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UNIDO MONOGRAPHS ON INDUSTRIAL DEVELOPMENT

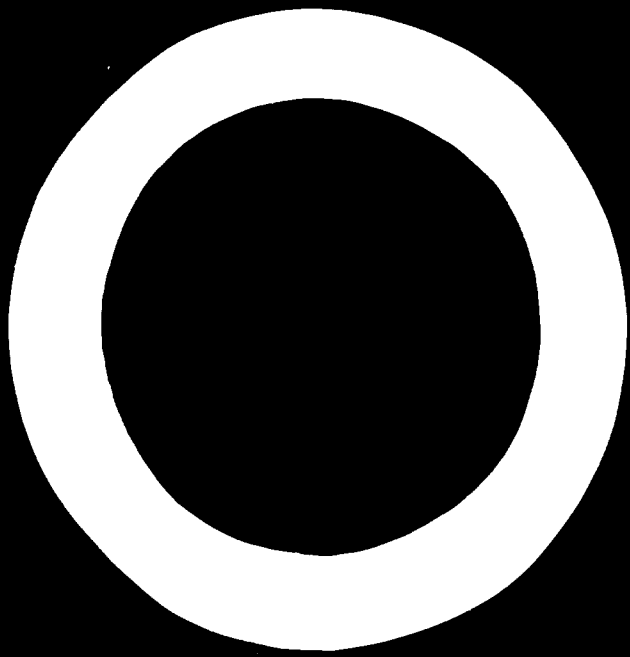
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Problems and Prospects*

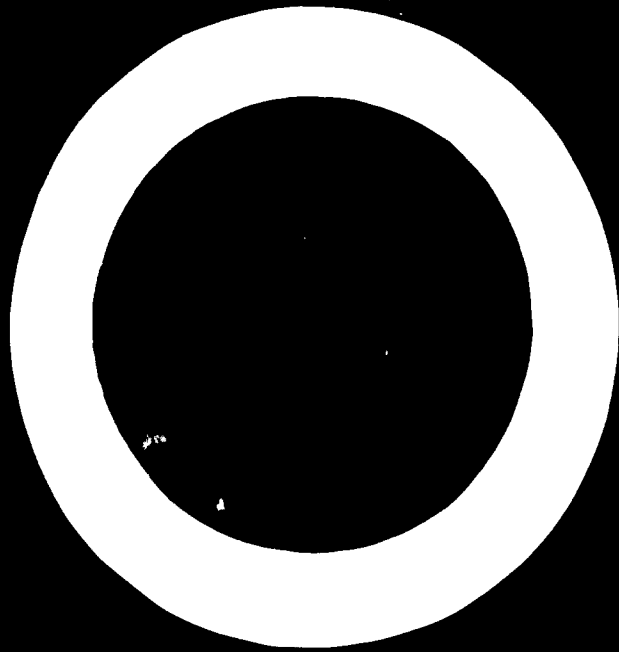
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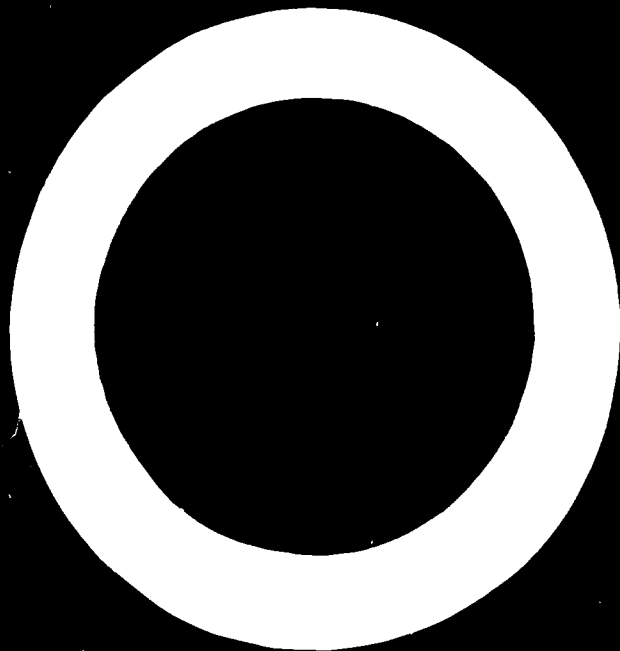


**UNITED NATIONS**





**ADMINISTRATIVE MACHINERY**



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION  
VIENNA

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UNIDO MONOGRAPHS ON INDUSTRIAL DEVELOPMENT

*Industrialization of Developing Countries:  
Problems and Prospects*

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MONOGRAPH NO. 15

# ADMINISTRATIVE MACHINERY

Based on the Proceedings of the International  
Symposium on Industrial Development  
(Athens, November-December 1967)



UNITED NATIONS

New York, 1969

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ID/40/15

UNITED NATIONS PUBLICATION

Sales No.: E.69.II.B.39, Vol. 15

Price: \$U.S.0.50 (or equivalent in other currencies)

Printed in Austria



## Foreword

The International Symposium on Industrial Development, convened by UNIDO in Athens in 1967, was the first major international meeting devoted exclusively to the problems of industrialization of the developing countries. It followed a series of regional symposia on problems of industrialization held in Cairo, Manila and Santiago in 1965—1966 under the sponsorship of UNIDO and the United Nations regional economic commissions, and a similar symposium held in Kuwait in 1966 under the sponsorship of UNIDO and the Government of Kuwait.

The Athens Symposium was attended by some 600 delegates from 78 countries and by representatives of various United Nations bodies, international organizations and other interested institutions in the public and private sectors. It provided a forum for discussion and exchange of views on the problems and prospects of the developing countries which are engaged in promoting accelerated industrial development.

The Symposium devoted special attention to possibilities for international action and for co-operative efforts among the developing countries themselves, and explored the scope, means and channels for such efforts.

Studies and papers on a wide range of problems relating to industrialization were presented to the Symposium—by the UNIDO secretariat and by participating Governments, international organizations and observers. An official report, adopted at the Symposium, has been published by UNIDO.<sup>1</sup> Based on this documentation and the discussions in the meeting, the present series of monographs is devoted to the 21 main issues which comprised the agenda of the Symposium. Each monograph includes a chapter on the issues presented, the discussion of the issues,

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<sup>1</sup> *Report of the International Symposium on Industrial Development, Athens 1967* (ID/11) (United Nations publication, Sales No. 69.II.B.7).

and the recommendations approved by the Symposium. Some of the monographs deal with specific industrial sectors; some with matters of general industrial policy; and others with various aspects of international economic co-operation. An effort has been made to make the monographs comprehensive and self-contained, while the various economic, technological and institutional aspects of the subject matter are treated within the context of the conditions generally prevailing in the developing countries.

Since economic, technological and institutional aspects are described with particular reference to the needs of the developing countries, it is felt that the monographs will make a distinct contribution in their respective areas. They are intended as a source of general information and reference for persons and institutions in developing countries concerned with problems of industrialization, and particularly with problems and issues of international co-operation in the field of industrialization. With this in view it was considered that an unduly detailed technical presentation should be avoided while at the same time enough substantive material should be offered to be of value to the prospective reader. For a more elaborate treatment of the subject, the reader is referred to the selected list of documents and publications annexed to each monograph.

The annexes also contain information on the areas in which UNIDO can provide technical assistance to the developing countries on request; a selected list of major UNIDO projects in the respective fields; and a list of meetings recently organized by the United Nations.

It is hoped that the monographs will be particularly useful to Governments in connexion with the technical assistance activities of UNIDO and other United Nations bodies in the field of industrial development.

This monograph has been prepared by the secretariat of UNIDO with the co-operation of the United Nations Development Programme.

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## INTRODUCTION

Industrialization is largely dependent upon the efficient functioning of a number of supporting services concerned with development planning, the creation and expansion of industry and its day-to-day operation. These are known collectively as "industrial services". No industrial enterprise is completely self-sufficient. Even the largest firms in the most highly developed countries look beyond their own resources to secure financing, engineering services, production advice, and a variety of information on all phases of industrial activity. In the developing countries, industry is even more dependent on such outside services. The average enterprise is likely to be small and unable to provide its own special engineering, research or testing units. Many plants are newly established and their entrepreneurs have not built up a body of experience in handling production problems. Often there are only a few enterprises in a particular industry in the country so that opportunities are limited for an interchange of knowledge through industry associations or through the movement of personnel from one enterprise to another. Movement of personnel, which is common at the managerial and technical levels in many industrialized countries, is restricted in some developing countries by the prevalence of family businesses and by tribal, regional or linguistic barriers.

Hence centrally organized industrial services, which are available and used to a great extent in industrially developed countries, are especially needed in the developing countries. But such services are less likely to be available in the developing countries and even where they exist generally lack experience and expertise.

A full range of industrial services is essential in order to establish new industry and to secure the success of existing enterprises. The creation of such services cannot be left to chance. A comprehensive and co-ordinated programme to establish and strengthen industrial services should be an integral part of the over-all industrial development plan.

In *chapter 1* it is pointed out that, in most developing countries, the Government will have to play a leading part in providing industrial

services. A basic question to be decided is whether these services are to be established within an existing ministry, as an autonomous unit, or as a private enterprise sponsored by organized industry with government support. The decision reached in any one case is often a combination of practical considerations and historical accident. Certain services evolve as part of a large whole. Industrial development itself forms part of the national economic plan. The training of professional and managerial staff for industry is also part of the national education system. Staff training in general, together with industrial legislation and standardization, are aspects in which private industrial organizations have traditionally been interested. Some flexibility is needed: services that regulate industry cannot be combined with those that promote it. A degree of decentralization is also required, so that the industrial services work in association with local government machinery, particularly in their relationships with small-scale industries.

Co-ordination is another basic consideration. All the industrial services must work harmoniously towards common goals. It is generally accepted that, in order to promote this, as many of the services as possible should be grouped within a central agency for industrial development. The main question here is whether such an agency should be a government department or an autonomous unit. Those who favour the latter argue that the general slowness and inflexibility of civil service procedure is ill-suited to the needs of industry. Those who favour making the central agency a government department point out that political responsibility for the efficient functioning of the services must lie clearly with some minister and that the machinery of government should not be fragmented by the establishment of too many autonomous units. The decision in any developing country will depend partly on what importance the Government attaches to industrial development and on the willingness of political leaders and civil servants to adjust to meet its needs, and partly on which form of organization is more likely to inspire confidence in the local industrialists.

*Chapter 2* deals with the role of industry. Since the reason for the existence of industrial services is to meet the needs of industry, organized industry should play an active part in deciding policy in this connexion and should be represented on the responsible governing or advisory boards. Since industry is the client of the industrial services, it is clear that the services must make an effort to take their assistance to individual firms, rather than wait for the firms to come to them, especially in the case of small industries. For this reason a measure of decentralization may be

advisable. There are, however, some services, such as laboratories and banks, which cannot easily be decentralized.

*Chapter 3* lists the various industrial services: the organization of industrial estates; services concerned with industrial legislation; information services to publicize opportunities for entrepreneurs and assist them in establishing new enterprises; financing services to deal with fiscal concessions and the provision of credits; labour advisory services, which must be particularly concerned with the training of personnel; advisory consultancy services to deal with individual problems; industrial research; and, finally, the collection and dissemination of technical data for industry. It is essential to secure co-ordination among the industrial services. As regards combined work for individual private or public industrial enterprises, this can best be secured by careful programming and the use of interservice project teams. As regards matters of policy, co-ordination can be achieved by means of interlocking directorates, whereby the director of one service is a member of the advisory board of a related service, or by setting up co-ordinating committees comprising senior personnel from various services.

*Chapter 3* also discusses the internal organization of industrial services, which will vary with the function of the service. A research institute is different in its activities and staff requirements from a bank which finances loans to small industries. Most services will have to start in a small way and must keep their organization flexible during the initial period, although job specifications should be clearly defined. Staff is the most important resource of any industrial service and the most difficult to find in developing countries, where trained personnel are scarce and the industrial service faces competition both from industry, which can offer higher salaries, and from the civil service, which can offer more important posts and opportunities for promotion. The industrial service should be prepared to pay a competitive salary to its senior staff, although there is no need to pay above the market rate for unskilled or semi-skilled subordinates. Other incentives are also important: an enlightened management policy that gives senior staff the chance to participate in decision-making will make industrial services attractive to the right sort of candidate.

*Chapter 4* deals with problems of staffing and work programming. Staff should be recruited by examination and personal interview to ensure proper qualifications. It will be necessary to provide training initially and to update the skills of personnel; normally this should take place in the country concerned so that staff become familiar with local

conditions, which generally necessitate the use of very simple equipment and improvisation. The possibility of interservice training programmes should be considered. It will be easier to retain staff if there is a flexible system of secondment from the main stream of civil service to industrial services or to individual industrial enterprises.

The nature of the industrial services, which must answer requests for assistance from a wide variety of industries, makes it difficult to forecast the volume of work for which staff must be provided. This difficulty is partly met by having a system of in-house projects on which staff can be employed when they are not otherwise engaged. It can also be mitigated by establishing an annual work programme, to be revised as necessary and improved as the service learns from experience. To facilitate programming, systematized procedures should be adopted to deal with correspondence, research investigations, the handling of loans and other routine tasks.

*Chapter 5* deals with the financial aspects of industrial services and the evaluation of their performance. There are three main sources of revenue for industrial services. They may receive annual subventions from the national budget or from a special development budget. They may receive loans for large-scale projects, such as industrial estates and credit banks, or grants (often from international sources) when a new service is being established. Some services may receive income from industry, in the form of rents for factories or fees for laboratory testing and research projects. In some countries, all such income has to be paid immediately into the government treasury. The budgets of industrial services must be carefully prepared, as they must stand the scrutiny of the governing board and the supervising ministry. The control of expenditure must be exercised in some form by an outside body, though this is often irksome, because an industrial service, in order to be efficient, needs to be able to act quickly and flexibly. The dilemma is partly solved by the adoption of modern management accounting practice, in which costs are related to work units. An industrial service can in this way more easily justify its actions to government auditors.

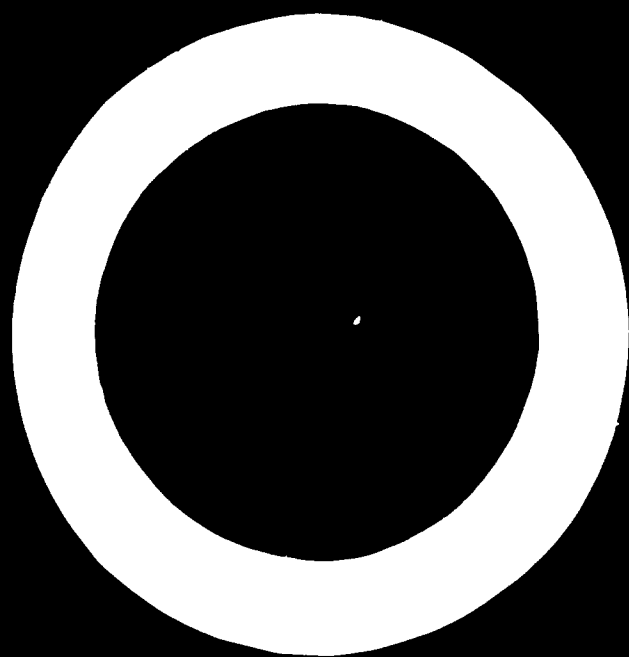
The performance of industrial services should be evaluated by appropriate criteria. These will vary according to the type of service. Although costs are important criteria, they do not in isolation assess the quality of the work. Data which can be presented in statistical form are attractive, but they must be carefully selected in order to be valid for the service concerned. Generally such data are taken from regular standardized reports by staff members, including data showing requests for services



by time and by category. An effort must be made to steer a middle course between collecting too much data and being too informal. Evaluation takes various forms: staff should be encouraged to practise self-evaluation; supervisors should prepare evaluation reports; the advisory board and government auditors will provide evaluative material; and the most important evaluation will be by industry itself. Industrial services must use evaluation as a basis for follow-up so that their work and plans will be an increasingly efficient part of the national plan for industrial development.

*Chapter 6* gives an account of the issues presented to the Athens Symposium, the discussions held and the recommendations made by the Symposium.

*Chapter 7* deals with UNIDO action for the improvement of administrative machinery for industrial development.



## THE RELATIONSHIP OF THE GOVERNMENT TO INDUSTRIAL SERVICES

### FACTORS AFFECTING THE LOCATION OF A GOVERNMENT-SPONSORED INDUSTRIAL SERVICE

The fundamental administrative decision about an industrial service—the decision which will largely determine its chance to be effective—is whether it is to be a government unit or a private one, and where it is to be placed: within the structure of the government or in the private sector. This choice dictates where the control of the service and its policy will lie and how it is to be related to government services. This decision will also affect its ability to secure the resources needed and will have a profound influence on the closeness and harmony of relationships between the industrial service and industrial enterprises.

If the Government is to assume responsibility for an industrial service, as is commonly the case in developing countries, it usually chooses one of three courses of action:

- (a) The service can be established as a division of one of the ministries;
- (b) It can be set up as an autonomous unit, or part of such a unit, subject to a degree of government control but free from the usual civil service regulations;
- (c) It may be established by the organized private sector either independently or jointly with Government. In this case the Government may provide financial subsidies or other support.

When an industrial service is established as a private or semi-private body with government subsidy, it will still have dealings with various government departments. The subsidy will have to be paid directly from the Ministry of Finance or through some industrial development agency, normally part of the Ministry of Industry. Usually there are arrangements for representatives of one or more government ministries to be members of the board which supervises the policy of the subsidized

industrial service. Co-ordination is necessary if the subsidized institution is to fit into the national development programme.

The second basic decision to be taken is whether all industrial services should be grouped within a single large unit or distributed among several ministries and/or autonomous agencies. As will be seen from the report of the Symposium discussions (chapter 6) the idea of a single, comprehensive unit for all industrial development and services holds great attraction. The advantages of effective unified action are obvious. However, the experience of individual countries shows that there are some difficulties in achieving such a unity.

All countries have specialized ministries dealing with such matters as ports, highways, and railroads, law and order, education and health, currency and finance. These subjects are all essential to industrial development but their scope is wider than industrial development alone and they are rightly handled by a general ministry rather than by one concerned with industry.

The Government shows its concern with national economic development as a whole in its over-all national economic plan. Although many developing countries give special priority to the establishment and development of industry, nearly every national economic plan is also concerned with other sectors, e.g. agriculture, communications and mining. Hence the organization dealing with over-all economic planning cannot be an industrial service unit, but must occupy, as it does in nearly all countries, some more general and central place in the government structure. Similarly, the central financial institutions have an obligation to promote national economic development as a whole and not that of industry alone. To a lesser extent the same may be said of national vocational and technical training programmes and of scientific laboratory, research and testing services.

As a country becomes more industrialized, the industrial component of many of these activities will become large enough to warrant separate institutions. Thus, an industrial planning unit will be required within the general planning machinery. Specialized industrial financing institutions will be created within the country's financial structure. Particular schools, laboratories etc. will be established to serve the specific needs of industry or even of specialized types of industry.

When such industrial units are created, the question immediately arises as to whether they are to become specialized units within the ministry dealing with economic planning, finance or education, or whether they should form part of, or be attached to, a ministry or other

body concerned with industry. In most countries the trend appears to be towards the latter. However, any industrial unit of this type will clearly need to co-ordinate its activities closely with the appropriate general ministry.

A country rarely has the opportunity to create a complex of industrial services simultaneously. These services develop gradually and individually. At the beginning, many of them form small units within more general services, as described above. When eventually they reach a size or importance which may warrant status as a department, habits and relationships will already have been created which may still keep them tied to their original parent ministry.

Thus nearly all countries find that the location of existing industrial services within the government structure is more a matter of historical chance than of logical decision. Although such a decision can sometimes be made for a completely new service, generally the problem is one of grouping a number of existing services into a more efficient whole.

### **The need for flexibility**

Despite the desirability of grouping industrial services, each service will have its own special conditions and will need to be at least a separate sub-unit of a larger body. For example, no country has found it feasible to combine industrial research, promotion and regulation within the same service. In some cases, these differences may even warrant completely separate identities. This is especially true of services to small industry and to public industrial enterprises, where the service and the client are the only ones of their kind.

The problem of grouping industrial services is further complicated by the fact that ideally services should be made available not merely in the national capital but also regionally or at individual enterprises. An industrial service which is part of a larger unit may benefit by sharing regional offices or personnel with other sections. In countries where vigorous systems of local or provincial government exist or are being encouraged, it is practicable to utilize the local units to support, or act for, certain industrial services. Services to small industry, and the industrial financing service in particular, find it expedient to establish a co-operative relationship with local governments. But it is important that the line of control and responsibility be clearly defined and it requires a special administrative effort to take every advantage of local initiative

while ensuring that the local activity is co-ordinated with the national policy for the particular service and for over-all industrial development.

**PRINCIPAL AGENCY FOR INDUSTRIAL DEVELOPMENT:  
MINISTRY OR AUTONOMOUS BOARD**

Increasingly, developing countries are trying to establish a single body which can plan, guide and accept political responsibility for all activities associated with industry. Co-ordination is thus facilitated and industry has a single organization with which it can deal and to which it can look for help.

While there is growing agreement on the value of a principal agency for national industrial development, there are still wide differences of opinion and practice as to whether that agency should come within the general government structure, as in the Ministry of Industry, or should be autonomous, as an industrial development board or corporation. This divergence of views was clearly expressed in the discussions at the Athens Symposium and is seen in the experience of many developing countries.

**The cases for and against autonomy**

Within the past thirty years, the tendency has become very marked in many countries to separate a number of public services from the traditional structure of government. Fundamentally, this is a result of dissatisfaction with the restrictions of civil service procedure and regulations, which, having evolved in states whose primary task was to maintain law and order, were designed to ensure stability and uniformity rather than flexibility or rapidity of action. But during recent years, all countries, particularly developing ones, have used government increasingly as a device for socio-economic development and change. Much government activity is now concerned with promoting economic growth, including industry. For this purpose, qualities of imagination, risk-taking and rapid decision are required completely different from the attitudes formerly common in the civil service, where the methods and rules have not changed rapidly enough to encourage, or even to allow these qualities.

Hence there is a strong case for arguing that dynamic national development activities can be successfully carried out only if they are freed from outmoded civil service traditions and allowed to make a

fresh start in modern fashion. This proposal sounds especially attractive for industrial services, where industrial practices in matters of personnel, financial procedures, and flexibility in decision-making are immediately available for comparison. Further arguments for autonomy are: the need to offer salaries based on market competition rather than on civil service levels; the need to spend funds immediately rather than after lengthy procedural delays; and the need to base decision making on reasoned judgement rather than on hierarchical legal responsibility. There is also the feeling in the background that an autonomous industrial development board would have greater "importance", greater access to resources, and easier contacts with industry than would a similar service within a regular ministry.

On the other hand, there are strong arguments for a principal industrial development agency to form part of the general government structure. There is a real fear that government will become fragmented and political responsibility and cohesiveness lost as more and more public services become autonomous. Although many countries have attempted to meet this difficulty by assigning to the Minister of Industry the supervisory responsibility for autonomous industrial services, these efforts have not always been successful. In some cases the powers of the minister have been too limited for this or he has not had the time or machinery to supervise the autonomous bodies for which he is supposedly responsible. In other cases, the minister has assumed full powers of control, with the result that the so-called autonomous agency has become little more than a section of the Ministry of Industry under another name. Since an autonomous industrial development agency has rarely taken over all industrial services, and some services generally remain within the Ministry, problems of co-ordination can still be acute.

It is also argued that the creation of autonomous bodies fails to solve the underlying administrative problems. What is needed is the modernization of all civil service practices. If this could be accomplished many, if not most, of the reasons for setting up autonomous boards would disappear. On this line of reasoning, those concerned with development activities should join together and work within the government to secure the necessary modern tools and practices. This is countered by advocates of autonomy who claim that such efforts have usually been unsuccessful and that national economic development cannot wait for administrative reform to take place. They also suggest that the example of the successful use of modern practices in an autonomous development board might be the best way of encouraging reform within the ministries.

### The importance of national factors

The best solution to the problems discussed above will depend on the current situation in a particular country. No formula can be given which applies everywhere.

Several national factors are especially important. One is the degree of "development-mindedness" within the Government as a whole and within the Ministry of Industry in particular. Some countries are now so committed to industrial development that their entire political and administrative attitude is one of desire to make it succeed. Such countries will be likely to carry out the reforms necessary for industrial services to work efficiently within an active and progressive Ministry of Industry. On the other hand, some countries have not yet accepted the importance of industrial development, or have Ministries of Industry whose methods are restrictive and offer no prospect of modernization. In such cases autonomy may appear to be the only path to effective industrial servicing.

Political leaders and civil servants sometimes find it difficult to adjust themselves to new development activities. They may have had no experience of a new service and be unable to see how useful it would be. Hence, if it is entrusted to them, they may have neither the attitude nor the knowledge needed to make it successful.

Much will depend on the attitude and preferences of industrialists, and on their relationship with the already existing ministries. If there is a history of conflict, they may be suspicious and prefer that industrial services be provided by a new and autonomous body which might be more sympathetic to them.

Although a consistent approach to industrial development can be helped by grouping industrial services in a principal agency, this in itself does not automatically ensure balance and co-operation. It merely provides structural machinery through which a common chief can attempt to produce them. He will still need to work vigorously to prevent conflicts between services, fill gaps in the total service programme, and ensure that resources are so allocated that industry has adequate services of various types. If the services are not grouped within a principal agency under a common head, some other form of co-ordination will be necessary.

At the top level of politics or administration, responsibility means primarily responsibility for what goes wrong. Industry, the political organs, and the public will naturally want to know who can be blamed if the industrial services are not efficient. If they depend on a number of



different bodies, it will be more difficult to pin down the responsibility for failure.

But in matters of economic development it is not enough to avoid failure; it is necessary to succeed. This requires responsibility for action. The men charged with directing industrial development are not fulfilling their responsibilities if they merely act cautiously and do nothing wrong. They have an active responsibility to plan, to build, to stimulate. To do this successfully they must have effective control over the industrial services and the personnel who will implement the details of development. Especially in new and developing countries, where organizational structures are still flexible and where personalities may be extremely important, it is often valuable to identify the posts, the groups, and even the individuals who are to be held responsible for actively promoting industrial progress, and then to place industrial services under their control, so that they have the machinery they need.

## THE RELATIONSHIP OF INDUSTRY TO INDUSTRIAL SERVICES

### PARTICIPATION BY INDUSTRY IN RUNNING INDUSTRIAL SERVICES

There are sound practical reasons why industry should participate in the making of policies and plans for the industrial services. The purpose of these services is to meet the needs of industry. If industrialists have a means of expressing their opinion, the industrial services will learn what type of assistance is desired and what improvements can be made in their daily work and can then take this information into account in setting future policies and plans.

#### Indirect feedback

The opinion of industrialists is ultimately reflected by the extent to which they use the services provided, but this is an inadequate instrument for guiding policy. If the use increases, the service may be presumed to be meeting a need, but, in the absence of consultation, there is no way of knowing whether a different policy might have produced a service of even greater use. Failure to use a service, or decreasing use, may be due to any one of a number of causes: perhaps the service is not needed; perhaps changing conditions make it less needed than formerly; perhaps the service has become available from industry's own resources or from other industrial services; perhaps the service provided was simply unsatisfactory.

Direct consultation with industrialists will show the facts behind the statistics and help the service to meet client needs more adequately. The reactions of industry are received in the normal course of the service's work as staff members talk with personnel of industrial enterprises or as meetings are held with industrial organizations. However, it is often felt desirable to give industry a definite voice in formulating the policy of an industrial service.

### **Representation of organized industry on service advisory boards**

If the service is sponsored by the organized private sector or is an autonomous agency, industry is usually represented on the policy board. If the services form part of a larger organization, such as a Ministry of Industry, the policy is usually controlled by the parent organization. In such cases, an advisory board, on which industry can be represented, is often established to propose or review policy.

Industrial representation on such boards varies. The representation of industry depends greatly on how united and well organized local industry is. In some countries, there are chambers of commerce and industry which represent all or most enterprises. The same may be true if a broadly based federation of small industries exists. In other countries, industry is organized by sectors or by regions or is divided among several associations. In some developing countries, there is as yet little or no organization of groups of enterprises.

With respect to public industrial enterprises, arrangements for this representation on boards of industrial services are usually different from those for representation of the private sector. In a number of countries, labour is represented on the boards of at least some industrial services by delegates from trade unions or federations of unions. Professional or technical associations and universities and scientific institutions are also frequently represented. For some services, it is also felt desirable to have board members representing banking and commerce.

Almost all boards have representatives from other closely related industrial services as well as from ministries or government agencies which deal with planning, finance and industrial development as a whole. Such representation is valuable in promoting co-ordination among all industrial services.

## **INDUSTRY AS CLIENT**

### **Need for publicity**

Industry will not make use of the industrial services unless they are publicized and unless they are accepted as bringing substantial gains to the users. A relationship of confidence must be established. Practical demonstration of the quality of work done by a service will determine the reaction of its clients and the reputation of the service. Initially, contacts will need to be actively developed with individual enterprises

and with groups of industrial managers; to inform them of the existence of the service and of the subjects it intends to cover; and to estimate the volume and range of their needs. At this stage much may depend on the experience and prestige of the director and senior staff of the service, since an industrialist will not willingly ask for help unless he feels the service has personnel more qualified than his enterprise possesses.

A frequent assumption is that an industrial service will be used most heavily by small enterprises which cannot afford their own specialized staff. In many instances, however, the major use and support of the industrial service is by establishments of medium or large size, which may lack the necessary specialists but do have the resources and knowledge to make effective use of the advice which they may obtain from an industrial service. The service may need to develop on its own initiative industrial extension programmes to help groups of smaller enterprises.

Each industrial service will find it desirable to utilize all available opportunities and methods to publicize its activities as widely as possible. The methods and means for such publicity will include: the distribution of descriptive literature; visits by staff to plants; attendance at meetings of industrial, governmental and technical organizations and those of a more varied public nature; and issuing of periodic news bulletins and professional documents.

#### **Taking the service to the client**

Effective service to industry requires direct contact between the industrial service and individual enterprises. Since industry in any country is likely to be situated in a number of different places, either the members of business firms or the service personnel must do some travelling. Sometimes intermediate arrangements can be made by establishing regional offices of the industrial service or by providing some services centrally and some by visits to the field.

There are several reasons why industrial services have found it undesirable to rely on industry representatives to come to their central offices. This is a passive approach which encourages the staff of the service to become bureaucratic-minded instead of learning the realities of individual problems of industry. It puts an undue burden on entrepreneurs far from the capital or upon small industrialists, who will thus be discouraged from seeking service.

On the other hand, the industrial service institution may often be unable to function except in one central place. Some services, such as those of a testing laboratory, are most efficient when centralized. Others, such as banking or protection of industrial property, may require files and contacts that are available in the capital city or commercial centre. A very small service may not have enough professional staff to spread it widely throughout the country on visits or in district offices. Funds may not be available for travel.

Each industrial service develops its own way of reconciling the desirability of decentralization and the reasons against it. In a small country the difficulty is not great, since industry and service centres are close together. In larger countries where industry is concentrated in a particular geographical area, the entire service—or at least a regional office of it—may be located in that area. Arrangements can sometimes be worked out to enable central service personnel to make periodic tours of outlying regions to meet industrial personnel, especially of smaller enterprises. If an enterprise is to pay for an advisory service project, the charge can include the cost of sending project staff there.

Industry itself, especially its organized private sector, can do much to encourage the decentralization of industrial services. Representations can be made to the ruling political party and to those who control allocations of money and personnel, emphasizing the need for the service to be given sufficient resources to enable it to go to industry in the field. Nevertheless, the main responsibility lies with the board and the director of each industrial service. The organizational plans, work programmes, budget and staffing requests must all be directed toward the fullest possible contact with the enterprises to be served, wherever they are located. Decentralization of the service thus becomes more than a device of organizational structure; it becomes a mental attitude and a working goal.

## **THE ADMINISTRATION OF INDUSTRIAL SERVICES: ORGANIZATIONAL ASPECTS**

### **CLASSIFICATION OF SERVICES AND INTERSERVICE CO-ORDINATION**

#### **Classification of industrial services**

There are many and varied supporting services required for industrial development. They may be divided into the following categories:

##### *(a) THE ORGANIZATION OF INFRASTRUCTURE*

Industry is dependent on outside public and private sources for much of its infrastructure. Assistance is frequently needed in acquiring sites, the location of which is often determined by plans for regional economic development. Public utilities, such as power and water, have to be made available at the plant site. Communications, such as roads, railways or waterways, are needed to bring in raw materials and take out finished products. Housing for employees may be needed. Since smaller industries are particularly dependent on outside sources for co-ordinated facilities of this nature, a useful industrial service is the encouragement of industrial estates—the establishment of groups of industries on planned sites. The industrial estate provides the requisite utilities, roads and other communications, police and fire protection, and sometimes even the factory buildings. The presence of a number of industries on the industrial estate may attract other firms interested in subcontracting or in offering ancillary services to the major enterprises. Shops and houses for workers may then be built. The facilities of an industrial estate can thus ease many of the problems which an entrepreneur encounters in establishing a small or medium-sized business.

##### *(b) LEGAL ADVISORY SERVICE*

The success of an individual enterprise may be seriously affected by the laws and regulations a Government enacts or fails to enact. Some of the legislation affecting industrial development implements the country's

economic policy on such matters as the protection of home industries, the extent to which small enterprises are sheltered, tax levels, social security and labour relations. Other legislation determines the precise conditions governing the establishment and operation of enterprises: factory licensing, land zoning, import and export licensing, marketing and price controls, the enforcement of quality and quantity standards, and factory health and safety regulations. In all countries, laws protect the physical security of the plant and its employees, but industrialists are also concerned to protect their technological property by means of patents and trademarks and by agreements licensing the use of machines and processes. Some legislation clearly promotes the establishment and operation of business enterprises. Measures which impose controls have the merit of preventing fraud and unfair practices and forcing all manufacturers to observe common standards. Since industry is both promoted and controlled by the action of the law, there should be some organized method of taking its needs into consideration before legislation is drafted and of explaining to industrialists how to operate within the legal framework.

(c) **HELP IN ESTABLISHING ENTERPRISES—GENERAL INFORMATION SERVICE**

Whether or not a particular enterprise is established may depend upon information and resources which the entrepreneur does not possess. A developing country may find it necessary to publicize the need for a particular industry and to describe the opportunities it has to offer, such as convenient and cheap raw materials, adequate labour supply, and tax concessions or other financial incentives. The entrepreneur often needs detailed help to take advantage of these possibilities. Qualified persons may have to make feasibility studies. Advice may be required on such varied matters as the legal incorporation of companies, preparation of engineering plans for plant construction, handling of tenders and contracts, or ordering of machinery. These are all specialized and technical matters frequently beyond the expertise of the entrepreneur or his staff.

(d) **FINANCING**

Financial incentives and the provision of industrial financing are among the essential prerequisites to industrial development. Financial incentives include tax exemption or concessions on income, business or

property taxes for specified periods; duty-free imports of capital goods; tariff protection against foreign competition; and direct subsidies or grants. If there are no facilities for medium- and long-term credits, the size and number of the industrial enterprises which can be established will be greatly diminished, as difficulty in securing short-term credits will hamper production. Medium- and long-term credits must be available from financial organizations which have the backing to advance loans at reasonably low interest rates or which can guarantee private debentures or make equity investments. Arrangements also have to be made to provide short-term credits for working capital.

(e) ASSISTANCE WITH PERSONNEL—LABOUR ADVISORY AND TRAINING SERVICES

The average industrial enterprise needs help on staff matters. It may need assistance in interpreting and observing laws relating to labour relations and social security. It may be required to comply with detailed regulations about hours, wages and holidays. It will need advice on the proper procedure for resolving disputes on these matters. Information about manpower availability and mobility will be needed.

Where industry chiefly requires assistance, however, is in training of staff, as qualified industrial staff is often unavailable in developing countries. Generally, the national education system cannot help much, and only the largest industrial enterprises have funds and personnel to train their own employees. Most plants will have to rely on an industrial service which organizes vocational, technical and managerial training courses.

(f) ADVISORY CONSULTANCY SERVICES

Although nearly all industrial services give advice on their specific subjects, it is being recognized increasingly that a system is needed to make expertise available rapidly and flexibly when an enterprise faces a particular problem. In industrially developed countries, firms of industrial consultants are numerous. In developing countries, where experienced consultants are not as widely available, advisory service agencies, similar to the older agricultural extension services, are being established. Consultancy is frequently needed to solve technical problems of engineering and production, but it may also be helpful in connexion with problems of organization and management. In some countries, entrepreneurs who lack the knowledge or contacts to act for themselves are



given help in purchasing supplies or equipment. Marketing is facilitated by advice on reaching potential purchasers, information on current market conditions and on forecasts of future trends; and by assisting enterprises to take advantage of international trading arrangements, such as barter agreements. In addition to advising on current problems, consultancy services can help industrial management to become acquainted with new technological, economic or managerial techniques. This is especially valuable to small- or medium-sized establishments.<sup>1</sup>

#### (g) INDUSTRIAL RESEARCH

The subject of industrial research and of the industrial research institute is treated separately in Monograph No. 10 in this series.

#### The provision of industrial information

One important category of service to industry, especially in developing countries, is the collection and dissemination of industrial information. Throughout the world, the vast body of literature about every aspect of industrial activity is constantly growing. In the more highly industrialized countries, this information is reasonably available. In most of the developing countries, however, those concerned with industry have little knowledge of what information is available and would in any case find it difficult to obtain. In all countries, the sheer mass of industrial information makes it necessary to have some method of analysing, consolidating and summarizing the available material so that it can be put to practical use.

Industrial services need to keep in touch with information pertinent to their individual activities and have the means to do so. One of their responsibilities is to channel such information to those in industry to whom it could be of value. A developing country rarely has the resources to establish a central industrial information agency. An industrial research institute often attempts to fill this need. In view of the extremely wide range of subjects on which industrial information is available and required, much of the burden must be shared by all the other industrial services, each dealing with information relating to its own specialized activities.

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<sup>1</sup> United Nations Industrial Development Organization, *Manual on the Use of Consultants in Developing Countries*, New York, 1968, ID/3 (Sales No. E.68.II.B.10).

Information will sometimes be disseminated through the service's programme or working methods. It will certainly be used in the answers given to specific requests from industry. The service may also find it possible to develop a specialized library or collection of documents which can be used by its own staff for reference purposes and which can be made available for consultation by industry. Important information on new legislation, announcements of government policy, or the latest statistical data may be given wide coverage through the periodic bulletin of the industrial service or through special publications. Information about new machines or products may be made known through industrial exhibits or trade fairs.

### **Interservice co-ordination**

Some defects in co-ordination are caused by unexpected natural or foreign events, but some are due to weaknesses in planning owing to inexperience or lack of expertise. Both are common in developing countries, placing added responsibility on industrial services to ensure that difficulties are not caused by lack of co-ordination in the administration of industrial development.

In setting up enterprises, a number of services must be provided. For example, feasibility studies must be made, financing arranged, engineering work done, construction supervised, equipment ordered, supplies of power and transport ensured, a labour force collected and trained. When they are in production, plants will require help in securing materials, managing labour relations, overcoming production troubles, and marketing their products.

All of these have to be fitted together in accordance with a carefully co-ordinated schedule. Feasibility must be proved before financing will become available; a trained labour force must be available when machines are installed; and so on. In project after project throughout the world, delays have been long and costly because of failure by industrial services to provide essential help at the right point in a complex time-table.

Most industrial services participate in some way in projects for establishing or expanding major public enterprises. It has long been customary in engineering and construction to programme in detail the various stages of building and equipping industrial plants. Similarly, industrial management, once a plant is in operation, must programme the use of resources and the various stages of production. Less common, but

equally important, is the programming of all the industrial services, to assist in establishing the enterprise and to help once it is in operation. It is often just as important to make a particular service available at exactly the right time as to complete the building or deliver raw materials on schedule. Each service has responsibility for timing its own contribution, while some over-all machinery must co-ordinate the entire programming of the project. New managerial methods, such as critical-path analysis, are being used increasingly in industrial development projects to ensure that the flow of resources and services is properly timed.

A number of countries have discovered the advantages of using teams to co-ordinate the development of such industrial projects involving several services. One person is made responsible for expediting progress on the project; he has several specifically appointed colleagues from other industrial services to work jointly and help the project along to the extent to which it requires the co-operation of their own particular service. Since the work involved is reasonably definite, it does not require the most senior personnel of each service, though the members should be sufficiently experienced and high in rank to know what actions need to be taken and to have easy access to senior staff who may be needed from time to time to make those actions possible. Similar team arrangements are often useful in making feasibility studies and analysing problems.

The policies of all the services must be co-ordinated so that they are oriented harmoniously toward common goals. If not, for example, one could find financing available for small industry, while the system of import licensing gave machines only to large plants. Or entrepreneurs might be encouraged to establish industries in depressed areas, while transport services were concentrated in other parts of the country. Or the industrial services might help entrepreneurs to acquire technical know-how and to meet production problems in order to build a national industry, while the marketing services gave greater encouragement to substitute or imported products.

It has therefore often been suggested that representatives of other interested agencies should serve on the governing or advisory board of a particular industrial service and take part in its policy-making. The co-ordinating value of such "interlocking directorates" has perhaps been underestimated. This co-ordinating device has a two-way effect: the service benefits from the advice, warning, and encouragement of others working in similar fields, while the representatives take back to their units a greater knowledge of what the service is doing and

accept added responsibility for encouraging co-operation by their own agencies.

At the working level, a similar and common device is the establishment of a co-ordinating committee of staff members from various projects or units, which enables those concerned with a specific common problem to meet together and exchange views. At the least such a committee provides a means of communicating information. This is valuable in itself since many difficulties are the result of not knowing what one's colleagues are doing rather than a wilful desire to act independently. At best, committees can decide upon, but not implement, methods of co-operation.

Co-ordination is undoubtedly one area where administrative machinery is most completely dependent upon human understanding. It is nearly impossible to force co-ordination; those concerned must be willing to co-operate. Political and administrative superiors can foster this willingness to talk and work together by their own example and by indoctrination of their subordinates. Industry can encourage it by insisting on unified action to meet its needs. Instructions, committees, and other devices are merely machinery to make use of an underlying willingness to co-operate in order to attain effective industrial development.

### INTERNAL ORGANIZATION OF THE INDUSTRIAL SERVICE

#### Organization according to function

In administrative organization, one must first determine the functions which an industrial service is to perform, and then develop a structure which will best enable them to be carried out. No blueprint can be provided for universal adoption, as conditions vary with cases. Nevertheless, there is a large degree of similarity in the services provided to industry in most countries and one country can learn much from the experience of others.

The internal structure of any particular service will be much the same whether it is sponsored by government or by the organized private sector. On the other hand, the organizational structure will differ from one service to another because the work is different.

For example, the activities of a large, comprehensive industrial research institute often include a number of disciplines, and many of the institute's personnel will have high technical skill and will work with a considerable degree of independence. An industrial bank for small

industries does work that is very different from the research institute and requires a different range of staff with different organization and supervision. Its feasibility studies are numerous but narrow in scope; it requires detailed procedures for handling funds and a large clerical staff to deal with accounts and correspondence; it is likely to operate a number of permanent, decentralized branch offices. The organizational units of the bank will reflect the various stages and functions of granting, supervising and collecting loans, rather than the types of enterprise served.

A service for industrial training will be designed to provide a range of specific courses or teaching units and will employ a number of specialists, many of whom may teach a single subject only or handle the training courses within a single enterprise. A service dealing with the protection of industrial property, such as patents, will need a structure which can maintain contacts with the national legislative body and with firms and organizations in other countries.

### **Initial structure**

When an industrial service is first organized, its work may be rather limited. Industry is not likely to be fully aware of the services offered nor to appreciate their benefits. There is thus a problem as to the size of staff and the complexity of structure needed. If services are to be available even on a small scale, the service must have at least a minimum number and range of personnel. Yet the initial activity does not justify a large organization and it may be difficult at the outset to secure more than a small budget and a few qualified staff members.

Although the director and others who plan the development of the service will need to have a clear idea of its ultimate structure, the initial organization will probably have to be very simple and relationships of work and personnel will be rather flexible and broad. During this period, the director will be able to discover the special abilities and weaknesses of his staff. As the volume of work increases, he will be able to assign the staff members to the activities they handle best.

If an over-large structure is established at the beginning, the organization chart will show departments and sections which are not yet required by the volume of work. The director will be under pressure to staff the unnecessary parts of the structure by assigning at least one officer to each. This will restrict the director's flexibility in trying out new personnel and it usually means in the long run that the first persons assigned

to each unit will claim the highest posts in it. In many countries this results in a structure which appears impressive but is really embryonic, since many sub-units are manned by one or two persons who have imposing titles but no subordinates.

In a developing country, such a system can have long-term disadvantages. It immediately poses the problem of co-ordinating many tiny sections, and puts the burden of co-ordination on the director or forces him to employ otherwise unneeded deputies as co-ordinators.

More important, as already indicated, it fills the principal posts in each section with men whose chief qualification is that they were appointed early. Later, when able juniors are ready for promotion or when well trained new personnel become available, they find all the top posts filled. The director or his superiors then face the unhappy choice of leaving advancement blocked for qualified new or rising staff, forcing out early appointees who are less qualified though they may have given faithful service, or further inflating the organization by creating additional senior posts.

### **Job specifications**

Though the assignment of personnel is kept flexible at the beginning, individuals will gradually be given responsibility for particular tasks. The organization chart will at best indicate functions and responsibilities only vaguely; detailed and clear job descriptions are required. A job description is usually tied to a post rather than to a person, since from time to time the individual doing the job will be changed. However, at any given moment, the job description will specify the duties to which the particular staff member is assigned.

Each job description should state clearly the relationship of the work—and hence of the individual performing it—to the rest of the organization. The staff member must know from whom he takes orders, whom he is to supervise, whom he may call upon for specified assistance, and with whom he is to consult and co-ordinate in carrying out his duties.

A clear specification of this relationship is essential for industrial services in developing countries, where such services, and even the government machinery, are new. A relationship calling for supervision or co-ordination is often unfamiliar to the staff. Their past experience may have been in the completely different atmosphere of educational institutions or of society in general. Even staff recruited from industry

will find the organized relationships of a government office very different from those of an industrial enterprise.

Although it is necessary to establish organizational relationships on a formal basis, the director of each industrial service will find that his formal organization will inevitably be supplemented, or even challenged, by a network of informal organizational relationships. Some of these will be cultural or social. Persons from the same tribe or school will work in a certain harmony which they may withhold from those from other backgrounds. Age or seniority may give an employee of low rank greater importance in the eyes of his hierarchical seniors; conversely a very young senior officer may find it difficult to supervise those considerably older than himself. Individual personalities or abilities may give certain staff members greater strength over their colleagues than might be inferred from their formal rank, while a weak or incompetent official will be unable to hold his own even if his formal organizational position is high.

### **Housekeeping facilities**

Government practices vary with respect to the machinery for "housekeeping" in the industrial services—i.e. for the provision of office space, transport, clerical help etc. Sometimes these facilities are handled centrally for the entire Government or for the Ministry of Industry as a whole. Autonomous or private industrial services must generally provide their own housekeeping facilities as well as their own personnel and finance sections. It is usually desirable to establish within the services a special administrative unit to handle all these subjects and so free the director and professional staff from worrying about them. Properly handled, these support facilities can contribute greatly to the efficiency of any industrial service; badly handled, they can make its work unnecessarily difficult.

### **Use of unattached staff officers**

Most industrial services in developing countries are relatively small. In their early stages, they will have little need for staff units of a professional type, as distinct from housekeeping support. The larger services may need to make provision for advisers or special assistants, who can

be used for unusual tasks and surveys or as specialist helpers to the director and senior officers. This enables the service to continue to have some qualified staff available for flexible assignment, provided they are not gradually loaded with operational duties or routine. Care must be taken that these staff posts do not become a haven for elderly incompetents or political cast-offs. It is often safest to keep such staff positions as temporary appointments, allowing the service to fill them with short-term personnel from industry, universities and other sources.



## **THE ADMINISTRATION OF INDUSTRIAL SERVICES: STAFF AND PROGRAMMING**

### **STAFF POLICY**

#### **Salary scales**

It is usually assumed that the industrial services in developing countries may be in a favourable position compared to other public services as regards staffing because they can draw not only on the civil service but also on industry and even on the universities. This also means, however, that the staff of public industrial services can look elsewhere for jobs, which will very often pay much better, especially in industrial enterprises.

Salary scales are one of the most complicated administrative questions confronting an industrial service. In a developing country, personnel with even approximately the qualifications, training and experience desired by the service are almost always in short supply. Thus the industrial service must bid for their services in competition with other potential employers. Industrial services must compete not only against private or public industrial employment but also against other branches of the civil service, which being larger may offer greater scope.

Although some countries have tried to control the allocation of manpower, the struggle to secure scarce specialists often makes such controls ineffective. The alternative is open competitive bidding, with each service attracting staff according to its financial capacity rather than according to its needs or national requirements. From the viewpoint of the Government, this system is catastrophic, but the harassed director of an industrial service may have to bow to necessity and fight with the rest. If his service has financial autonomy he will fix his grades and salaries at competitive levels. If he is bound by government regulations, he will find special allowances and other fringe benefits to make his service more attractive and will reconcile himself to the probability that he will eventually lose his better staff members as they gain experience and are

attracted to better paying jobs elsewhere. He will probably make a virtue of necessity and announce that his service has a responsibility to train young persons for industry and other services.

Many autonomous agencies seem to feel that not only posts requiring scarce skills but all of their jobs should be paid at rates well above civil service levels. But although the service may find itself forced to bid extravagantly for technicians or supervisors, there is usually no reason for it to pay more than the usual market rates for over-abundant unskilled or semi-skilled staff.

Civil servants seconded to an autonomous service constitute a special problem in many countries. If the service has a pay scale higher than that of the regular civil service, and if a seconded civil servant receives that higher salary as he usually does while with the autonomous industrial service, difficulties arise when the period of secondment ends and he returns to his regular civil service job at lower pay.

#### Other incentives

Industrial services find many ways of offering incentives other than salary. In some countries, the challenge and excitement of building the national economy will attract staff. Many posts in industrial services offer opportunities for valuable professional experience and interesting contacts with industry and its operations. Personnel with good qualifications will be more willing to start in junior posts if the service can offer them a clear line of future promotion. Travel abroad for periods of training, for visits to industries or industrial services, or for attendance at seminars or conferences is usually considered in terms of its value to the service, but it also makes the work more attractive to the staff member.

Each service develops a pattern of personal and group relationships which to a large extent determine its attractiveness in comparison with other government agencies where salaries may be higher. Staff policy in a public industrial service may appear to be closely regulated by civil service regulations. Yet even in such a case the director can play a major part in fixing the staff policy and relationships. This is well shown by the wide variations in staff quality, efficiency and morale between departments within the same civil service, or within an individual unit under one director as compared to his predecessor or successor. Civil service recruitment methods, for example, usually allow a director some latitude in selecting senior staff. He will thus be able to use his influence to appoint

persons of the highest calibre available, and will resist any tendency to fill the service with mediocrities. Again, even in cases where the regulations for staff administration appear detailed, a director will have considerable latitude in applying them. His decisions on work assignments, staff evaluations, disciplining, transfers and leave will be extremely important in determining the efficiency of the work as well as the morale of staff.

The traditional concepts of management assumed that the role of the subordinate staff was to receive policy and to carry out orders to implement it. Modern experience shows that the qualified staff of an industrial service can and should contribute greatly to formulating and implementing policies and plans. Through their work they come to know how a policy will affect the service. They are often in a position to estimate whether plans are realistic. From their experience, they develop ideas for new policies or for revision of old ones. Unless machinery exists through which these ideas can be expressed, thoughtful staff members may become frustrated. To combat this, staff are represented on governing or advisory boards in some services. In other cases, there is machinery for consultation with staff unions or associations. Many directors hold periodic staff conferences or group sessions with senior staff or allocate time to talk to them. Occasionally suggestion schemes are promoted. Even where no machinery exists for direct staff participation in forming policy, ordinary management practice dictates that the policy be explained to the staff and that they be consulted to make sure the plans are realistic and will be carried out efficiently.

### **Recruitment**

Recruitment of staff will be affected greatly by the extent to which an industrial service is required to follow the civil service selection methods. Many developing countries have a double and paradoxical civil service recruitment pattern. The regular legal requirements are often extremely rigid, with fixed educational thresholds, complex procedures, numerous tests. Side by side with this, there is a system of relatively easy recruitment of "temporary" personnel. This has been established to provide flexibility in meeting the special needs of a new and growing bureaucracy engaged in a number of tentative development experiments. It also provides a vehicle for meeting political, tribal, family and personal pressures for public employment. After these temporary recruits have been working for several years, it is customary to make special

arrangements to incorporate them, individually or by the hundreds or even thousands, into the permanent civil service without examination.

Heads of industrial services should realize that careful recruitment protects the service by enabling it to secure properly qualified staff. Whether inside or outside the usual civil service recruitment system, the industrial service must ensure that its vacancies are widely advertised, that examinations are designed to test the specific qualities which the work of the service will require, and that the service has a reasonable opportunity to choose from among the top candidates. If regulations allow, it may be desirable to choose candidates for higher-level posts in the service through interviews by the top officials of the industrial service or by members of its governing or advisory boards.

### Training

Once staff have been recruited to any industrial service, they generally require special training, for two reasons. First, techniques change rapidly in modern industry or administration, and even the ablest specialists must constantly be learning in order to keep up. Thus in any country, whether developed or developing, the senior and specialist staff of an industrial service need to take advantage of all possible training opportunities.

Second, the staff of the industrial services of developing countries require training because many of them have come from different activities and know little about industry and its needs. Many who are currently in administrative and technical posts have formerly held relatively minor posts and have had little or no experience in planning and supervising work programmes. Others are newly graduated from university and are unfamiliar with working in a group or under bureaucratic conditions. Few staff members of the industrial services have had any special training for the actual work they are to perform.

The specific form and content of the training will vary with the particular country, the service and the job. It may also be conditioned by the training resources available. Clearly the value of any training will depend on the extent to which it provides the officer with knowledge which will be of direct help in performing his job. This suggests that he should usually be trained in the country where he works and by persons thoroughly familiar with local conditions. It will often be desirable to draw instructors from industry. Training should also acquaint the industrial service officer with local administrative, social and economic

conditions. Some of this can be taught in a classroom but teaching should be conducted mainly in the factory or office.

The training of industrial service officers abroad should be reserved for special cases. At times an officer will need advanced education which is not available in any local university or technical institute. In other cases, he may need to receive training abroad relating to a new industry or industrial process or form of industrial service which is about to be introduced into his country.

Training in any country tends to be adapted to local conditions. In developed countries, there is a good deal of large-scale industry, a range of industrial services, and considerable specialization and sophistication in providing them. Such conditions do not usually exist in developing countries. Their industrial service personnel will need to become familiar with the operations and problems of simple small-scale enterprises. They should understand the concept of planned economic development in which each industrial enterprise, whether private or public, is expected to play its appointed part in the national economy. In addition, they will need thorough knowledge of their country's industrial development plan, both in its broad outlines and as it affects particular industries and enterprises. Finally, they will usually have to be taught how to use the very simplest techniques and equipment, often improvised, and almost always assuming a scarcity of human and material resources.

Few individual industrial services in any developing country have enough training resources or enough staff to do all of this successfully. Much of it, however, could be accomplished if a number of services worked out a co-operative training programme. They would then be in a stronger position to seek additional support from industry, from the educational authorities, and from the civil service training unit. In some cases, they might be able to supplement their efforts by regional or sub-regional training programmes in co-operation with neighbouring countries whose industry and industrial services operate under much the same conditions.

#### **Retention and secondment of staff**

When an industrial service has acquired adequate staff through effective recruitment and training, there remains the problem of retaining them. Mention has already been made of the counter-attractions of the civil service and, even more, of industry. Such attractions are not

only a matter of salary. Often an industrial service is a relatively small organization compared to government departments or industrial enterprises. The average senior officer of an industrial service often works at a lower grade, supervises fewer subordinates and enjoys less responsibility than he would in the civil service or in industry. The number of senior posts are few so that juniors have limited possibilities for promotion.

In view of the working conditions in industrial services and the mobility of manpower in developing countries, the possibilities of moving personnel to and from these services should be further explored. The practice of secondment between the civil service and public industrial enterprises is already common. Staff and programmes could often benefit from similar exchanges for limited periods between all industrial services, whether private or public, departmental or autonomous, and their client industrial enterprises. Naturally this would require arrangements to protect industrial secrets, adjust individual salaries, and guarantee continued career opportunities. Fortunately all these aspects present less difficulty in most developing countries than in developed economies because industry is usually part of a planned economy and large-scale industries are very often public corporations or have substantial governmental participation. Securing experienced men from industry as temporary staff members of any industrial service can be advantageous to the service, and in the long run helpful to industry because it would ultimately produce a service better adapted to its needs.

### PROGRAMMING THE WORK LOAD

#### Difficulties of predicting the work load

Some industrial services are compulsory and it is possible to estimate future demand with some accuracy and to plan on that basis. A large number of industrial services, however, are voluntary. Fundamentally, the use of such services will depend on the need for them, which may change suddenly as a result of new laws, economic fluctuations, natural disasters or other phenomena. Hence it is sometimes difficult to anticipate accurately the volume of requests for services which will be received during the period under review.

Other industrial services offer general help in solving different industrial problems. The work not only depends on voluntary requests from

entrepreneurs, but it must be flexibly organized, since the subjects and expertise required depend on the particular problems arising in the enterprises concerned. In such cases, not only is the volume of requests hard to predict, but also it is impossible to know in advance the type of work involved or the staff members needed.

This produces a dilemma for many industrial services in developed as well as developing countries. If they plan their future activities carefully and in detail, they will not have the flexibility and resources to handle the unpredictable specific problems which constitute one of their most important duties. On the other hand, they cannot merely wait to receive requests. The requests may be unimportant and their solution may contribute little to industrial development. They may come from only a few firms and may be concentrated at peak times. Despite all publicity, there may be periods with few requests for service, and the staff will then be underemployed.

To the extent that past experience and knowledge of industrial conditions allow accurate prediction of future service demands, this problem may be eased. In any organized activity, a certain amount of leeway is always required to allow for unexpected changes or for errors in planning, and intelligent management merely attempts to minimize these causes for later changes of plan. Even when it is not possible to predict the details of future service demands, experience and knowledge of industrial conditions may help in estimating the types of problems on which help will be requested and allocating staff and resources to them. However, there will remain many activities, such as research or industrial extension and new services, where such prediction cannot be completely successful.

### **Making the best use of staff**

Some industrial services try to train staff who can be assigned flexibly to meet different service demands. To be effective, the service must have a system which sets priorities on requests as they arrive, and concentrates the available staff on the most important or most urgent pending requests. Where demands are numerous and cannot all be met, the enterprises whose requests are given low priorities will be dissatisfied since their requests may be deferred even further if important new requests come in.

Industrial research institutes have found that one successful way of handling the planning/request dilemma is to allocate some staff to deal

with requests, while reserving others for "in-house" projects. This may be a useful arrangement for other services to follow if the proportion of staff allocated to each activity is flexible and changes as needed. Even in services where the nature of the work does not make "in-house" projects feasible, it is usually possible to draw up a list of desirable investigations to which staff can be assigned when requests do not occupy their full time. This is quite different from making work merely to keep people busy. Personnel who are temporarily available are used to work on the top priorities among the waiting tasks, which all administrative organizations need to do but never seem to accomplish. Such work should be a clear part of the total programme of the service; it should be related to answering industry's requests for service, however, and should not be given such importance as to interfere with this task.

All of these arrangements are administrative devices. They can keep staff steadily and productively busy. None of them completely answers the dilemma of reconciling planning with requests. None can take the place of, or be as good as, a close relationship between the service and industrial enterprises. When industry takes part in planning the work of the service, it will reflect more realistically industry's expectations of using it.

### **Establishing an annual work programme**

Some industrial services are fortunate enough to be able to plan their work fairly accurately, because it is less dependent on the uncertainties of demand or because they have had enough experience to be able to predict the requests they will receive.

In many cases it is possible to establish an annual work programme which shows the type and volume of work expected in each activity of the service. A one-year programming period is common because this is the usual budget period for which funds and other resources are available. However, any alert service director has at least in his own mind projections of the current annual work programme into the future. It is felt increasingly that directors should be thinking five years ahead in order to have an idea of how the current work is to develop. This will influence their proposals for staffing and financing.

It is often impossible to predict and show in the annual work programme the detailed flow of work for several months ahead, and the programme must therefore be revised from time to time during the year.



It is important that such revisions be more than automatic corrections to reflect current realities; they should be occasions for inquiring why the original targets have not been met. If the forecasts were wrong, they must be made more accurately in the future. If some sectors are failing to reach their target while others have exceeded theirs, this may indicate a lack of balance or a change of priorities in the service effort. If short-falls are widespread, the causes should be identified and steps taken to deal with them.

In a new service or in a developing country, it is sometimes difficult to keep to a work programme covering even one year simply because sufficient experience is not yet available or because the progress of industrial development is still too unpredictable. Many services try to supplement the annual work programme by even more detailed plans of work for shorter periods. In many cases, these are further subdivided to show the work expected from individual staff members. This helps in allocating duties and in timing particular tasks and completing them by the target dates.

### **The use of procedures**

The efficient programming of work can be greatly assisted by systematized procedures.

Modern industrial production is based on a flow of materials from one section to another or from one workman to another. Much thought is given to production procedures. They are planned carefully; each step is analysed; time and motion studies are made. In addition, the employee is given detailed directions as to exactly what his job is and how to do it.

Industrial services can learn much from their industrial clients. Most service tasks require work to be carried out by several individuals. Many tasks are repeated in project after project, and systematization of them will lead to smoother operations. A number of industrial services have developed standard working procedures in different subjects. The flow of correspondence is the most similar to industrial production, and in many government departments, including industrial services, correspondence has been subjected to analysis and given a fixed procedure. Industrial banks have systematized the handling of loans from initial request to final repayment. A manual on industrial research gives

procedures for planning and carrying out research investigations.<sup>2</sup> Current training in management even describes the procedures for decision-making.

Even the effort to systematize work into a procedure has advantages. Partly for this reason, all staff engaged in the work can profitably take part in the analysis.

Each industrial service can also copy industry in making careful programmes for its major studies and advisory service projects. While these are on a smaller scale than the establishment of large industrial plants, such programmes frequently require the scheduled integrated efforts of several sub-units or several individuals. Detailed advance programming and supervision of progress make it possible to complete such projects on time and without a hitch.

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<sup>2</sup> United Nations, Department of Economic and Social Affairs, *Manual on the Management of Industrial Research Institutes in Developing Countries*, New York, 1966, ST/CID/6 (Sales No. 66.II.B.3).

## THE ADMINISTRATION OF INDUSTRIAL SERVICES: FINANCING AND EVALUATION

### FINANCIAL SUPPORT AND CONTROL

Like nearly every other aspect of its administration, the financial position of an industrial service will depend greatly on whether the service forms part of a ministry or is an autonomous public or private agency. In the former case, it will usually be bound by rigorous and complex financial laws and regulations. An autonomous body will be free from these, but ordinarily will have its own financial rules which in time may grow to become nearly as complex as those of government. In any event, even so-called "autonomous" service agencies are usually subject to financial controls by other bodies, such as a supervising ministry, post-auditors, or parliamentary accounts committees.

#### Sources of revenue

A public industrial service, whether departmental or autonomous, may secure its revenues in three different ways: it may have a reasonably steady income from the national budget or a special development budget; it may secure special grants for particular purposes; or it may receive income from the sale of its services to industrial clients.

*Public budget* funds may come either as a general subvention from the treasury to the service, to be spent according to its own internal budgeting, controlled by its governing board, or under an itemized heading of the state budget. In the latter case, since many industrial services are concerned with development, their public revenues may sometimes come not from the current national budget but from a special development budget. The latter may either cover a one-year period, like the national budget, or a longer planning and development period.

*Grants and loans.* The second category of revenue, special grants may be regarded as including loans. The industrial services which usually receive loans are large-scale projects, such as industrial estates, or financial operations, such as development credit banks. Services also receive loans when they are capitalized. In each case, the assumption is usually made that eventually revenues from the sale of services or products will enable the industrial service to repay the loan. Experience shows that this assumption is not always valid, owing to over-optimistic financial planning, delays in reaching an income-producing stage, bad management, or low profitability caused by heavy social costs. Hence the advisability of loans must be very carefully considered and a judicious substitution of outright grants at the beginning may be better than having to write off later a loan which clearly cannot be repaid.

Grants to finance current operations are frequently provided to help in getting new services started. There are often sizable initial costs to obtain accommodation, train staff and employ temporary expatriate personnel. At the same time, the Government may be reluctant or unable to allocate substantial sums in its ordinary budget to a service that is new, unknown and unproved. Grants are frequently obtained from outside sources, to help the new industrial service get established and grow to a point where it can secure adequate local revenues from the national budget or from sale of services. Grants are also commonly given when, although an industrial service does not form part of the government machinery and may even be a private organization, it nevertheless receives a certain public subsidy because it is valuable to industrial development.

Other grants are restricted to a special part of the service's programme. A frequent example is a donation by one or more industrial enterprises or by an industrial association, to support a specific investigation for a limited period of time provided that the results are made generally available to all who may be interested.

Conflicts may arise as to how much control the donor of a grant shall exercise over spending it. He naturally wishes to be assured that the grant will be used for its intended purpose and the money judiciously spent. Thus there is a tendency, especially when the national treasury is the donor, to require not only detailed preliminary budgeting of how the grant is to be spent, but also accounting in strictly prescribed form. It is also natural that the service will desire considerable flexibility in using a grant and may find that

the requirements and accounting methods attached to it are unduly restrictive. There is no real solution to this dilemma, but, at the very least, a clear agreement is necessary prior to the grant between the donor and the recipient service in order to avoid later misunderstandings.

*Revenue from sale of services* is of many different types, including the sums received by industrial banks as interest on their loans, rents from land or factories in industrial estates, profits from pilot plants or public marketing transactions, and services and projects carried out for clients by industrial research institutes.

Most government financial regulations call for all revenues, including those from the sale of services, to be credited immediately to the general treasury. While they may be occasionally "earmarked" for particular uses, they cannot be spent until properly appropriated for those uses. It is therefore important for industrial services which carry out a great deal of paid contract work to make sure that their budget income includes the revenue from that work and that the expenditure side of the budget shows correctly the costs which will be incurred and financed by it.

### Budgeting

In most respects, budgeting for public industrial services is similar to that for any other governmental department. One or two possible points of difficulty may be noted. Once the budget estimates have been prepared, they will go to the supervising minister, either directly, if the service is a ministry unit, or after approval by the governing board, if it is an autonomous unit. Since the budget affects policy, the extent to which it may be changed by a governing board and by the responsible minister is a matter of great importance to the service. The director of the service and senior officials must make sure that their budget proposals are clear and adequately justified. This will reduce the danger of arbitrary changes or cuts at a later stage through misunderstanding or lack of information.

The same problem arises in negotiating the estimates with the budget authorities of the Ministry of Finance and in explaining them to the parliamentary appropriations committee. Much of the work of industrial services is new and rather unusual. In many cases, it is a national investment, the results of which are shown only indirectly through increased industrial development. The industries, as the users of the service, can

best testify to the extent and urgency of the need. If they are sympathetic toward the industrial service they can give valuable support to its efforts to secure an adequate budget allocation.

### Control of expenditure

In spending budgeted funds, any public body is subject to complex laws, regulations and administrative controls, and the processes of satisfying those restrictions often seem interminable. While this is also true in many developed countries, it is especially common in developing countries where financial regulations and procedures were originally designed as colonial controls rather than as active instruments of national development.

Industrial services feel these restrictions and delays more acutely than many of the older government departments whose work is more routine. By their very nature, they deal with development needs which are urgent and must be handled flexibly. A bit of judicious spending today may produce an early increase in industrial production, whereas the same amount of expenditure delayed by several months may come too late to meet the need.

The result of the restrictions, however, is that the supervisors of the activities of the service, who actually spend or use the manpower and materials, usually have very little control over budget planning or detailed spending. Thus, although the regulations and controls were intended to achieve a more efficient use of funds, the very complexity of red tape divides and conceals financial responsibility.

These considerations have often been used as powerful arguments for making industrial services autonomous. Unfortunately, even autonomous services often develop their own complexities and delays in financial matters. Sometimes the governing board is given or demands the right of prior approval or post-review of even minor items of expenditure. The special financial procedures or accounting systems of the service may not always be more streamlined than those of the Ministry of Finance. Even quite autonomous or private services find it hard to avoid putting a good many internal restrictions on spending, either through formal administrative regulation or through gradually developing precedents in the service or the demands of its chief officers.

Autonomy in financial matters is never absolute. The autonomous industrial agency is using public funds as part of a national development

programme. The Government therefore insists on machinery to ensure that the programme is followed and the money properly spent.

In developing countries, most autonomous agencies receive the initial capital they need from the Government. They have frequently to return to the Government for additional capital or for annual operating grants from the general national budget. At such junctures, the agency has to justify the request and account for its stewardship of previous appropriations.

Even if the arrangements leave the agency free from outside controls before expenditure is made, it can almost never escape outside post-audit. This may be carried out by a private auditing firm, by the Ministry of Finance or by the independent general public auditor. In nearly every country, there is some arrangement by which the parliamentary body can at intervals review the accounts and financial policies of autonomous public agencies.

Each country has developed its own machinery for dealing with this dilemma: no public service can be fully independent of financial control, yet one of the major advantages of establishing an autonomous agency is to free it from many of the traditional restraints. In part, this dilemma can be resolved by giving the agency responsibility for detailed spending and accounting, while subjecting its financial policy as a whole to outside review.

Help in solving this dilemma and in assisting services which form part of ministries and are subject to traditional financial methods can be obtained from the modern financial management device referred to as "accountability in relation to work performance", which has become especially desirable as Governments have concentrated on economic development. Under this system, budgets allocate funds according to the work units to be accomplished. This in turn leads to accounting in terms of unit costs. Individual projects are budgeted as unities, and their costs can be seen and watched. The emphasis is thus shifting from holding public services responsible for handling their resources legally to encouraging them to behave in such a way that they do as much as possible and as well as possible with the available resources.

Industrial and commercial enterprises now commonly use such modern methods in their financial operations. Industrial services are therefore in an especially good position to encourage the adoption of similar methods by public services. In this matter as in the adoption of systematized procedures, they can learn from their industrial clients.

## EVALUATION OF PERFORMANCE

**Need for appropriate criteria**

Efficient performance by industrial services is needed not only to ensure that the best and fullest possible help is being provided to industry, but also to justify government expenditure as analysed above. The results can be evaluated only if there are clear and valid criteria. Performance can then be compared to the past records of the service or of other similar services.

In private industry, profitability is the measure commonly used. In public institutions, other objectives are often of greater importance and other measurements must be found. Some of these may be quantitative, such as cost per unit of service. The quality of work performed is much more difficult to evaluate.

Evaluation is especially difficult in developing countries. It is unreal to measure the contribution of any service in isolation from its environment. For example, in developing countries which are short of supporting staff, scientific or professional personnel may have to devote a disproportionate amount of their time to routine functions. Outside political, legal or administrative restrictions in any country may prevent a service from functioning as efficiently and economically as it otherwise might do.

Evaluation criteria and techniques will differ according to the service. Criteria appropriate for evaluating an industrial financing unit might be completely useless for evaluating a research institute.

In the past, the activities of public institutions, including industrial services, have been reviewed primarily from two points of view. One has been financial, through constant regulation of budgeting and spending as described in the previous section. The other has been legal, so that there is a chain of responsibility to the superior officer, to the legislature, and ultimately to the courts in case of challenge. These traditional controls aim at ensuring the propriety or correctness of action but they are insufficient when it comes to measuring the desirability of the action—that is, whether it was the best that could be carried out to achieve the goal. The traditional review for correctness is, of course, always necessary to ensure that public or quasi-public institutions do not mis-spend their funds or violate their public responsibilities. However, for dynamic functions such as industrial services, evaluation and control should be directed towards encouraging constant improvement of the service provided.



If this positive approach is adopted, it becomes important to establish clearly what the industrial service is supposed to be doing. The mission of a service has often been defined only in very general terms when it was first established, and its work has grown almost by chance. Thus the initial step in any evaluation will be the consideration of objectives, the establishment of them if they do not exist, or a review updating them if they do.

### Selection of data to be used in evaluation

Costs are often regarded as important criteria for several reasons. Budget and accounting machinery already exists to watch costs, collect data and try to enforce economy. Modern budgeting measures performance costs and seeks to define work in cost units. At the same time, factory work studies are cost-conscious and such analysis is being applied increasingly to clerical and intellectual activities. Thus cost is considered important and industrial services are under pressure to show how much service they can provide at the lowest possible unit cost. At the same time, service of high quality, carried out with care and understanding of industry's needs, may be what is needed even if it is somewhat more expensive. In the early days of a service, while its clientele is being built up and supervisors and staff are still inexperienced, costs may be high but justified for the time being. Hence cost cannot be considered the only criterion for an industrial service. On the other hand, the service is dealing with very cost-conscious industrial clients. When they are being asked to share in financing the service, they will expect it to watch and minimize its costs even as they must do.

Data which can be presented through statistics are generally attractive. However, it has already been noted that quality of work is often not easily presented in statistics. Furthermore, the work of an industrial service may consist of varied help to industries both large and small and of projects which vary greatly in the staff time required as well as in their importance to industrial development. It is misleading to lump large and small, short and long, into the same set of statistics. It is also unfair to the service and to the staff members concerned.

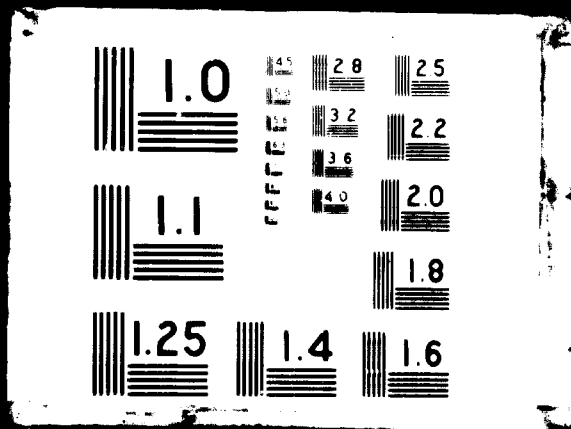
The statistics collected must be valid and significant. For example, the number of requests for service visits per month might be a most significant measurement of an industrial extension service, while for a legal service it might mean failure to give clear information. As another



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example, figures of the kilometres travelled by staff on official business may be easy to collect but of no value in themselves in determining what service industry received as a result of the travel.

Once the criteria have been decided upon, steps will be necessary to ensure that data are available. In industrial services, reports from staff members are usually required at fixed intervals. For the convenience of those who receive these reports and make later evaluation, it is desirable that the organization and form of the reports be standardized and that information be recorded in tabulated form or at least simply and concisely. Some services have found it helpful to divide reports into two parts: a small table for statistics and a larger section in which activities can be described in more detail.

It will also be desirable to keep accurate figures of the exact number of requests for service received during each week, month, and year, by detailed categories. For management purposes, similar figures are necessary for the number of requests finally answered during each of these periods. Obviously, if the number of requests begins to move ahead of the number of answers, the service is acquiring a backlog of unfinished business which will produce client dissatisfaction and lead to trouble.

As these figures are collected, they will provide the initial data which can be analysed to show the problems on which help is requested and the trends of requests, both in volume and type. Management will want the figures to be in such form that it is also possible to see how long it took to respond to each request as well as to solve the problems involved.

Industrial services seem to vary between two extremes with regard to their recording of data. In small or new units, there may be great informality. The staff is small and the director or supervisors are likely to be familiar with the work of each staff member. Procedures have still to be fixed, and there is considerable reliance on subjective feelings about how work is progressing and what results are being obtained. Unfortunately, this does not produce tangible measurements nor a written record for future comparison. Ultimately the system, or lack of system, breaks down and more specific detailed records become necessary.

The opposite extreme is to collect very detailed statistics which then form the basis of impressive charts for wall display or publication. The statistics, however, are not always kept up to date and charts often show indiscriminately both important and unimportant figures. Quality of performance is rarely charted.

It is generally best for a service to record a limited range of data, which reduces the effort of reporting and analysis. It will also force the director and staff to consider which indicators most clearly and fairly show what is being accomplished. Sometimes the study will reveal activities which are so unimportant but effort-consuming that they should be dropped.

### Evaluation

Evaluation is the comparison of actual results with those which, on the basis of selected criteria, ought to have been achieved. Evaluation will be made by a number of persons, for a number of reasons.

The director or supervisors, as noted earlier, will wish to see that subordinates are performing their work properly and will also wish to make sure that their own supervision is producing effective results. Thus evaluation is a normal and necessary function of management. In the larger industrial services, a special unit may be set up to collect the appropriate data and prepare evaluation for management. A relatively new technique is to encourage all staff to do a considerable amount of self-evaluation of their work and results as well as those of the service as a whole. Any officer will normally be forced to do a certain amount of this as an inevitable result of having to report on his work. If in addition he is provided with comparative data about previous periods or about the work of others, he may be led to make valuable contributions in discussions about how work can be improved and to find ways and incentives to improve his own performance. Such staff discussions may help in formulating programmes by making projects more realistic.

If the service has a governing or advisory board, that body will want to receive information about evaluation and may under certain circumstances actually make its own evaluation. Occasionally there may be reason to have a special evaluation by persons completely outside the service, when affairs are going badly, when major policy questions require outside objective advice, when substantial expansion or change is being considered, or when the country's entire industrial development programme is being reviewed. Outside evaluation of a limited nature is carried out by the organs responsible for the service's financial support and auditing, as part of their normal work.

In many ways industry itself, as recipient of the industrial service, is the most important factor in evaluating it. If the governing or advisory

body of the service includes representatives of industry, they can reflect that client evaluation. In addition, the service may find it valuable to call periodic meetings at which industry can express its needs for service and its evaluation of past services. Such meetings will give the service a chance of telling industry what it can provide and of answering criticisms.

A proper evaluation needs to be absolutely honest. On the one hand, it should not be unfairly critical by condemning the industrial service for faults which were beyond its control or for failure to carry out activities which were not on its programme. Such facts may be noted for future consideration and action. On the other hand, the evaluation should not present too favourable a picture by omitting or under-emphasizing the points where the service failed or fell short of its objectives.

### **Follow-up and improvement**

Evaluation will be merely an interesting intellectual exercise if it fails to lead to efforts towards improvement. In a few countries, such as the United Arab Republic, each department has officers who are concerned with "follow-up". Part of their duties is to act as "progress-chasers" for current operations, but they are also responsible for ensuring that follow-up action is taken on evaluations to bring about improvements. This concept of follow-up is needed in developing countries which are building up industrial services.

Follow-up is a major responsibility of management, and the director of any industrial service should study an evaluation to see how he can bring about improvements through his own actions. He may wish to discuss the evaluation with his staff. The board of the service or supervising ministry or agency should consider the evaluation, together with comments by the director. Industry itself may have suggestions.

Follow-up will be effective only if such reactions and comments are constructive rather than defensive. Even if the evaluation seems unfairly critical, more will be gained by using it as a basis to produce better work and to programme for the future than by continuing to discuss what was or might have been done in the past.

Follow-up may be carried out at a number of levels. If the evaluation shows poor work by individuals, steps may be needed to clarify their duties, improve their supervision, make sure that they are properly

trained and improve their motivation. In extreme cases, transfer to other tasks or even dismissal from the service may be required. Where a process or activity is faulty, it may be necessary to redesign it completely, very possibly in consultation with the industrial clients. Evaluation may also lead to a review, or even a revision, of the objectives of the service so that its resources are best used to provide the assistance most needed by industry.

**THE INTERNATIONAL SYMPOSIUM  
ON INDUSTRIAL DEVELOPMENT:  
ISSUES, DISCUSSION AND RECOMMENDATIONS**

The issues and the discussion and the recommendations approved by the Symposium are presented in this chapter.

**THE ISSUES<sup>3</sup>**

Industrial enterprises require and continually make use of various supporting services, including industrial research, feasibility studies; laboratory testing; industrial extension services, consultant services; training services; administration of industrial standards; economic and financial services (including special incentives); marketing services; fairs and exhibitions.

In developing countries particularly, the majority of the industries are not in a position to provide for themselves all the services they need from their internal resources. Thus, it is generally necessary to set up one or more agencies in the public and/or private sectors to provide a variety of these services for the industries needing them; collectively, these agencies constitute what is here termed the "administrative machinery for industrial development".

Examples of such agencies in the public or the semi-public sector include the planning board, the ministry of industry, the industrial development corporation, the industrial development bank, the industrial information centre, the industrial research institute, the public enterprises bureau, the central statistical office, the technical training institute, and the institute of administration. Some of these agencies also cater to the non-industrial sectors of the economy.

In the organized private sector, the agencies and organizations that are frequently active in providing supporting services for industries include

<sup>3</sup> From Issues for Discussion: Administrative Machinery for Industrial Development, 1967, ID/CONF. 1/A.19 (mimeo.).



industrial co-operatives, industry associations, manufacturers' associations or chambers of industry, professional organizations and industrial labour organizations.

The issues discussed below are based on actual situations observed by UNIDO in the course of surveys conducted in more than twenty-five developing countries in various regions to determine the existing patterns of organization and administration of industrial services.

#### **Location in the government machinery of the principal organ for industrial development**

The surveys indicate that in the overwhelming majority of developing countries, some specific agency has been designated or created to deal with industrial development. This agency is referred to here as "the principal organ for industrial development". In a number of developing countries, e.g. Ethiopia, Jamaica and Nigeria, this central organ is the ministry of industry, which generally combines the function of industrial promotion in its broadest sense with that of industrial regulation. Frequently, however, the promotional or stimulative function is delegated to a statutory agency under the jurisdiction of the ministry. In a few countries an autonomous agency outside the civil service structure is the central organ for industrial development.

The issue to consider here is whether the principal organ for industrial development should be the ministry of industry or, for that matter, any branch of the regular civil service, or whether it should be an "autonomous" and "specialized" agency created for the purpose. Is the one better suited than the other to offer pioneering initiative and flexibility in dealing with the needs and problems of industrial development?

There is little doubt that the standards of performance of the civil service in the field of public administration is high in many developing countries. Industrial development, however, poses special problems. An agency that is expected, among other things, to stimulate and promote industrial development, particularly when the private sector is involved, should have a structural location and juridical status that would enable it to take prompt and business-like decisions and action unhampered by the generally slow processes and procedures of the civil service. Along the same lines, complaints are often heard from officials of non-autonomous industrial development agencies that there is excessive political interference in the day-to-day administration of the agencies, including pressure to hire staff on the basis of political connexions rather than of qualification and merit.

Possibly these problems might be lessened if the principal organ were

an autonomous agency with an executive head of the rank, if not the title, of a cabinet minister responsible only to the head of the Government.

Many developing countries are still experimenting with various approaches in an attempt to find the most effective formula. A practice that is widespread is to create an industrial development corporation and place it under the minister responsible for industry. This gives rise to a number of problems.

#### **Scope and functions of that organ**

With respect to scope, the question is whether the agency should handle all industry regardless of size, or whether in view of the weaker position of small-scale industry and its greater need of attention and assistance, this should be dealt with by a separate agency. Whichever approach is preferred, care should be taken to avoid duplication.

The furtherance of industrial progress involves promotion as well as regulation. It might be considered whether these two roles should not be assigned to two separate agencies. A number of developing countries have done so, assigning the promotional role to an industrial development corporation and the regulatory role to a branch of the civil service, usually the ministry of industry.

In itself the promotional role covers a wide range of activities. Each of the following, for instance, is promotional in one sense or another: planning, programming, feasibility studies, project evaluation, implementation and follow-up, research and laboratory testing, standardization, financing, technical and management training, advisory and extension services, administration of incentives, fairs and exhibitions, administration of patents, trademarks and designs, licensing etc. Some of these functions, such as planning, financing and research, are themselves highly specialized and may call in turn for the creation of specialized institutions. They will thus become, in so far as the principal agency is concerned, peripheral functions in which that agency will engage, if at all, only to the extent necessary to supplement the activities of the other institutions or organs. The question arises how to control the decentralized functions of the principal organ.

#### **Relationship of the principal organ and other industrial development agencies**

The issues to be discussed concern the types of relationships that should exist among the industrial development agencies which together constitute the administrative machinery for industrial development. The following, in particular, deserve consideration:

- (a) If the principal organ is different from the ministry of industry, what relationship should exist between them ?
- (b) Where the State owns a number of industrial enterprises, should these be under the jurisdiction of the principal organ or under a separate department of state enterprises? If the latter, what should be the link between the two ?
- (c) How can organizations in the private sector be brought into fuller participation in such aspects of industrial development as formulation of industrial policies, planning, training etc. ? In this connexion, the report of the Symposium on Industrial Development in Latin America notes that "only when the entrepreneurial sector established its targets in accordance with over-all national development requirements could the optimum participation of the private sector be secured".<sup>4</sup>
- (d) What other functions normally carried out by public or semi-public sector institutions could advantageously be turned over to the organized private sector and under what circumstances would this be justified ?
- (e) How should co-ordination of the activities of the various agencies be best achieved, e.g. through the creation of an inter-agency consultative and co-ordinating committee, or other alternatives ?
- (f) What can national Governments, private organizations, UNIDO and other international, regional or subregional bodies do to assist in setting up or strengthening industrial development organs ?

#### **Organizational aspects of industrial development agencies**

##### *Staffing*

Organizations for the promotion of industrial development should be staffed with people of superior professional training and experience. Such personnel are often in short supply, particularly in developing countries. Factors contributing to this shortage (e.g. the so-called "brain drain", uncompetitive emoluments, inadequate training schemes) should be examined and steps taken by national authorities and international bodies to correct them.

<sup>4</sup> United Nations, *Report of the Symposium on Industrial Development in Latin America, Santiago, Chile, 1966*, New York, 1966, ID/CONF.1/R.R./3, para. 82.

*Financing of the agencies*

Most industrial development agencies in the public or semi-public sector subsist on annual government grants. Release of funds generally follows well defined procedures which, under normal circumstances, cannot be altered or accelerated. Neither can the amount of the grant be exceeded except by supplementary grants which only the legislature can authorize. Moreover, unexpended balances at the end of the fiscal year cannot be carried forward to the succeeding financial year but revert to the general fund of the Government.

The limitations of these methods of financing are obvious. The question arises whether agencies would plan their operations more effectively if they were budgeted on a longer-term basis, say three or five years instead of one year. The agencies should be permitted greater freedom of decision in financial planning and administration.

*Evaluation*

A public industrial agency, by reason of being public—which often involves a monopoly status—runs the danger of settling into complacency, bureaucratic routine and low efficiency unless a mechanism is devised for periodic measurement and evaluation of its performance and the correction of observed or potential shortcomings. It is not always easy to set up objective criteria, especially in the case of public institutions to which the rule of commercial profitability does not apply. It is nevertheless possible to formulate a set of quantitative and qualitative criteria. In the case of the principal organ, its effectiveness could be measured over a period of time by the number of industrial enterprises it has promoted or assisted, the number of industrial jobs it has helped to create, the growth of its own investments and the increase in the contribution of the industrial sector to the gross national product which could be attributed to its effort.

**Machinery for subregional and regional co-operation**

The regional symposia on industrial development, held in Manila, Cairo, Santiago and Kuwait in 1965 and 1966 have emphasized in their reports<sup>5</sup> the need for strengthening existing regional and subregional

<sup>5</sup> United Nations, *Report of the Asian Conference on Industrialization, Manila, Philippines, 1965*, New York, 1966, ID/CONF. 1/R.R./2.  
 United Nations, *Report of the Symposium on Industrial Development in Africa, Cairo, 1966*, New York, 1966, ID/CONF. 1/R.R./1.  
 United Nations, *Report of the Symposium on Industrial Development in Latin America, Santiago, Chile, 1966*, New York, 1966, ID/CONF. 1/R.R./3.  
 United Nations, *Report of the Symposium on Industrial Development in Arab Countries, Kuwait, 1966*, New York, 1967, ID/CONF. 1/R.R./4.

institutions and the setting up of new ones to promote industrial and economic co-operation.

The Asian Conference considered that the existing machinery was "not adequate either qualitatively or quantitatively" and recommended, *inter alia*:

- (a) The establishment of an Asian Conference on Industrialization as a regular organ of the Economic Commission for Asia and the Far East;
- (b) The establishment of an Asian Industrial Development Council to promote industrial development in the region;
- (c) The formation of industrial development corporations on a sub-regional basis, a matter to be dealt with by the proposed Council.

The African Symposium recommended "the harmonization of efforts within a framework of subregional co-operation", the setting up of "effective consultation machinery to promote subregional co-operation" and the establishment of Secretariats at the level of existing or future subregional institutions.

The Latin American Symposium reached a consensus on the need for co-ordination between "the agencies formulating industrial programmes, those promoting or executing them and those handling the various instruments of industrial policy".

The Symposium on Industrial Development in the Arab Countries called for the strengthening of the subregional offices in Beirut and Tangier and the setting up of other institutions in the Arab countries to deal with such matters as statistics, regional planning, research and execution of industrial projects.

## THE DISCUSSION<sup>6</sup>

### Location in the government machinery of the principal organ for industrial development

The need for a central organization to promote and assist industrial development was generally accepted at the Symposium. The fundamental difference of opinion was whether that could be accomplished within the already-existing structure of government ministries or not. The problem was not confined to industrial development but had also risen in connexion

<sup>6</sup> See also the report of the discussion contained in: *Report of the International Symposium on Industrial Development, Athens 1967* (ID/11) (United Nations publication, Sales No. 69.II.B.7) (paras 99—118).

with agriculture and with other economic and social services. The Symposium, like all recent meetings on industrial development, concluded that such development could not be successfully accomplished unless planning was imaginative, procedures rapid and flexible, and methods of work and control modern. Each developing country would have to decide whether it could guarantee those essentials within its traditional government structure or whether a completely new organization would have to be created untrammelled by the usual requirements of government and free to set its own policies and procedures.

Those who supported the establishment of an autonomous agency argued that the civil service system of most developing countries had been inherited from pre-independence days and was not suited to dynamic development. They felt that an autonomous agency would better serve the needs of the private sector and would be able to speed the implementation of industrial projects. The view was expressed that countries should adjust their civil service systems to the needs of industry; that task should be relatively easy since in many developing countries, especially those which had gained their independence recently, civil service practice had not yet had time to become deep-rooted.

Those favouring the setting up of an autonomous agency were of the opinion that it should be highly specialized and that its chief must have status. He should be a member of the cabinet or executive council, as the case might be, and should be responsible directly to the head of the Government. It was only with that level of authority that he could fully promote industrial development. The functions of such an agency would include the implementation of the industrial development plan, which had been formulated and approved by the proper authorities, the awarding of incentives to new or developing industries, the over-all responsibility for the state-owned industries and the sponsorship of industrial development schemes. The policy-making board of such an agency should include the ministers or permanent secretaries of all the related ministries (such as economic planning and finance) and representatives of the chambers of commerce and of industry, banking institutions and trade unions. The agency should be staffed by highly experienced personnel, including industrial engineers, market researchers, financial analysts and legal experts.

Others were of the opinion that a ministry of industry should be the main organ in charge of industrial development. Where ministries concerned with industrial development existed, there was no room for an autonomous agency as well; this would cause confusion and duplication

of effort and throw an extra burden on the financial and personnel resources. The establishment of an autonomous industrial organization outside the regular government departments might prove to be an example which would be followed in other activities, such as mining and agriculture, and would fragment the entire machinery of the Government.

Some participants expressed the view that in order to control the performance of public industrial services the industrial development machinery should be answerable to a legislative authority. The minister concerned with industrial development would be in a better position if he were the head of many, if not all, of the Government's industrial development activities.

### **Scope and functions of the organ for industrial development**

The question was whether the organ in charge of industrial development should handle all industry regardless of size or whether small-scale industry (in view of its weaker position, and hence its greater need of attention and assistance) should be dealt with by a separate agency. Whichever approach was preferred, care should be taken to avoid duplication. Moreover, the furtherance of industrial progress involved promotion and regulation. It might be considered whether these two roles should not be assigned to two separate agencies; this was the pattern in a number of developing countries.

The Symposium felt that both established industrial enterprises and new enterprises needed the assistance of industrial services. In order to be of real value, however, such services must keep in close touch with the actual requirements of industry and act as an integrated whole.

The view was expressed that the nature of the bodies responsible for industrial organization and promotion was not the most important issue; what was important was to have a co-ordinating body in order to avoid dilution of responsibilities, duplication of work and conflict of areas of competence.

Concern was expressed at the duplication of functions inside government departments because of vested interests and departmental loyalties: activities within departments and between ministries should be streamlined. On the other hand, certain specialized activities, such as research, laboratory testing and standardization, might merit special units.

Some participants were in favour of separating the promotional function from the regulatory function in the hope that if the policing

function were kept separate the advisory services would gain the confidence and trust of industrialists. In all cases, however, the relevant government departments should be adequately represented, along with business and labour, on the boards of industrial development organizations.

During the discussion of the special needs of small-scale industry, it was suggested that in many developing countries the promotion and counselling services of the Government could be complemented usefully by chambers of commerce and industry, co-operatives or groups of small producers and by large industries which employed small-scale industries for subcontracting.

#### **Relationship of the principal organ and other industrial development agencies**

Two issues presented to the Symposium related to the role of industry. They were:

How far can organizations in the private sector be brought into fuller participation in such aspects of industrial development as the formation of industrial policies, planning, training etc. ?

What other functions normally carried out by public or semi-public sector institutions could be advantageously turned over to the organized private sector and under what circumstances would this be justified ?

The Symposium was of the opinion that although the major responsibility for supporting industrial services must rest upon the Government, this did not necessarily mean that the Government had to bear the entire burden. The industrial systems of developing countries varied widely, but in nearly all of them there was a sizable amount of private industry, at least in small or medium-sized establishments. Organizations of private industrial interests were increasingly being formed and strengthened in developing countries.

It was generally agreed that where private sector organizations existed, they should participate in the programmes of public or autonomous industrial services. One way of doing that was through representation on the governing or advisory boards of industrial associations, trade union and co-operative organizations. Another form of participation might be through methods of "feedback" of reactions to the industrial services from those organizations representing the clients for whom services existed.



The potential value of chambers of industry and commerce was particularly stressed, and reference was made to the functions they could perform to promote rapid industrialization, including improving industrial relations through co-operation between management and labour; supplying business information, data and advice; encouraging wider and better use of available technical assistance; and spreading knowledge and understanding of the industrial process in the local business community.

Reference was made to the fact that industry itself should and could participate in the training of professional and technical staff. Industry had certain training facilities; it also had the incentives and approach to give training of immediate practical value. It would be possible to expand the training courses organized by individual industrial enterprises, especially large-scale units; programmes might also be sponsored by organizations interested in an entire industry or a particular industrial sector. Industry should be given more opportunities to associate itself with the work of vocational schools. Trade unions should be encouraged to support and assist in training for industrial development.

#### **Organizational aspects of industrial development agencies**

##### **STAFFING**

The Symposium reviewed the factors contributing to the shortage of personnel with high professional training and experience of the sort required to staff organizations for the promotion of industrial development, and the steps that might be taken by national authorities and international bodies to overcome the shortage.

There was general concern that those who staffed industrial services should be trained adequately. In addition to the importance of initial training, many participants stressed the need for professional personnel to attend periodic training courses in order to increase and update their skills. Some emphasized the view that personnel should be recruited because they had the proper qualifications and not through political patronage. To prevent the loss of qualified and trained personnel it was agreed that various incentives should be adopted to encourage the managerial and technical personnel employed in industrial services to stay on the job. In addition to increased salary scales, incentives might include the chance to participate in decision-making, so that senior staff might identify themselves with the organization.

Some concern was expressed at the loss of skilled professional staff through the "brain drain" from developing countries. The suggestion was also made that developing countries might agree with developed countries on measures to limit the long-term employment in industrialized countries of trained scientists and technologists from developing countries. The case was cited of a country that had been successful in re-hiring researchers who had left the country by adopting higher salary scales and providing a more stimulating professional atmosphere.

#### FINANCING

It was generally assumed by the Symposium that Governments would directly or indirectly support most of the costs of industrial services. The issue was whether agencies would plan their operations more effectively if they were budgeted on a longer-term basis of perhaps three to five years instead of one year. The view was expressed that although the regular national budget might be the main or only source of financing industrial services, some way must be found to adjust the budget system so that it would ensure the continuity of projects in following fiscal years; if that were done, the argument for locating industrial development activities in government departments would be strengthened.

#### EVALUATION

In order to avoid the danger that a public industrial agency, which often had a monopoly status, might settle into complacency and bureaucratic routine and low efficiency, the Symposium discussed the need for periodic measurement and evaluation of performance and correction of shortcomings.

Governments had had failures as well as successes in their industrial activities and it was necessary to evaluate performance. Various criteria might be adopted for that purpose.

#### **Machinery for subregional and regional co-operation**

There was general recognition of the need to promote national industrial development by action at the regional or subregional level, but some participants considered that regional and subregional organizations

were tied to political problems. For example, although such organizations would be well suited to such matters as staff training and industrial property, their establishment would involve in turn creating new multinational administrative machinery, which might be difficult. One participant endorsed the idea of establishing industrial development corporations on a subregional basis; another questioned the legal basis of such multinational organizations and urged further study before any action was taken.

National organizations might also make an important contribution towards regional efforts by assuming regional responsibility for some specific function on an exchange basis. It was suggested that some of the existing national training schemes for industrial service officers might be opened to trainees from elsewhere in the region or subregion.

In view of the extra-national character of regional or subregional action, it was natural that the Symposium should look to UNIDO and other international bodies for assistance in promoting such action, including the training of research personnel and the establishment of industrial information data banks. It was noted that some of the United Nations regional economic commissions were already sponsoring programmes of interest to industry, and that there were internationally sponsored regional institutes for economic development and planning and regional development banks. The services of such bodies might help to promote additional regional and subregional activity for industrial development.

It was pointed out that the assistance provided by international and bilateral aid programmes, both in kind (through supplying equipment and books) and through the provision of experts and fellowships, could contribute greatly to lightening the initial financial burden of establishing industrial services in developing countries. Technical assistance was of particular value in training professional and technical staff.

#### **Special arrangements for industrial property**

The Symposium expressed special interest in facilitating the freest possible transfer of technical knowledge, subject to fair protection for those who had developed it. It was recognized in this connexion that adequate legal provisions were required, as well as an industrial service to deal with such matters as patents and trademarks. Patent legislation was important so that developing countries might take advantage of

patents which were the source of most technology. Dissatisfaction was expressed with the existing arrangements for industrial property, including the cost of world-wide registration of inventions, the difficulties of acquiring licences, and inadequate recognition by agencies in some industrialized countries of rights acquired by nationals of developing countries. The machinery for dealing with industrial property in developing countries needed strengthening; this might be a suitable subject to handle at the regional level.

#### RECOMMENDATIONS APPROVED<sup>7</sup>

The following recommendations on administrative machinery for industrial development were approved by the Symposium:

##### **Survey of administrative machinery for industrial development**

Developing countries should review the present administrative machinery for industrial development, its structure, functions and potentialities. UNIDO is requested to assist developing countries in this task. On the basis of this review, the countries would be in a position to modify their civil service systems to suit the requirements of industry and/or consider the establishment of autonomous industrial development agencies. UNIDO should assist Governments in this connexion if requested to do so.

UNIDO should undertake a comparative survey of administrative machineries for industrial development in order to see if it is possible to distil therefrom a set of general principles and establish a world inventory of institutions and organizations for the administration and promotion of industrial development in the patterns most suited to the specific needs of each country.

##### *Training*

UNIDO, in co-operation with other concerned organizations, should assist in the training of personnel needed for the administration of industrial services, including industrial property.

<sup>7</sup> From the *Report of the International Symposium on Industrial Development, Athens 1967* (ID/11) (United Nations publication, Sales No. 69.II.B.7).

*Industrial property*

UNIDO, in co-operation with other international and national organizations, should study present arrangements for industrial property with regard to the special situations and problems of the developing countries. Upon request UNIDO should assist developing countries in securing advice in the administration of industrial property. UNIDO should assist requesting countries in locating sources of patents and know-how and advise on the terms for acquiring such patents.

*National chambers of industry*

UNIDO should undertake—at the request of national chambers of industry and similar institutions submitted through their Governments and in co-operation with regional and international organizations concerned—studies of the present status, activities and capabilities of these institutions with a view to assisting them to play their indispensable role in the field of industrialization at both national and regional levels.

UNIDO is also requested to respond favourably, as appropriate, to requests submitted to it by national Governments for assistance in improving the efficiency of these institutions.

*Consulting services*

UNIDO, in co-operation with other interested agencies, was requested to compile and maintain a roster of industrial consultants. This roster could be of assistance to developing countries requesting identification of sources of consulting services.

As appropriate, consulting firms should be used by the United Nations technical assistance programmes to supplement the work of individual international experts.

## **UNIDO ACTION TO IMPROVE ADMINISTRATIVE MACHINERY FOR INDUSTRIAL DEVELOPMENT**

The programme of UNIDO for the improvement of administrative machinery for the development of industry is financed under various United Nations operational programmes in which UNIDO participates. These programmes are: the Regular Programme of technical assistance devoted to industry and financed from the United Nations budget (RP); the Special Fund component of the United Nations Development Programme (UNDP/SF); and the Technical Assistance component of the United Nations Development Programme (UNDP/TA). UNIDO receives, in addition, voluntary contributions from Governments for the financing of the Special Industrial Services programme (SIS), a programme limited largely to urgent short-term missions. Some projects may also be financed from funds in trust, deposited by Governments for specific projects, or other direct voluntary contributions. In all these programmes assistance is given only at the request of the Government concerned.

UNIDO has worked consistently to improve industrial services, both through technical assistance in the field and through the action of the appropriate headquarters division. Technical assistance projects assisted by UNIDO for the purpose of improving industrial services can be divided into these categories: industrial studies and development centres; training; industrial information; and industrial consultancy.

### **FIELD PROJECTS**

#### **Industrial development or industrial studies centres**

Industrial development or industrial studies centres are usually associated with ministries of national economy, ministries or departments of industry, planning organizations and departments, or other similar

bodies. They advise and assist in the drawing up and implementation of the country's industrial development programme. Among their particular duties are: to formulate industrial policy measures; to prepare industrial surveys; to assist in establishing plans for specific sectors of industry and decide priorities for industrial investment; to formulate and evaluate industrial projects and conduct feasibility studies; to assist in the training of national professional staff for industry; and to provide technical advice and information to industry and appropriate government departments.

The assistance available from UNIDO to such centres ranges from the assignment of individual experts—normally industrial economists or engineers in specific fields—for work in already established centres to the provision of an expert team to assist in the creation of a new centre. In some circumstances, fellowships and important equipment components are also provided. While the most common type of centre is that established by an individual country, UNIDO is willing to assist in the establishment of development centres serving several countries of a region or subregion.

### **Training**

UNIDO provides assistance in training various types of personnel concerned with industrial services and management, including the training of engineers and technicians and of government and public-sector officials who deal with industrial development. The training of engineers and technicians is carried out primarily through assistance in developing in-plant training programmes at the national level. This can ultimately lead to establishment of permanent national centres for in-plant training of a wide variety of engineers and technical specialists. Much importance is attached also to the preparation of a training workshop on the organization and administration of industrial property offices for government officials.

### **Industrial information**

There is a large reservoir of accumulated industrial knowledge and experience relevant to the needs of developing countries. Some of this information is immediately applicable; some may require

adaptation to local needs or conditions or materials. Access to this material, or even the knowledge that it is available, can be of great benefit to industrial managers and entrepreneurs in developing countries.

UNIDO has assisted in the development of machinery to make technological, business and economic information for industrial development available as part of the programmes of national industrial services. Future plans include examination of the feasibility of establishing on a pilot basis a proprietary technology bank containing a collection of patents of possible relevance to developing countries. UNIDO can also help Governments to establish or strengthen services specifically devoted to the provision of industrial information where local conditions make such a special organization desirable and appropriate.

### **Industrial consultancy**

In many developing countries there are few, if any, local facilities to provide industrial consulting services of any kind. Under such circumstances, reliance is necessarily placed on securing consultants from industrially advanced countries. Often the developing countries have little knowledge of where the needed consultants may be found or how they can be secured.

UNIDO assists developing countries to meet their needs for industrial consultants in several ways. Upon request it provides information about available foreign consultants and assists developing countries to arrange for hiring them. It also provides experts who can assist Governments in establishing local consulting organizations, in carrying out their initial operations, and in training their staff of consultants.

Advisory industrial extension services which are sponsored or supported by Governments are similar in intent but different in organizational pattern. These services have proved their worth in giving advice and assistance on problems of management and product or process improvement in a number of countries. Frequently they appear to be more effective and acceptable to local entrepreneurs when they are attached to already existing services, such as industrial development banks, industrial research institutes or productivity centres. UNIDO is prepared to provide expert assistance in establishing these extension services or in strengthening them where they already exist.



### **Fellowship programme**

Although much of the assistance described above consists of providing international experts, UNIDO also lays stress on the provision of fellowships to train national staff for industrial service work. In many cases, fellowships are made available even where there is no expert assistance. In other cases, both types of help are linked together, with fellowship training aimed at developing national personnel who can eventually take over the functions temporarily performed by the foreign expert.

Fellowships are intended to give persons engaged in industrial development activities the opportunity to broaden their professional knowledge by becoming acquainted with advanced methods and techniques. Among the fields in which this can be profitable are: industrial development planning and programming; industrial technology and practice; research; development of new industries; special problems of small-scale industry; and industrial management. The emphasis is on attaining knowledge which can be of direct practical value in work related to industrial development rather than on pursuing academic studies leading to degrees or diplomas. The duration, form and content of each fellowship are fixed by the needs in the individual case. The programme includes study tours, training in educational centres and training directly within industry.

### **SPECIAL INDUSTRIAL SERVICES**

UNIDO has established a programme of Special Industrial Services, designed to provide specific and urgent assistance which may be required to make feasible the financing and implementation of particular industrial projects. These often need a more flexible form of assistance than can be given under the usual long- or medium-term international technical assistance arrangements. The Special Industrial Services programme is intended to provide the range of services required by Governments in implementing any manufacturing project after the initial feasibility study has been completed but before the necessary capital investment has been assured. This final stage is both critical and urgent. Skill and technical knowledge are required to carry out the various practical steps involved.

The manufacturing industry also needs technical assistance, often of

a short-term nature, which cannot be programmed in advance. In such cases, the efficiency of any assistance depends on whether it can be given quickly.

The Special Industrial Services assist in studies preliminary to the establishment of specific industrial enterprises, such as assessments of general feasibility or of availability of raw materials or advice concerning location. In other cases, help is given in finalizing plans, preparing specifications for construction, or negotiating management contracts. Aid is given for improvement of plant management, where an enterprise is in difficulty, where its reorganization is needed, where dormant plants are to be reactivated or where grouping or consolidation of enterprises seems desirable.

In many instances, assistance from the Special Industrial Services supplements the work of existing national industrial services by providing specialized knowledge which they do not have locally available and contributes to their development by furnishing an example of how to carry out a particular type of investigation. A number of Special Industrial Services projects have been designed to supply urgently needed direct aid to public industrial services.

#### UNIDO HEADQUARTERS ACTION TO SUPPORT INDUSTRIAL SERVICES

The Industrial Services and Institutions Division of UNIDO is charged with assisting in the improvement of industrial services. It includes sections dealing with Information and Promotion, Industrial Institutions, Industrial Training, Industrial Management and Small-scale Industry.

In addition to supporting technical assistance projects in numerous countries, the central staff of UNIDO carries out a number of other activities of benefit to national industrial services. Research and survey studies provide background material to be used by technical assistance personnel and by the national staffs of industrial services. This is of special value to developing countries, where information concerning all aspects of industrialization is not readily available. UNIDO issues periodic newsletters and bulletins, prepares manuals based upon practices which have been found successful throughout the world and publishes studies of various aspects of training, management and industrial organization.

A double purpose is served by the seminars and other meetings organized by UNIDO. Information becomes available regarding activities and problems in individual countries. This is exchanged among the participants at the meetings to their mutual benefit and is ordinarily made available more widely through published reports and other documents. At the same time, UNIDO's staff become aware of national conditions and needs and are thus better able to adjust the UNIDO programme to satisfy these needs.

**Annex 1**

**UNIDO ASSISTANCE IN THE FIELD OF ADMINISTRATIVE  
MACHINERY FOR INDUSTRIAL DEVELOPMENT**

**AREAS RELATING TO THE DEVELOPMENT OF ADMINISTRATIVE MACHINERY FOR  
INDUSTRIAL DEVELOPMENT IN WHICH UNIDO IS IN A POSITION TO PROVIDE  
TECHNICAL ASSISTANCE**

Strengthening of organizational and administrative  
machinery of government, semi-public and non-  
governmental industrial organizations;

Training of industrial administrators;

Assistance to patent offices;

Administration of industrial services, including  
industrial legislation.

## Annex 2

### MEETINGS, SEMINARS AND WORKING GROUPS ORGANIZED BY UNIDO OR BY THE UNITED NATIONS PRIOR TO THE INCEPTION OF UNIDO

	<i>Location</i>	<i>Date</i>
Inter-regional Working Party on Training of Economic Administrators of the Developing Countries in Industrial Development	Paris	September 1965
Seminar on the Organization of Industrial Services in Africa	Tangier, Morocco	August 1967
Expert Group Meeting on Industrial Co-operatives	New York	November 1967
Expert Group Meeting on the Organization and Administration of Industrial Property Offices	Vienna	October 1969
Workshop on the Organization and Administration of Industrial Services in Asia and the Far East	USSR	<i>Proposed date</i> 1970
Workshop on the Organization and Administration of Industrial Services in Latin America	—	1970—1971



**UNIDO MONOGRAPHS ON INDUSTRIALIZATION OF DEVELOPING COUNTRIES:  
PROBLEMS AND PROSPECTS**

- |   |  |
|---|--|
| <b>No. 1. Non-ferrous metals industry</b>         | <b>No. 11. Small-scale industry</b>                    |
| <b>No. 2. Construction industry</b>               | <b>No. 12. Standardization</b>                         |
| <b>No. 3. Building materials industry</b>         | <b>No. 13. Industrial information</b>                  |
| <b>No. 4. Engineering industry</b>                | <b>No. 14. Manpower for industry</b>                   |
| <b>No. 5. Iron and steel industry</b>             | <b>No. 15. Administrative machinery</b>                |
| <b>No. 6. Fertilizer industry</b>                 | <b>No. 16. Domestic and external financing</b>         |
| <b>No. 7. Textile industry</b>                    | <b>No. 17. Industrial planning</b>                     |
| <b>No. 8. Chemical industry</b>                   | <b>No. 18. Regional co-operation in industry</b>       |
| <b>No. 9. Food-processing industry</b>            | <b>No. 19. Promotion of export-oriented industries</b> |
| <b>No. 10. Industrial research</b>                | <b>No. 20. General issues of industrial policy</b>     |
| <b>No. 21. Technical co-operation in industry</b> |  |

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Printed in Austria

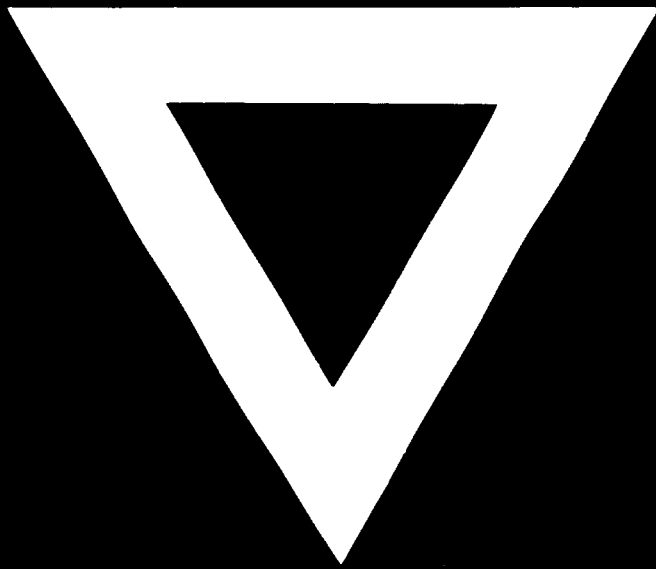
Price: \$U.S.0.50  
(or equivalent in other currencies)

United Nations publication

69-2086—February 1970—4,200

Sales No.: E. 69. II. B. 39, Vol. 15

ID/40/15



**74.09.12**