
British Standard

Work study and organization and methods (O & M)

Part 1. Guide to organization study

Etude de travail, organisation et méthodes (O et M)
Partie 1. Guide pour l'étude de l'organization

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Foreword

In 1959 the first edition of BS 3138 'Glossary of terms used in work study' was published which was revised in 1969. In 1979, the second revision was published as 'Glossary of terms used in work study and organization and methods (O & M)'.

As BS 3138 has become increasingly used throughout the private and public sectors of British industry and throughout the world (the ILO* use it as a reference standard), BSI and some of the cooperating organizations for BS 3138 have received numerous enquiries as to how the various terms and disciplines interrelate with each other.

Accordingly it was decided to prepare under the direction of the Quality, Management and Statistics Standards Committee a new series of guides as BS 3375 to meet this need, and to reflect the four main sections of BS 3138.

To date, BS 3375 comprises the following Parts:

- Part 1. Guide to organization study
- †Part 2. Guide to method study
- †Part 3. Guide to work measurement
- †Part 4. Guide to work performance control

In this Part, in addition to the conventional use of italic type for subclause headings, etc., defined terms (see clause 2) have been printed in italic type for ease of identification.

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*International Labour Organization.
†In course of preparation.

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Work study and organization and methods (O & M)

Part 1. Guide to organization study

0. Introduction

0.1 The 1979 edition of BS 3138 recognized the increasing links between *work study* and *O & M* by including a selection of terms on *organization study*. There was also a greater emphasis on the application of *method study* over the wider field of commercial and administrative activities.

While the concentration had earlier been on the methods improvement aspects of the O & M practitioners' work, there is now an increasing recognition of the importance of creating effective and efficient organization structures and systems. The work and investigations carried out to achieve improvement in this area are embraced by *organization study*.

0.2 It is the aim of this guide to define objectives and establish procedures for *organization study*.

0.3 This guide is intended to give an appreciation of *organization study* to all levels of management and personnel representatives who may be involved in investigations of organizations in which they work. The guide should be of particular value to those engaged in or training for positions in *management services*.

0.4 An organization, whether commercial, industrial or governmental, usually incorporates a variety of responsibilities, authorities, roles and relationships which exist in a changing environment to achieve defined objectives, which may also be subject to change. Organizations are usually formed to divide the overall management task into a variety of activities and to establish means of co-ordinating and controlling these activities in accordance with corporate policy objectives.

0.5 The concept of division of labour is not new and references can be found in many early works. For example, Adam Smith, in the book 'Wealth of Nations' 1776 drew attention to the effect of the division of labour. He observed that a worker doing all the eight operations involved in the making of pins (drawing the wire, cutting, sharpening, etc.) could make about 20 pins per day. When the work was divided so that people specialized in doing single operations (one man drawing, one cutting, one sharpening, etc.) the output increased greatly. Ten men could produce 48 000 pins per day, the equivalent of 4800 per man or 240 times the previous equivalent output. Much of this early work provided the foundation upon which the classical theories were built.

0.6 The concept of integration of effort is more recent. As organizations grow in size and divide there is more opportunity for the different parts to pursue their own sectional objectives. These sectional objectives may well be departmentally efficient but they can, and often do, conflict with the overall objectives of the organization especially where these are to satisfy highly variable market demands.

Coupled with this, the increasing complexity and costs of developing, producing, operating and maintaining modern products and services has emphasized the need for management to become more effectively involved in the somewhat diverse operations of their design/development, production and marketing functions in order to ensure the quality of products and reliability of services desired by purchasers.

NOTE. For more detailed information on these developments see appendix C of BS 4891 : 1972.

0.7 The theory of organization seeks to describe how organizations function and how they should be structured to carry out their functions. The theorists fall into a number of schools, the main ones being:

- (a) the classical school (e.g. hierarchical structure), which concentrates on the *formal organization*;
- (b) the human relations school, which is mainly interested in the *informal organization*;
- (c) the *systems* school (e.g. matrix organizational structure);
- (d) the contingency school, which describes organizations as open systems strongly affected by their environment.

NOTE. A list of some of the textbooks available on theory of organization is given in appendix B.

The different theories of organization and the organization models derived from the theories provide complementary rather than contradictory tools that can be used to achieve a better understanding of organizations and thus provide a basis for improving their effectiveness.

Systems of organization are usually found to be made up from one or more of the following:

- (1) grouping of personnel according to occupational level (normal line management);
- (2) grouping of personnel according to subject or specialization;
- (3) grouping of personnel according to project (each new project);
- (4) grouping of personnel according to same phase of each project.

The interrelationship of such groups and their position or authority within the organization structure are considered in appendix A.

0.8 *Organization study* involves investigations into the structure and systems of organizations to improve their effectiveness. Such investigations use analysis and problem-solving techniques plus some intended to improve relationships and communications between personnel.

1. Scope

This Part of BS 3375 defines the objectives and establishes procedures for *organization study*. It gives an understanding of *organization study* to all levels of management and personnel representatives who may be involved in investigations of organizations in which they work. The guide should be of particular value to those engaged in or training for positions in *management services*.

NOTE. The titles of the publications referred to in this standard are listed on the inside back cover.

2. Definitions

For the purposes of this Part of BS 3375 the definitions given in BS 3138 apply.

NOTE. See paragraph 5 of foreword.

3. Formal and informal organization

3.1 General. It is important to recognize that any organization has both *formal* and *informal organization*. The *formal organization* is generally depicted in an *organization chart*, showing the reporting lines between each level of management and the pattern of relationships between positions and groups of personnel within the organization. Usually formulated by top management, it is the framework within which functions of the organization are intended to operate to reach their goals.

3.2 Formal organization. The *formal organization* can encompass official *job descriptions*, rules of the organization and officially accepted ways of working, e.g. the keeping of official files, communication with more senior officers of other divisions through a superior.

This formal structure represented on an *organization chart* is often one of the starting points in any study of an organization or part thereof. From this chart can, for example, begin an examination of issues such as division of work, and *span of control*. However, an *organization chart* is not always forthcoming and the reasons given for this may themselves be revealing, e.g. 'there is no time to produce one' or 'things change so much that it is not worth producing a chart'. In these cases it may be necessary to draw an *organization chart*.

3.3 Informal organization. To understand the way in which organizations actually work it is necessary also to understand the *informal organization* that is superimposed on these formal structures and practices. The *informal organization* represents those patterns of social interaction and behaviour which develop over a period of time among individuals and in small groups. The network of communication often referred to as the 'grapevine' is an example. Custom and practice on such matters as hours worked, acceptable standards of work, form and nature of communications, although not written down are, as aspects of the informal system, usually as important in understanding the way in which an organization works as the *formal organization charts* and *job descriptions*.

Accordingly it is important to recognize and to help managers to recognize that the *informal organization* will exist inevitably. It is a response to the failure of the *formal organization* to meet all the needs of the personnel or to provide individuals within the organization with sufficient information about what is expected of them. (Thus the

newcomer to an organization may be as keen in his first few days to learn about the *informal organization* as to get to grips with *formal organization charts* and *job descriptions*.

3.4 Formal and informal organizations. It is important to take into account *formal* and *informal organizations*. *Informal organizations* can work to support formal goals; they expand to meet those personnel needs that are not met formally, and, therefore, can sometimes work against formal goals. An example of this is the way in which personnel may develop informal standards or norms about work output. Any member of a group of personnel who exceeds these may be subjected to considerable social pressure to conform to the rest of the group.

Consequently, *informal organization* will provide some useful clues to problems within the *formal organization*. For example, if the patterns can be traced and the needs which are not being met by the *formal organization* distinguished, it may be that more can be done to coordinate the *formal* and *informal organization*. If this can be done, a powerful force for the achievement of the aims of the organization may be released. Conversely, if some change in the *formal organization* is proposed, it is important to recognize that the *informal organization* may be threatened. This, if not accounted for, can cause extra resistance to the change.

3.5 Authority structures within an organization. The inter-relationship of the various groups for their relative position or authority within an organization structure is a complex matter. However, since this subject is usually of crucial importance when changes in corporate objectives are contemplated, a review of the various corporate and project authority structures possible is given in appendix A.

3.6 Summary of general principles. The general principles of *formal* and *informal organization* may be summarized as follows.

- (a) A *formal organization* consists of *elements* between which there are relationships involving the exercise of authority and the communication and exchange of information.
- (b) *Formal organization* implies a defined structure within which co-ordinated activities take place under management control.
- (c) Within every *formal organization* there is a network of informal social roles and relationships. Without these, the *formal organization* might not function, and the roots of these informal systems are embedded in the *formal organization* itself.
- (d) To be successful any change in the *formal organization* should also take account of informal relationships.
- (e) The relative position of the various elements or groups within an organization may require consideration both of corporate forms of organization and of project forms of organization, particularly where corporate objectives change.

4. Range of application of organization study

4.1 Corporate policy. All organizations have a mission or purpose to achieve the objective or the objectives which they have set themselves or which have been set for them (e.g. satisfying the market demand or statutory requirements). This achievement is the fundamental

criterion for their success. Most business organizations have an objective in terms of profitability and all organizations strive to achieve their objectives by the effective use of manpower, data, materials, systems, equipment, space and energy to produce goods, services and information.

All organizations operate with some measure of monetary constraint. Other constraints include the skills and experience of the personnel, the commitment through investment in personnel, systems and methods, the size of the market, the effect of pricing on demand, the effect of competition and the range of alternative production methods available. In addition there are legal constraints, codes of professional practice, codes of industry practice and agreements between management and personnel.

These constraints and pressures both internal and external can be compared to those of a living organism which responds to its surroundings, grows, divides or otherwise reproduces itself.

4.2 Resources and functions. *Organization study* is the examination of the process by which an organization identifies and meets its objectives, the structures it sets up to facilitate all its basic resource requirements, the functions necessary to achieve its objectives, and the flow of decision, commands, instructions, information and responses within the organization to ensure that the necessary functions are indeed carried out effectively.

A typical organization requires certain basic resources and may embrace a wide range of functions that may include:

- (a) *financial resources*: the provision, management and servicing of finance;
- (b) *human resources*: the recruitment, training and development of personnel and the provision of personnel services;
- (c) *physical resources*: the provision of premises and equipment and their maintenance;
- (d) *system functions*:
 - (1) the purchasing and storage of materials;
 - (2) the manufacture of goods and/or the supply of services, quality control;
 - (3) the maintenance of records and administration, costing and accounting;
 - (4) the distribution of materials, goods and services;
 - (5) the marketing and selling of a product or service.

4.3 Structures. The structures of organization that are set up to carry out functions vary considerably from organization to organization. One organization may have a tight central control and rigid structures to relay decisions and to receive information while another may ensure only that policy is controlled centrally and yet another may keep central policy to a minimum and allow people taking decisions a larger amount of autonomy. The principal forms of structure are considered in detail in appendix A.

4.4 Management style. Variation in structure should not be confused with management style or culture, the latter being the way in which managers behave within the organization. The two may be interlinked but should be considered separately. It should be recognized that as with structures there is no single 'best'; each option carries advantages and disadvantages.

The management style adopted by an organization may be a reflection of its task, e.g. a research station, or of its geographical location, the architecture of its buildings, the preferences of its senior management or previous interventions by behavioural consultants to overcome perceived ills. It is possible to have a variety of management styles from closed autocracy, e.g. on the production line, to open participation at different levels or within different divisions of the same organization, e.g. in the training or research divisions.

4.5 The procedures. The procedures used in carrying out the functions and the methods used may be more properly examined under *method study* but there is no rigid dividing line. Solutions to *method study* problems are only likely to be acceptable if they take into account the structure, climate and management style of the organization. *Method study* can be applied to *organization study* problems but a more dynamic approach is often required that responds to the living nature of the organization and its parts.

Work measurement and *work performance control* relate to areas within the structure of the organization where there has been considerable development of techniques and detail. They have become subjects in their own right and powerful and valuable tools to an organization seeking to carry out its functions more efficiently and effectively.

Organization study is especially concerned with people. The personnel within the organization take decisions that lead to actions. They respond to information and propose, agree, direct and control change. The provision of information, the authority to decide, the means of communicating and carrying out change all come within the scope of *organization study*. Especially important are motivation and commitment which provide direction, concentrate action and highlight the sense of purpose.

In a manufacturing organization the costs of resources, handling, storage, processing and distribution can affect the way in which the organization structures itself. The objective of the organization is closely bound to the manufacture of a product or range of products. Thus the organization centres around the manufacture of the goods and studies are often involved with improving production. However, the direction provided by the task, i.e. to manufacture, may be interpreted structurally in different ways as clearly demonstrated in the car industry by production line or team working. In a non-manufacturing organization such as a building society, bank or government department, the O & M practitioner is usually involved with office administration and management. Office equipment is often more versatile than manufacturing equipment and a wider variety of structures of organization becomes possible.

With the growth of computing both within manufacturing organizations and within non-manufacturing organizations the physical environments and the arrangements of organizations may increasingly become similar.

4.6 Summary of range of application. The range of application of *organization study* includes consideration of an organization's resources, general functions, structure, management style and personnel, in order to ensure objectives appropriate to the organization are set (corporate policy) and met efficiently and effectively.

5. Organization study and change

5.1 Introduction. *Organization study* is a prerequisite to effective change in an organization. If done well, subsequent reorganization will avoid unexpected ramifications that increase costs and that increase vulnerability of the organization to the point where the risk is not acceptable. There has been a continuing increase in the pace of change. This and the need for organizations to keep up-to-date and compete more efficiently and effectively in the market place has added to the relevance of *organization study* as a useful technique.

5.2 Reasons for change. The need for change can be triggered by factors that are outside the organization, by factors from within it or by major developments in techniques for achieving greater efficiency, e.g. technology. External factors can include competition; change of ownership; the cost of borrowing; the price of labour; the price and availability of other resources, material and particularly energy; the changing level of demand; a changing economy; market size; new legislation; and changes in labour practice. Any one of these factors can force organizations to review their decision-making processes with a view to having structures that can handle faster decision making. The increased emphasis on schemes for productivity improvement and a redistribution of management functions over a smaller number of personnel has in a number of areas reduced the ratio of management to other personnel.

The pressure for change from within an organization may be stimulated by changes in the market, e.g. planned expansion or rationalization, product changes, penetration of new markets, better use of resources or acquisition of new ones; by changes in the social climate, e.g. involvement by personnel in their jobs, a more questioning approach, greater need for motivation; or by internal factors, e.g. low morale, high turnover or sickness, industrial relations problems, the need to be better informed. Any of these might trigger change within an organization. In general, the view from within an organization will be two-fold: to improve the quality of working life and to improve the effectiveness of the organization.

5.3 Changes in technology and techniques. Technology, especially information technology, has made dramatic advances over the last decade. The information available to an organization to enable it to carry out its duties has increased. To be effective the information has to be correctly routed to its destination and be complete in itself. The ability to produce enormous volumes of information has led organizations to attempt to identify objective information needs, those who need it and the purposes for which it is needed, which can be an *organization study* in itself. The pressures from within have led organizations to relay more information to personnel to increase commitment, involvement and motivation. However, it should be recognized that distribution of information has to be paid for financially and there is a limit to how much information may be absorbed by the organization, its parts and personnel.

Although techniques that improve efficiency can be seen as external pressures, they are different from those described above. First, they are optional, because managements can choose to introduce them. Secondly, their nature is different, and they may be developed to cope with pressures for change or when introduced be a stimulus for change.

Techniques intended to improve design, production, marketing, management, accounting, objective setting or training, separately or in combination, may affect every and any part of an organization to some degree and not always beneficially.

6. Objectives of organization study

6.1 Introduction. The objectives of *organization study* usually include the creation of a new organization or the justification for the continued existence of an existing organization; ensuring that there are effective and efficient structures to carry out all the functions necessary for the survival, continuation and development of the organization; improving an organization's ability to meet its objectives; and development of the management personnel to deal with changed circumstances.

6.2 Recognition of environment and requirements.

An essential feature of the ability of an organization to survive is that it can recognize the characteristics of the external and internal environments and determine appropriate responses. Procedures are required within an organization to gather information on the external conditions, the internal situation and the effect of previous responses. Where the success of an organization is highly dependent on competition, the economy, or the level of demand there will be a need for a well-developed structure for gathering information. Most organizations need a procedure for gathering information on the internal deployment of personnel and other resources to make management decisions on the best use of resources. To reduce the inherent risk in decision-making they need precise information about previously implemented decisions. The resources deployed on information gathering and information processing, including the use of information technology, should be tailored to suit the various levels of the organization's management. Elaborate systems should be avoided where simple ones will suffice. Generally there is an increasing awareness of the importance of information management to the survival of organizations.

6.3 Response to environment and requirements. The structure through which an organization responds to the information it receives including how a response is formed and communicated and how effective that communication is, forms part of *organization study*. An objective of *organization study* is to improve the management of the organization.

Growth as an example of such a response is easier to achieve where communication is effective and efficient and where decisions are made and actions are taken quickly. Good communication is not enough in itself and structures for handling research and development and perhaps *operational research* are essential.

Successful growth may require management styles and processes of organization that encourage flair and innovation, nurtured before the stages of evaluation, closer scrutiny, and cost justification.

If stability is the proper response, quite different characteristics may be called for.

If the response includes the establishment of succession plans, the procedures should not be left entirely to personnel management; they should permeate all thoughts within the organization.