IBM	International business machines
MBO	Management by objectives
MS	Managerial structure
NC	Numerically controlled
OB	Organizational behaviour
OR	Operations (operational) research
R & D	Research and development
SDM	Scope of decision making
TOS	Total organizational system
TSD	Time span of discretion

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# **Managing Industrial Organizations**

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**Brian C Twiss**  
*and* **Theodore D Weinshall**

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# 1 Introduction: Manufacturing and the Decision-making Process

This book revolves around two topics in the general field of decision-making in the manufacturing field. It deals with manufacturing management in developed countries only and it confines itself to organizational problems, namely, to the problems confronting manufacturing managers in their relationships with other managers, other individuals, various groups of people and among themselves.

When one deals with the technical aspects of production systems (e.g. unit production or mass production) and with production management techniques (e.g. production planning and control techniques, like PERT or Gantt charts), geographical differences between production systems are, to a large extent, insignificant. This is why cases dealing with production management techniques in one country, like the United States, are no different from such cases in another country, like Korea. However, as soon as one deals with the human side of manufacturing management, the cultural effects of the environment introduce changes of varying degrees between different countries and continents.

We hope that the book will be useful to those preparing themselves or others to operate within, or in collaboration with, manufacturing organizations in countries where similar cultural effects on organizations exist. We also thought the book could be of use to chief executives, top managers and other non-production managers of manufacturing organizations, for we believe the book could give them an insight into, and an understanding of, what manufacturing management is, thus facilitating easier communication and cooperation with manufacturing managers.

The second topic of this book is concerned with the critical human problems arising in manufacturing management due to interpersonal and interfunctional relationships. We focused our attention on problems confronting the manufacturing managers in their relationships not only with their immediate superiors, subordinates or peers, but also with other individuals and groups of people throughout the organization. These other people with whom manufacturing managers are involved in their

**Editor's note.** Comments, quotations and bibliographical references relating to the text appear in Notes at the end of each chapter. The reader is referred to them by superior numbers, e.g. human relations situations<sup>4</sup>.

decision-making process, i.e. with whom they have contacts and problems, are usually managers from other functions (marketing, purchasing, engineering, research and development, finance and general management etc.) or manufacturing workers. We find, however, that in more and more manufacturing organizations, the managers are directly involved in their decision-making processes with other individuals and groups belonging to the organization in its wider sense—customers, suppliers, owners, trade union and government officials. For this reason, we thought that a book dealing with organizational and human problems of manufacturing managers, could serve these managers and the teachers who train them in an area where hitherto there has been relatively limited training material. This is why we decided to include material which might have likewise been branded as ‘business policy’ or ‘organizational policy’. We felt that total organizational system problems regarding the interrelationship between the manufacturing function and the other functions, which are of prime importance, should be included in a book like this which, we hope, could also be of help to non-production managers.

Therefore, let us first consider in this introduction the general framework of organizational decision making and secondly, explore the implications of this general framework on the manufacturing function.

## 1.1 The General Framework of Organizational Decision Making

Over the last 100 years or so, the decision-making process (DMP) of management has become more and more complicated as management has had to take into consideration an evergrowing number of opinions and pressures in order to ensure the successful operation of the organization. The first pressures were exerted by the employees of the organization and the unions to which the employees belonged; subsequently followed by pressures from the direction of the financial supporters of the organizations—primarily bankers and shareholders. Then came the pressures from suppliers and customers and, finally, as we are aware today in probably all the countries of the world, the evergrowing effect that government policies and practices have on the DMPs of business organizations.

The appearance of a ‘pressure group’ in an organization coincides with competition by other organizations for the services of the same group. Thus the more, say, that manpower is scarce, the stronger the pressures from the employees and the greater their effect on the DMPs of management. Similarly, the greater the shortage of investment and working capital in the market, the tighter the pressures of the bankers and shareholders on the organizations. Likewise, we find that the stronger the competition in

selling the organization's products or services, the more decisive the influence of the customers on the organization's DMPs. The same is true of the pressures exerted by the suppliers and the pressures exerted by institutions (such as governments, trade unions and, in some countries, political parties) on the organization.

Historically, the beginnings of the appearance of human factors (i.e. pressure groups) which influence the DMPs of business organizations could be traced back to the Industrial Revolution. However, the rapid increase in the number of these factors and the intensity of their effect on managements' decision making (DM) has become self-perpetuating and evergrowing through the enormous pressures on organizations to innovate in every possible area, in order to ensure the cooperation of all these pressure groups with the organization. These innovations have brought in new pressure groups who, in their turn, have increased the pressure on the organizations to innovate. Over the years, we witness how profit-minded organizations, when the main pressure group was the capital providers, turned into customer-orientated organizations when purchasing power became the dominant factor or, alternatively, became employee-centred, when employee specialization and competence evolved as the decisive factor in the success of the organization.

Thus we have reached a point where the overall objective of management is to ensure the survival of the organization. Management achieves this purpose by satisfying the minimal requirements of the various participating groups (i.e. the pressure groups) in order to safeguard their continued cooperation with the organization. The shareholders have to be content with dividends and expansion of the company, the customers with the price and quality of products or services, the employees with working conditions and other factors influencing satisfaction and motivation, etc.

Changes in one organization regarding dividends, expansion, prices, quality or salaries may turn into pressures exerted on other organizations through the shareholders, customers, suppliers or employees. In order to maintain the continued cooperation of these groups, and thus ensure the survival of the organization, the management has to keep all these parties relatively content by offering them the fruits of innovation and technological change.

Whether one describes it as a vicious circle or as the prompting force for progress, this process explains the expanding rate of technological innovations in our world. The process also explains why organizations have to keep pace with growth in their respective fields (e.g. electronics, food industry, banking, air transportation, mining). Let us consider one example—the airline organizations, the size of which is determined to a great extent by technological development and innovations. In other words, the increasing size of the organization ensures its survival. 'Size', in this context, means the physical size and the diversification of its operations.

However, as this size increases, the amount and complexity of the DMPs of management required to keep all the groups (shareholders, customers, employees etc.) together also increase. In order to maintain and successfully manage the increasing complexity of the DMPs, top management has, from time to time, to adapt the managerial structure.

Many organizations follow a similar sequence of managerial structures as they grow in size. They start with an entrepreneurial structure, where the entrepreneur runs his management team in a very informal and centralized way, working directly with many people throughout the organization and he himself controlling any major initiative.

When the organization grows, these centralized activities led by the entrepreneur have to be formalized, or the organization is faced with turmoil and chaos and its very survival endangered. At this point bureaucratization comes in, usually in the form of a functional structure in business organizations. In this structure, the main functions—manpower, marketing, production, engineering, research and development, finance, purchasing—report to the head of the organization, who still maintains central control, but through a formalized structure. When the organization continues to grow in a functional, formally centralized structure, it reaches a point at which the scope of the DM (i.e. the scope of managing all its operations) cannot any longer be controlled effectively from one centre. The organization is then decentralized, i.e. divided into autonomous product-line units or into autonomous area units, each of which has at its disposal all the functions (including the manufacturing function) it requires for managing independently its scope of decision making (its operation) for the duration of its autonomy. However, while in a 'product-line decentralization' the manufacturing function is confined to a relatively homogenic product line, in the 'area decentralization' the manufacturing function may cover a relatively heterogenic range of manufacturing operations, including a variety of product lines.

## 1.2 Organizational Decision Making in Manufacturing

The manufacturing function of the organization is frequently more protected from direct pressures coming from the various environmental factors participating in the DMP (e.g. customers, suppliers, shareholders, government etc.), than other functions. Indeed, unlike the manufacturing function, most of the other managerial functions in the organization are each fully entrusted with the continued cooperation of at least one decision-making factor with the organization. Thus, for example:

- the general management function deals with the government;
- the marketing function deals with the customers;

the purchasing function deals with the suppliers;  
 the financial function deals with the owners;  
 the personnel function deals with the employees.

The pressures of the environmental factors reach the manufacturing function, in most cases, through the buffer of the other managerial functions. Thus, the pressures of customers for lower prices or better quality are borne by the marketing function and transferred by it to the manufacturing function. The pressures of the owners for a more profitable operation or for more advanced technology are passed to manufacturing by the financial function through the financial control function, etc.

There are only two factors with which the manufacturing function has continued direct contact, namely the employees and the trade unions. However, the manufacturing function shares the burden of the pressures exerted by these two factors with other functions—primarily with the personnel function, but in many instances with the general management function too. This rather privileged and protected position of the manufacturing function explains why it is frequently accused of ‘disregarding the needs of the organization’, ‘operating in a world of its own’ and ‘being production oriented’.

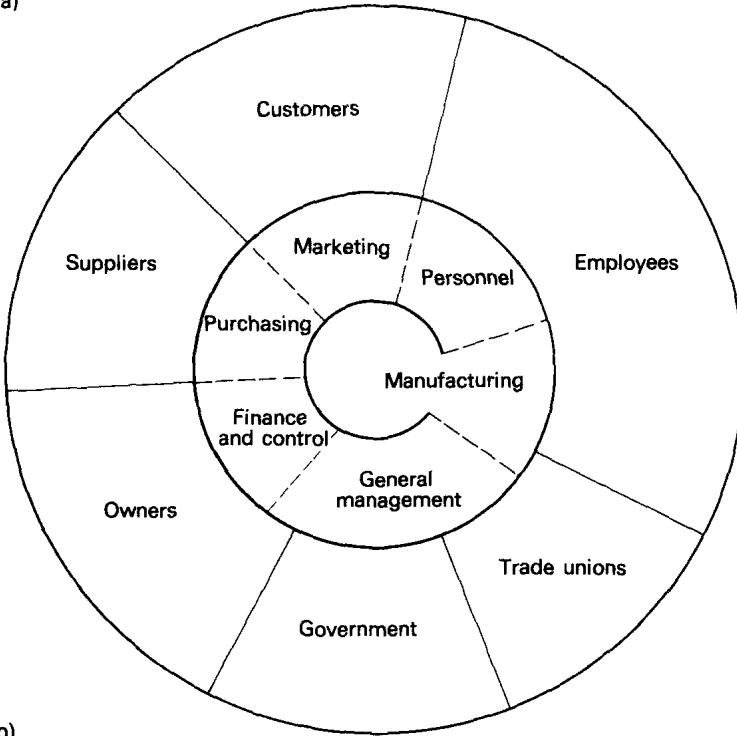
One finds that managers in the manufacturing function are more aware and receptive to the environmental effects of the employment situation in the organization, than to the effects of the customers, the suppliers, the owners or the government. Similarly, one discovers that conflicts and disagreements between manufacturing managers and marketing, purchasing and financial managers are often sharper than those between the manufacturing function and either the personnel or the general management functions.

Figure 1.1 presents the relation between the managerial functions (i.e. general management, finance and control, purchasing, marketing, personnel and manufacturing) and the factors comprising the decision-making process of the organization (i.e. employees, trade unions, government, owners, suppliers and customers). Diagram (a) gives a schematic environmental description, while (b) gives a tabular presentation of the same relationships between the managerial functions and the decision-making factors, with some additional possible relationships included.

The roles of the manufacturing functions in the DMPs of different organizations vary according to the character of the individual organization; for this reason, we labelled our descriptions in Fig. 1.1 as ‘schematic’. There are organizations in which the manufacturing function is more secluded from the pressures exerted by factors like customers, suppliers, shareholders and bankers, that is to say, that the other managerial functions are ‘protecting’ the manufacturing function and bearing the burden of environmental pressures. In these organizations manufacturing



(a)



(b)

<i>Managerial functions</i>							
<i>Decision making factors</i>	<i>Manufac- turing</i>	<i>Personnel</i>	<i>General management</i>	<i>Finance and control</i>	<i>Marketing</i>	<i>Purchasing</i>	
Employees	+	+	(+)	(+)	(+)	(+)	
Trade unions	+	+	+	(+)	(+)	(+)	
Government			+	(+)	(+)	(+)	
Owners			+	+			
Customers					+		
Suppliers							+

(+) Additional possible relationships.

**Fig. 1.1** The roles of managerial functions in securing the co-operation of decision-making factors

(a) Schematic environmental description

(b) Schematic tabular presentation

managers are exposed only to pressures coming from their own employees or shop stewards. There are, however, other types of organization where manufacturing managers are directly exposed to suppliers, customers and sometimes even to owners and government officials. Nevertheless, it is our