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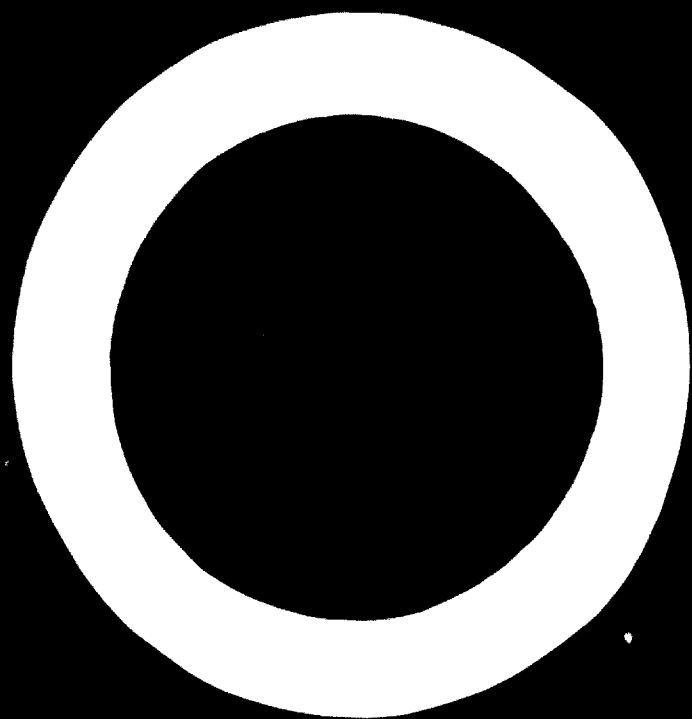
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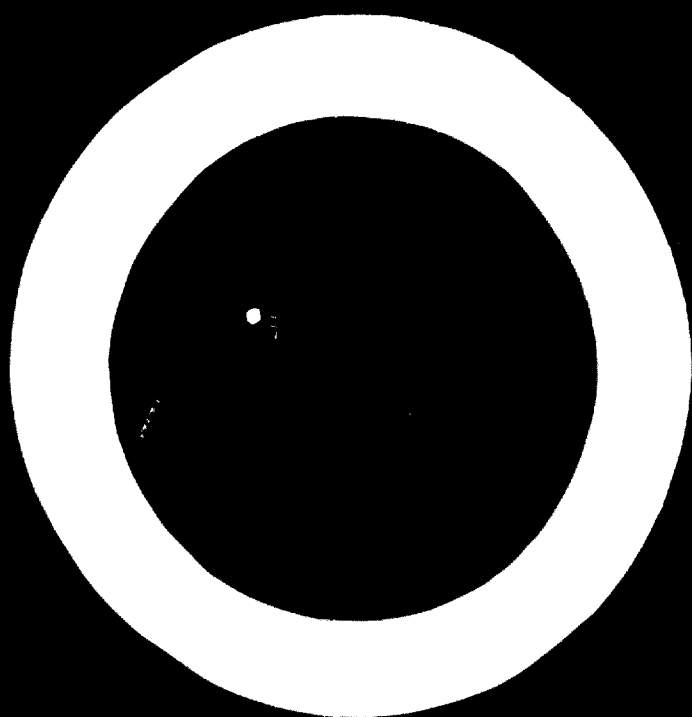
**MANAGEMENT
OF INDUSTRIAL
ENTERPRISES
IN UNDER-DEVELOPED
COUNTRIES**

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UNITED NATIONS





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PREFACE

The present report is the first in a series of projects in management of industrial enterprises in under-developed countries, carried out by the United Nations Secretariat under the programme of work on industrialization approved by the Economic and Social Council in its resolutions 597A (XXI) of 4 May 1956 and 618 (XXII) of 6 August 1956. It has been prepared by the Bureau of Economic Affairs in the Department of Economic and Social Affairs, in co-operation with the Technical Assistance Administration, largely on the basis of the discussions of a panel of experts which met at United Nations Headquarters, New York, from 24 September to 5 October 1957.¹ The experts were selected with a view to bringing together the experience gathered in this field under the United Nations technical assistance programme.

In addition to members of the Department of Economic and Social Affairs, the following experts participated in the discussions: Ejler Alkjaer (Denmark), Professor of Marketing and Transportation, Copenhagen School of Business Administration; Toyoroku Ando (Japan), President, Oneda Cement Company, Tokyo; Ernest Dale (United States), Professor of Economics and Business Administration, Cornell University; Bruno Leuschner (Chile), Chief, Office for Latin America, Programme Division, United Nations Technical Assistance Administration; General Edmundo de Macedo Soares e Silva (Brazil), President, Companhia Siderurgica Nacional, Volta Redonda; George Ronson (United Kingdom), Management Accountant, United Nations Technical Assistance Administration; Joseph E. Stepanek (United States), Industrial Engineer, United Nations Technical Assistance Administration; and Otto Stern (Austria), Director, Instituto Centro Americano de Investigación y Tecnología Industrial (ICAITI), Guatemala City, Guatemala.² Other participants, representing specialized agencies, were C. R. Wynne-Roberts, Economic Division, International Labour Organisation; C. N. Vakil, Director, Research Centre (Calcutta), United Nations Educational, Scientific and Cultural Organization, and W. J. Jenkins, Engineering Adviser, International Finance Corporation. The Secretariat wishes to express its gratitude to the experts and other participants for their contribution to this report.

In preparing the report, the following objectives have been kept in mind: (a) to map out specific areas for further study by the United Nations Secretariat in the general field of management; (b) to formulate suggestions which can be used for an appraisal of the present activities

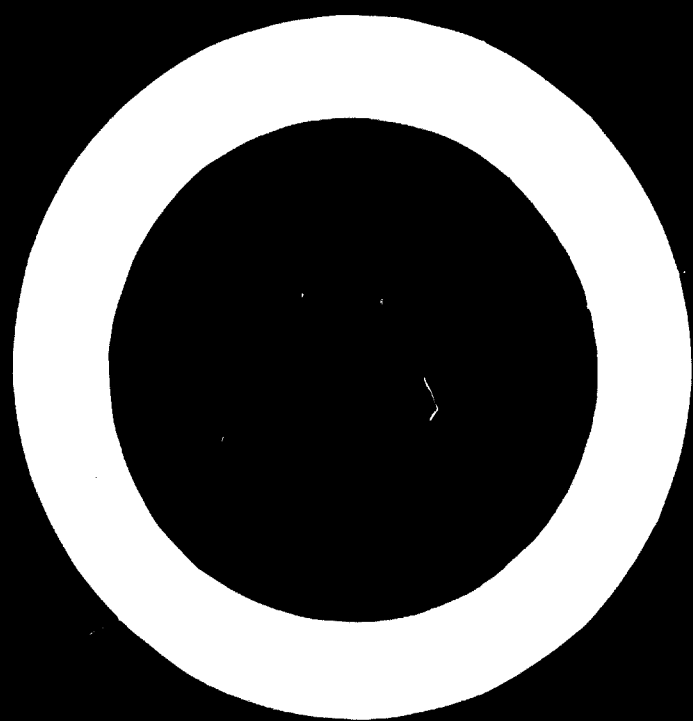
¹ These discussions were centred around a number of background papers prepared by the experts, the Bureau of Economic Affairs, the International Labour Organisation and the United Nations Educational, Scientific and Cultural Organization. Some of these papers will be reproduced in the second issue of the United Nations *Bulletin on Industrialization and Productivity*, to be published at the end of 1958.

² G. Faruque (Pakistan), Chairman, Pakistan Industrial Development Corporation, who had accepted an invitation to take part in the panel, was unable to attend.

in the field of industry under the United Nations technical assistance programme, and the planning of future activities under the programme, and (c) to formulate suggestions to be considered by governments themselves when planning industrial development, in which management is an important, though frequently neglected, factor.

TABLE OF CONTENTS

	<i>Page</i>
Introduction	1
The environment of an industrial enterprise	2
Management structure	4
Management cadres: Recruitment	8
Top management personnel — Lower-echelon management personnel — Managerial cadres for smaller enterprises	
Management cadres: Training	12
Selected aspects of labour management	15
Integration of rural labour into industry — Some aspects of vocational training — Labour management policies and productivity	
Management of production facilities	17
Design and utilization of equipment — Raw materials — Quality control: Use of specifications and standards — Maintenance and repair of equipment	
Marketing	24
Evaluation of demand — Channels of distribution — Promotion of demand for industrial goods — Some aspects of marketing in exports	
Management controls	29
Some aspects of the relationship between industry and government	31
Suggestions for early action in selected areas	32
Annex: Management service institutes	35



INTRODUCTION

1. Industrialization involves not only capital resources, labour and raw materials, but also another factor of production—managerial skill. In most under-developed countries, this is a scarce factor, and in some, to the same extent as capital resources, if not more so. The management element has not always been prominent in discussions of the process of industrialization of under-developed countries. It is, however, hardly necessary to stress the fact that skilled management would enable under-developed countries to make better use of whatever capital resources and skills they are able to mobilize.

2. Managerial skill and methods, like capital equipment, can be, and are being, imported. Foreign managerial talent is hired, and local talent is trained, in the countries themselves and abroad. It is increasingly realized, however, that merely transplanting methods and techniques developed in the industries of advanced countries is not always the right answer; management has its own particular problems in under-developed countries. It faces most of the problems found in developed countries plus the fact that the industrial enterprise in most under-developed countries functions in an essentially unfavourable environment. The unfavourable features are well known—lack of external economies due to inadequate economic and social overhead, scarcity of skills, and a social structure and pattern of behaviour characteristic in many cases of a pre-industrial society. Thus, the typical manager in an under-developed country, in addition to his conventional managerial duties, has constantly to adjust to, and allow for, the inadequacies of his environment. He has to improvise, provide solutions and, in particular, compensate for the lack of many facilities which, in a developed country, are available as “free goods” and often taken for granted by his counterpart there. It is these conflicts between conventional management and the environmental conditions which prevail in most under-developed countries that the present report attempts to explore.

3. As economic development progresses, the environment changes until, by a cumulative process, it reaches a point where, instead of inhibiting economic development, it acts as an accelerating factor. From a long-term point of view, management is one of the elements in the general dynamics of the industrialization process in under-developed countries. However, since this report concentrates on problems facing management in the short run, the state of economic development is considered largely as given. Broadly defined, the purpose of this report is to arrive at a number of practical propositions which are applicable in the context of the present stage of development of the under-developed countries. It was considered useful, however, also to explore briefly a number of areas related to the improvement of the environment itself, such as certain long-run problems of recruitment and training of managerial personnel. In addition, reference

is made to certain features of the relationship between government and the private sector which might contribute to a more favourable climate for industrial development.

THE ENVIRONMENT OF AN INDUSTRIAL ENTERPRISE

4. In this section a brief review is made of a number of factors related to the economic environment and the more general institutional setting within which economic activities of an industrial enterprise take place in most under-developed countries. While these factors are largely beyond the control of the individual enterprise, they have a vital bearing upon the problem at hand. They also account for the fact that many management methods developed in the more industrialized countries are applicable only after some degree of adaptation to the conditions of the less developed areas.

5. As a rule, the operation of industry in the more advanced countries takes for granted the existence of the so-called external economies, that is, of a complex of economic overhead, including transportation, power and water supply, repair facilities and availability of spare parts, and of a variety of skills ranging from highly complex managerial skills to a labour force brought up in an industrial tradition and possessing at least a minimum of general and professional education. Management can also avail itself of a network of specialized organizations to meet some of its needs, ranging from those in procurement, marketing and finance to the solution of technical and organizational problems. In a more general way, the entire institutional framework, which has gradually evolved throughout the course of economic development, provides a favourable climate for the operation and growth of the industrial sector, or at least does not interfere with this. In the under-developed countries, economic and social changes brought about by industrialization are relatively recent phenomena and are accompanied by a number of frictions and maladjustments; many and varied obstacles have still to be overcome.¹

6. In regard to external economies, there generally exist in under-developed countries inadequate power and water supplies and a shortage of transport facilities, including urban communications, as well as a lack of other supporting facilities such as those mentioned above, especially in distribution and finance. In addition, lack of accommodations, such as proper housing and social services in the cities, has a deleterious effect upon the morale and efficiency of the labour employed.

7. Larger enterprises may be in a position to remedy this situation, at least in part, by providing some of the supporting facilities as a necessary cost of doing business in areas where no such facilities exist. This is frequently the case in industries tied to sources of raw materials, such as mining, oil, pulp and paper, and some energy-based chemical industries.²

¹ Many of these points were taken up in considerable detail in an earlier United Nations report. See United Nations, *Processes and Problems of Industrialization in Under-developed Countries* (sales number: 1955.II.B.1), especially pages 11 to 74.

² The problem of external economies may in fact arise in the case of such industries even in industrially developed countries, although admittedly it is more serious in under-developed areas.

Except for these special cases, provision of a minimum overhead investment to permit efficient operation of industry is largely the responsibility of the public authorities.

8. Lack of external economies often limits the location of industry to a few urban areas which are sufficiently developed to offer a minimum of the required facilities. As a result, there is overcrowding and congestion in these areas and increasing pressure upon the existing facilities, creating chronic shortages and bottlenecks and interfering with the continuity of operation. It is well known that this is a major source of difficulty for industrial management in some under-developed countries, the consequences of which are inefficient operation and high production costs. At the same time, overcrowding of cities through migration of rural labour to the new industries presses upon housing and other social overhead. The undesirable social effects of this overcrowding have led the governments of some countries to attempt to decentralize industry, but this is bound to be ineffective as long as the underlying problem of external economies is not adequately resolved.

9. With regard to the other factor mentioned above, the prevailing shortages of managerial skills, it has been stated in an earlier United Nations document³ that such shortages "seem to have two mutually reinforcing aspects: first, the fact that the economic environment in an under-developed country is not generally conducive to the emergence and training of the type of person likely to prove successful in initiating industrial activities; and second, [that] the task of industrial entrepreneurs in a pre-industrial economy would tend to be an extremely difficult one". As will be discussed below in some detail, the family control of enterprises, which is fairly widespread in under-developed countries, is one of the factors which tend to inhibit the development and growth of a body of professional managers.

10. As to labour, it will be recalled that, while practically all under-developed countries have a more or less extensive "developed" sector characterized by modern methods of production and exchange, important groups of the population still remain largely outside the money economy. The economic activities of these groups are geared to the production patterns and needs of agriculture—or, more exactly, of subsistence agriculture—where the rhythm of work and the system of discipline, rewards and incentives are essentially different from those required of their members by industrialized societies. In many cases, the existence of strong family bonds, which extend to distant relatives and kinsmen and dominate the organization of the pre-industrial society, tends to decrease self-reliance, and acts as a brake upon its more ambitious members.

11. Another factor in the labour supply situation in some pre-industrial societies is the prevalence of a static social organization. In a number of under-developed countries there is a wide social gap between the "upper" and "lower" groups of the population, which is very inadequately bridged by a generally weak intermediate group.

12. The rigidities in the social stratification are frequently aggravated by other factors. There are often sharp cleavages, with severely limited or non-existent social contacts, between tribal and non-tribal areas, between

³ United Nations, *op. cit.*, page 31.

village and town and nationals and foreigners. As there are few opportunities for mobility between groups and occupations, economic incentives are correspondingly weakened. This situation not only inhibits the growth of a skilled labour force, but is also a serious handicap in the development of middle management cadres and leads to the familiar bottlenecks in that field in the industry of under-developed countries.

13. Finally, it should be mentioned that, in a more general way, the social and economic environment affects the outlook and business conduct of the entrepreneurs. The characteristic conservative attitude of business management in many under-developed countries has its roots in chronic economic stagnation; in most under-developed countries culture "is traditionalistic and contains virtually no elements of scientific and technological experience and, consequently, no habit of experimentation".⁴ A characteristic feature of business enterprise in most under-developed countries is the greater degree of uncertainty and risk, as compared with conditions in the older industrialized countries. Some of this uncertainty is associated with lack of experience in the conduct of industrial operations. In the pre-industrial society, where investment opportunities are substantially limited to land, residential building, trade and finance, there is little opportunity to acquire technical competence outside of these fields. As will be seen in some detail in the following sections, the industrial entrepreneur is faced with a number of problems in production and marketing which are not easy to solve, particularly in view of the lack of competent advice. As a result of his general outlook, and sometimes of his business background, the entrepreneur's response is, in many cases, not to attempt to overcome his difficulties by developing and applying better management procedures, but rather to orient his business policies towards quick returns and high rates of profit so as to compensate for the limited economic horizon and higher risks. A serious effort is necessary to instill into the entrepreneur in under-developed countries, particularly in smaller-scale enterprises, an awareness of the role and value of proper management and to educate him in the uses of managerial techniques.

14. Mention might be made in this connexion of the work currently being undertaken in this field by various international organizations, including the International Labour Organisation (ILO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). In particular, UNESCO is engaged in a number of projects dealing with the social and cultural factors in industrialization and labour productivity. Projects under the technical assistance programmes sponsored by the United Nations and ILO also aim at relieving the shortages in technical skills by means of training schemes, fellowships and similar devices. Some of the latter measures of assistance are discussed in the following sections.

MANAGEMENT STRUCTURE

15. Industrial enterprises in under-developed countries often face problems similar to those which confronted industry in developed countries

⁴ Gunnar Myrdal, *An International Economy: Problems and Prospects* (New York, 1956), page 171.

some fifty or even seventy-five years ago. One of the problems is that of transition from personal to functional management.

16. The existing forms of organization of industrial enterprises in under-developed countries reflect factors of an institutional nature, including also certain social and cultural traits. Many successful industries in under-developed countries were established—sometimes on a very small scale—by persons coming from non-industrial occupations, endowed with unusual energy and skill which enabled them to overcome such obstacles as lack of familiarity with industry and an unfavourable economic and social climate. They have had, perforce, to assume a variety of managerial functions. This has led historically to a pattern of organization based upon tight personal and, later, family control.⁵

17. One of the inhibiting factors in industrial organization in under-developed countries is the tendency of entrepreneurs to be guided by experience gained in non-industrial activities. It manifests itself in lack of familiarity with the nature of an industrial enterprise and results in an imbalance in the performance of the various managerial functions. Thus, the commercial aspect of a business might be emphasized as against production; in other cases—particularly when the owners come from mining or landholding activities—the opposite situation might arise. In the former case, the business policies of the enterprise are often likely to be guided by short-term considerations of immediate profit, while the long-term aspects, such as maintenance and modernization of the equipment and training of workers and foremen, are neglected. Entrepreneurs may be reluctant to exchange information and experience and undertake concerted action, a situation which prevents dissemination of knowledge and makes difficult the solution of problems best handled on a joint basis, such as improvement of marketing methods, promotion of sales and training of labour.

18. It is considered that an effort should be made to impress upon entrepreneurs in under-developed countries the nature and advantages of functional management. As the various functions are taken over by professionals, it is likely that most of the deficiencies mentioned above will be eliminated.⁶ It is important, however, that the development of a functional organization should proceed in a gradual way and be kept within appropriate limits. If this development takes place without due regard to local conditions and the resources and requirements of the firm, it may defeat

⁵ It will be noted that a process of transition to more evolved organization generally sets in as soon as the undertaking has reached a level of operations beyond the management ability of a single individual, so that the family pattern of organization tends to weaken as the industrialization process advances. With the increasing awareness of the need for professional management, there is, first, recruitment of outside junior level managers and, later on, of managers at senior levels. In the course of time, family control also weakens as a result of the spread of ownership through inheritance or because outside capital is called in. A point is gradually reached at which, while the highest ranks in the firm's hierarchy are still reserved for members of the family, the key executive posts are filled by professional management staff. The change-over to functional management may also take place as a result of other developments, such as financial reorganization, emergence of more efficient competitors or reorientation of production.

⁶ Some success has been achieved in breaking down this attitude of top management by productivity centres in a number of countries; in particular, management seminars, properly led, are instrumental in starting round-table discussions of common problems.

its purpose. It is suggested in this connexion that comparative case studies of typical organizational patterns in industrial enterprises, in both industrialized and under-developed countries, would help considerably in throwing additional light on this problem.

19. As to the structure of top management in under-developed countries, in the larger enterprises, organized along conventional lines,⁷ the functions of the board of directors tend to be, as a rule, of wider scope than those in industrial countries. The board of directors often exercises supervision over detailed matters of administration, and the area of authority and responsibility of the general manager is correspondingly reduced.⁸ This lack of delegation of authority is often due to the unavailability of sufficient numbers of trained and experienced professional managers, but may also reflect the prevalence of family-controlled, one-man rule enterprises. A contributing environmental factor in the reluctance to delegate authority is that individual leadership is an accepted social feature. The same phenomenon extends downwards to lower-echelon management, which is equally reluctant to grant subordinates the necessary measure of autonomy.

20. It may be noted that in India control of industrial enterprises is sometimes exercised through undertakings known as managing agencies. The managing agency system was originally evolved to meet management needs during the early stages of industrialization, but has been extended since to consolidate the control of certain family and financial groups. The detailed arrangements vary from one case to another, but a common characteristic is a high degree of centralization of decision-making power, particularly in the senior partners of the agency firms, who also maintain a close watch over the day-to-day affairs of the affiliated companies.

21. As regards the structure of lower-echelon management, the division of their functions also tends often to lack precision. Thus, sales personnel may be burdened with legal and administrative duties, and maintenance departments may be assigned duties related to production; conversely, the responsibilities of a "staff" function may be scattered among various units of the "line" organization. Some of these defects stem from the scarcity of experienced personnel, which brings about accumulation of unrelated responsibilities in the same person, while in some cases certain functions may not be covered at all. In many undertakings, however, not enough thought has been given to the organizational problem, and there is a tendency towards the cumulation of functions and centralization of authority just mentioned. One result is the existence at lower levels of redundant staff with ill-defined functions, little responsibility and inadequate incentives, while top management is overloaded with detailed matters of administration, to the detriment of its essential functions.

22. In this connexion, it would appear that a major deficiency on the production side of industrial enterprise in under-developed countries is

⁷ The formal organizational structure of larger corporations generally includes two managerial levels: the board of directors, which is responsible for the formulation of general policies, and the general manager, who is in charge of day-to-day administration under the supervision of the board.

⁸ This structure of top management is often sanctioned by corporate legislation which permits a high degree of concentration of administrative functions in the board of directors. In one enterprise in Latin America, which was cited by the experts, each of the directors was given supervision over a separate area of administration; thus, the board assumed collectively the normal functions of a general manager.

a shortage of competent foremen. On the demand side, this shortage reflects the rapid rate of industrial expansion in many countries. On the supply side, it appears to be a matter of poor pay, low prestige and lack of adequate training. The training of foremen often omits proper indoctrination in elementary management techniques. While, in the long run, industrialization will result in the formation of a class of skilled technicians with a more widely accepted professional status, a serious effort appears to be necessary to solve the immediate problem by means of foreman training schemes. Furthermore, greater efficiency and better performance would be achieved if foremen were given higher pay and a larger measure of authority in such matters as wages and labour discipline. They should also be provided with the necessary control information on such items as budgets and performance records to guide their activities.⁹

23. Special problems are raised in the case of enterprises in which public ownership is involved, which are generally larger in size and thus lend themselves more readily to the adoption of a functional structure of management. Three principal organizational forms are to be found in this type of enterprise: (i) enterprises integrated into the government administrative apparatus; (ii) public corporations, and (iii) mixed-ownership corporations. In the first case, the administrative machinery of the government generally extends downwards into the internal organization of the enterprise, including the conduct of day-to-day operations. In the second case, while top management is responsible to the appropriate government authorities with regard to basic policies and general efficiency of operations, it is given a degree of autonomy in the performance of its functions and in the setting up of the internal management organization. This appears to be a more effective arrangement in view of the fact that, as has been noted by many observers, government administrative procedures are not always suited to the efficient conduct of business of an industrial enterprise. In the third case, the organization of top management, in which government and private interests are represented, follows conventional lines, with a board of directors and a general manager who is responsible to the board and who is given the necessary authority concerning the internal organization of the enterprise.

24. In regard to the staffing of these enterprises, it will be noted that, in the first two, managerial personnel are often chosen from among civil servants whose training and experience may not be directly applicable to managing an industrial enterprise, and some period of adaptation may be required.¹⁰ In this respect, the third form of organization presents distinct advantages, in that its greater operational autonomy permits a wider discretion in the selection of managerial personnel with the requisite business experience.

25. As a general observation in connexion with this type of enterprise, it might be mentioned that when public control is delegated permanently to a small group, this may become, in some cases, self-promoting. On the other hand, it is important that management be given a reasonable degree of autonomy in the conduct of the affairs of the enterprise, that it be left as much as possible free from political interference and pressures of political patronage, and that its responsibilities and duties be clearly

⁹ See, in this connexion, paragraph 118.

¹⁰ The problem of adaptation is further considered in the section on recruitment.

defined. In view of the growing importance of the public sector in industry of under-developed countries, further studies of the structure and functions of management of public enterprise appear to be indicated.¹¹

MANAGEMENT CADRES: RECRUITMENT

26. It may be well to refer briefly to some of the social and economic factors bearing upon the problem of recruiting management personnel. It has been pointed out that there is generally less inducement in under-developed countries for gifted persons to choose industrial management as a career. There is not sufficient prestige attached to such careers, and, in some cases, access to positions in business is restricted by considerations of caste or class. On the demand side, the need for managerial talent in pre-industrial societies is limited, as businesses are generally small and are managed by owners with a minimum of professional help. Large-scale enterprises, which tend to be concentrated in the fields of primary production for export or commercial and financing activities, are few in number, and their needs are often met by foreign recruitment.

27. Under the impact of the process of economic development, many of the factors mentioned above are being weakened in a number of countries; urbanization, for instance, leads to greater social mobility in the process of which class and caste distinctions are gradually eroded. Some of the inhibiting traits are, however, still in existence, while the demand for managerial personnel is rapidly increasing as industrialization progresses. Thus, a serious personnel problem has developed in many countries.

Top Management Personnel

28. It is recognized that recruitment and selection of top management personnel presents a different problem from that of recruiting personnel on lower management levels. The functions of the latter require a greater measure of specialized technical knowledge; the former require a broader background of training and experience, with greater emphasis on initiative, foresight and willingness to assume responsibility. The various areas offering either a favourable ground for the development of top managerial personnel or potential sources of such personnel are examined below. These include: (i) large-scale enterprises; (ii) government service, including the military establishment; (iii) certain professions, and (iv) foreign personnel.

LARGE-SCALE ENTERPRISES

29. Lower-echelon specialized personnel in charge of various departments of an industrial enterprise acquire, in the performances of their duties, considerable managerial experience, and represent a ready source of potential candidates who could be trained for top management positions.

¹¹ A seminar on management of public enterprise in South East Asia is being organized by the United Nations Secretariat under the technical assistance programme. It is expected to take place some time late in 1959.

In connexion with this source it might be mentioned, however, that, under the régime of family control, management is generally selected from within the controlling family, and family bonds also determine, to a large extent, advancement in the hierarchy. Moreover, because of the greatly centralized nature of management in a family concern, there is less scope for younger men to acquire experience in leadership and decision making.

30. Foreign-owned enterprises are also important in this connexion. Many young men, nationals of the host countries, with adequate educational background but little experience in business, enter employment in foreign establishments where they may be trained for executive positions. There is, however, great diversity in the policies of foreign companies concerning employment and training of local personnel. The extreme case occurs when such companies keep the management of local subsidiaries as much as possible in the hands of their own nationals; in some cases, because the home office of the foreign company is unaware of the availability, or distrusts the capacity, of local personnel to fill executive positions. On the other hand, many foreign concerns frequently make a point of replacing foreign executive staff by nationals as soon as the latter become available. These firms start first with "imported" management, but take pains to select local candidates who, after being given suitable training, are placed in managerial positions.¹²

31. Commerce and banking are considered to be other sources of top industrial management personnel, in view of the opportunities provided by these occupations to develop executive ability. Difficulty sometimes arises in regard to personnel recruited from these branches of activity since, as mentioned, the general outlook and attitude in matters of business policy developed in trade or finance may prove to be somewhat of a handicap in industry. A serious effort at adaptation, together with technical training, may often be required.

GOVERNMENT SERVICE

32. It is considered that experience gained by civil servants in the higher positions in public administration often provides them with a good background to qualify as candidates for top managerial positions in industry. The higher echelons of the military establishment might also be mentioned as a source offering good possibilities, particularly as regards personnel in technical branches. Some training and adaptation would be required, as in the case of personnel coming from trade or banking.

PROFESSIONS

33. Another possible source are the professions, which are not necessarily limited to those involving technical or scientific training. Non-technical professions—for example, law and accounting—have often

¹² In some cases such personnel policy may be induced by pressure on the part of the authorities of the country, or the existence of statutory limitations upon the proportion of non-nationals to be employed in an enterprise. Another important factor is the degree of autonomy in personnel policy enjoyed by the foreign subsidiary. For all these reasons, there are cases where the same company has adopted different personnel policies in different countries.

provided excellent managerial personnel. It will be noted in this connexion that, particularly in management of large-scale enterprises, a wider training might be a distinct advantage.

FOREIGN MANAGEMENT PERSONNEL

34. The importing of foreign personnel may constitute an immediate solution to the problem of management. Under this heading comes immigration of trained individuals, staffing of foreign enterprises by nationals of the home country, and hiring of managers from similar industries abroad. Provision of foreign staff for new industrial enterprises, as a transitional arrangement until local managerial cadres have been trained, is frequently of particular urgency. As one method of recruitment, it is well known that foreign manufacturers of industrial equipment are often ready to co-operate with their customers in providing experienced technical staff or assisting in locating suitable individuals; such an arrangement might also cover management personnel. However, this type of assistance is generally available only to the larger enterprises, and it is also difficult to obtain it in cases where the equipment of the new enterprise originates from a number of sources.

35. A possible source of recruitment of foreign personnel which does not appear to have been fully exploited might be retired staff members of large and medium-sized concerns in the developed countries. These persons, who are usually retired between the ages of sixty and sixty-five, have wide experience which may range from serving as chairmen, presidents or vice-presidents of companies to higher-level foremanship. They might be induced to work for a few years in the under-developed countries at a remuneration which would not be excessive as compared to their experience. While they may not always be familiar with conditions in under-developed countries, their training and experience in their home countries would often give them the necessary flexibility in adapting themselves to local conditions. It was suggested in the panel that the United Nations Secretariat might consider making the necessary contacts with firms in various parts of the world in order to locate such personnel as they become available; in many cases their availability might even be indicated shortly before retirement. A register of available and carefully screened persons might thus be built up.

36. As an alternative to recruitment of foreign personnel, mention may be made of the services of specialized consultant firms which provide management teams on a contractual basis for specified periods of time. A number of enterprises in under-developed countries have entered into contracts of this kind. Under such contracts, the over-all policies of the enterprise generally remain under the control of the owners or directors, while the management team is given the necessary authority to assume full responsibility for current production operations in such matters as employment of personnel, rates of compensation and purchasing of equipment and supplies. Less frequently, the management team assumes marketing functions as well. As a rule, the contracts include provisions for training of nationals to take over the management functions after the expiration of the contract. Another device is the setting up of joint ventures under which local interests combine with foreign firms having

experience in the relevant branch of industry. In such instances, the technical—and sometimes also the general—management is initially in the hands of the foreign nationals, but in due course it passes to the local element.

Lower-Echelon Management Personnel

37. The principal source of middle management personnel—at least as far as the more technical functions are concerned—is to be found among graduates of universities and technical and business schools, and among supervisors who have risen from the ranks. As to the methods of recruitment of personnel in this category, in one case which has been cited, a local university recommended a group of students of potential management calibre, from which a number of trainees was selected on the basis of interviews. In another case, a preliminary screening of university graduates was made on the basis of written applications; the promising candidates were then interviewed for final selection by a committee composed of academic and business people. In still another instance, several skilled workers with adequate general education were selected on the basis of interviews, and given on-the-job training for a period of several months; they were then placed in jobs with some managerial responsibility.

38. There appears to be a need for developing suitable devices to facilitate impartial screening and selection of candidates for managerial posts from among students and graduates of engineering schools, universities and business schools. Recruitment of candidates would be facilitated if they were systematically informed of existing openings; the establishment of an appropriate register of vacancies might also be considered.¹³ As to the composition of the screening boards, these should include individuals appointed by academic institutions and industry, and independent persons of high calibre.

Managerial Cadres for Smaller Enterprises

39. The problems of recruitment and selection discussed above apply mainly to larger enterprises; in the case of smaller plants the problems are different. Smaller plants are largely run by owner-managers who may originally have been skilled workers, foremen, sometimes graduates of technical schools, or who may have come from non-industrial occupations, such as trade. Supply of managerial talent in this sector is in many cases governed by the principle of "the survival of the fittest" which may not necessarily be considered the best or the most desirable criterion. There appears to be a need for a major effort on the part of the public authorities to supply the managerial needs of small-scale industry by promoting suitable training schemes. This aspect is discussed in the next section.

¹³ Such a device is employed, for example, in the United Kingdom, where a register is maintained by the Ministry of Labour.

MANAGEMENT CADRES: TRAINING¹⁴

40. The complexity of this problem has been indicated in an earlier United Nations document:

"Training for management is the most controversial of all phases of training; so far its problems have found the fewest satisfactory solutions. Successful management demands more than innate organizing ability and occupational skill. Modern industrial processes require an intelligent understanding of scientific discovery; modern commercial organization demands a knowledge of economics, finance and accounting; and the scale of modern operations imposes an entirely new approach to personnel management. There are no easy ways of meeting these requirements, which call for general education as well as technical knowledge. Success at the top level of management may depend to a large degree on the selection of the right individuals to intermediate posts, where they will secure the training and experience necessary to undertake the highest responsibilities a few years later."¹⁵

41. Many aspects of the problem of training are related to selection and recruitment. The following discussion concentrates upon problems of short-term training. These are considered particularly important in view of the pressing need of most under-developed countries for rapid assimilation of managerial techniques. Emphasis is put on training of management for larger enterprises; the problem presents different aspects in the case of small-scale enterprises, where special techniques would have to be developed. The latter are discussed in the annex to this report dealing with management service institutes.

42. As far as training within the country is concerned, a beginning has been made in several under-developed countries towards providing facilities for training in management. The expansion in development of these facilities would undoubtedly help solve the needs for short-term training.

43. One of the obstacles inhibiting their rapid development is the lack of industrial tradition which limits both the supply of competent instructors as well as the interest of managers of existing plants in availing themselves of these facilities. On the other hand, technical training activities are already being carried out in many countries. The duties of experts in industry, who are supplied under various technical assistance programmes or are otherwise serving under contracts with Governments, often include the technical training of local counterparts. Certain large-scale enterprises also operate technical training programmes for their staff; in certain instances informal seminars, lectures or round-table meetings, in which technical assistance experts frequently take part, are sponsored by local indus-

¹⁴ Three types of training are involved: (i) on-the-job training within the enterprise, preferably through a planned programme which would include training in various jobs; (ii) educational training provided in academic institutions (engineering and technical schools tend to stress technological rather than managerial aspects), and (iii) in-service training consisting of systematically organized field work. From a national point of view, this last, to be effective, would have to be organized on an industry-wide basis, if necessary under government sponsorship. All these types of training are complementary and are generally developed concurrently.

¹⁵ United Nations, *Some Problems in the Organization and Administration of Public Enterprises in the Industrial Field* (sales number: 1954.II.H.1).

try associations. While these activities also contribute to stimulating the interest of industry in problems of management, they are not geared directly to managerial problems and their impact upon management training is marginal. It is felt, however, that some effective use might be made of available technical training facilities for the purpose at hand by including management training in the curricula.

44. The major function of the training programmes--whether combined with existing facilities or set up on an *ad hoc* basis--would be to provide trainees with a basic knowledge of modern managerial functions and techniques.¹⁶ The training might preferably take place after working hours and be of short duration. Special programmes might also be provided for training of foreman cadres. As to methods of training, these may include round-table conferences, seminars, and--whenever practicable--visits to plants and in-plant work. In training foremen, formal instruction might be included in the curriculum, in view of the educational level of some of the trainees.

45. While there is general awareness on the part of industry and Governments of the value of training abroad in the technical aspects of industry, there is a tendency to underestimate its value in the case of management. It appears necessary to stimulate an active interest in this field on the part of both industry and public authorities.

46. In several instances in which enterprises have successfully trained abroad their technical and administrative personnel, the training involved a combination of post-graduate study with in-plant activities in foreign companies, training in the plants of manufacturers of equipment, under equipment purchase contracts, or similar methods. Clearly, smaller plants are likely to be at a disadvantage in this respect, because they have greater difficulty in establishing the necessary contacts with foreign firms, and also because the authorities are not always aware of their needs. Cases have been cited by technical assistance experts of Governments being reluctant to provide the necessary support for training of personnel from smaller enterprises. Foreign exchange to cover the cost of trainees abroad would be disallowed by the exchange authorities, either because such training needs were not recognized or because other training projects, relating to large-scale industry, were given priority. The attention of Governments should be drawn to the importance of proper recognition of the needs of smaller plants in this field.

47. In connexion with the more advanced type of training for higher-calibre personnel, attention is drawn to the existence of well-organized management training programmes in a number of industrialized countries; the programmes conducted by the Ecole d'administration publique in France, the Administrative Staff College in the United Kingdom¹⁷ and

¹⁶ It may be mentioned, in this connexion, that trainees sent abroad for technical study sometimes have little understanding of the principles of scientific management and of the management methods applied in the enterprises with which they come into contact. The effectiveness of the training thus tends to be impaired. Such preliminary training in elements of management would remedy this deficiency.

¹⁷ As an illustration of this type of training, the Administrative Staff College in London selects its trainees from industry candidates who are around the age of forty and at the time when they are about to take up senior positions. The training is almost entirely devoid of formal instruction or academic study. It consists of an analysis of a number of problems calling for the full range of ability and practical experience of the trainee.

Harvard University and other institutions in the United States might be noted in this respect.

48. A major problem in training personnel abroad is the difficulty often encountered in connexion with the placement of trainees in industrial enterprises of the developed countries. Whether because of a reluctance to devote the necessary time and effort to this, or the fear of disclosing production practices to outsiders, or other reasons, not all enterprises appear to be willing to admit trainees, at least for long periods of time. Experience shows it is much easier to enlist the co-operation of industry in developed countries in organizing study tours than in programmes of in-plant training. It is considered that the problem might perhaps be approached by making use of the existing machinery of international co-operation in economic matters, and that co-operation of governments, industrial organizations, management institutes and academic institutions in both the countries receiving fellowship awards and the host countries should be sought on this matter. It appears desirable to bring this problem to the attention of Governments who might wish to deal with it within the general framework of the programme of technical assistance.

49. As far as the long-run aspects of management training are concerned, the development of adequate managerial cadres would require—in addition to the development of specialized training facilities—some reorientation of the curricula of academic institutions engaged in technical education, whereby schools of engineering, universities and similar institutions of higher technical education would teach students the elements of organization and administration of enterprises. At the present time the programmes of study too often fail to do justice to these disciplines. It might also be recalled here that in few under-developed countries is management considered as a career in itself, and appropriate incentives, such as attractive employment opportunities and scales of pay and professional prestige, are indicated in order to stimulate the interest of potential talent in this field.

50. A general shortage exists in under-developed countries of technical schools below the university level, and there is urgent need for such institutions to be established on two levels—secondary and intermediate—the latter taking in those between high school and university. These types of institutions, which emphasize the practical side of the subjects taught, have proved to be very effective in industrialized countries in providing training for lower management echelons.

51. Finally, again from the long-term point of view, a well-planned training programme should be based on realistic estimates of demand for managerial and technical personnel. A number of countries have attempted to quantify the prospective requirements in technical personnel in the industrial sector¹⁸ and, in countries where development plans have been drawn up, these often include manpower budgets for specific skills. Long-term requirements in managerial skill should also be taken into account in drawing up these budgets.

¹⁸ One technique consists of forecasting output in various branches of industry and estimating the ensuing requirements in technical manpower. This is supplemented by a questionnaire sent out to industrial enterprises requesting estimates of anticipated needs in technical personnel. Estimates are then made of the corresponding requirements in teaching staff and facilities in the universities and technical schools.

SELECTED ASPECTS OF LABOUR MANAGEMENT

52. While the field of labour management raises a great number of problems, the discussion in this section is limited to the following topics which are considered to be within the terms of reference of this report: (i) integration of rural labour into industry; (ii) some aspects of vocational training, and (iii) the role of labour management policies, including labour relations.¹⁹

Integration of Rural Labour into Industry

53. This problem varies according to the degree of economic development and the cultural conditions of the countries concerned. Thus, the available material would indicate that in Brazil and some other Latin American countries integration of rural workers into industrial employment has been carried out more rapidly and effectively than in Asian countries, where traditions of village life are comparatively stronger. The problem also appears to be different according to whether plants were located in rural or urban areas; in the former case, since the industries drew their labour from local sources, the process of adaptation was smoother.²⁰

54. Peasants are usually attracted to industrial employment by economic considerations, but their ties to their villages persist and, as long as their families remain behind, they tend to go back to their homes as soon as they have accumulated sufficient funds, returning to industry or urban employment only when their savings are exhausted. The provision of adequate accommodations and other living facilities for workers and their families would help to reduce the rate of turnover due to this cause. New industrial enterprises established in rural areas in Yugoslavia, for example, have found this a particularly successful means of stabilizing the supply of peasant labour; the acceptance of housing provided by the firm was a definite step in cutting the ex-peasant's ties with the land and making him think of himself as an industrial worker. In this connexion, certain countries have passed legislation requiring enterprises, when constructing new plants, to provide housing for a stated percentage of their workers. Another method is to facilitate the purchase of houses by means of loans to workers at low interest rates; this method applies, however, only in the case of larger companies where relatively high wages are paid.²¹

55. Another aspect of labour instability, widespread and high rates of absenteeism, appears to be more prevalent at an early stage of industrialization and tends to become less acute as wage-earners become more accustomed to work in industry. Various means of reducing absenteeism

¹⁹ Various problems relating to labour and management have been dealt with at several international meetings convened under the auspices of the International Labour Organisation.

²⁰ Information on this problem, however, is still scanty. A project at present in progress in four Indian cities, sponsored by the Research Committee of the Indian Planning Commission, proposes to investigate the problem of adaptation of workers from rural areas. Attention is also drawn to the research currently undertaken by the United Nations Educational, Scientific and Cultural Organization on the social implications of industrialization.

²¹ It should be noted in this connexion that improvement in the efficiency of the building industry in under-developed countries would lower the cost of building and thereby greatly contribute towards solving the housing problem.

by changing the attitude of workers in this respect may be cited. In particular, education of workers and their families in new patterns of consumption would increase their demand for consumer goods and thus provide an incentive for stable income. This applies particularly to areas in which a money economy has only recently emerged.

56. Another element in adjustment of rural labour to conditions of work in industry with which management has often to cope is that the new industrial worker is often subject to certain psychological tensions resulting from the unfamiliar environment. These are likely to be particularly acute when workers are separated from their families and may prove not only to be a source of inefficiency on the job, but even to lead to social unrest. In some countries it has been found that building construction or public works and even military service often provide useful educational stages in introducing labour to the rhythm and discipline of work and the general environment of industry. The studies referred to above may help to throw some light on this problem.

Some Aspects of Vocational Training²²

57. The vocational training facilities established in many countries for different trades are not always sufficient to meet the growing needs of industry, while the traditional methods of apprenticeship, such as putting a new worker with a trained man, are slow and uncertain. A different approach, in the form of in-plant training, is indicated. One method of this kind of training is to set aside a certain period of time every day during which inexperienced workers may be trained in various operations.

58. Industry in under-developed countries often fails to recognize the value and possibilities offered by in-plant training in such cases, for instance, as when new types of machinery are introduced, or when handicraft industries are being mechanized, and there is a need to stimulate the interest of management in this problem. It is suggested that a manual or pamphlet for the use of industry management, describing the nature of the problem and the principles to be adopted in training, would be of considerable use in this respect.

Labour Management Policies and Productivity

59. A serious difficulty in industry in under-developed countries is to persuade management of the importance of sound labour relations as a means of raising productivity. Management is not always aware of the financial losses incurred by enterprises as a result of absenteeism, high labour turnover, spoilage and similar results of an indifferent or non-co-operative attitude of labour.²³ It is considered that attention should first be drawn to the advantages of wage policies based upon, and linked to, labour productivity. Rising productivity provides the economic basis for higher wages which, in turn, provide an incentive for greater effort on the part of labour. At the same time, rising labour income provides

²² Other aspects of this topic are discussed in the section on the training of management cadres.

²³ See, in this connexion, the section on management controls.

the basis for an expanding domestic market for industrial consumer goods and the development of industry.

60. Better personnel policies and techniques of labour relations are also indicated, but, in the case of the latter, it is felt that it would often be unwise merely to transfer techniques developed in industrially advanced countries to under-developed countries without taking account of local environment and social patterns. It is suggested that a study of this problem might appropriately be included in the research programmes on social implications of industrialization referred to above. It would also be of considerable practical value to industry if the subject of labour relations could be included among courses given by management training institutions, productivity centres and similar bodies, as well as in university curricula in engineering and business. The subject matter of the courses should, in such cases, be thoroughly reviewed by qualified indigenous persons, familiar with the environment and institutions of the countries concerned, so as to bring it into harmony with the conditions prevailing in those countries. It is felt that there is often a tendency for technical personnel to underrate or to ignore the contribution which a well-informed social scientist could make in these matters.

MANAGEMENT OF PRODUCTION FACILITIES

61. Management of production facilities covers some of the more important areas of industrial management, in which basic decisions are made on such problems as plant capacity, selection of equipment and plant design, as well as on the organization and supervision of current operations. Some of these problems involve long-term commitments incurred prior to the start of operations; others deal with current planning and control of production. The two sets of problems are closely related and affect the results of the enterprise.

62. The terms of reference of this report do not call for a comprehensive treatment of the subject along the lines of conventional industrial engineering. The discussion is therefore limited to certain selected areas, with the aim of singling out the obstacles to the application of current management techniques and indicating ways and means by which these obstacles might be overcome. The subject matter is dealt with under the following major topics: (i) design and utilization of equipment; (ii) raw materials; (iii) quality control: use of specifications and standards, and (iv) maintenance and repair of equipment.

Design and Utilization of Equipment

63. A well-known aspect of the problem of the transfer of technology to under-developed countries is the need for adapting processes and equipment developed in industrialized countries to the local environment. Instances have been cited, by experts in the field, of production equipment which is well suited to the needs of industrialized countries but whose performance fails to measure up to expectations in the industrial environment of under-developed countries. The problem seldom arises in the case of large-scale industrial operations, since technical processes, including

plant design, are fairly standardized in this type of operation. However, even in such cases, a certain flexibility exists in the design of equipment for some ancillary operations, for example, materials handling. By making such operations more labour-intensive, substantial savings in capital might be achieved. In view of the scarcity of capital resources in newly industrializing countries in relation to their needs, detailed studies of appropriate factor proportions, dealing with the possible combinations of capital and labour in major industrial processes, would appear to be extremely useful.²⁴

64. The problem of equipment specially designed to meet the conditions of under-developed countries does, however, frequently arise in small-scale industries. There are generally few prototype plants in industrialized countries and, even when available, they may often be too complex to operate and maintain in less developed countries. In purchasing equipment the small entrepreneur is not always in a position to exercise his own judgement—as, for instance, in the case of a change-over to more mechanized operations involving a different level of competence. He can also seldom afford outside paid advice and has to rely on the advice of importers or manufacturers' agents, who may not necessarily be objective. There is, therefore, a real need for the provision of competent engineering advice on design and procurement of equipment for small-scale industry.

65. It also appears desirable to collect and disseminate, on a systematic basis, engineering and economic data on equipment in a certain number of industries. An effort has been made in this direction by some national agencies in the form of publications on design and operating characteristics for model plants. Experience has shown, however, that the great variety of plants, both as to type and size, would make it necessary to prepare an excessively large number of plant specifications to meet possible needs, even in a small country. A more practical approach might perhaps be to assemble and disseminate basic technical data on individual pieces of industrial equipment, such as capacity, shipping weight, cost, product specifications and source of supply, as well as simplified drawings or sketches of the relevant items. Such information might be obtained from manufacturers' catalogues²⁵ and its dissemination entrusted to the relevant government agencies in each country, with the help of experts, if necessary.

66. In the design of plant for small-scale industry, it is sometimes found that major economies, or better and more uniform quality, can be realized if a particular step is carried out on a large scale. Where a complicated and expensive piece of equipment is required for a certain purpose, or other facilities are found to be necessary which are beyond the means of a single plant, a possible solution would be the establishment of common facility services, for instance, using the device of industrial estates—a well-known feature of the organization of small-scale industry in some countries.²⁶

²⁴ See three studies in this field published in United Nations, *Bulletin on Industrialization and Productivity*, No. 1 (sales number: 58.II.B.2).

²⁵ In at least one case a manufacturers' association in a country exporting machinery has produced a consolidated catalogue of equipment for use by small industry.

²⁶ Common facilities of this type are already in use in some countries, principally to serve handicraft production, or cottage industries, for example, machine preparation of clays and glazes for potteries, mechanized glazing of leather or finishing plants for textiles.

67. As another problem in design of plant, it may be noted that plants are sometimes designed to meet existing demand and fail to take advantage of potential opportunities for economies, either in scale or by the application of improved techniques, where an expanding market for the industry's output could reasonably be anticipated. Conversely, the minimum size for economic operation may be such that the establishment of a plant is not warranted by the existing or foreseeable demand for the product. Thus, studies of the relationship between size of plant and investment and cost of production in given industries appear to be an important field of investigation for the purposes of both industry programming and investment decisions of individual enterprises.²⁷

68. Attention should also be focused on the problem of improving the rate of utilization of existing equipment, the importance of which as a "capital-saving" device in under-developed countries need hardly be stressed. One approach to this problem would be through the use of methods of work study, in which field important work is being done by the International Labour Organisation. These methods make it possible to analyse machine utilization and to set standards of labour output and plant utilization on which production programmes may be based.²⁸

69. Another way of improving the rate of utilization of equipment is to increase the hours worked by machines, either through the use of overtime or by the device of multiple shifts. In this regard, it is recognized that certain economic and social factors, as well as purely technical considerations, are involved. Thus, in some newly industrializing countries, many workers would be reluctant to engage in night work; this applies especially to the more recent arrivals who have not yet adapted to industrial work discipline.²⁹ The introduction of night shifts may be further hampered by inadequate public services and lack of other facilities, such as urban transportation and meals. Problems of a social nature also arise. For all these reasons, introduction of multiple-shift operations represents a complex problem, the solution of which involves co-operation between management, labour and public authorities. The problem is, however, sufficiently important to deserve the fullest attention of all parties concerned.

70. Seen from the cost point of view of the individual enterprise, the introduction of additional shifts might be expected to lead to higher labour costs. Higher rates of pay, or bonuses based on regular attendance, would be necessary to attract labour to night-shift work, and the required plant facilities to accommodate additional shifts would be a further source of expenditure. Nevertheless, it is considered that the additional cost might be more than offset by savings resulting from better utilization of equipment.

²⁷ The United Nations Bureau of Economic Affairs is currently engaged in a study of this type concerning a number of industries.

²⁸ A discussion of the experience of technical assistance experts in this field, sponsored by the ILO, is contained in the *International Labour Review*, vol. LXXVI, Nos. 1 and 2, July and August 1957.

²⁹ This may also tend to increase the rate of labour turnover (see the section on aspects of labour management).

Raw Materials

71. One source of difficulty in industrial production in under-developed countries is the poor and uneven quality—and sometimes the uncertain supply—of raw materials. The poor quality is often due to the primitive methods of production and production control prevailing in the primary producing industries. Irregularity of supply is largely the result of poorly organized markets and defective distribution, including transport and storage facilities.³⁰ Industrial efficiency suffers from both these factors as regards the establishment and maintenance of proper quality standards in production and regular production schedules. Enterprises often attempt to overcome the deficiencies in the supply situation by keeping high inventories of raw materials, requiring considerable outlays of working capital and expensive storage facilities. This leads, in the last analysis, to higher cost of production.

72. In most under-developed countries government policies of economic development attach the greatest importance to industries based on domestic raw materials. In stimulating the establishment of such industries, however, Governments would be well advised to pay close attention to these raw materials problems. They could help by educating the producers of raw materials in the use of methods of quality control, by enforcing minimum quality standards and similar measures. A type of organization which might be appropriate for this purpose are the technological institutes for assistance to industry, which have been set up by Governments in a number of countries. In addition to the assistance mentioned above, the functions of these institutes might also include systematic research on domestic raw materials, with a view to developing new industrial uses, and technical help to industry in various other fields. Several countries have sought technical assistance from the United Nations and other organizations to this end, and Governments of other countries might also consider establishing such institutes.

73. As far as the supply of raw materials for industry is concerned, governments can play an important role. Among the measures that may be taken in this connexion are the provision of better facilities for the marketing of raw materials in the form of improved transportation and storage, and the promotion of more efficient marketing methods.

74. As regards the development of industries on a domestic raw materials basis, in many instances sources of usable materials are known to exist, although, for a number of reasons, their commercial exploitation may take some time. In such cases, the use of imported raw materials on a transitional basis might be envisaged to start domestic industries operating. Not only would this help accelerate the industrial development of the country, but the existence of an adequate and stable domestic market for these raw materials would provide a sound basis for the exploitation of indigenous supplies.

75. The attention of Governments is also drawn to the fact that manufacturing activities are, in some cases, seriously hampered by indiscriminately applied restrictions on imports of raw materials and uncertainties as to future government policies in the matter of such

³⁰ See paragraphs 101 to 105.

imports. Abrupt shifts in foreign sources of supply, which may be dictated by exchange policies, also often have a disruptive effect upon production and create serious problems of management. It is considered that, even in stringent exchange situations, a more flexible policy might be justified for certain imported materials which, while being used in small amounts, thus involving an insignificant outlay in foreign exchange, are nevertheless key components of the manufacturing process, whose elimination would greatly affect the quality of the final product. Dyes for textiles and certain alloys for castings are examples of such materials.

Quality Control: Use of Specifications and Standards

76. There are several factors responsible for the often inferior quality of manufactured goods in under-developed countries. One of these is the use of defective raw materials, noted above. Another is that the goods are produced with inadequate, obsolete or worn out equipment. The related problem of inadequate maintenance, which is reflected in poor performance of the machinery, is considered later in this section. The final factor is the extent to which management is prepared to enforce a rigorous system of quality control throughout the production process.

77. Industry standards in regard to quality control are generally low. Even where they exist, they are usually limited to the finished product stage, and little or no effort is made to control the intermediary stages. As regards larger enterprises, the adoption of higher quality standards in production is related to the improvement in the general quality of management. No specific suggestions appear to be indicated on the enterprise level, except perhaps to draw the attention of management to the importance of the problem. On the national level, the adoption of standard specifications would greatly facilitate the task of management in introducing quality control techniques into their plants.

78. Small-scale enterprises can seldom afford the expense of the personnel and equipment required for control purposes, and assistance in the form of services provided by the technological institutes described earlier provides a ready solution. The institutes could educate small producers in the value of quality control in their production, provide advice on quality control problems, supply the necessary technical services, and train management in the use of control techniques.

79. The problem of specifications and standards is closely related to quality control. In some countries, while no formal national standards exist, some specifications are used in industry, based on makeshift arrangements or on norms developed by a few large, well-known firms. In some cases foreign standards, known through imports, come to be adapted in the course of time. The multiplicity of standards originating from different sources may introduce a degree of confusion and is often a source of annoyance to producers and users alike. Uniform quality specifications would greatly facilitate quality control and simplify many production problems. They would also facilitate marketing and distribution and increase the confidence of consumers in the products of industry. Standardization would be particularly helpful in promoting exports.³¹ Finally, it is

³¹ See paragraph 110.

considered that the enforcement of uniform standards would be an important step towards reducing excessive diversification of products—a well-known weakness in most under-developed countries and a source of inefficiency and waste that industry can ill afford.

80. There appears, however, to be some difference of opinion as to the advisability of establishing standards at an early stage of industrialization. Extensive and careful experimentation with materials and products and long experience in use is often required before standards can be established. Standardization would also have to be approached with considerable caution in situations where consumer tastes are in a state of flux. It is likely that the need for standards would be felt first of all in producer goods industries, in consumer goods industries serving organized markets, such as textiles, and in export industries.³²

81. It is considered that practical action should preferably be undertaken by the industries directly concerned. The prevailing practice is for standardization institutes to be established by the respective industries, with the assistance of engineering societies and with active support from Governments. The institutes co-ordinate and direct the technical work, including research, and are also active as clearance centres for information on standardization work conducted internationally. They perform a particularly useful task in promoting "standards consciousness" among manufacturing enterprises, and awareness of the problem among the public.

82. Assistance in establishing national standards associations can be obtained from various national and international sources; among the latter might be noted the International Organization for Standardization.

83. Finally, it is considered that adoption of standards should, in many countries, be preceded by, or take place in conjunction with, the establishment of uniform weights and measures.

Maintenance and Repair of Equipment

84. Industrial maintenance has two aspects: preventive maintenance and repair. The former involves periodic inspection of equipment and facilities for such upkeep as inspection indicates; the latter involves repair after breakdown. Because of inadequate maintenance, industry in many under-developed countries suffers from an unduly high rate of depletion of capital assets and a chronic waste of productive capacity which even economically stronger countries could hardly afford. As regards preventive maintenance, it is found by many technical assistance experts that, in some industries, this tends to be neglected to the point where equipment breaks down and has to be replaced. Many instances are also reported where, because of poor preventive maintenance, the consumption of spare parts is excessively high, necessitating considerable outlay of foreign exchange for replacement.

85. In many cases the lack of attention to preventive maintenance is due to neglect or indifference to this problem on the part of management. There may be unwillingness to engage in an expense which does not appear

³² This of course does not apply to some export industries which are organized on a handicraft basis, where the lack of standardization is considered by consumers as a desirable, and even the outstanding characteristic, of the product. See also paragraph 110 and footnote.

to yield immediate returns, and there is often a tendency to consider the maintenance department as an unnecessary burden upon the enterprise.

86. In so far as poor maintenance is a matter of attitude, this could be overcome by a process of education which would also encourage management to make use, as much as possible, of outside advice on, and assistance in, introducing sound maintenance practices. There may be, however, a less subjective reason, such as shortages of skilled maintenance labour and technicians. This could be remedied, in the short run, by the use of trained personnel from abroad, who would train local personnel. A longer-run approach to the problem is the setting up of adequate training facilities for maintenance personnel.³³

87. Another important factor in maintenance is the problem of spare parts. Management is not always fully aware of the necessity for carrying adequate inventories of spare parts. In many cases, however, the fault also lies with a too rigid application of import controls by the exchange authorities. In importing new equipment, enterprises often experience difficulties in obtaining additional exchange for spare parts. Instances have been cited by technical assistance experts in the field of new factories being set up without a single spare part in stock.³⁴

88. In many countries, the spare parts situation is aggravated by the fact that existing physical plant is extremely heterogeneous as regards age, type and country of origin. This makes procurement of parts a complex and, in the case of obsolescent equipment, an impossible task.³⁵ In this connexion, it is suggested that an effort should be made by industry to standardize their basic equipment as much as possible, as far as origin is concerned. It is recognized, however, that this is a slow process which also involves the active co-operation of the public authorities with respect to their import control policies.

89. The problem of repair has two aspects: capacity of plant repair shops and availability of trained personnel. Because outside facilities are often inadequate and spare parts and equipment difficult and slow to obtain, plant repair shops are often engaged in production of replacement parts and even in duplicating complete pieces of equipment, and, particularly in the larger enterprises, elaborate mechanical facilities are set up at considerable investment expense. From a rational point of view, this often represents duplication and poor utilization of scarce investment resources; from the point of view of the individual enterprise, establishment of costly facilities is reflected in high production costs. On the whole, the situation illustrates the effects of inadequate external economies upon the economics of industry. Training in maintenance involves both inculcating sound maintenance principles in managers and teaching practices and procedures to technical and operative personnel. In earlier

³³ See also the section on training management cadres.

³⁴ In other instances, however, government agencies have shown considerable awareness of this problem by insisting that spare parts be imported at the same time as the basic equipment. Similarly, some countries provide private companies with generous exchange allowances on the understanding that adequate supplies of spare parts will be kept on hand to supply not only their own needs but those of other firms throughout the country.

³⁵ The high rate of change-over in models for certain pieces of industrial equipment, such as trucks, by manufacturers in some countries is a source of considerable difficulty in this respect.

sections of this report, reference was made to various problems in this field.

90. A possible solution to the repair problems of small-scale enterprises might be the establishment of central or pooled maintenance shops serving the needs of several co-operating plants. Central maintenance units of this kind could be established in close proximity to the plants, and, in addition to facilities for repair work, could be equipped to manufacture parts, if necessary. It is suggested that the establishment of pooled repair facilities might be considered within the framework of the industrial estates to which reference was made earlier.

MARKETING

91. Industrial enterprises in under-developed countries are usually not sufficiently aware of the importance of a systematic approach to the problem of marketing and of the need for a close co-ordination of, and a proper balance between, the marketing and production functions of the enterprise. As was mentioned earlier, in industrial enterprises managed by former merchants, the efforts of management are generally oriented towards taking advantage of short-run market situations, regardless of production schedules. On the other hand, in industries established by persons whose former interests were in the fields of agriculture and mining, management tends to underestimate the marketing function.

92. In this section attention is devoted to the following aspects of marketing: (i) evaluation of demand; (ii) channels of distribution; (iii) promotion of demand for industrial goods, and (iv) some aspects of marketing in exports.

Evaluation of Demand

93. In some countries reasonably well organized trade and marketing channels are available. Some information exists on the characteristics of domestic demand, and manufacturers find it possible to make market forecasts and schedule production accordingly. On the other hand, when faced with completely unorganized markets, producers find an evaluation of future demand to be a hazardous, if not an impossible undertaking. Clearly, the domestic market is seldom a totally unknown quantity, and past experience and rule-of-thumb methods sometimes lead to tolerable results. But the limitations of such procedures are evident, particularly when it comes to decisions of investment in new facilities or the development of new products.

94. The use of market research techniques, including the interpretation of results and the establishment of the necessary facilities, gives rise to certain problems. The techniques of market surveys have so far seldom been applied in under-developed countries, so that professional personnel is extremely scarce and would need to be trained. Moreover, in many countries the conduct of even a relatively simple survey would present considerable difficulties.

95. The basic information used in market surveys consists of primary data secured through questionnaires, personal interviews and similar devices and of secondary data originating from current statistical publications. As far as the first type of information is concerned, few countries have the necessary resources, such as competent research institutions and trained personnel. In addition, interviewers would frequently have to contend with a population unfamiliar with this type of inquiry, which might be unco-operative and even hostile. Survey techniques would thus need to be reviewed and adapted to local conditions.

96. As regards secondary data, only in a few under-developed countries are the relevant statistics sufficiently detailed and specific to be of use. Most of these data have often been compiled to meet certain *ad hoc* needs of the public authorities and are of limited applicability for the purpose of market research. It is considered that an effort should be made to develop and improve relevant statistical information, such as geographical distribution of purchasing power, consumption patterns, production, sales and inventories by branches of industry, and turnover of business enterprises. It is important, in this connexion, that industry make its needs known to government agencies and that, in general, a closer collaboration between producers and users of statistics be maintained. Other drawbacks, to which attention is drawn, are the considerable lag in the publication of statistics, and, in the case of studies relating to export markets, the lack of international comparability of the statistical entries. Some efforts to remedy these defects have been made in recent years, on the initiative of the United Nations and the specialized agencies, but much remains to be done.

97. It is important to recognize that the evaluation of the results of market studies is a particularly complex problem in under-developed countries and should be approached with a great deal of caution. In addition to the limitations and considerable margins of error in the statistical estimates themselves, the effect of the dynamic elements in demand need often to be taken into account, particularly in the case of new products. Changes in such dynamic elements as distribution of incomes, consumers' tastes and a host of others are likely to have greater consequences than in the developed economies because of the very nature of the development process. The interpretation of the results of conventional market research would, in many instances, require a careful analysis of the underlying factors.³⁶ The relevant experience of other countries which have undergone a process of industrial development might furnish some useful insights in this respect.

98. In regard to facilities, it is noted that in a few under-developed countries some professional advice on market research is already available.

³⁶ The interrelation of supply and demand is another factor in the dynamics of demand in under-developed countries. Not infrequently market demand for imported commodities is limited by import restrictions or by high prices due to heavy transport and handling costs and the generous profit margins of importers. The establishment of local production may so change the supply schedule that the market for the products will grow out of proportion to past experience. Thus, it has been shown that a considerable latent demand exists for certain basic industrial products, such as iron, steel, cement and heavy chemicals, which becomes effective as soon as imports are replaced by local production. In the case of consumer goods, adaptation of the product to the characteristics of the local market has also proved, in many cases, to play a major role in bringing latent market demand into the open.

However, such facilities as exist are generally used by the larger concerns, and little or no use is being made of them by the average enterprise, which is seldom familiar with the value and techniques of market research. A need exists to stimulate management in the use of the techniques and facilities for market research and to establish new facilities. As far as smaller firms are concerned, such advice might be one of the functions of the management service institutes whose establishment has been mentioned previously in connexion with the provision of assistance to smaller industrial enterprise in other management areas. In the field of marketing, in addition to market research, the institute could provide assistance in advertising, sales promotion and training. Institutionalized facilities of this kind already exist in a number of countries.

99. It is also felt that a manual on market research, specially adapted to the needs and conditions of under-developed countries, would be of considerable assistance. A prototype manual might be prepared for general use, which could then be adapted in each country to fit local conditions and needs.

100. Attention might also be given to including market research in the curricula for management studies in academic and other training institutions.³⁷ Finally, as noted earlier, among the numerous foreign fellowship grants by international organizations, few have been made available so far in the management field, and it is felt that marketing is an important area in which fellowships would be useful.

Channels of Distribution

101. Conditions in the distribution sector in most under-developed countries are one of the recognized inhibiting factors in economic development. The low efficiency and high costs prevailing in that sector hinder growth of markets and expansion of output. It is true that the situation is in itself largely related to the level of development. Overcrowding of distribution, as of other services, because of chronic under-employment, is one of the causes of low productivity, which, together with the low rate of turnover, leads to high margins in distribution, in spite of the generally small incomes in this sector.

102. The industrial producer has often to contend with an antiquated and inefficient distribution sector in which the process of adaptation to the production requirements of modern industry, such as mass production of standardized articles and advance planning of production schedules and deliveries, has made comparatively little headway. Thus, with few exceptions, there is little or no specialization among commercial houses, the prevailing pattern being that of a cumulation of different marketing functions and product lines—often of heterogeneous nature—in one enterprise. In other cases, distribution is in the hands of merchants who are at the same time manufacturers of competitive products. In both instances, the distribution function would, more often than not, be inadequately covered from the manufacturers' point of view.

103. While progress can be noted in many instances, a serious effort to improve the channels of distribution is still indicated. Governments

³⁷ See section on training management cadres.

could play an important role in this connexion by devoting their attention to the problem, in co-operation with industry and the distributive trades. Preliminary surveys of distribution channels and practices, undertaken if necessary with international assistance, would be one of the first steps in this respect. The management service agencies, discussed elsewhere in this report might assist in the conduct of these surveys and in formulating the measures of improvement which would emerge.

104. The problem of distribution presents particular aspects to the smaller industrial enterprises. Many of them are dependent upon a single merchant for the sale of their output. Because of the economic weakness of the small producers, not only is the distributor in a position to dictate prices and terms of sale, but the former often become completely dependent upon him for working capital and even for the financing of fixed investment. Thus, the control of the enterprise, in all but the day-to-day routine, is in fact in the hands of the distributor.

105. Measures of assistance in marketing, including distribution, appear to be particularly urgent in the case of small-scale enterprises. The formulation of such measures would be greatly facilitated by a survey of marketing methods in small-scale industry. This has proved to be effective in countries where this problem has received considerable attention. The case of Japan, where marketing of the output of a large sector of small-scale industry is carried out under sub-contracting agreements with large industrial concerns, has been cited in this context. The device of producers' marketing co-operatives might also be explored.

Promotion of Demand for Industrial Goods

106. It is considered that management of enterprises in under-developed countries is not always aware of the possibilities of increasing domestic demand for industrial goods.³⁸

107. One of the factors retarding the development of sales and output is the inferior and unequal quality of the products as compared with similar manufactures produced in developed countries. It is true that it is often difficult to interest an enterprise in engaging in the expense and effort of improving quality when it finds a ready market for the quality it is currently producing. Consumers are frequently forced to buy local products because alternative sources of supply are restricted, or non-existent, on account of policies of protection or shortages of foreign exchange for imports. While in many under-developed countries the demand for manufactured goods purchased by population groups with very low incomes might be influenced more by price than by considerations of quality, this argument does not apply, by any means, to all manufactured goods. Even in the former case the factor of uniformity of quality still needs to be considered. It is in the long-run interest of industry to adopt a more enlightened policy in regard to improvement of the quality of output.

108. The improvement of quality by means of appropriate control techniques in production, to be adopted by producers on an individual or collective basis, was discussed in an earlier section. Some measures

³⁸ While it is recognized that the economic aspects of this subject play an equal, if not a larger, role, these were considered beyond the scope of this report.

might also be considered by Governments to enforce minimum quality standards. For example, import licensing might be used in some cases to strengthen competition and induce manufacturers to strive for higher quality; in addition, Governments might set up and enforce specifications for their own purchases.

109. The panel also examined the possible contribution of advertising towards expanding demand for industrial goods, particularly among potential consumers in the lower income groups. Advertising with a view to familiarizing the latter with hitherto unknown consumer goods has played so far a modest role, although, as a result of the spread of literacy, the press is being increasingly used as an advertising medium to influence these groups. However, this medium still reaches only a relatively small fraction of the population in this category. The point was made that larger consumer groups—rural consumers and illiterate persons—might be reached by visual displays and by such media as films and radio. Advertising of this type, by influencing the consumption patterns of certain groups of labour which have not, as yet, been completely integrated into the money economy, might also help to provide the necessary incentives to increase their production effort.³⁹

Some Aspects of Marketing in Exports

110. Promotion of exports of manufactures from under-developed countries must frequently be undertaken in the face of stiff competition, in prices and quality, from the industrialized countries, which have the additional advantage of well-established distribution channels. As regards exports to the industrialized countries, aside from competitive prices which raise the problem of cost and efficiency in production, uniformity of quality is often the overriding factor.⁴⁰ As was discussed at some length in the section on management of production facilities, a major effort must be made by the export producer as regards quality control in manufacture. Governments might assist in this respect by enforcing minimum quality standards in production for export. On the other hand, price, rather than uniformity of quality, is likely to be the important factor in exports to under-developed countries, and efficiency in output and low costs of production would determine the competitive position.

111. As regards promotion of exports, the type of market intelligence currently supplied by consular services and similar channels is likely to be of too general a nature for the purpose of planning export campaigns, and may fail thus to meet the needs of manufacturers interested in specific export markets. Here, *ad hoc* market research is required. The effort and cost involved would be, however, beyond the means of individual enterprises, and it is considered that the necessary research activities should be undertaken by a special export promotion body, to be set up on a national or industry basis. Some countries have developed government-sponsored organizations of this type which are given, at the same time, certain

³⁹ See also the section on aspects of labour management.

⁴⁰ The requirement of uniformity of quality is of course not applicable to some types of handicraft exports, and might even be detrimental to their marketability. It was mentioned, however, that it is nevertheless desirable to standardize and upgrade as much as possible such elements in the manufacture of the product as bear on its quality, for example, colour fastness and yarn strength in textiles.

powers of supervision over the export industries, to ensure that adequate standards of quality, delivery time and other requirements are maintained. Trade organizations of this type, preferably on a co-operative basis, would appear to be an effective means of promoting exports of products of small-scale industries.

112. It should be mentioned that efforts made in developing markets abroad, in the face of world-wide competition, would result in a number of benefits for domestic industry, even outside the export sector. They provide strong inducement for producers to raise standards of manufacturing, reduce costs and, in general, adopt a more sophisticated industrial outlook. The export sector thus serves as an excellent educational ground for industry as a whole. The establishment of an international market for a product also often helps to enhance the prestige of that product in the domestic market, which, in countries where considerable prejudice exists among consumers against local manufacturers, is by no means a negligible consideration.

MANAGEMENT CONTROLS⁴¹

113. Management controls referred to in this section include financial or historical accounting, budgetary control, cost accounting, stores accounting and material control, and internal or management audit.⁴²

114. In larger enterprises, basic control information is generally available. Most of these concerns maintain a well-developed accounting organization and have fully qualified accounting staffs. However, in public enterprises, accounting methods and records are sometimes patterned upon procedures in use in the administrative agencies of the Government, which are not always suited to the purposes of industry. Medium-sized enterprises generally maintain a system of financial accounting and—to a lesser extent—some cost accounting and control procedures, and supplement their accounting staff, when necessary, with occasional outside professional help, for example, for the preparation of annual financial statements. In small-scale enterprises it is unusual for even a minimum system of accounting to be kept.

115. There is a tendency on the part of the average manager to rely mainly on financial accounting and to overlook the value of proper integration of costing and financial accounts, which would increase considerably

⁴¹ See also George Ronson, "Use of Accounting as an Aid to Management in Industrial Enterprises in Under-developed Countries" in United Nations, *Bulletin on Industrialization and Productivity*, No. 1; the article is based on a paper presented by Mr. Ronson to the panel of experts.

⁴² Financial or historical accounting includes the keeping of records to serve in the preparation of general periodic statements, especially the operating, profit-and-loss accounts and the balance sheet. Cost accounting is conducted chiefly with a view to ascertaining unit or product costs. Budgetary control consists in establishing budgets for the operation of each department of the enterprise, to allow for continuous comparison of actual with forecasted results. Stores accounting consists in the control of materials and manufactured goods, including movement of stocks, orders placed and similar data. The internal audit provides the means for a critical evaluation of financial transactions, and may be extended to an independent review and evaluation of certain aspects of business performance.

the usefulness of the accounting system as a whole. In many cases it is not realized that greater use could be made even of financial accounting for purposes of management control, particularly in smaller enterprises, which, because of their limited resources, cannot always afford the expense of more elaborate cost records. To serve that purpose, financial accounts would have to be compiled at regular intervals and be made available as soon as possible after the end of the accounting period. They would need to be set up in such a way as to make comparable the data for corresponding periods.

116. There is also considerable room for improvement in the use of budget techniques for control purposes. To that end management should be educated in the necessity of planning ahead and translating the plans into financial terms, of keeping under continuous review the comparison of the actual with the planned results and the reasons for any discrepancies. It would also appear, on the basis of the experience of United Nations technical assistance missions, that enterprises in under-developed countries would greatly benefit by developing materials control accounting.

117. The foregoing raises an important point, namely that, in addition to developing the accounting basis for controls, it is necessary for management to make effective use of the control information thus provided. Many enterprises maintain accounting records largely to comply with the requirements of tax legislation or of credit institutions.⁴³ Professional organizations of accountants—in countries where they exist—perform an extremely valuable task by bringing home to management of enterprises the potentialities offered by the proper use of accounting information. Cases were cited of enterprises going to considerable trouble and expense in setting up elaborate accounting systems, with little regard to the practical usefulness of the information for purposes of management control.

118. The effectiveness of the control is clearly related to the general organization of the enterprise. In particular, proper delegation and definition of functions⁴⁴ and circulation of relevant information to all levels of management are essential prerequisites. Top management should not be overburdened with detailed control data while the needs of lower-echelon management for information on costs, sales and procurement, relevant to the performance of their duties, remain unmet because little or no control information reaches their level. It should be noted in this connexion that information provided by the accounting system is also a useful device for training lower-echelon personnel, as well as for measuring their performance. It gives them a better appreciation of their role in the activities of the firm as a whole, and makes possible a more rational approach to operational problems.

119. An important factor in the effectiveness of the control system is the relationship of the accountant to other members of the management team. For technical and accounting personnel better to appreciate one another's problems, closer co-operation between them is necessary. This might be achieved by means of frequent staff meetings and discussions at various management levels. A better understanding of the value of

⁴³ In many countries owners are reluctant to introduce financial control systems, since they prefer to keep such information secret.

⁴⁴ See the section on structure of management.

accounting controls might be achieved if engineers and technical personnel were encouraged to familiarize themselves with the principles of cost accounting and budgeting.

120. As to the supply of professional skill in accounting, large-scale enterprises are generally able to set up accounting systems, either by recruiting senior accounting personnel from abroad, or by training nationals in foreign countries. For smaller enterprises, the situation is generally less satisfactory, and the provision of accounting services to this category of enterprise is an urgent need. It is suggested that Governments of under-developed countries make the fullest use of international assistance facilities in this field, and that accounting services should be considered one of the key functions of the management service institutes referred to earlier. It should be the role of these institutes to assist small and medium-sized enterprises in introducing and using modern accounting methods; they should also promote, and assist in, training of local personnel.

SOME ASPECTS OF THE RELATIONSHIP BETWEEN INDUSTRY AND GOVERNMENT

121. Government policies have an important bearing on the problems of industrial management. As mentioned earlier, they influence considerably the physical environment of industry, as regards improvement of basic facilities. Government policies are also instrumental in promoting an appropriate economic environment for the development of the private sector of industry. While it is not intended to cover this problem exhaustively, since that would be beyond the scope of this report, it is considered useful to mention a few aspects which are more immediately related to the day-to-day operations of industrial enterprises.

122. Government measures affecting industry, such as certain fiscal measures and import and exchange controls, which may be a source of difficulty and annoyance to the private sector, might be better accepted and also gain in effectiveness if an effort were made by the authorities to keep the private sector better informed of the considerations of economic policy and public interest motivating such measures. The government would also be in a better position to formulate and implement economic policies if it had a sharper awareness of the conditions in, and the response of, the private sector.⁴⁵ For all these reasons there appears to be a need to improve the channels of communication between industry and government. This might be done, for example, by setting up joint consultative bodies representing the government agencies and industries concerned.

123. In the particular case of economic controls, it is considered that Governments may not always fully explore beforehand the repercussions of proposed controls; instances have been cited in which these have defeated the very purpose of the government policies underlying them.

⁴⁵ The importance of continuity in government economic policy was stressed in this connexion. Frequent policy changes and a resulting climate of uncertainty are likely to inhibit initiative and, particularly, discourage investment. The inhibiting effect on foreign investors of a climate of uncertainty as regards the continuity of national economic policies is well known.

A great deal of avoidable friction is often caused by the way in which these controls are administered; in many cases inefficiency or lack of flexibility on the part of the enforcing authorities has resulted in unnecessary hardship to business. The functions of the consultative bodies mentioned above might include consultations in matters relating to the formulation and implementation of controls. In particular, it is considered that, in many cases, greater flexibility in the administration of controls would be feasible without impairing their effectiveness.⁴⁶

124. From a more general point of view, the basic problem in the relationship between government and the private sector is that of achieving a reasonable compromise between normal business incentives and the public interest as expressed in government policies.⁴⁷ The co-ordination of the two is achieved, in many areas of the economy, by means of economic controls. It has often been suggested that an alternative approach to the problem of co-ordination might take the form of inducements to industry which would guide private production and investment into the desired channels. These inducements could be tax concessions, preferential tax treatment of reinvested profits, and flexible depreciation rates, as well as price and rate setting in regulated industries. Finally, consideration might be given to wider application of the device of mixed-ownership corporations, now being used in many countries in the organization of certain industries of national interest. Aside from any other advantages that this type of organization may possess, for example, as regards mobilization of funds for investment in heavily capitalized industries, mixed-ownership corporations may have considerable educational value. Under this type of organization, operation of private incentives is often tempered by consideration of public interest. On the other hand, the public authorities may gain first-hand experience in dealing with private interests, and learn better to appreciate their problems.

125. Several of the questions raised in this section on relations between government and private business might be usefully explored, and it is suggested that this might be a fruitful field for further study.

SUGGESTIONS FOR EARLY ACTION IN SELECTED AREAS

126. In the preceding sections, a number of suggestions for action were made, and it is considered useful to restate, in summary form, some of those suggestions which lend themselves to immediate practical action by individual entrepreneurs, industrial associations and government authorities, with the assistance, when necessary, of the appropriate international agencies.

⁴⁶ See, for instance, the suggestions made in this report in connexion with imports of raw materials and spare parts, in the section on management of production facilities, and exchange allocations for training abroad, in that on training management cadres.

⁴⁷ This is particularly true where economic policies take the form of economic plans or programmes. The co-operation of the private sector, which controls a substantial part of the production facilities, is clearly essential to achieve the planned targets. Very little progress has been made in dealing with this problem as regards the implementation of the plans.

127. One aspect of the development of effective management is the transition from personal to functional management. Since the structure of the latter is affected by varying local circumstances, it is suggested that comparative studies be undertaken of typical organizational patterns of industrial enterprises, in both developed and under-developed countries, including the relevant aspects of corporate legislation. In addition, in view of the fact that public participation plays a major role in the development of the industrial sector in many under-developed countries, there is great need for studies of the structure and functions of management in public enterprises.

128. Because of the shortage of managerial talent in newly developing economies, it is suggested that some areas outside the technical professions—for example, civil service, liberal professions, military personnel—might be explored for suitable candidates for managerial positions in industry. It is also suggested that, in designing training schemes for upper-echelon managerial personnel, the needs of such candidates, some of whom may lack technical training, should be taken into account. In this connexion, too, attention should be given to an important source of managerial personnel represented by retired executive and supervisory personnel from developed countries, and, to this end, appropriate registers of available individuals in this category should be established and kept up to date by the international agencies concerned.

129. It is further suggested that facilities which exist in many countries for training in technical subjects be expanded to provide, as well, facilities for short-term training of managerial and supervisory personnel in industry, including foremen. Advantage might also be taken of existing bilateral and international fellowship programmes to train management personnel abroad. The related problem of placing managerial personnel in foreign firms for in-company training should be thoroughly explored, including the use of existing international machinery for technical assistance. The needs of smaller enterprises for training in management should be taken into account by Governments in their fellowship programmes.

130. In order to assist management in meeting their needs for skilled labour, it is suggested that a manual be prepared for the use of industry, which would describe the nature and principles involved in vocational on-the-job training for unskilled workers.

131. To enable smaller firms to make use of the economies of scale in some stages of their production process which could be more efficiently performed by using large and costly special equipment beyond the means of individual enterprises, it is suggested that consideration be given to establishing appropriate common production facilities to service several affiliated plants. The latter arrangement might be combined with the device of industrial estates. The need of smaller enterprises for adequate repair and maintenance facilities might also be met by providing common repair facilities within the same organizational framework.

132. In many under-developed countries the low quality standards of industrial output are due to insufficient attention to the technical problems of production, in particular to adequate quality control procedures throughout the various stages of production, from raw materials to fin-

ished goods. To meet this deficiency, it is suggested that technological institutes be established to provide advice, guidance and assistance in production problems, including quality control, particularly as regards raw materials. It is suggested that these institutes might be used to conduct systematic research on the utilization of domestic raw materials, assist in drafting, and advise on the use of, standard specifications for raw materials and manufactured goods, and assist in training industry personnel in the use of quality control techniques. The services of the institutes would be particularly useful for smaller enterprises.

133. It is recognized that inadequate maintenance practices lead to an unduly high rate of depletion and waste of scarce capital assets in the industry of under-developed countries. The attention of governments and industry is drawn to the urgent need for adopting proper maintenance methods and practices, and to establishing proper facilities for training of maintenance personnel.

134. Because of the importance of market research as a tool in guiding the development of industrial production, as regards both existing industries and new industries to be established, and the weakness of existing statistical information for this purpose, it is suggested that governments, in developing their statistical programmes, consider the needs of industry in this field. To facilitate wider adoption of techniques of market research in under-developed countries, it is also suggested that a prototype manual on market research techniques be prepared for general use, which could be adapted by individual countries to fit their particular needs.

135. In view of the fact that prevailing inefficiencies and resulting high costs in distribution are a serious obstacle in the development of domestic markets for industrial products, and are thus an important factor in limiting industrial output, it is suggested that governments consider making studies of existing channels and practices in distribution, with a view to analyzing the factors involved and suggesting means for improvement; the distribution problems of smaller firms should, in particular, be taken into account in such studies.

136. It is recognized that in many under-developed countries industrial development would greatly benefit by better co-ordination between private entrepreneurial motivation and the public interest, as expressed in government economic policies. This problem is particularly important in cases involving the achievement of specific targets under economic programmes or plans. The co-ordination problem might be approached, in addition to the conventional economic controls, by appropriate measures to guide private production and investment into desired channels. It is suggested that studies be undertaken to explore appropriate measures in this field.

137. In order to meet particular needs of small-scale enterprises in various management areas, it is suggested that management service institutes be established on a country or regional basis, the function of which would be to provide services, including training facilities, in such areas as marketing, accounting and other controls, and personnel.

ANNEX

Management Service Institutes

138. Reference has been made several times in this report to establishing management service institutes to provide guidance, advice and technical services to industry, particularly to small-scale industrial establishments which cannot afford to employ specialized personnel on a permanent basis. It was stated that the services of such institutes would be very useful in such areas as marketing, accounting, and training of managerial personnel, including foremen.

139. It should be noted that some facilities for servicing industry already exist in a number of countries, largely as a result of assistance extended under international and bilateral programmes. These facilities are generally of a specialized nature—productivity centres, technological institutes, laboratories and pilot plants and similar institutions. Priority has generally been given to technology and industrial engineering, but some of the institutions occasionally provide assistance in related fields. Thus, technological institutes have sometimes undertaken market analyses in connexion with development of new processes or establishment of new plants, and productivity centres have provided advice on management matters. A few institutions have also initiated programmes of management training on a limited scale. The institutes now proposed would be devoted primarily to services in the field of management, to which little attention has been given so far under existing schemes.

140. A number of organizational problems arise in connexion with the establishment of these institutes. It is considered that they should preferably be established on a national basis, although, in some cases, a regional set-up might be considered.⁴⁸ It also appears that the scope of the services to be provided—which, as mentioned above, includes training—is too comprehensive to be effectively met within the resources that could reasonably be anticipated. In order to reduce the initial staffing and financial requirements, the servicing activities might be limited, in the beginning, to an area considered to be of particular urgency in the given situation—marketing, for example—and other services added as demand from industry develops. Priority might be determined by means of a preliminary survey. Finally, on the basis of the experience gained by the United Nations Technical Assistance Administration in the setting up of institutes of public administration, affiliation with an existing institution in a related field would be desirable. Existing institutions in the fields of technology and industrial productivity might be used for this purpose in certain countries.

141. Personnel requirements for the institutes might be met initially by foreign experts specially recruited, or by United Nations technical assistance experts in industry, having management experience, who are on the spot and who might be able to serve on a part-time basis. Another source of part-time staff could be business executives and, when available, management consultants. At a later date, local staff trained in the institute could take over the operations.

142. Financing of the institutes, at least in the initial stages, could be provided primarily by subsidies and donations from governments and industrial associations. Some financing under the various programmes of technical assistance might be expected. While the institutes would collect fees in payment for their services, it may be anticipated that these would, in many cases, be nominal; servicing institutions of this type seldom operate on a self-sustaining financial basis, and are generally subsidized.

⁴⁸ Considerations of economy in operation might favour such a regional organization. However, in cases where countries vary markedly in degree of economic development and size, the preponderance of demand for training from the larger and more advanced countries would be unavoidable, to the detriment of the less favourably situated countries. A further difficulty might be the considerable travel expenses of the trainees, which would offset part of the saving derived from the regional set-up. A mobile structure might also be suggested, at least on a trial basis.

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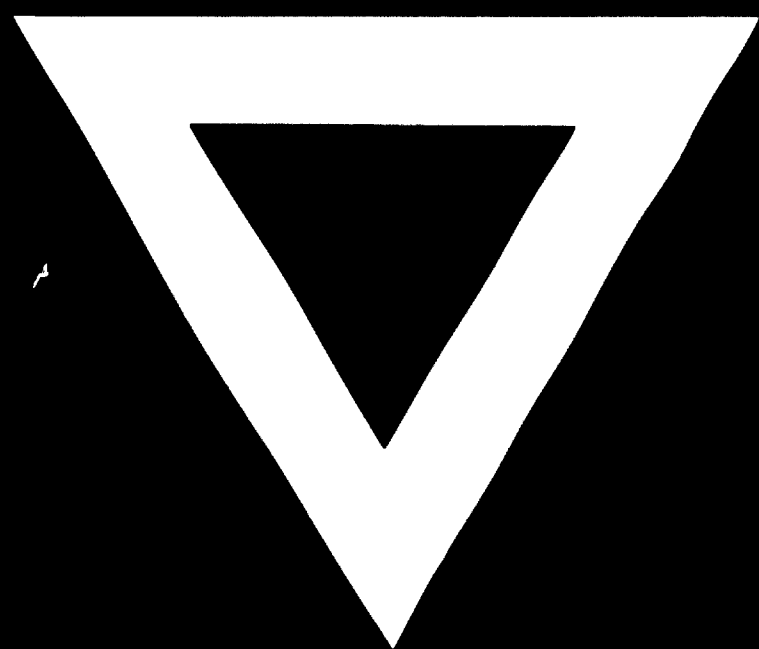
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