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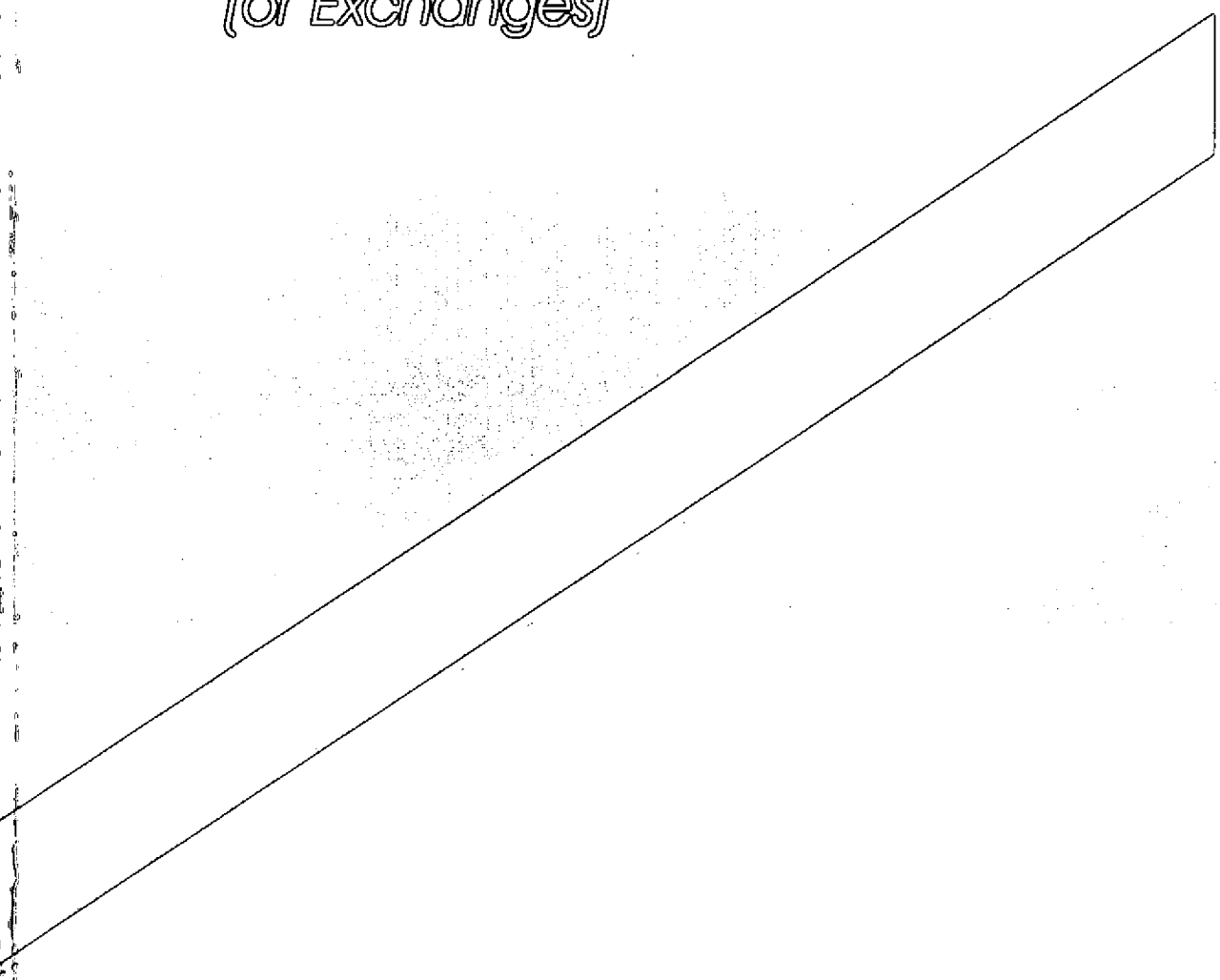
# GUIDE

## for the creation of Industrial Subcontracting and Partnership Promotion Centres (or Exchanges)



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

# *GUIDE*

## *for the creation of Industrial Subcontracting and Partnership Promotion Centres (or Exchanges)*

by

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# Foreword

## Theory or practice?

Nowadays, the rational organization and promotion of subcontracting and industrial partnership are features of all development strategies of nations and enterprises, large and small. For some 30 years, the subject has generated, throughout the world, countless definitions accompanied by a mass of glossaries, and has even given rise to the invention of new terms in all languages. The subject teems with learned definitions and concepts, many of which are visionary and very few of which are based on concrete realities in the field. In Europe, the term subcontracting is regularly called in question, and, after long and weary twists and turns, it finally gains the approval of all and remains firmly in use.

This UNIDO document does not set itself up in opposition to the definitions advanced on many sides and does not impose any of its own. It is intended to be essentially practical and designed for the convenience of the reader; it presents as concise as possible an account of subjects that could often be developed at much greater length. It is based on the observations of UNIDO's services, which have studied and analysed ventures of this type in all regions of the globe, which are highly diversified, both economically and geographically. It is also based on the study of UNIDO's own achievements over more than 25 years and on the field experience accumulated by its international experts, who have been working in the subcontracting field for more than 30 years.

This document is therefore the still imperfect summary of these achievements, drawing lessons from experience and proposing, under the UNIDO logo, the formulas that have the best chances of survival in any country and in any context whatever, because economic logic and its rules apply everywhere and to everyone. Experience has shown that whenever the principles enunciated by UNIDO are departed from, for reasons which are all equally honourable, are advanced to satisfy some particular local set of circumstances, the subcontracting organization or service set up in this way is doomed to failure, in the more or less short term. It is at one and the same time the privilege and responsibility of UNIDO — which is a neutral and objective focal point — to draw the conclusions and to propose a solution, which is not a universal panacea, but offers a very serious promise of success and sustainability.

The establishment of mechanisms for the rational organization and promotion of subcontracting in a country requires much care and know-how. This Guide is a UNIDO contribution intended to provide information and documentation for all the parties involved with which it cooperates:

- Donors (Governments, institutions, banks and agencies)
- The cooperation programmes of the donor countries
- Officials (national and international) responsible for economic development
- National Governments and their ministries
- Economic players
- Professional organizations, federations and associations of industries, both general and sectoral
- Industrialists and entrepreneurs

- National and international experts and consultants so that all those involved in the work conducted by UNIDO can enter into a dialogue and cooperate, using the same practical terms, the same principles, the same rules and the same instruments.

That is the role that this modest document intends to play, being a simple Guide capable also of serving as documentation for teachers and students. An exhaustive reference manual would require a much larger work, transcending the objective that UNIDO sets itself at this stage, namely, to ensure the widest possible dissemination, for the harmonious and effective development of economies, of the benefits procured by the efficient organization of subcontracting and partnership.

## Strategy or tactics?

Serge TCHURUK, President of the TOTAL Petroleum Group, speaking on the targets that his enterprise sets for itself, said: "Strategy is making possible what is necessary. A strategy that fluctuates at the whim of circumstance is a tactic".

In its full significance, that quotation expresses the purpose of this document. It is intended to assist in defining development strategies for the economies of many countries, including those that are considered to be industrialized, where it can be seen that the progress made in the promotion and rational organization of subcontracting is failing for the lack of consistent and compatible instruments. Each of these countries has numerous local formulas, which are mutually incompatible and obviously incompatible with those of neighbouring countries.

Thanks to UNIDO, developing countries can now have at their disposal standardized instruments, and thus local bodies can cooperate among themselves and of course with neighbouring countries that had previously benefited from the same inputs. All the countries that will be able, by a suitable strategy, to set up coherent machinery for the promotion and rational organization of subcontracting will "make possible what is necessary", if not indispensable, namely: the availability of a fabric of complementary enterprises that create jobs and are technically and economically capable of responding to the needs of the national market and of peripheral and more distant markets. In view of the difficulties encountered, which are thorny and delicate, they will also be able to employ good tactics thanks to this Guide and to the UNIDO inputs which will enable them to avoid unsatisfactory and costly ventures.

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# Preface

## Once there was subcontracting

After the advent of the industrial era and the upheaval of world wars, after the resultant social changes and achievements, the need for the rational organization of industrial subcontracting became an imperative during the Second World War, and later during the reconstruction efforts of the 1950s. Since then, it has constantly developed, practically from decade to decade. Subcontracting was not always a consideration in industrial thinking. Certain values cultivated at the time were in opposition to it. Manufacturers considered it a point of honour to make everything in their own workshops. For reasons of ethics, but also for reasons of manufacturing secrets, a closed-door policy was in force. Within factories, it was not permissible to move from one workshop to another without good cause and without authorization. In the face of progress of every kind, this concept could not be maintained, and, as everywhere, necessity knows no law.

## The 1940s

### *The war — Necessity knows no law:*

It was doubtless during the Second World War that the practice of subcontracting became widespread. The States and the armed forces, under the dictate of necessity, called on specialists in all sectors of the economy to reorganize and orient their production apparatus in order to respond to war needs: the iron and steel industry and metalworking and mechanical engineering for the construction of arms, armoured vehicles, combat aircraft, railways, even uniforms, tarpaulins and tents, electrical (and wireless telegraphy) equipment and explosives as well. It was general mobilization, including that of the production apparatus, for predetermined purposes. Why should one make for oneself what others, specialists, could make better and cheaper?

### *The post-war years*

The post-war reconstruction years called for the same spirit of a general mobilization of the economy, but this time in the form of civil engineering, construction, transport networks, roads and bridges, industrial buildings and housing, etc.

## The 1950s

### *Concentration and expansion*

It was the automobile sector that made the greatest impression on minds and memories. The 1950s saw the disappearance of a large number of well-known makes, in the United States, in Europe and elsewhere. The phenomenon spread to other sectors: the manufacture of railway equipment, machine-tools, machines of all kinds, the construction of aeroplanes, ships, agricultural machinery, etc. Not all the enterprises disappeared systematically. Many resurfaced as subcontractors ... offering production capacity or speciality service, depending on the field in which they excelled most.

# The 1960s

## *The search for productivity*

Since it had been shown that it was no longer possible to produce everything in an integrated manner, since investments were becoming costlier and costlier, it was necessary to make the best possible use of existing capacity:

- Human resources, where there was a lack of skilled labour,
- Machines and installations which were in short supply and expensive.

Subcontracting Exchanges emerged in 1961 and occupied an important place in:

- Making inventories of existing capacity,
- Disseminating relevant information,
- Putting industrialists in contact with one another.

They created great awareness on the part of main contractors and subcontractors, leading more and more to specialization.

# The 1970s

## *Know-how and its dissemination*

From being auxiliaries, subcontractors increasingly became a driving force for growth, situated at the heart of the industrial production process, through progress achieved in mastering certain techniques. Gradually, they themselves became main contractors.

The 1970s were marked by the promotion of subcontracting, illustrated by the establishment of the first great specialized exhibitions. In this promotional framework, it is necessary to mention the creation of subcontracting charters, intended to set up a professional code of ethics in a market that is difficult owing to the interdependence resulting from relations between main contractors and subcontractors.

# The 1980s

## *Not subcontractors, but partners*

The development of markets, technology, strategies, mentalities, and therefore of needs, alters the behaviour of industrial operators. The notion of partnership increasingly replaces the customer-supplier notion. The field of application is very wide. Partnership can apply to all sorts of relations. But that does not mean that partnership is a universal panacea.

Moreover, in the 1980s there was a new wave of "relocations", and the problem of the international transfer of production units resurfaced. But that was not subcontracting in the true sense. Relocation certainly entails the use of existing capacities but they are capacities in the form of cheap labour, which is of a precarious nature unless it meets ethical standards. Sooner or later, prices will rise and agreements will become null and void if they are not based on other values.

## The 1990s

### *Quality assurance*

- After having sought production capacity based on volume,
- After having sought more or less intensive specialization,
- Industry seeks high quality at the level of total quality management, which is characterized by the three zeros:
  - zero defect (or total quality)
  - zero delay (or just-in-time)
  - zero stock (or tight flow schedules)

The latter two constitute demands whose price must be borne by the subcontractor, reviving old quarrels ... .

Quality assurance is a determining factor in subcontracting relations during the current decade. It is a genuine economic passport.

## Subcontracting in the year 2000

Since more than half of the world is impoverished, subcontracting in the year 2000 will inevitably be at the heart of concerns. Certainly, a very large section of industry will utilize subcontracting at the global level in order to achieve competitiveness, conquer markets and ensure the availability of high-tech equipment. A European-United States programme for the aircraft of the future, or strategic alliances for the "global" automobile, are already taking shape.

For small and medium industry (SMI), subcontracting will be international in character and no longer based on low wage costs but on fair shares. The one side will contribute new markets, the other, know-how. However, one should not indulge in too many illusions, the ideal situation is not for tomorrow. But it is the realistic route that both sides must take if they wish to succeed. It is a necessity, and like others, it will become law, otherwise:

- Those on the one side will never be able to bridge the technological gap, which will continually widen,
- Those on the other side will have no work, owing to the lack of markets.

It will be up to them to reach an understanding on sharing the profit, which should be fairly easy, for it should be easier to share abundance than shortages.

# Introduction

This document consists of five parts:

❒ **Part one.** Subcontracting/partnership

In order to make them widely known, this part proposes a global approach to the various terms related to the various concepts or aspects of subcontracting and partnership, without thereby claiming to impose new definitions or to develop the subject exhaustively, since it has been abundantly dealt with elsewhere — often in different manners — in the various regions of the planet.

A concise exposition is presented, drawing on the work done by UNIDO in contributing to the promotion, development, and organization of subcontracting and partnership, more particularly in the service of the SMEs/SMIs.

❒ **Part two.** The organization of subcontracting

This part summarizes the line of reasoning and achievements, explaining the whys and hows, and providing specific definitions drawn from experience in different fields.

The subject is in constant development and will never be static. Some enterprises disappear because others are born, or expand thanks to improved productivity, higher quality, more competitive prices, more rapid and timely services, better equipment, better staff with higher qualifications and motivation thanks to better organization, and through more appropriate and more dynamic commercial activity. It is this search for optimization, competitiveness, and efficiency that led to the establishment of strategies and mechanisms capable of helping the SMEs/SMIs and their main contractors to get to know each other better and to cooperate better.

❒ **Part three.** UNIDO and the promotion of subcontracting and partnership

This part presents the special role that UNIDO has played for many years on the industrial development stage thanks to the efficient and universal vector of subcontracting and partnership (suited in particular to the development of SMIs). It emphasizes the prospects and resources that the Organization can provide in the short, medium and long term to assist and support national, regional and international strategies in the context of which its services would be called upon. It prepares a list of the current achievements of UNIDO in many different countries.

❒ **Part four.** The UNIDO Subcontracting and Partnership Promotion Centres (or Exchanges) (SPXs)

Taking into account UNIDO's achievements, successes and setbacks, its study and research, Part four sets forth the various aspects on which UNIDO relies in proposing and setting up SPXs, all operating with the same principles, the same instruments. This makes possible national harmonization in the case of large countries, regional harmonization when it is necessary to make possible communication and trade between neighbouring countries, and international harmonization when needs justify action at the planetary level. Institutional, structural and operational aspects are dealt with.

As and when necessary, the factors leading to failure and the consequences of departing from the concepts proposed by UNIDO will be mentioned at the end of the various chapters.

❒ **Part five.** The stages of establishment

This part sums up the various stages that have to be gone through in order to design and set up a subcontracting organization and promotion body, in the light of realities in the countries concerned. While the bases and the instruments must be similar, if not identical, from one country to another at the institutional and operational levels, adaptation is necessary at the structural level according to the context in which the country concerned is developing. It will be readily understood that a subcontracting organization cannot be set up by a simple reproduction process and that it is necessary at one and the same time that it should correspond to the needs of the economy in question and that its establishment be supported by appropriate training of the different national operators. While there are competent staff at all levels in all countries, at least in theory, appropriate training is nevertheless indispensable.

While pursuing the same goals, the machinery is in fact different in an industrialized country, a country with an economy in transition, a rapidly developing country and a less advanced country, and in countries of different sizes. It is sufficient to compare Brazil with Paraguay, India with Mauritius, or China with Singapore.

**Conclusion**

Obviously, in conclusion, this Guide is only the germ of a full-scale operational manual for SPXs and for a feasibility manual, a genuine reference work which would make it possible to explore in depth and develop all the aspects touched on above. That is the next stage, which will draw on many activities that UNIDO is carrying on at the moment. It also shows that the best instruments cannot be effective if they are not employed by competent people. UNIDO can also, and above all, help in the selection and training of human resources.

**Annexes**

They represent only a very small part of the documentation created or accumulated on the subject by UNIDO, which is part of the inputs incorporated in projects carried out in the field.

*Part one*

# Subcontracting/partnership

# I. A retrospective review

## A. Industry and subcontracting

The development of subcontracting is indissolubly linked with the history of industry: as an example, we shall take the automobile industry, which does not necessarily represent industry as a whole but constitutes a symbol which has the merit of making an impression on minds by its special character and universal use.

### *Craft-based industry*

After their invention and in the development phase, automobiles were widely produced by many manufacturers, particularly in Europe, the United States and Japan. Originally, automobiles were manufactured on a quasi-craft basis and to order, each component part was made by hand or with the aid of rudimentary machines, and no parts were interchangeable.

That was also the period of manufacturing secrets. Not only was inter-enterprise cooperation non-existent, there prevailed a climate of exacerbated distrust among the various enterprises. What was true of the automobile was also true of all other branches of manufacture.

### *Industrial mass production*

Under the pressure of market laws and economies of scale, industry experienced a first revolution with mass production. That was necessary in order to satisfy first of all important needs for the development of infrastructure in the second century of the industrial revolution (railways, bridges, mines, housing, etc.) and then of the First World War (1914-1918), with its enormous demand for equipment.

Shortly before 1914, Ford had begun series production and had constructed the first assembly line for automobiles, producing the T-model Ford or the first industrially manufactured automobile. The process had begun and it was the golden age of what was termed Taylorism, the most important principle of which, with a view to achieving economies of scale, was to manufacture the largest possible series in order to respond to quantitative demand and, in parallel, to reduce production costs.

The industrialists of that period took pride in manufacturing everything themselves, leading to integration at all costs. Ford in the United States owned coalmines to help in producing steel for its factories and had even planted rubber trees in Brazil to provide the latex necessary for tyres and other rubber parts.

### *The emergence of the subcontracting industry*

At this stage, large manufacturers began to introduce "internal standards" in their enterprises to rationalize their needs for parts and components, for example, screws and bolts. Various innovations led to the manufacture of components such as ball bearings. Gradually, the compelling demands of production and competitiveness induced manufacturers to invest in equipment of ever higher performance in all fields and led to the advent of "specialists" offering "standard" components. Standardization began in every industrialized country. Thus the practice of outsourcing was introduced.

The Second World War (1939-1945) further intensified the needs of industry, to sustain the war effort in the first phase, and for reconstruction in the countries that had suffered from the world conflict, in a second phase. That is the context in which subcontracting began to become widespread: first of all, to meet the enormous needs for war material, transport, infrastructure, warships, etc., with limited national manufacturing capacity, and then in the post-war reconstruction period and finally in the repair of equipment which was now being widely used, for example, agricultural machinery. Blacksmiths became repair handymen, even mechanics, locksmiths, and boilersmiths, and had to equip themselves accordingly.

So, on the basis of SMEs/SMIs, a process of industrialization developed in the 1950s, following the process described below:

Phase 1 — Repair and maintenance
(Welding, surface-coating, straightening, simple remachining)
Phase 2 — Manufacture of parts and expendable tools
Phase 3 — Manufacture of components
(small and medium series, for new work and new equipment)
Phase 4 — Manufacture of subassemblies
(Machining, assembly, tests)
Phase 5 — Manufacture of finished products
(Design, manufacture, marketing)

Gradually, industrialists were confronted with imperative demands of competitiveness, leading to the search for optimum productivity. In that context, both capacity and speciality subcontracting became more and more common, in order to ensure an optimum response to market needs in terms of price, quality and delivery dates. This increasingly rapid evolution caused a new revolution:

## *Flexible and just-in-time manufacturing*

In the 1960s, Japanese industrialists who had studied the characteristics of production in Western countries, particularly the United States, recognized the disadvantages of mass production and developed a system incorporating a new production model, based on quality, speciality and the just-in-time principle. That gave them recognized productivity and competitiveness, and the method was soon taken over by industrialists throughout the world, who have been using it since the 1980s. That led in turn to the establishment of international standards and the development of a large number of capacity, speciality, service, and maintenance subcontracting enterprises, and clusters for the supply of components, and then to the advent of partnership in all its forms as well as to relocation.

Industrialists use the services of a large number of subcontractors at the first, second and third levels, the last level even including work at home. The Japanese conquered considerable market shares in all parts of the world. In the United States, NASA carried out its programme of conquest of the moon by using several ten thousand subcontractors. In Europe, partnership and subcontracting have become necessary at the national level. The ARIANE aerospace programme combined large subcontracting companies in several countries. The same applies to the *Airbus-Industrie* programme, which has numerous subcontractors, even in the United States, and to the construction of the high-speed trains (TGV) and of the "Eurotunnel" under the English Channel.

The reasons are economic imperatives of competitiveness. One isolated country and, even more so, one isolated enterprise no longer has the resources to invest in all the fields necessary to execute such programmes. What is necessary for the largest is also

necessary for small and medium enterprises, which do not have the resources to provide all the equipment and all the skills to respond to the demands of their markets. They therefore need to become integrated in the context of subcontracting by specializing, so that they can invest profitably and acquire the indispensable know-how and respond effectively to needs by joining forces with several others.

## B. The role of SMEs/SMIs

In the industrialized countries, the SMEs and SMIs have very great economic significance. They represent from 50% to 70% of the gross national product, 70% of employment and 30% of direct exports, but they contribute more, as suppliers for the large exporting groups.

While there is much similarity between SMEs and SMIs, there are nevertheless fundamental differences in their need for support, which should be handled with the aid of appropriate institutions. For example, the development of SMIs for metal-working, metal manufactures, plastics, electrical or electronic goods has little to do with that of the SMEs for fishing or confectionery. In that context, while it is true that an SMI is also an SME, the reverse does not apply.

That is one of the reasons why it is important to distinguish between the two types, so as better to respond to the actual needs of each. To illustrate this difference, it should be noted for example that it takes one week to train a female worker in garment-making, but a minimum of six years to train a toolmaker. It should also be noted that one job in industry (SMI) generates three to four peripheral jobs (SMEs).

Structural crises and the high rate of unemployment now being experienced by the industrialized countries clearly show that small or medium enterprises (SMEs) are effective economic engines. The public administrations and enterprises engaged in a radical privatization and restructuring process dismiss workers. Moreover, the large enterprises, on the one hand suffering from the economic depression and on the other hand benefiting from automation, are sharply reducing their staffs. However, the SMEs, having great flexibility and being able to react promptly to the emergence of new niches and to technological progress, can create jobs. Since unemployment is one of the major social problems at the end of this century, it is more than ever important to promote the creation and development of SMEs in order to help them to negotiate a maze of regulations and constraints, to find access to new markets, to obtain finance and to acquire the necessary technology. For all countries of the world, the development strategy, like economic sustainability, is clearly based on the existence of a fabric of productive SMEs/SMIs. The strategy becomes efficient and sure when it facilitates their emergence and promotion.

The development and promotion strategy for SMEs/SMIs concerns not only the States but also the large industrial groups, in their own enlightened self-interest. While large enterprises, through their management and marketing strategies and machinery, are prepared for all forms of industrial collaboration with third enterprises, the small and medium enterprises are not so equipped as to favour such collaboration and in this regard deserve special attention and help. In view of their restricted experience of external markets and their aversion to the inherent risk, which is generally stronger than in the large transitional companies, the SMEs clearly need appropriate support services, in particular under present conditions of supply on the world scale. They must be able to have access to institutional support machinery that will help them to obtain the necessary information on technological advances, sources of finance, and new markets, foreign licences, and to conclude lasting industrial cooperation agreements. While contributing to the development of the SMEs/SMIs sector, this assistance clearly benefits the industrialization process as a whole. Accordingly, the SMEs/SMIs attach particular importance to the neutrality of UNIDO in its capacity as adviser and impartial broker.

## C. The head of an SME/SMI enterprise

The head of an SME/SMI enterprise is confronted with a plethora of problems, apart from the financial risks that he takes, which he must solve personally, because he cannot rely on an operational staff such as exists in large enterprises. He is at one and the same time the administrative, technical, commercial and personnel manager, head of supplies, production, sales and marketing, without forgetting the research and development function that he assumes on top of all the rest.

It is indispensable that he should be able to rely on a range of support mechanisms for the provision of advice, services, assistance, training and finance. Some of these mechanisms may be of a multi-purpose type and apply to all sorts of SMEs/SMIs, e.g. for management, marketing, social questions, etc. On the other hand, for very specialized support, particularly in the technical field, he will have to find more specific competence, requiring the assistance of specialists or the establishment of specific action by means of alliances of enterprises or Economic Interest Groups (EIGs) for example.

At some point, a technician, a businessman, an accountant or an independent operator may decide to set up his own enterprise. Very often, he gives pride of place in that enterprise to his strong points, which are linked to his original training, and assigns second place to the other functions, which thus suffer from a lack of skill and motivation. There is another category of heads of enterprises, namely, financiers. Their motivation is fundamentally different from that of those described above and is similar to that of sleeping partners. While entrepreneurs in the first group aim to achieve the survival of their enterprises, financiers aim at rapid profits and consequently act more out of motives of speculation than of any industrial calling. Finally, there is the category of pupils leaving schools of a more or less high level, who have ideas but no practical experience, which justifies the creation of nurseries of enterprises, so to speak.

The head of an SME/SMI is generally a very pronounced, if not rabid, individualist. It is very difficult to induce him to entrust himself to, and to envisage cooperating with, other heads of enterprises, especially competitors, whereas very effective cooperation involves precisely heads of enterprises who are a priori competitors. There is consequently a great need to display diplomacy and judgement in setting up EIGs (Economic Interest Groups) or strategic alliances, which will be irrevocably doomed to failure if it were necessary to combine in them individualities that have only little chance of agreeing to concerted action. Hence, it is necessary to present them with interfaces, institutions and their staff who meet the indisputable requirements of versatile technical skills, industrial psychology, dynamism and availability, neutrality and confidentiality, so as to obtain and justify their trust.

These precisely are the "Subcontracting and Partnership Exchanges or Promotion Centres" (SPXs) that we shall describe below.

## D. Heads of enterprises and subcontracting

In early days, the term subcontracting was relatively pejorative in nature and had certain implications in the minds of heads of enterprises. Great progress has been made in this context, but not all barriers have been removed. The subcontractor is still often considered as a junior partner by the main contractor, and performance suffers in consequence. On the part of the subcontractors, the tendency is to consider the main contractor as an exploiter, and performance also suffers. Setbacks have had wide repercussions and have served as examples not to be imitated. In the context of the promotion and organization of subcontracting, much effort still has to be made at the psychological level to induce main contractors and subcontractors to cooperate on an equal footing, as full-fledged partners.

# II. Industrial subcontracting and partnership

## A. A universal development vector

The various linkages that the SMEs/SMIs can establish among themselves, or with large and State-owned enterprises, are essential factors for their growth and competitiveness. The organization of these linkages is crucial, both up-stream with the suppliers and subcontractors and down-stream with distribution and marketing channels.

Subcontracting and other forms of sourcing are modern and efficient ways of organizing industrial production. New forms of industrial subcontracting, called "industrial partnerships", are based on the complementarity between the large contracting assembly enterprises or main contractors and numerous SMEs/SMIs as specialized subcontractors or suppliers, and on the necessity of involving them in all stages of the production cycle (design, testing and prototype). Moreover, the SMEs/SMIs frequently cooperate closely with each other in order to complement their activities in the production cycle, by establishing production associations or clusters, and, increasingly, through networks. These new forms tend to become more stable and more lasting arrangements with a more equitable distribution of responsibilities (risks and profits) between the various partners. In addition, such subcontracting and partnership linkages enable SMEs/SMIs to focus on their fields of specialization.

In order to increase the chances of success, these new forms of relationships often call for other complementary forms of linkages, such as provision by the main contractor of special raw materials, sophisticated equipment, moulds, technical assistance, training, know-how and licence agreements, and even, in some cases, equity participation by the enterprise or joint investments. Here, the traditional subcontracting relationship has become a full-fledged partnership.

## B. The place of subcontracting

Industrial subcontracting is omnipresent, it is a powerful and indispensable vector for development. Subcontracting is a major ingredient of economic development through the increase in productivity that it generates. The SMIs are a fundamental prop of this process. They will be called upon to operate at several levels, up-stream and down-stream of large enterprises, but also among themselves, depending on the specialities at their command, as subcontracting production units or as specialized or auxiliary suppliers.

Subcontracting is an essential part of a complex within a general policy that requires appropriate instruments. It implies proceeding methodically in a field where much still remains to be created or organized. One of the essential instruments to be provided for the rational promotion and organization of subcontracting linkages between complementary production units is a structure for information, leadership, promotion and organization, habitually referred to as: a Subcontracting and Partnership Exchange (or Promotion Centre).

Such an exchange must be the instrument and expression of the necessary solidarity among all the prominent players in a country's industry: enterprises, their representative trade associations, the government authorities, as well as the institutions and higher colleges concerned. Tens if not hundreds of jobs in certain complementary or peripheral enterprises may depend tomorrow on every 10 jobs created or consolidated in a small subcontracting unit.

It is necessary to quote here some figures which indicate the position of subcontracting in modern economies. A study by the European Commission dating from 1992 indicates that European subcontracting represents the equivalent of US$ 200 billion, of which US$ 127 billion is represented by industrial subcontracting, and that 70% of PMIs are subcontractors. This study also shows that:

The criteria for the choice of subcontractors are:

- 90% quality;
- 70% price;
- 70% proximity;
- 70% delivery dates;
- 50% the size of the enterprise.

The geographical origin of subcontractors is:

- 70% regional;
- 20% national;
- 10% international.

The mean annual growth rate of subcontracting over the period 1988-1994 was:

- 15% of average turnover;
- 30% being stable and,
- 70% rising.

Types of subcontracting:

- 65% capacity;
- 35% speciality.

Another analysis in Japan shows that the policy of subcontracting is justified by:

- Prices, 36%;
- Quality, 28%;
- Know-how, 22%;
- Delivery dates, 14%.

## C. The definition of subcontracting

Attempts have been made time and time again to define what subcontracting is. In fact, subcontracting, in its general aspect, is an extremely tangled web, but the basic justification for its existence no longer needs to be proved. This word covers such a wide range of linkages at the industrial level that it is not possible to define it concisely.

At the very best, one can attempt to define subcontracting by expressing it in the simplest and most concise form possible: "Subcontracting is having things made rather than making them oneself, in order to achieve optimum economic performance" (the latter being a function of cost, technical factors, quality, delivery dates, etc.).

On the other hand, it is much easier to define what a subcontracting enterprise is not. It is not an enterprise that exclusively devotes all its design and production facilities to its own manufactures, which are sold to consumers through its own commercial action. These firms are the "manufacturers" who operate in an integrated manner. Moreover, for such a manufacturer, no single customer should represent more than 50%

of his markets, otherwise he would be quasi-integrated with his customers and would in fact become a subcontractor. In practice, it is found that everyone is more or less a subcontractor for everyone else and that the production chain is organized in the form of a pyramid. In the United States, 50-80% of subcontractors are in turn main contractors.

In metal-working, one can nevertheless distinguish between three great families of subcontracting, in which one always finds craft operations, small, medium and large enterprises. This classification is necessarily imprecise. It is superimposed upon other considerations. It has no other purpose than an attempt to pinpoint the problem.

- Subcontracting operations which consist in selling particular operations or techniques, for example:

  Heat treatment; surface coating; grinding; cutting; broaching, and all sorts of operations using machines or installations that are more or less specialized or of varying dimensional capacity.

  In that case, there is practically never any supply of raw materials.

- Subcontracting operations that consist in manufacturing spare parts (individual components). These products are:

  Sometimes usable as such:

  Mechanical components, components produced by bar-stock machining, tooling, etc.

  Sometimes parts that require subsequent operations after having been produced by forging, stamping, cutting, deep drawing, etc. or casting.

- Subcontracting operations that consist in producing subassemblies or assemblies intended for another firm which markets them:

  Non-catalogue products: (subcontracting in the strict sense)

  Structural steelwork, boiler-making, general mechanical assemblies, etc.

  Catalogue products: (supply or delivery)

  Components, machine accessories, whole machines, etc.

One and the same firm may be interested in all or part of the complex of the three families of activities mentioned above! But depending on whether it attaches priority to one category or the other, it is possible to define its "profile" and to understand better the nature of the specific problems confronting it.

It is not prohibited for certain "constructors" (or fitters, or assemblers) to diversify and devote some of their production facilities to subcontracting, for the account of other constructors and other subcontractors. Hence, everyone is a competitor of everyone else and everyone simultaneously gives and receives orders for work. In practice, with regard to certain products, the craftsman is in competition with a large enterprise, and the small or medium specialized workshop with an integrated workshop of a large group, etc.

AFNOR (the French Standardization Organization), in its publication X 50300 of 1987, gave the most recent and most widely accepted definition used in France:

> **Subcontracting is one or more of the operations of design, elaboration, manufacture, placing in service or maintenance of the product in question, the manufacture of which an enterprise, called the main contractor, entrusts to an enterprise called the subcontractor, which is required to conform, exactly, to the directives regarding technical specifications annotated, in the last resort, by the main contractor.**

# D. Types of subcontracting

## *Capacity subcontracting*

This type of subcontracting is subdivided in turn under three headings.

### *By dimensions*

An enterprise equipped for carrying out work may, one day be confronted with the need to respond to an occasional inquiry either for the expansion of its range of production, or a demand that exceeds the dimensional capacity of one or other of its equipment items. When confronted with this type of problem, the enterprise must consider either investing in new equipment or finding another enterprise capable of carrying out for it the work that it cannot undertake.

At this stage the question arises of the relationship between the period required for setting up the equipment and the delivery dates required by its market. The installation of new equipment, apart from financing and amortization imperatives, may be incompatible with regard to delivery dates and perhaps cost, which may be prohibitive for competitiveness. Subcontracting, on the other hand, will generate other alternatives, doubtless preferable, with regard to prices, quality and also delivery dates; it is necessary to find the available equipment and skills at the time required by the main contractor.

### *Quantity*

An enterprise equipped to respond to the needs of its market may be called upon to respond to a much greater demand than its workload capacity permits.

It is confronted with the dilemma of either responding to the inquiry or refusing it and leaving it to its competitors. If it responds to the inquiry, it is confronted with the dilemma: making the product itself or having it made? Making the product immediately leads to many demands: financial, technical and social, and consequently takes time. Having the product made entails a search for subcontractors who are suitable from the technical, timeliness and economic points of view.

### *Know-how*

In theory, with similar equipment, two, three, or four enterprises would be able to carry out the same work. In practice, if one is working for the aerospace industry, the second for civil engineering equipment or agricultural machinery, the third for printing equipment and the fourth for agro-food industry equipment, they will hardly be interchangeable. It is their know-how that differentiates them on the basis of technical difficulties but also of economic performance. In view of the compelling need for know-how, it is necessary to find the subcontractor or partner who is suitable for carrying out the particular work.

These considerations lead us to the second aspect of subcontracting.

## *Speciality subcontracting*

It may involve either finished products or specialized components or supplies, or more or less highly technical operations, which usually requires very specialized equipment suited for the work to be done, specially qualified personnel who have the essential "knack", all of whom are supported by a design and research office that is incessantly on the look-out for improvements and the development of needs in the niche covered by the enterprise.

### *Services subcontracting*

Owing to their environment, enterprises must respond to more and more and diversified demands in terms of labour and commercial law, financial or accounting management, computerization, ecology, transport, insurance, packaging, customs, taxation, etc. and above all in terms of industrial repair and maintenance. They can no longer have all the related skills at their command and must increasingly call on the services of specialized offices or enterprises. Industrial services have a considerable place in production cycles and are an integral part of the subcontracting family, with its main contractors and service providers.

Technological development inexorably makes it necessary to entrust to subcontractors a vast range of tasks which had previously been integrated within enterprises. This type of subcontracting requires specific organization and qualifications, so that an SPX can permanently render very important services, particularly to main contractors.

Maintenance subcontracting is a mixture of service, capacity and speciality subcontracting. This aspect of subcontracting is a vast field with its own rules, which inexorably lead to the fundamental question, which emerges again and again: Do the work oneself or have it done by others? Here again, the supreme arbiter is the economic criterion, which combines the direct costs of maintenance operations: breakdown service, repair, replacement, substitution, improvement, prevention, renovation, etc. and the indirect costs: the minutes, hours, days, and weeks of down time of the equipment to be maintained in operating condition.

## E. The field of application

### *The general field of application*

According to a 1994 study by the Assembly of French Chambers of Commerce and Industry, the industrial subcontracting market is broken down as follows in that country:

| | |
|---|---|
| Machining of metals and finishing: | 22.2% |
| Metal-forming: | 17.0% |
| Casting: | 14.7% |
| Tools and patterns: | 3.9% |
| Plastics processing: | 14.4% |
| Rubber processing: | 6.2% |
| Electronics: | 10.2% |
| Garment-making—leather: | 7.1% |
| Miscellaneous: | 4.3% |

In the present state of affairs, and although the principle applies to all economic sectors, some are affected to a greater degree, particularly, metal-working, plastics processing, and electronics, which represent 88.6% of the total market. As an example, it can be mentioned that, of the approximately 10,000 parts, components and processes required in the manufacture of an automobile, 9,980 are subcontracted or outsourced.

The field of application in these sectors is extremely wide and diversified and comprises "families", which may be considered as subsectors, being of such great importance in technology and needs, for example:

- Castings (steel, iron, non-ferrous metals, stainless materials, etc.), with a wide range of varieties and processes for each material,
- Forging, stamping, drop forging (remarks identical to casting),
- Boiler-making, sheet-metal working, locksmithing, mechanical welding (ditto),
- Cutting, deep drawing (ditto),
- General mechanical engineering (the range is broad and complex),

- ❒ Surface treatment, heat treatment,
- ❒ New techniques and processes, composite materials,
- ❒ Industrial electrics, electronics,
- ❒ Plastics, rubber, composites.

Services such as:

- ❒ Computer assistance,
- ❒ Design offices,
- ❒ Monitoring and testing services,
- ❒ Various laboratory services,
- ❒ Packaging, transport,
- ❒ Promotion, advertising, etc. ...

## *Fields of application for industrial tools and spare parts*

Special mention must be made of the field of application for industrial tools and spare parts.

- ❒ Mastery of the tooling sector presupposes and makes necessary control over supplies and over the preparation of the **necessary raw materials,** which vary according to applications. This is the field of special steels. A particular steel possessing the characteristics that ensure the best performance for some particular tool may prove completely unsuitable for others. Practically every type of tool requires a specific material and related treatment.
- ❒ In the manufacture of tools, a large number of parts are used which may be common to several models and even to several types of tools. These parts or **standard components** are manufactured in small, medium or large series depending on their nature and their markets, and they appear in catalogues of specialized enterprises which supply toolmakers, often on a retail basis, so that the latter can benefit from competitive cost prices.
- ❒ It is also necessary to mention **specific** tools (for mechanical engineering, metallurgy, plastics, etc.) and special tools such as moulds, expendable parts, technical operations for tooling, etc.

## *Maintenance*

There is a substantial field of application for maintenance in the subcontracting and partnership sector. The range of skills and capacity in subcontracting in this field is highly diversified. Whole sectors of the economy of a developing country may depend on the good organization and efficiency of subcontracting in this field. For lack of specialized subcontractors, industrialists faced with the requirements of maintenance must incorporate this function in their own structures at excessive cost and also import parts and components at prohibitive prices. Maintenance takes pride of place in a development strategy. There is technological progress in equipment, and maintenance demands skills and know-how; this necessitates the manufacture of high-performance spare parts and tools, or else the remedy will be worse than the disease. For example, the introduction of a poor-quality spare part in a kinematic chain produces even greater damage.

In such a context, the organization of subcontracting is of considerable importance for reducing direct maintenance costs and down time of equipment. This involves the metal-working sector and all connected industries but also all the other industrial sectors which depend on the former for the manufacture of production machinery, installations and equipment, and above all for maintenance and improvement.

## F. Certification: a vital necessity
## Certification of standards and quality, and approval

It is confirmed day after day that certification has a firm place in the industrial scene and constitutes one of the fundamental elements of subcontracting. Reliable certification is based on prevailing international standards, ISO 9000 (International Organization for Standardization) and its derivatives (ISO 9001, 9002, 9003).

Enterprise certification is one of the tools of international economic development, and quality assurance makes possible a common language enabling different industries to conduct a dialogue, without taking frontiers into account. Enterprise certification according to the ISO 9000 standard constitutes a genuine passport for subcontracting activities.

In addition to such certification, there is the approval given by large main contractors. Indeed, reliable and constant quality has become the main criterion for the selection of subcontractors on the part of main contractors.

Approval certificates granted after long periods of study, tests, analysis and certification are strictly graded, from A at the highest level to pure and simple rejection at the bottom of the scale. These approval ratings are widely known and constitute quality indices for enterprises.

References are not everything: there is also the spirit in which they are applied. Quality assurance must create confidence between the customer and the supplier. Certification auditors must be strict, without intervening for that reason in the internal problems of enterprises; today as yesterday, enterprises must be able to continue to manage their quality control freely, as they manage their finances and their personnel.

## G. Subcontracting in the automobile industry

Such subcontracting is often placed first in the economic and industrial sphere. It has considerable weight in view of the importance of the present automobile sector in the economies of the industrialized countries. Paradoxically, it is far from being representative of subcontracting. The latter is a full-fledged sector comprising many trades and responding to the needs of many sectors, including the automobile sector. Subcontracting for the automobile industry has its own rules and its own imperatives. The stakes are so high that a subcontractor for the automobile industry is practically tied to his main contractor or contractors. It is quasi-integration.

When a large automobile industry group decides to establish an assembly plant outside its traditional bases, the question of finding subcontractors that will meet its needs is high among its concerns of all types. An SPX can save it a great deal of time.* But when the same group, for strategic reasons that are its concern alone, decides to close six of its plants scattered throughout the world, what happens to its quasi-integrated subcontractors? When another group, forced to do so for reasons of competitiveness, decides to halve the number of subcontractors it employs, what happens to the 50% ousted?

Automobile industry subcontracting is a world apart, integrated in a very special sector into which it is very difficult for any person or enterprise to penetrate, except the constructors themselves, who possess all the appropriate services for the supply, selection and promotion of suppliers. That is one of the reasons why the rational organization of subcontracting is of only very marginal concern to the automobile sector. In that connection, the visit to a specialized subcontracting exhibition is an eye-opener. While the automobile has pride of place there, it represents only an infinitesimal part of the range of capacities, specialities, and services offered.

*By studies of technological product lines, the identification of families of subcontractors and suppliers and strategic studies (quality/cost/reliability).

# III. Partnership

The term "subcontracting" has always been slightly unpopular by reason of its hierarchical, authoritarian and episodic connotation in the context of the relationship between a main contractor and a subcontractor. Moreover, subcontracting, whether industrial or not, has often implied, particularly in the 1960s, the pejorative aspect of the exploitation of semi-skilled and cheap labour. Nowadays, we know industrial subcontracting linkages cover a much wider and more complex reality, which is the expression of a modern and efficient method of organizing industrial production, using several autonomous production units.

Nevertheless, as this practice developed and became widespread, the need progressively imposed itself to establish more durable and more balanced relationships between two or more industrial partners that would better reflect the needs of the market. In order to satisfy that need, UNIDO has since 1985 advocated the concept of "industrial partnership", namely, a modern method of industrial subcontracting based on the specialization and technological expertise of subcontractors, which leads to durable and stable horizontal inter-enterprise linkages, with equitable sharing of responsibilities between the industrial partners concerned.

The economic stakes have become so high that subcontracting linkages could no longer be limited to simple order procedures, however perfect they might be, or to the most equitable contracts for the parties, main contractors and subcontractors. The era of partnership has arrived.

This new term has led to a flood of new definitions; in fact, they all have their place, but not all of them can be applied everywhere. In the context that is of interest here, partnership is a more developed form of subcontracting in which main contractors and subcontractors mutually strengthen one another in a context of deeper and more extensive collaboration.

In subcontracting pure and simple, the main contractor undertakes to place an order for a clearly defined piece of work and to pay for it at an agreed price. The subcontractor, for his part, undertakes to deliver the work envisaged, at the desired hour and time, in the quantities and quality required. In a partnership, each of the two parties will endeavour, through the quality of the relationships established, to provide the other with the maximum data so as to help him to make progress, technically and economically, and, in all fields, correctly.

## *Types of industrial partnership*

In the widest sense, the French term *partenariat* has sometimes been used to translate the English term joint venture. Here, that is not the interpretation chosen but rather the strict sense, namely, a method for sharing industrial production, i.e. industrial subcontracting, whereas the term "joint venture" often has the connotation of a "subsidiary" enterprise of two "parent enterprises". Industrial partnership is closer to the concepts of a "strategic alliance", or "flexible specialization", which are sometimes used. It is considered here that the concept of "industrial partnership" is superior to all of the others, while it includes them, owing to the richness of its content and the universality of its application, just as it also transcends other concepts that are sometimes used, such as: up-stream linkages, supply management, shared production or production under contract.

- *Partnership in the wide sense of the term* (Industrial cooperation)

  Any form of cooperation between enterprises based on the complementarity of resources, facilities, and objectives and intended for the mutual benefit of the parties involved.

- *Joint venture*

  A subsidiary enterprise set up by (or with majority equity participation from) two or more enterprises.

- *Up-stream and down-stream partnership*

  Supply and distribution agreement.

- *Industrial subcontracting* (production partnership)

  Capacity, speciality or services subcontracting as well as a stable and balanced subcontracting partnership. In this case, the question is how to promote partnership while avoiding the integration of the subcontractors with the main contractors.

- *Strategic alliances*

  Cooperation between competitive enterprises, generally with a view to an understanding of or sharing of markets. It includes strategic alliances between subcontracting enterprises.

- *Flexible specialization*

  A new way of describing speciality subcontracting between SMEs/SMIs (collective efficiency, complementarity, collective economies of scale). However, care should be taken to avoid the pitfalls of production cooperatives.

- *Relocation* (generally motivated by lower production costs)

  Relocation does not have a very good press, in the context of the prevailing unemployment in the industrialized countries. Nevertheless, this form of partnership has positive aspects for the main contractors in the country of origin, who can retain their market positions, for the subcontractors of the country which acquires jobs and sometimes for the subcontractors in the country of origin, who establish new linkages or strategic alliances (suppliers of equipment services, markets). In view of the political problems attached to this form of partnership, caution will often have to be exercised in its use.

This classification is admittedly incomplete.

UNIDO has concentrated its programmes on the forms of **North-South SMI partnerships** (that is to say, partnerships between enterprises in industrialized and developing countries).

Many enterprises or manufacturing activities that disappear in the industrialized countries would be highly welcome to young enterprises in developing countries. As the stakes are relatively low in absolute terms, the phenomenon is ignored. Despite their low level of resources, the SMIs have an eminent role to play in this context. The existence of an SPX network would permit promotion of a partnership formula that responds to this particular set of conditions.

In the industrialized countries, the lifetime of products is such that it leads to the disappearance of a large number of enterprises and at the same time to the creation of almost as large a number of new enterprises suitable for meeting new needs. If enterprises do not disappear, it is often a whole line of their products that ceases, leaving equipment, know-how, tools, and sometimes stocks with zero value.

The SMIs can find partnership formulas that provide mutual enrichment. The first criterion is that of the market. If there is no market, there is no equitable source of partnership. Each side makes its own contribution. For example, an SMI in the North may have access to hundreds of millions of consumers for which there may exist manufacturing niches that cannot be filled economically without the assistance of less costly factors of production. The SMI in the South has the labour without access to the market in the North, but it has access to its own market, which is smaller in quantity but real, and practically closed to the SMI in the North.

A system of share and share alike is not necessarily achievable, but the opening is there. The SMI in the North has at its command techniques that it is still impossible to establish in the South and loses markets in the North because it cannot satisfy demand at more competitive prices. Rather than lose its markets, it is to the advantage of the SMI in the North to call on the services of a partner in the South, who in addition will provide an opening to new markets, which are admittedly smaller, but real at two other levels:

- Prolonging the lifetime of manufactures about to disappear in the North, but of quite topical interest in the South, which it is practically impossible to export at the production costs prevailing in the North, but that it would be possible to manufacture and distribute in the South with the equipment and know-how supplied by the SMI in the North.
- Obtaining orders for the SMI in the North, for sophisticated manufactures, which it is often impossible to produce in the South for technical reasons. The solvency of the enterprise in the South is to some extent guaranteed by its own inputs.

The basis for such a partnership are linked to the following factors:

- Sharing of production (subcontracting), and in addition
- Quasi-swapping of markets,
- North-South transfer of technology and know-how.
- Symbolic and reciprocal equity participation in order to establish in a formal manner the links between the two partners, permitting for example the interchange of managers (the proprietor of the SMI in the North is admitted to the Board of Directors of the SMI in the South, and vice versa), and in order to guarantee the seriousness of the partners = long-term intentions (guarantee of results).

## *Tentative UNIDO definition of partnership*

Subcontracting (and supply) speciality linkages which are supplemented by other forms of cooperation (technical, technological, financial, commercial, management, supply of equipment, assistance and training) for the purpose of increasing the success potential and results of the partners in question and of guaranteeing stable and lasting relationships between the partners, for their mutual benefit.

That is often the case with international North-South partnerships between SMIs as described above, particularly in order to gain access to new markets or to new technologies, which it would be more difficult to achieve in isolation.

# IV. The subcontractor

There are two types of subcontractors:

- The dedicated subcontractor, who permanently places his production facilities at the disposal of other enterprises: this often corresponds to **speciality** or **structural** subcontracting.
- The occasional subcontractor, who is willing, depending on the general or special economic situation (seasonal activity, for example), to place part of his production facilities at the disposal of colleagues or competitors. This corresponds to **capacity** or **cyclical** subcontracting.

Either may have at its command more or less advanced techniques, but they are fundamentally different and the problems raised by their activities must be studied separately.

Moreover, the status of the subcontractor may take different forms.

## A. The occasional subcontractor

In this context, everyone may be a subcontractor for everyone else. An integrated workshop of a large industrial group may carry out work to order for a small industrialist. A factory that is a main contractor may, from one day to the next, be confronted with an unfavourable situation for reasons of *force majeure* (fire, flood, or other natural catastrophes, explosions, revolution, etc.), affecting a large proportion of its production capacity and placing it in the position of offering its capacity and specialities. This field of subcontracting can be referred to as a breakdown service.

In countries with economies in transition (from a planned economy to a market economy system), the large integrated industrial complexes, faced with the disappearance of State orders and the vicissitudes of reconversion, often endeavour to work as subcontractors for foreign industry or for other national industries in order to increase the very low rates of utilization of their installed capacity and to make it profitable.

## B. The quasi-integrated subcontractor

He is usually working in the wake of large manufacturers: in the aeronautical, automobile, or electronics industries. Such subcontractors are also more frequent in certain countries like Japan, corresponding to the industrial culture and being a constituent element of the Japanese model. This is the expression of the "single supplier" approach with its exclusive customer concomitant.

In this case, the workload capacity of the enterprise is assigned 100% either to a single main contractor or to a single economic sector: automobiles, for example. This status is easier for the subcontractor and for commercial function, which is reduced to its simplest expression. However, he is particularly vulnerable, for he is at the mercy either of the caprices or of the loyalty of his main contractor. Any reverse suffered by the latter is reflected in the quasi-disappearance of the subcontractor and at the very least by a considerable reduction of his activities.

## C. The dedicated subcontractor

An example is an enterprise that has full command of its professional speciality and its market (through its own commercial activity). To ensure its survival as well as possible, it endeavours not to depend on a single customer or a single economic sector; to do that, it diversifies its clientele while retaining its speciality.

In isolation, the dedicated subcontractor avoids depending for more than 30% of his workload on any single customer. To safeguard himself in this respect, he must undertake promotion and communication efforts for the constant diversification of his clientele. He must have documentation presenting his capacity and performance, exhibit in specialized exhibitions and rely on canvassing of and visits to his potential customers.

# V. The main contractor

It was mentioned that in the early days the main contractor was a priori a large enterprise and the subcontractor an SME/SMI. Now, that concept is very largely out of date. Currently, it has been shown that 50% of main contractors are themselves subcontractors! The pyramid shape of inter-enterprise linkages in the chain of industrial production (particularly in certain sectors) shows that most enterprises in production chain branches are at one and the same time main contractors and subcontractors or suppliers. Careful examination should also be made of the notion of large enterprises.

The size of an enterprise, in terms of the number of its staff, is less relevant than the place that it occupies in its market. A leader SMI at world level, in a very special field, is considered as being more important than a large enterprise with a payroll of 200 employees. The main contractor is defined by the work that he farms out rather than doing it himself. SMEs/SMIs, which represent 70% of employment in a country, are, in terms of subcontracting and integration potential, at least as important as the large groups.

It is therefore easy to imagine in the modern economy in which we live, which is partly based on the permanent striving for improved productivity, that one of the most effective tools to be used is the rational organization of subcontracting.

*Part two*

# The organization of subcontracting

# I. Reasons for the rational organization of subcontracting

## A. The fundamental reasons

Production equipment is becoming more and more expensive and therefore scarce, and, paradoxically, it is very often found that much of it is not fully used. Often, and simply for lack of information, industrialists search far and wide for subcontractors when they could be found closer at hand (setting aside all considerations of price).

The fact that there is available capacity in an enterprise is not always due to unsystematic investment or poor commercial management. It may be the result of operating circumstances—breakdowns, breakages, social movements, etc.—which produce bottlenecks or shortages. Or else it may be caused by unforeseeable fluctuations in workload, depending on the season, for example. Entrepreneurs are left to their own devices in trying to minimize and even out all these fluctuations. At this stage, which transcends the framework of the enterprise, it can be seen that, for special reasons, certain geographical zones are in economic decline, while others, on the contrary, are experiencing a period of overheating; it would be in their interest to try to balance out their workloads.

The rational organization of subcontracting by no means influences the general economic situation. In a period of economic decline, main contractors are scarce and subcontractors are numerous; conversely, in a boom period, customers are legion and there are not enough suppliers. In fact, there are only a few reliable means of enabling industrialists within one and the same province, or from one province to another, to ascertain available production facilities on which they might possibly call. The same applies all the more within one country, from one country to another or from one continent to another.

The fundamental reasons for promoting the rational organization of subcontracting can be summed up concisely. They are:

- The development of technology, which confronts enterprises with problems requiring intellectual, financial and technical resources that it is increasingly difficult to acquire. **Subcontracting is easier.**
- Unless they wish to be rapidly overtaken by developments, industrialists cannot continue to do everything in the same way as in the past. The result is a **need for specialization**, which necessarily entails calling on subcontracting for everything outside the industrialists' special fields.
- It is distinctly **more economical** to use outside assistance rather than do everything oneself, when neither the equipment nor the human resources are suited to a particular manufacturing process B in which, moreover, competition is becoming keener and keener.
- Each enterprise must assign its financial, technical and human resources to the fields in which it excels, rather than disperse them among fields over which others, who make it their vocation, have much greater command. Thus **the enterprise invests where it makes a profit**, and in fact strengthens itself by calling on the assistance of others, who considerably expand its potential in all respects. As a subcontractor, it gains in **competitiveness**.

- ❒ Awareness and the evaluation of the losses caused by the lack of relevant, reliable and rapidly available information: it is preferable and **more efficient** to avoid seeking far and wide for what is available closer at hand.

While it is for each enterprises to conduct its own commercial activities with a view to the optimum utilization of its production facilities, it is also expedient to provide for the establishment of appropriate links in the framework of such changes. This specialization, this knowledge of external possibilities, cannot be acquired on the spur of the moment and without the aid of a competent organization.

The necessary development of integrated enterprises induces them to make profound changes in their internal structures and their conception of the market. It is obvious that interpenetration links between all these activities cannot simply be left to the inspiration of the moment. It is necessary to popularize the notion of **subcontracting contracts,** which is practised only very little at present. The only contracts used are in fact merely order forms, too often approximate, sent by the main contractor and accepted by the subcontractor. It is obvious that a subcontractor will be able to render better service to a main contractor only to the extent that he obtains a minimum of guarantees from the latter, and conversely, it is clearly in the interests of both sides that such mechanisms should be available.

In a modern economy, that is to say, one that is fully open to foreign penetration, to access to external markets, it is a compelling need for industrialists to improve their **competitiveness** in all fields. To do that, they must use all the tools that can contribute to improvements and, in particular, the improvement of productivity. The rational organization of subcontracting presents itself as a tool that is particularly well suited for attaining such an objective.

## B. The inherent prospects of subcontracting

### *For productivity*

The subcontracting organization makes possible a very considerable increase in productivity and consequently in profitability. Since its chief aim is to contribute to the **optimum**, the most complete* and the most rational** possible utilization of existing working capacities, it will lead, by exploiting all the prospects stemming from its instrumentation, to an unheard-of range of services, made possible solely by its very existence.

### *For management*

It makes it possible to identify deficiencies in order to favour the adoption of solutions in all sorts of fields: quality assurance, organization, training, promotion, communication, industrial services, etc. It is not pretentious to affirm that such services will constitute the essential basis for the **genuine industrial and technical promotion** of the enterprises that take it up.

### *For investments*

Lack of information has serious consequences in the field of investment and even conditions it. For example, an industrialist may be prompted to buy equipment which he knows he will not be able to use full time for his own needs unless there is an

*More complete utilization means: the load in hours of operation that makes possible optimum amortization.

**Rational utilization means: specialization, e.g. not machining parts 500 mm in length on a 6,000 mm capacity machine, etc.

organization that takes into account the availability of that equipment. Apart from any non-economic considerations, that would prevent a neighbouring industrialist from undertaking a similar operation shortly afterwards, which would only be added to others that are already under-utilized. The establishment of prior contact before the second investment would perhaps enable both of them to operate the first equipment jointly and thereby to increase their competitiveness and that of the country!

## For import substitution

Economic competition sets States and enterprises against one other. Much effort is made to encourage exports, but little with regard to savings in imports. However, any foreign exchange saved on imports in this context has the same value as foreign exchange earned on exports. Why should goods be imported that can be ordered locally? By encouraging better knowledge of both needs and capacities and by establishing contact between the two, the subcontracting organization makes a very efficient contribution to national integration by replacing imports by manufactures made in the country under competitive economic conditions.

## For the popularization of quality assurance

In view of the importance of quality, which has become the prime criterion for the selection of subcontracting enterprises and has become no less than a passport for industrial linkages, it is imperative to promote total quality management. ISO 9001, 9002, 9003. How can the SMEs/SMIs find their way through this maze? The subcontracting structure constitutes a guide that helps heads of enterprises to become more familiar with the challenges and to take the best action to meet them. In this field, the subcontracting organization is not qualified to award certification to enterprises, it confines itself to creating awareness and providing information.

## For research

The relatively limited share of research in the range of concerns of industrialists, particularly in small and medium industries, is often pointed out (setting aside financial considerations, which have their due place). While research seems in any case to be costly, its price is further increased by the involuntary impermeability of the industrial fabric to the dissemination of the results obtained. Research is turned to account through the publication of its results. Efforts aimed at assisting in such penetration would in some way be value added for research. It can be said that the research effort is not complete if no provision is made for means of placing the fruits that it bears within the practical grasp of small and medium industrialists. The subcontracting organization will partly make it possible to bridge this gap.

## For decentralization

In the context of decentralization, the subcontracting organization will make a contribution to the preparatory work for the projected establishment of plants on the basis of this better knowledge of the existing industrial fabric by showing that individual provinces of a country are complexes organized at the technical level. It will also help to overcome the isolation in which the SMEs/SMIs situated far away from the decision centres often find themselves and help to bridge the gaps existing between the companies established close to the capitals and those set up in sometimes rural provinces, more or less distant geographically and also economically.

## Important remarks

* When a subcontracting firm is **highly specialized,** as is the case for example in gear-cutting, heat treatment, surface coatings, etc., it occupies a very special position in relation to constructors and subcontractors who are not highly specialized or not specialized at all, that is to say in relation with subcontracting that fluctuates with the business cycle.
* The concerns that it may have regarding workload have little to do with the rational organization of subcontracting as proposed by UNIDO, but are simply the normal concerns that every industrial enterprise must have, in particular with regard to its **commercial function.** The subcontracting organization will not be able to replace the enterprise in carrying out its workload or in filling its order book. The latter depend above all on the company's dynamism and commercial skill. On the other hand, the subcontracting organization will help to make the enterprise better known and to inform it of new needs.
* These companies, being similar to one another, must **combine** in a dynamic and active professional organization whose aim it will be to help them to solve their particular problems; for example: definition of contracts, joint participation in fairs and exhibitions, commercial prospecting missions, study tours, etc. They may formalize, to a greater or lesser extent, such cooperation activities through setting up EIGs (Economic Interest Groups), which the subcontracting organization will be able to help establish.

# C. How to put subcontracting into effect

## *Tactics*

Subcontracting is an essential part of a complex within a general policy and requires appropriate means of action. It implies proceeding methodically in a field where much has still to be created or organized. One of the essential instruments to be established for the rational promotion and organization of subcontracting linkages between complementary production units is **an information, motivation, promotion and organization structure** usually called a Subcontracting and Partnership Exchange or Promotion Centre (SPX).

Clearly, a service intended for industrialists without their effective participation would be nonsense, but as industrialists have a natural aversion to revealing their problems, it is crucial to design machinery that is completely neutral and thus inspires their confidence. That is one of the reasons why the subcontracting organization must be independent, particularly from the administration and the government authorities, whose interference the industrialists fear, but whose role is nevertheless of vital importance.

The tactics are to prepare the establishment of an ad hoc structure:

❒ *By the industrialists themselves*

They provide the "substance", namely, demand and supply. They are the first beneficiaries of the operation and it is for them to make the minimum effort of

taking an interest in this initiative. They must in particular facilitate inventory work and acquire the automatic reflex of calling on the services thus offered.

- *By the professional organizations or the Federations of Industry or the Chambers of Commerce and Industry* (existing or to be established) in the context of which the activity of the subcontractor or the main contractors will take place.

  In the case of a dedicated subcontractor, the vocation of the professional organization to which he is attached is naturally oriented towards action intended to improve the condition of its members and therefore to orient them and help them in studying and overcoming problems in their path.

  For occasional subcontractors, it is up to the professional organization to which they belong to have a working group focusing on subcontracting questions which are of more particular interest to its members.

  In both cases, the activity of the professional organization in question is, however, usually directed only to:

  Members of the organization,

  The profession concerned,

  General questions,

  whereas a Subcontracting Organization and Promotion Centre (or Exchange) addresses itself to the whole range of industry on a non-exclusive basis.

  In the case of main contractors, who may be working in very different sectors such as iron and steel, petroleum, mining, agro-food industry, civil engineering, chemical engineering, etc., their own professional organizations do not have the facilities for maintaining a technical service of this nature, which, however, their members need. By relying on the "SPX" structure, they can have access to these new services.

- *With the assistance of the government authorities*

  The services rendered by a structure for the promotion and organization of subcontracting are matters of individual interest to enterprises, as has been seen, and of corporate interest to their professional organizations. However, they are also of general interest to the government authorities, for example, the Ministry of Industry, the Ministries for SMEs/SMIs, Planning, Economic Affairs and others. Such authorities must support improved competitiveness in order to increase exports and make more judicious imports for public procurement by finding more competent and cheaper suppliers, and for vocational training, which must closely match the needs of the enterprises, etc. While this structure cannot be incorporated in a government department, the participation of the government authorities is nevertheless necessary if not indispensable at several levels, for example, in legislation and therefore the promulgation of laws that facilitate achievement of the results aimed at, granting material or financial assistance or assistance in kind. Such assistance is amply justified by the services rendered and, for reasons of equity, cannot be totally borne by the enterprises, which moreover make contributions of all kinds.

  Good tactics are therefore those that make it possible to combine simultaneously the three major parties involved; otherwise, the structure is shaky and sustainability is highly uncertain.

## The basic process

The first condition to be met is knowledge of existing facilities, in parallel to needs. The second is to permit matching of the two when possible. The third is to accumulate

information concerning unfruitful research, problems encountered, technically and economically. The fourth is to promote specific remedies.

### ❒ *Inventories*

This involves making a systematic inventory of all production facilities and capacities and then an inventory of existing capacity of all these machines and installations, by means of visits to enterprises concerned. Taking into account what is known of the life of enterprises, it is clear that, to be efficient, these two inventories must be kept up to date, for equipment and availability may fluctuate from day to day. These inventories, which are essentially technical, must be interpreted, processed and related to needs expressed. The staff assigned to this work must be particularly skilled.

The rational organization of subcontracting demands the most complete possible knowledge of the enterprises at the technical level. Such knowledge necessitates in fact more than a simple list of names and quantities. Two similar enterprises, equipped strictly in the same way may nevertheless be totally dissimilar at the technical level, if only through the nature of the work done (speciality). Moreover, problems are often urgent and special. A subcontracting organization should not confine itself to the distribution of these inventories, even on the widest possible basis, whether they are computerized or in printed form.

### ❒ *Processing of inventories*

To favour development, one of the greatest wealths of a Subcontracting and Partnership Exchange is its knowledge of needs compared with available capacities; that naturally calls for the necessary follow-up. This purpose cannot be served by any yearbook. It is the indispensable and irreplaceable role of the staff engineers of the service.

In this regard, geographical proximity plays a great role, problems are not always correctly expressed by the inquirer, and the support of technicians who are known to him personally will greatly facilitate all desired action. This imperative of knowledge taken in its widest sense conditions permanent and direct links (other than by letter or computer). That is the reason why the rational organization of subcontracting must be based on dividing the territory into areas which are neither too large nor too small, as explained below in Part four.

Existing structures are of such a nature in most countries and the problem raised is so specific that one is inclined to advocate the establishment of an operational unit specially suited for such work. Thus, the rational organization of subcontracting over a large territory would be conducted through a network of subcontracting exchanges covering the geographical zone concerned all operating according to the same principles, the same methods (procedures, rosters, codes, etc.), so as to facilitate relations between them as far as possible. The principle is obviously suitable for an inter-country network. In this respect, modern office techniques make it possible to establish reliable links for the rapid and precise exchange of information.

## D. What is a Subcontracting and Partnership Promotion Centre or Exchange, or an SPX?

### *Principles and definition*

An SPX is a centre for technical information, promotion and the matching of capacities, processes and production or industrial service specialities, in the form of an autonomous structure whose basic purpose is to help bring together inquiries for and offers of subcontracting work and sourcing.

### *Demand* (main contractor and/or purchaser)

The inquirer is the party that wishes or is compelled to outsource work, either because he cannot carry it out himself or because he carries it out in poor quality or at too high a cost, owing to the facilities at his disposal

### *Supply* (subcontractor and/or supplier)

The motives of the supplier are different:

- For the profitability of its investments: Rapid amortization of capital goods purchased, that is to say, the endeavour to make full-time use of his machines and therefore of his staff. The knowledge of demand in the region will represent a service to him.
- To carry out investments with full knowledge of the needs and facilities in place,

  To become integrated in a complex without any change in his independence, considering the resources of that complex as an extension of his own,

  To increase his production and jobs, without investment,

  To access new markets,

  To have at his disposal a high-level commercial and public relations service and to be represented in contacts outside the region.

### *The first principle*

The exchange cannot claim to justify its existence by systematic absorption of the available capacity of its members. The exchange is indeed not the refuge of the incompetent, it is not a commercial service, it does not promise that it will bring about a turnover proportional to the membership subscription.

### *The second principle*

The exchange is not a supply service, it never replaces the specialized services of the enterprises; on the other hand, it is at their service to help them in their search for technically appropriate suppliers who will deliver in good time.

### *The third principle*

The exchange is not a regional planning body. It does not interfere in the manufacturing programmes of its members.

### *The fourth principle*

The exchange does not suppress free competition; on the contrary, by means of better information, it contributes to the emergence of a more transparent and competitive market.

### *The fifth principle*

With regard to prices, the exchange never interferes in the commercial dialogue proper and is not an additional intermediary. It does not accept any commission as an intermediary, either from the inquirer or the supplier.

### *The sixth principle*

It is only at the express request of the parties concerned that it intervenes by giving technical, legal, economic or other advice. Its duty is to be an entirely impartial and objective body. It must confine itself solely to bringing the supply and demand sides together, purely in the light of the technical characteristics demanded. The parameter of delivery dates in relation to availability also comes into play.

## Role of an SPX

The fundamental idea of making the best use of the production capacities and facilities of the industrialists of a region emerged from recognition of the fact that, in a given sector, industrialists are not well acquainted with one another and have no means of being precisely informed about the technical possibilities of their colleagues, which they might use to carry out part of their manufacturing programme. Conversely, their own possibilities are not known to the other industrialists.

The Subcontracting and Partnership Exchange does not intervene systematically, its action is related essentially to demand formulated by its members. It can therefore be stated that the exchange is above all a "service", in the full acceptation of the term, an inter-enterprise service which generates savings and rationalization. It must therefore make itself known to industrialists so that the latter can call on its services.

It might be thought that such a body might disturb the existing linkages between certain industrialists and that such linkages might be called in question by offers from newcomers. It is reiterated that, since the exchange should not be used as a supply service, it cannot generate such disturbances if the inquiry addressed to it is motivated purely by technical, economic, quality or delivery-date demands. But, in a competitive economy, the enterprises that might experience difficulties on that score, difficulties that they would have experienced in any case, would thus be warned in time of their weakness and could react accordingly.

Moreover, and this is important, the procedure followed, which is set forth in detail below, makes the position of the Subcontracting and Partnership Exchange unassailable. The effects of the exchange work are felt at different levels: at the level of the enterprise, the province, the nation, and at the international level. Moreover, this service may have either a protectionist and defensive philosophy or an expansive and dynamic philosophy.

### *A protectionist and defensive philosophy*

It might also be argued, that, by its promotion of available capacity, the Subcontracting and Partnership Exchange ensures the survival of technically and economically endangered enterprises, and that it thus merely retards a process that is inescapable in the more or less long term. In fact, rather than disappear, these enterprises will be willing to work under derisory conditions, which will finally sign away their future.

That would be true if the exchange systematically absorbed all the available capacity reported. In practice, that is by no means the case, all the more so since, if the companies are technically out of date, they can in fact offer only facilities that are not much in demand. In consequence, seen from the "service" angle these firms should not be neglected if they can offer emergency service to and momentarily support an expanding firm. Moreover, the information obtained from dealings with the exchanges may to some extent facilitate their reconversion studies.

### *An expansive and dynamic philosophy*

Thanks to its organization, the Subcontracting and Partnership Exchange has a precise knowledge of the overall potential, the possibilities and needs of enterprises in its field of activity. Thanks to that knowledge, having links with economic and technical bodies, it will be able to assist in promoting first the provincial and later, consequently, the national economy. All the data gathered can be collated, transmitted and processed either by or in other interested bodies, if they exist, or indeed can trigger the creation of new bodies if no support can be found.

It will be noticed that such an exchange might make it possible to launch a number of other ideas and that its potential is not confined merely to the limits defined by its initial objective, namely, to contribute to the most complete and rational utilization of the available capacity of its members as is possible.

That foreshadows an operational structure by which the database would be kept correctly up to date, frequent visits would be made to enterprises and the data gathered would be processed. The sum total of openings detected during interviews, the sum total of questions raised by the industrialists and of the services rendered by the body bear witness to and prove the incontestable interest that there is in maintaining and promoting subcontracting bodies that are inspired by such a method and by such a working plan. Under an expansive and dynamic philosophy, this puts in our hands a new and powerful tool for participating in an increase of productivity and helping in genuine industrial promotion.

# II. The services rendered by the promotion centre or SPX

## A. At the enterprise level

- To the inquirer: He wants his subcontractor to deliver to him a product meeting the following demands: Conformity; quantity; quality; delivery date; price.
- To the extent that the exchange enables him to find a solution to one or other of these conditions, the body responds at least partially to the question raised.
- To the supplier: He seeks more complete or better utilization of his machines and installations, that is to say, in fact, better amortization. By informing him of new needs, the exchange helps him to achieve his targets.
- At this stage, a third notion quite naturally emerges in addition to supply and demand: the Subcontracting and Partnership Exchange can operate as an investment consultant. It is therefore important that heads of enterprises and executives consider the exchange as a service. This idea must be strongly stressed.
- In addition, the Subcontracting and Partnership Exchange enables the industrialist:

  To ascertain at any moment and with precision the activities and potential of the other enterprises in his region, simply by requesting information, other than confidential information, of course;
  Similarly, to make his own potential known and therefore to facilitate the reduction of his unutilized available capacity and to ensure the maximum profitability of his investment;
  To solve his subcontracting problems easily and above all rationally.

Motivations on the supply and demand side, although different, are both aimed at making the best possible use of personnel, machines, and commercial markets.

## B. At the provincial and national level

It is certain that the SPX has no commercial personality. Nevertheless, representing a large industrial potential, it has every possibility of:

Maintaining, at a certain level, links that are of interest to industrialists, the region, or the country. For example: relationships with foreign Chambers of Commerce and Industry, and the search for openings for production under licence that might interest its members.
Facilitating its links with official and quasi-official bodies with regard to questions of an economic nature. Through its precise knowledge of enterprises, the SPX may indeed be a valuable auxiliary for the officials responsible for the provincial or national economy and at the same time act as the spokesman *vis-à-vis* those officials for the problems of the industrialists.

The integrated "technical information" service is in itself a remarkable simplification and rationalization organization for all users, the commercial services, supply services, etc. of the affiliated enterprises. The SPX can present regional or national firms as an organized whole at the technical level; here, the advantages are incontestable.

Two phenomena influence the economic situation: recession and expansion. The SPX can scarcely exercise any effect on these two phenomena, but if it is used judiciously, it may make it possible to slow down recession, and must above all help in expansion.

- *Slowing down recession:*

  Without falling into regional or national isolationism, the exchange avoids loss of work by the province or country. Lack of knowledge of available resources is the basis for the large-scale drain to countries abroad of work that could be done regionally or nationally. That may negatively affect demand from the region or country and may therefore make imports necessary. In addition, apart from other disadvantages, such as the increase of transport costs, there are difficulties of technical liaison in adjustments, modifications, etc., human contact being necessarily reduced owing to the distances involved.

- *The pursuit of expansion:*

  Owing to its knowledge of potential and available production capacity, the SPX can make a valid response to concerns with regard to investments and help avoid uncoordinated and excessive capital investment in the province or country. It is not for the SPX to take direct action in this field, but it may become a very useful auxiliary for bodies concerned with expansion and considerably help in directing specialization. With regard to decentralization, it can provide by no means negligible information with regard to decisions to establish plants, owing to the knowledge that it permits of the potential of operational subcontractors. The exchange can also provide valuable information for at least partial conversion operations.

  Within each province or nation there are subcontracting flows that are determined by the nature of the work and its volume and finally by its orientation. By analogy, one can thus detect inter-provincial or international flows which make it possible to some extent to balance external trends from province to province, from country to country, that is to say by making it possible for the overloading of one supplier to be absorbed by the available capacity of the other. It is possible to slow down a national recession. Of course, the SPX is inoperative in the case of a general recession.

  However, if, for compelling technical reasons, subcontractors must be sought outside the province or the country, it is expedient to use the network of SPXs, whose distribution throughout the territory simplifies and rationalizes the search, facilitates contacts, and may permit offsetting arrangements, for example, by means of public procurement.

## C. At the international level

The mechanism described above can also be applied in international economic relations. In the same way as there must be a network within each country, it is necessary to set up a network between countries belonging to the major regions of the globe, and, more particularly, to those in which economic development is in full swing.

# III. Subcontracting and Partnership Exchanges (or Promotion Centres): from the origins to the present day

## A. The birth of the idea

The idea was born in France in 1960, in Aquitaine, in the context of an Economic Interest Group (EIG) comprising about ten metal-processing enterprises which realized that, although they were neighbours, they had under-utilized equipment and on the other hand lacked other production facilities. They noted that they did not know one another, resulting in some wastage of resources and a costly dilution of demand, and that it would be in their interest to pool their equipment.

The idea took root very quickly, other industrialists in the country became interested in it, within their professional associations. The concept of a provincial SPX took concrete form in Lorraine from 1961. The government authorities supported its start-up in the context of action by the Planning and Productivity Commission. The idea spread and some 20 SPXs were set up in France, with practically as many different operating formulas.

After information had circulated widely in the specialized press, economists from many countries became interested in the mechanism, which was established in many countries: Belgium, the Netherlands, Germany, the United Kingdom, Italy, and Spain. There again, each country made its own adaptation. Later, with the aid, first of OECD and later of UNIDO, it spread to India, Malaysia, the Philippines, Turkey, Mexico, etc.

## B. Designation of the concept

The term "exchange" is ambiguous: it has a speculative connotation that is definitely inappropriate for this body. Like a stock exchange, it is a place where supply and demand for subcontracting assignments meet. That is why, as in the title of this Guide, we have qualified the term by adding "Promotion Centre".

The term "subcontracting" has a rather pejorative connotation. It indicates dependence, inferiority. From the outset, these terms have been regularly questioned, but the usage remains and the designations are still used and are becoming increasingly widespread. This concept is found in other languages: "*Zulieferung*" in German, "*subcontración*" in Spanish, and "*subfurniture*" in Italian. The Japanese, however, adapt to the usage practised in the countries to which they assign subcontracting work ... following their own concepts.

## C. Development of the concept

On the basis of the original idea and operating concept established in France, the idea proliferated in a rather disparate manner, each player proceeding according to his own special interpretation and application. Exchanges were set up in federations of industry, employers' organizations, Chambers of Commerce and Industry, professional associations, Economic Promotion Centres, private enterprises, either in a more or less independent or in an integrated manner.

Using the same term, which was already ambiguous, several types of structures were created and referred to as subcontracting exchanges, sometimes having only the name.

- Services incorporated in professional organizations, sometimes directed by an engineer, sometimes by an economist, and even sometimes merely by a small secretarial unit, all relying on the facilities of the organization of which they were a part. Subsidized solely by employers' contributions, these services had only little impact and results. As their expenses were low, they were sometimes classified as overheads; they struggled along, stagnated and very often disappeared without a sound, not being recognized as performing a necessary and full-fledged service or function.
- Services incorporated in Chambers of Commerce and Industry, which have greater financial resources and often base most of their work on participation in fairs and exhibitions and on the publication of printed yearbooks. However, they depend on the prevailing policy followed by the Chamber's Board of Directors, which may discover other interests, fix other targets, or incorporate subcontracting in another service, so that it becomes marginalized.
- Private groups, which are to some extent agencies that canvass main contractors and finance their activities by taking commissions on the business done. Since business cannot be distributed equitably between the "shareholders", those who are least well served are no longer willing to finance a service that brings them little profit, and the machinery breaks down or is reduced to a mere industrial agency. In this context, the body diverges from the path of objectivity and neutrality followed by an SPX.
- More or less autonomous services, more or less integrated in industrial promotion structures (productivity centre, expansion committee), covering different geographical zones, local and provincial, or sectors (textiles, metals, plastics, electronics, etc.), with administrative rather than technical personnel, carrying out surveys that are too vague and updated only in theory.
- Databases and computerized information services on the lines of yearbooks in which it is sufficient to pay for inclusion and consultation, the data are neither verified nor updated, far less analysed.
- And finally, in the form of well structured and financed **autonomous associations** with the tripartite collaboration of the government authorities, professional institutions and organizations, and enterprises directly, in a coherent economic sector (Industrial subcontracting) and in a clearly defined geographical zone, incorporating related economic potential. It is only this latter form that is really recommended by UNIDO.

A large number have disappeared more or less in the short term—others vegetate within organizations that are administrative rather than practical in nature. The only ones to survive have been those which were autonomous, directed and stimulated by competent and motivated staff, that have taken care to render services corresponding to needs and developments and above all have not interfered in the commercial dialogue. Experience over time has made the selection and has made it possible to identify the criteria for success or failure. Relying on the principles stated above and on the bases set forth below, some SPXs including that of Nancy in France, set up in 1961, are still in existence.

National professional organizations have studied the emergence and development of industrial subcontracting. Legislation has been passed, national institutions have been set up, many publications, press articles, reviews and books have been issued. Nowadays, the place and the interest of subcontracting are universally recognized and its organization and promotion remain a major concern in most countries.

The European Commission has concerned itself since 1982 with preparing and distributing standardized nomenclatures and a special multilingual terminology to facilitate inter-community relations.

From the 1970s, UNIDO studied and established subcontracting exchanges under the old formula and since 1982 has established SPXs under the new formula in more than 30 countries. At present one encounters the paradox that the developing countries are those best fitted for the organization of subcontracting thanks to the UNIDO model, which is common from one country to the other and enables countries to communicate easily, applying the same principles, methods and instruments, while the industrialized countries all more or less continue to use their own systems, which are scarcely compatible.

The advent of modern means of communication has led to the emergence of fully computerized models which are very far from meeting real needs in the field. The establishment and updating of data must comply with strict requirements, the interpretation of inquiries, the analysis of the necessary processes, and the absence of appropriate response must be exploited rather than lost owing to the lack of a respondent. An electronic server will never replace an SPX, in the same way as the computer will never replace the manager, though it gives him valuable, precise, rapid and comprehensive tools for analysis.

## D. The different types of operational and efficient SPXs

Although the concept of development by the SMIs and consequently, to a considerable extent, subcontracting, is universal in character, it is quite clear that machinery can vary substantially when it is a question of promoting and organizing subcontracting in a highly industrialized country, a country with an economy in transition, a developing country or in one of the least developed countries.

Similarly, the geographical dimensions and the concentration of enterprises must be taken into account. The professional organizations and the provincial subcontracting bodies are complementary to one another and must therefore collaborate closely for the rational organization of subcontracting. Cooperation in subcontracting must be possible indiscriminately at the technical level with industrialists from quite different branches, such as iron and steel, structural steelwork, foundry operation, forging, etc.; with industrialists of different size: craft-based, small, medium or large enterprises; as subcontractors/suppliers or main contractors, particularly for maintenance, and from all the other sectors of the economy.

Consideration may be given to setting up different models of SPXs in the form of associations of industrialists for industrialists, with the support of the government authorities and the professional organizations concerned. Because the objectives are decidedly specialized and the method precise, one is unlikely to find an existing organization that is suitable for performing this work in the required geographical zone of action.

The operating principles, the methods, and the instruments are absolutely similar from one model to the other. The organizations differ only in the range of services rendered, depending on the SME/SMI environment in the country and on the staff of engineers/executives required by the workload in question. The smaller the number of structures in the environment and the scarcer and more incomplete the data, the larger will be the workload. The range of services rendered is given in Part four of this Guide.

*Model 1* (industrialized countries)

A single department responsible for promotion, organization, and motivation, consisting of:

A chief staff engineer (the manager)
A deputy staff engineer
A personal assistant to the manager.

*Model 2* (developing country/transition economy)

Two separate and complementary departments:

- Organization, awareness-creation,
- Promotion, motivation, development, consisting of:

  A chief staff engineer (the manager)
  An assistant staff engineer: Organization
  An assistant staff engineer: Promotion, motivation, development
  Two secretarial support staff.

*Model 3* (least developed countries)

Consists of three departments:

- Organization, awareness-creation,
- Motivation, development
- Promotion

Consisting of:

A chief staff engineer (the manager)
An assistant staff engineer: Organization
An assistant staff engineer: Motivation, development
An assistant staff engineer: Promotion
Three secretarial support staff.

The context will determine which model should be set up, and the facilities available will determine its composition. (see Part four of this Guide.)

*Part three*

# UNIDO and the promotion of industrial subcontracting and partnership

## A. Industrial subcontracting and partnership

The various linkages that the SMEs can establish among themselves or with large and State-owned enterprises are essential factors for their growth and competitiveness. The organization of these linkages is crucial both up-stream with the suppliers and subcontractors and down-stream with the distribution and marketing channels.

Industrial subcontracting and outsourcing are modern and efficient ways to organize industrial production. New forms of industrial subcontracting, called "industrial partnerships", are based on complementarity between the large contracting-assembling enterprises and the various specialized subcontractors and suppliers, and on the necessity of involving them from the very early stages of the production cycle (design, testing and prototype). Moreover, SMIs frequently cooperate closely with one other in order to complement their activities within the production cycle, by entering into production associations or clusters and, increasingly, through networking arrangements. These new forms of relationships tend to become more stable and more lasting because they entail a more equitable distribution of responsibilities, risks and profits between the various partners. In fact, such subcontracting and partnership linkages enable SMIs to focus on their field of specialization.

In order to increase the chances of success, these linkages often call for other complementary forms of linkages, such as provision by the main contractor of special raw materials, sophisticated equipment and moulds, technical assistance, know-how, training, and licence agreements, and even, in some cases, equity participation or joint investments. Here, the traditional subcontracting relationship has become a full-fledged partnership.

While large enterprises are geared by their management and marketing strategies towards all forms of industrial collaboration with other enterprises, small and medium enterprises are not equipped to promote such collaboration and thus deserve special attention and assistance in this area. It is evident that SMEs, particularly in the present context of global sourcing, are in need of support services, given their limited expertise in the matter of foreign markets and their generally higher risk aversion compared with large transnational companies. It is therefore the SMEs that attach particular value to the neutrality of UNIDO as an impartial adviser and intermediary. Institutional support mechanisms are therefore necessary to help them to obtain the necessary information on modern technologies, sources of finance, new markets, foreign licences, etc. and to gain access to them as well as to conclude long-term industrial cooperation agreements. By contributing to the development of the SME sector, this assistance will also further the overall industrialization process.

## B. The UNIDO strategy and approach

As indicated in the UNIDO medium-term plan 1996-2001, the networking of small and medium enterprises among themselves and with large manufacturing firms, through production linkages, is an indispensable dimension of industrial resilience and competitiveness. In the period covered by the plan, UNIDO will further strengthen and integrate its action in terms of:

(1) Policy analysis of and advisory services concerning approaches to bring about and promote local sourcing by large industries,

(2) Assistance to small-scale suppliers and subcontractors in upgrading their technical and commercial skills and their capability to meet quality demands,

(3) Support in building up technical information systems on networking potentials (production chain networks) (for example, through Subcontracting and Partnership Exchanges).

Subcontracting, supply and partnership relations between industries of various types and sizes, especially between large and small enterprises, is a feature of every modern industrial economy. Because industrial subcontracting and similar forms of linkages between small and large industries are so complex and so important for the development of the SMIs that act as subcontractors or suppliers, UNIDO has launched a special programme for the promotion of industrial subcontracting and partnership.

The object of the UNIDO programme is to reinforce the capacity of SMIs in the developing countries to increase their production and create employment, to upgrade their manufacturing processes and products, to improve their productivity and international competitiveness, to encourage import substitution and to promote the export of their manufactures. The programme contributes in this way to the optimum allocation of industrial resources and thus to national industrial growth and integration. At the same time, it contributes to the international redeployment of manufacturing facilities and the transfer of industrial technology and know-how to the SMI sector in developing countries.

In the framework of this programme, UNIDO acts in the following ways:

## C. Government policies and programmes

UNIDO advises Governments on how to create a favourable environment and to develop policies and programmes for the promotion of industrial subcontracting, supply and partnership, using the following means:

- Industrial legislation, including:
  Incentives to encourage large enterprises to decentralize their production through outsourcing and subcontracting operations,
  Decrees to improve inter-enterprise credit systems and terms of payment,
  Tax regulations to depenalize the SMEs that act as subcontractors and suppliers,
  Customs regulations to encourage international subcontracting and sourcing operations,
- Public procurement policies aiming at providing special facilities or access for SMEs,
- Appropriate government measures and programmes on "indigenization" (or integration) to promote local sourcing and subcontracting by large national or foreign industries, and for negotiating with them long-term plans for increasing the local content of products manufactured under foreign licence,
- The international promotion of networks of capable and reliable subcontractors and suppliers, which is a strong incentive for foreign companies to invest and establish manufacturing facilities in the country.

## D. Institutional mechanisms: Subcontracting and Partnership Promotion Centres (or Exchanges)

UNIDO provides developing countries with technical assistance for establishing and operating national Subcontracting and Partnership Promotion Centres (or Exchanges) (SPXs). To this end, it assists in setting up a roster of subcontractors, suppliers and main contractors. These centres or exchanges act as focal points for technical informa-

tion and match-making as well as for the promotion and exchange of industrial subcontracting and partnership offers and inquiries. They have a number of core functions, including the following:

- The collection, analysis, storage and organization for rapid retrieval of information and data on existing production capacities and capabilities of industries, especially SMIs,
- The identification of subcontracting, sourcing and partnership inquiries or offers from large foreign or domestic buyers or main contractors, and forwarding to potential subcontractors/suppliers/partners,
- Assistance to potential subcontractors/suppliers/partners in organizing production clusters or associations and in negotiating agreements with main contractors, which could be their own Governments.

In addition, as recommended by two UNIDO expert group meetings on industrial Subcontracting and Partnership Exchanges and policies in May 1991 and June 1994, the new generation of SPXs provide subcontractors and suppliers with multidisciplinary assistance and information in fields such as:

- Technical support (product design, technology, equipment, innovation),
- Quality management, standards and certification,
- Marketing analysis and commercial strategies (including participation in international fairs and partnership forums),
- Access to credit, financial facilities and incentives, pre-investment studies,
- Management (rehabilitation, financial management, stock control),
- Legal advice (contracts, codes of conduct, arbitration and settlement of disputes),
- Human resources management (training and upgrading).

This assistance and information can be provided either directly by the SPXs in the form of surveys, advice, training, awareness seminars and industrial fairs, or, more generally, by referring the enterprises to the relevant specialized institutes.

UNIDO recommends legal statutes and standard terms of reference for the establishment of autonomous Subcontracting and Partnership Centres or Exchanges under national boards of directors. In fact, UNIDO has set up more than 50 centres or exchanges of this type in some 30 countries, following this model.

# E. The UNIDO methodology

## *Standard instruments and methods*

In the framework of its programme, UNIDO has been studying, designing and developing standard instruments and methods for the development of industrial subcontracting, sourcing and partnership relations. It has been working on:

- Legal and tax problems and industrial legislation;
- Operational manuals on subcontracting and partnership exchanges;
- Detailed fact sheets or questionnaires for compiling technical information on enterprises;
- Subcontracting nomenclatures and terminology;
- Software for database management (UNIDOSS—see below);

- ❒ Legal guidelines and model contracts for establishing subcontracting agreements;
- ❒ Guidelines on the organization of, and participation in, subcontracting and partnership fairs;
- ❒ Brochures and videotapes that point out the advantages of subcontracting and partnership.

### *The UNIDO subcontracting system (UNIDOSS)*

For more than two decades, UNIDO has been developing a standard methodology to manage the databases of Subcontracting and Partnership Centres or Exchanges in various parts of the world. On the basis of that work, it has developed coherent computer software called UNIDOSS ("UNIDO Subcontracting System"), which is now available in English, French and Spanish. The UNIDOSS software is protected by a licence agreement, which is granted free of charge to SPXs established by UNIDO.

The basic functions of UNIDOSS are:

The registration of manufacturing capacities and capabilities of industrial companies, based on detailed questionnaires and surveys,

The classification of these companies according to a set of given industrial nomenclatures, such as products, sectors, manufacturing processes and equipment,

A search for subcontractors and suppliers on the basis of a large number of criteria (including an exhaustive analysis of the registered machinery and its technical characteristics) to match them with inquiries from buyers and main contractors.

UNIDOSS also permits the computerized printing of standard mailing and facilitates an organized follow-up on inquiries for information and matching services. In addition, it allows economic analyses to be carried out on specific sectors and areas, on enterprise deficiencies and required remedies, on technological and quality assessments and on investment and marketing strategies.

## F. International promotion and networking

UNIDO helps as well by establishing national, regional or international networks of SPXs, using standard means of communication, and by promoting international subcontracting agreements between potential industrial partners.

This promotion at the global level comprises, among other activities, the organization of, or participation in, international exhibitions (or fairs) for industrial subcontractors, suppliers and partners (such as SUBCONTRATA LATINOAMERICANA, SAMEST in Tunisia, or SISTEP in Morocco). In this respect, UNIDO has concluded privileged cooperation agreements with a number of subcontracting or supply international circles or fairs, including the best-established in the world (such as MIDEST, the *Hannover Messe*, SUBCON, SITEV, SIAM, etc.).

UNIDO is also editing an annual international directory of industrial Subcontracting and Partnership Centres (Exchanges), which includes more than 50 SPXs in some 30 developing countries, with the intention of facilitating international industrial networking and cooperation between these SPXs and with similar institutions worldwide.

## G. The SPX club

UNIDO is also establishing an SPX Club between all SPXs (or promotion centres), using the UNIDOSS system and software, as well as for industrial promotion bodies or institutions and industrial enterprises both in the industrialized countries and in the developing countries that are interested in participating in this network. The Club will enable them to enjoy a series of UNIDO support services on a preferential basis and should encourage networking and international industrial cooperation, using common technical terminology.

The SPX Club will be organizing on a regular basis:

- Expert group meetings, technical workshops and consultations to enhance its methodology and its programme;
- Research and publications on case studies, trends and new developments;
- Training seminars for SPX managers;
- Administration of the UNIDOSS Licence Agreement;
- Cooperation agreements between UNIDO and certain organizers, of world repute, of international subcontracting, partnership and sourcing exhibitions/fairs;
- Access to various UNIDO services and networks such as the Investment and Technology Partnership Network (ITPN).

## H. UNIDO expertise and training

All the forms of intervention described above are provided by a corps of international experts with considerable experience in all the disciplines involved in this programme, acquired in all parts of the world. They work closely with UNIDO Headquarters in formulating, developing, and implementing this programme and its methodology and its transfer by means of collective or field training programmes. This Guide, however complete and precise as it may be, will therefore never replace the fundamentally necessary specialized training and expertise.

*Part four*

# The UNIDO Subcontracting and Partnership Promotion Centres (or Exchanges) (SPXs)

# I. The essential bases

Generally speaking, the bases for management of the SPX's activity should be clearly stated in the statutes of the association so that all members are committed clearly and precisely and so that no-one can claim ignorance of them.

## A. The fundamental principles

The basis is that of a **non-profit association of industrialists for industrialists**. It is not the purpose of the SPX to create profit margins but to render services to its members so that they can enhance their economic performance. It is a service in the full acceptation of the term, that is to say, a mix of obligations towards private and public bodies, as defined by the statutes of the association.

Of course, the SPX must be able to draw directly and indirectly on the resources that are necessary for its operation and collect membership subscriptions and other contributions as described in the chapter on financing. It should be noted that the idea of providing service free of charge relieves the organizers of all responsibility and is not a guarantee of efficiency for the users.

In the light of its fundamental principles and ethics, the SPX will not:

- Interfere in the commercial dialogue between main contractors and subcontractors. At the very most, it can intervene as a mediator in the event of difficulties;
- Charge a commission for its services based on the amount of business generated. At the very most, it will be able to recover a fraction of the expenses specially incurred for a group of affiliated industrialists, such as expenses for participation in a seminar or a professional fair or exhibition;

### THE UNIDO SPX

In view of the important role of subcontracting and partnership in industrial development, UNIDO has made an objective analysis of various approaches tried out, drawing lessons from the differences in formulas and their successes and failures. In parallel, UNIDO has studied the needs of enterprises in their various environmental contexts, depending on the state of advancement of economic development. It has established appropriate structures, modifying them as they evolve in order to arrive at a reliable and permanent model, operating according to a number of conditions. Experience in many countries since 1960 shows that whenever there is divergence from these conditions or fundamentals, more or less serious negative consequences follow, which may even include the disappearance of the organization pure and simple. This makes it possible to identify a number of precise criteria which in some way ensures the success and survival of the SPXs.

The development of subcontracting—which has been continually expanding for half a century and is continuing to make progress—as well as economic change show that it is permanently necessary to promote and organize it, hence the value of a permanent structure in this field.

- ❒ Present itself as a commercial service claiming to fill its members' order books;
- ❒ Or present itself as a supply service for consultations on the premises of suppliers;
- ❒ Claim to carry out technical, legal, commercial or other specialized studies that it does not have at its command. However, it must serve as an adviser to refer its members to specialists or to help them to set themselves up as economic groups to solve their problems;
- ❒ In general substitute themselves for enterprises and their managers;
- ❒ Be a refuge for the incompetent or transform themselves into a chamber for complaints;
- ❒ Finally, the SPX must not have any exaggerated ambitions to expand its range of direct services or its geographical zone of action.

## B. The code of conduct

In a context of keen and dangerous economic competition, being at the centre of many prospects for transactions, and possessing a mass of information, the SPX naturally has a number of duties. It must establish for itself strict provisions that regulate its relationships with affiliated or corresponding enterprises. It must establish relationships of great integrity and neutrality with both of these in a context of strict **confidentiality**. Finally, it must act with the greatest efficiency in terms of **timeliness** and **quality**.

The confidential nature of the information contained in the rosters requires working methods that demand compliance with an internal code of conduct. This fundamental concept holds the key to success if it is respected, and bears within it the seeds of self-destruction if it is neglected. In brief, professional ethics are the expression of the professional conscience.

In parallel, the subcontractors and the main contractors must respect the **subcontracting code of conduct,** which fixes their reciprocal obligations and duties.

## C. Methodology

### *Action*

Above all, the SPX must be on the watch—at the service of heads of enterprises. That can be summed up as follows:

Precision and rapidity of action;

Imagination in the study of cases to be dealt with by comparison, analogy, substitution, etc.;

Monitoring and cross-checking of the information gathered;

Follow-up, statistical analyses and interpretation of results.

### *The principles*

Application of the basic principles and the code of conduct without fail;

Priority for the main contractors, who are the genuine motive force of the system;

Priority for members, without neglecting other correspondents;

Written replies to all inquiries received, of whatever origin.

### *The chronological order of action*

Compliance with procedure suited to each type of problem, consisting of:

Due recording of inquiries;

Preparation of work sheets for the parties involved;

Confirmation of receipt of inquiries;

Analysis and interpretation of inquiries;

Searches in the rosters;

Consultations with potential subcontractors;

Information to the main contractor on the results of searches;

Matching;

Follow-up.

### *The efficiency of an SPX*

Obviously, the first conditions to be met to ensure efficiency are the **competence** of the managers; next are **constant availability** of the service; **precision** in the study of the cases submitted, or identified; **rapidity**, or the rate at which problems must be dealt with. These are followed by **monitoring** to provide the necessary follow-up, all of these activities being under the seal of **confidentiality**.

Software and computers are merely the tools made available to operators to help them carry out their searches rationally, precisely, comprehensively and rapidly. The efficiency of the SPX is based on the quality of its relationships with industrialists, and that depends on the competence, dynamism and permanent availability of the management staff.

The fact that no solution is found following searches in relation with cases, resulting from the lack of equipment, capacity, or available resources, is valuable information to be exploited by the SPX, which is why precise and strict procedure must be observed in access to computer equipment and the management of cases.

## D. Awareness

The establishment of a subcontracting organization demands great psychological and educational effort in awareness-creation:

- Among the government authorities, who must be convinced that responsibility for industrial development is not merely a matter for enterprises, which are already paying their taxes, but also that of the government, which must intervene directly and indirectly in that context:

  *Directly* by taking over costs of part of the operation, in one form or another: subsidies or contributions in kind,

  *Indirectly* by taking all kinds of support action, in the form of legislation, even directives (or laws), smoothing out difficulties and providing various guarantees and regulatory facilities,

- Among professional organizations, which owe services to their members and cannot on their own operate a technical service such as an SPX. That is why they must become members of the SPX, so as to gain access to this permanent service,

- Among the industrialists, who are the primary users and beneficiaries, but who are not always willing to accept the rules of the system,

- Among the SPX executives, to supplement their training and ensure that they have at their fingertips the persuasive arguments that must be incessantly and faithfully repeated. Being the "staff engineer" of an SPX is a genuine profession and strict apprenticeship is necessary for the activity.

## E. The management staff (or the engineering staff)

The manager of an SPX is a full-fledged head of an enterprise and his first responsibility is to ensure the financial viability of the body under his direction. He is a **manager**, as in any enterprise; he must in addition know how to "sell" the SPX to all the potential parties involved: industrialists, services, professional organizations and institutions, public, national and provincial authorities, and sometimes international organizations providing support for industrial development: the World Bank, UNDP, UNIDO, the Commission of the European Union, etc. To do this, he must have a feeling for contact and be capable of persuasive verbal presentation.

The manager, or engineering staff, must be permanently vigilant so that he can detect every opportunity for intervention and service; he must never admit defeat in the face of search difficulties; he must have an analytical mind, integrating all hypotheses by comparison with other professions, other sectors, other data, by substitution, association or analogy. He is therefore also a "researcher". At the educational level, he must convince and motivate his staff and the members and correspondents of the exchange. Being a strict organizer, he must ensure the proper maintenance of his rosters and documentation, as well as the immediate updating of files on action taken by the exchange, and he must have great knowledge and expertise with regard to all the instruments employed. Finally, he must be of a combinative turn of mind, to ensure that he can form groups, associations of enterprises or action groups, inform his Board of Directors and the contributing bodies. He must set up all necessary monitoring activities and keep records of all action and that of his staff, so that the SPX can permanently justify its neutrality and efficiency. Having a service mentality, he will not be sparing of his time, with the result that enterprises can contact him without delay. The opening hours of an SPX must in principle correspond to working hours in enterprises and not in government departments.

In essentials, the impact and results of an SPX depend on the suitability of its staff. It is essential that contact persons for heads of enterprises give them a "bonus", a value added, otherwise they would not be useful and would rapidly discredit the institution that they represent, leading rapidly to a drain of contributions, and hence to the disappearance of their function. Such skills, capacities and availability define the qualification of the staff entrusted with such functions. They entail an appropriate level of remuneration. Consequently, the engineers/executives must be recruited from among the best applicants, and their remuneration will be commensurate with the nature of the support institution. If the latter is quasi-public in nature, it is compelled to apply the salary scales and regulations of the public administration, which do not permit the recruitment of such staff. Furthermore, those on its staff, who are remunerated on the public administration scale, have no experience of private enterprise and cannot provide the desired "bonus". In such conditions, it is to be feared that either the staff chosen will not provide the services expected so that the body is doomed to failure, or, if they are efficient, that they will not remain on board, and will be rapidly recruited by some enterprise in the sector, and the organization will have to begin long and costly training all over again.

It follows from this simple and realistic analysis that the services necessary to assist SMEs/SMIs in cutting-edge fields, cannot be located in the public administration but must be accommodated in an autonomous structure to be designed country by country, and that remuneration must be a function of the qualifications demanded.

# II. Institutional aspects

## A. The institutional framework

- It is conditioned by a twofold objective:

  To mobilize and create solidarity between the various participants in the promotion and organization of subcontracting,

  To raise the financial resources that guarantee sustainability.

- It is based on a tripartite structure of industrialists, professional organizations and the government authorities:

  The industrial enterprises directly, owing to the gains in growth, development and diversification conferred on them by the SPX;

  The professional associations or organizations, by reason of the benefits that the SPX offers to the industrial sectors concerned;

  The government authorities (national or provincial) owing to the character of public utility and benefits for the national economy as a whole.

- To achieve that, depending on the countries and the particular context, two bodies must be established:

### *The Board of Directors of the "SPX" non-profit association*

When legislation and national practice permit, it is desirable to incorporate in the statutes that the contributors (government authorities and the professional organizations) are *de jure* members of the SPX Board of Directors, along with industrialists elected from among their peers; the Board will thus include all those who are concerned and who can pass on valuable information to their respective bodies.

### *A National Coordination and Promotion Commission*

When the country context makes it necessary, particularly owing to the lack of structures in the SME/SMI environment, it is necessary to set up machinery including a National Coordination and Promotion Commission for subcontracting, in addition to the SPX Board of Directors.

## B. The machinery by type of country

The short- and medium-term concerns of heads of enterprises differ greatly according to the country in which they are developing, so that the support bodies may consequently vary from one country to another. While the principles and the bases must be identical whatever the context, the structure may vary, as well as the range and magnitude of services rendered.

*In the industrialized countries:* Numerous structured and motivated professional organizations exist. Structures for support and assistance in the promotion of the SMEs/SMIs are legion. Information of all kinds is abundant and readily accessible. With regard

to subcontracting, preference must be given to national and international promotion action and economic interest groups as well as to the organization of training courses to upgrade technological and quality assurance competence, etc.

*In the developing (or emerging) countries:* These are the countries in which the range of services is widest because they correspond to immediate, numerous and diversified needs, pending the establishment of new specialized structures, particularly in the employers' organizations, which are often in an embryonic state.

*In the least developed countries:* Here, needs are potentially greatest. It is necessary to strike a balance between almost unlimited needs and the resources that it is in fact possible to mobilize. In view of the gap caused by the weakness of the industrial fabric, or even the absence of an SMI fabric capable of usefully serving for subcontracting and sourcing, the priority of priorities is to create awareness among all the parties concerned; government authorities, emerging professional organizations, and above all heads of enterprises and promoters. In these countries, very great efforts must be made for persuasion and for developing to a maximum extent direct contacts in enterprises, the main focus being on permanent inventories, the documentation and technical information service, services with regard to machines, materials, second-hand equipment as well as the promotion of specialization. Organization will follow later as enterprises are established.

*In countries with a transition economy (from a centrally planned to a market economy),* the State is disintegrating and there is therefore a dramatic breakdown in demand or public procurement orders for manufacturing production units. Consequently, these large manufacturing enterprises have very low rates of utilization of installed capacity and therefore seek new customers and new markets abroad by every possible means in order not only to improve their productivity and profitability, but quite simply to ensure a minimum level of production and employment. The SPXs are very valuable in this context. This trend can be observed both in Eastern Europe and in the developing countries with planned economies, such as Algeria and Cuba.

Moreover, in certain countries such as Russia or other CIS States (Commonwealth of Independent States), the large vertically integrated industrial complexes are decentralizing their production by encouraging the hiving off of production workshops or industrial services which are capable of operating on a semi-autonomous basis and of producing goods by subcontracting for the large parent enterprises. While these new emerging SMIs continue to produce on a subcontracting basis for their main contractors, they often have considerable available capacity that could be used for other enterprises, both national and foreign. There again, SPXs have a fully justified role.

## C. The institutions mission

An SPX must act along three main lines:

### *Awareness-creation*

First of all it is necessary to publicize the aims and advantages of the existence of an SPX and the need that various bodies should join.

- The SPX is of interest to several parties: government authorities, professional organizations and institutions, heads of enterprises,
- The latter bodies must then be encouraged to use the services of the SPX rather than wait for it to take action.

### *Promotion in three directions, related to:*

- ❒ The SPX itself, which must make its existence known as widely as possible in order to elicit the largest possible number of inquiries,
- ❒ The notion of subcontracting, contributing to the spread of specialization, in particular by organizing seminars for heads of enterprises,
- ❒ Inter-enterprise cooperation, participating in all sorts of events, such as specialized fairs and exhibitions, for example.

### *Rational organization*

The purpose is to respond as efficiently as possible to expressed and potential needs, by contributing to the optimum rationalization of subcontracting linkages at three levels: provincial—national—international, by means of rapid, precise and appropriate action, and to propose a range of services corresponding to its capacities and the needs of the enterprises.

### *The range of services rendered*

This includes nine types of action, details of which are given under "operational aspects" (p. 69).

- [S] — Inquiries for and offers of Subcontracting work (speciality)
- [C] — Available Capacity exchange (inventory of and information on available capacity)
- [P] — Partnership (offers and inquiries: national—regional—international)
- [D] — Development (exploitation of opportunities or openings detected)
- [I] — Technical Information and documentation (Who makes what? What does ... mean? Who makes ...? Who supplies ...? Who represents whom?)
- [F] — Fairs and exhibitions (as well as seminars, promotion, publications, newsletters, yearbooks)
- [M] — Machines—Material—second-hand equipment (inventory and publication)
- [V] — Visits to enterprises (awareness, canvassing for membership, surveys, training, documentation, assistance)
- [B] — Management of databases (periodical updating).

## D. The structural dimension

Three parameters are involved:

### *The needs of the enterprises*

As far as possible, the SPX must endeavour to render the services requested directly or indirectly by the enterprises and their professional organizations, either by using its own resources, or by passing the relevant information to other specialized structures where they exist and are operational.

The SPX must guard against excessive ambition and trying its hand at everything and must never lose sight of its basic mission. It must in particular avoid ventures into marginal studies that interest only a limited number of members, except in the case of studies on whole product lines for subcontractors/suppliers that are requested by a large

main contractor (potentially an investor in the country), who might finance them. On the other hand, the SPX is competent for promoting either the creation of Economic Interest Groups (EIGs) or diversification towards other structures whose primary purpose that would be. The workload determines the staff structure to be set up to carry it out.

### *The geographical zone of action*

It should be reiterated here that one of the conditions for the success of an SPX is based on the direct contacts of the engineers/executives with the enterprises, in particular through visits. It follows that the geographical limits of action are conditioned by the maximum distance capable of being travelled on a two-way journey in one day.

For example:

- A radius of 300 km in a zone served by motorways.
- A radius of 150 to 200 km in a zone served by good roads.
- A range calculated in hours of travel in the case of travel over poor roads.

### *The number of member enterprises*

It must be realized that the executive staff or the manager of the SPX must have at least one contact per year with each member enterprise. Since there are about 200 to 250 working days in a year and at least half a day, including travel, is required for a proper contact, it is clear that the maximum number of **members** is 500 for a structure comprising three operators, bearing in mind that it is also imperative to have a permanent standby service at headquarters.

From a combination of these three aspects it is possible to calculate the size of the staff of an SPX and the number of SPXs to be set up in a country, which may have either a single centre, or a centre with small branches, or a national network of SPXs, with one structure per province, for example.

## E. Sectors of action

These are mainly metal-working, metal structures, mechanical and electrical engineering, and electronic equipment, the plastics, construction, wood and derivatives, and composite materials industries, and industrial services, for which reliable instruments are widely available.

The textile industry is still based on the employment of abundant but not highly specialized labour and the various subcontracting operations in this sector are motivated in essentials by the factor of cost. That often leads to relocation operations, which, incidentally, have a bad reputation in the industrialized countries owing to the disparity in workload and wages in operation. The civil engineering sector also makes wide use of subcontracting. These two sectors require very specific skills which cannot be fully integrated in a single structure together with metal-working.

# III. Structural aspects

## A. Location

The location of the SPX headquarters must be chosen to ensure that it offers the easiest possible access for its visitors, on the one hand, and enables the engineers/executives to visit enterprises linked to the exchange as rapidly as possible. In parallel, it is desirable that it be set up close to the decision-making centres and as far as possible in premises that are independent and of suitable size, as indicated below (see "Premises and equipment").

## B. The geographical zone of action

It was pointed out above that the geographical zone of action should be selected in the light of communication facilities, the number of enterprises involved and the size of the staff assigned to the SPX. Depending on the individual country and the resources that can be mobilized, the geographical area may prove to be too large and the question of the most harmonious possible coverage of the territory may arise. In the least developed countries, one might consider the establishment of a hard core in the region of greatest economic importance, with branches in the provinces, each consisting of a technician attached to an existing body, who must of course have been previously trained for the mission that would be assigned to him. This aspect has some importance, because it frequently occurs that the structures installed in the capital claim most of the resources and do not always devote the necessary attention to more distant enterprises. The industrialists in the provinces strongly resent this marginalization and are rather unwilling to leave matters to decision-makers in the capital.

When the possibility presents itself, it is preferable to set up an autonomous body in each province. With that in mind, provision should be made for communication bridges between the bodies as indicated below (see "SPX networks"). It is not realistic to consider setting up an SPX that would cover the entire territory in the case of a large country, or to apply a formula which would make the subcontracting activity of the regions depend on a centralizing body in the economic capital. At the very most, it can be envisaged that the SPX in the capital be the national pilot structure for the establishment of provincial bodies; also, this process should be undertaken with great caution, because such a function induces large workloads which the basic structure cannot necessarily bear. There is a risk of dissipating energy and finally of failure to render the services expected of the exchange in its true zone of action.

## C. The number of affiliated enterprises in relation with the size of the SPX staff

It should be recalled here that the ratio between the number of engineers/executives or the staff of an SPX and the industrialists and staffs of the enterprises is of paramount importance in the efficiency of the SPX. The main consideration is that the engineers/executives should know the heads of enterprises personally, and vice versa. This imperative requirement determines the number of affiliated enterprises. The weakening of relationships is inexorably reflected in a decrease in inquiries from the enterprises to the SPX and consequently by more and more frequent losses of members and payment of relevant subscriptions. This aspect must be carefully studied in the framework of the preparatory work for setting up the SPX and determines the number of engineers/executives to be assigned to the geographical zone in question.

## D. SPX networks

Though the promotion, organization and rationalization bodies must be autonomous, they cannot consider themselves as unrelated to other bodies of the same nature. They must communicate among themselves in order to exchange information and also to endeavour to solve cases for which no solution has been found in their own territory. The SPXs must set up networks both at the national and the international levels. Care must be taken to avoid the establishment of an entirely dehumanized and totally computerized communications system. Apart from the impoverishing aspect of the system, which could not replace the staff engineer in analysing and interpreting demand, there may be some dangers with regard to the confidentiality of subcontracting operations and possible outside access to the data stored by each of the SPX would be undesirable. A good formula is to set up an electronic mailbox system.

Moreover, the SPXs can be linked to all sorts of computerized networks and sources of information directly related to their objectives of service to enterprises. A collective subscription of the SPX constitutes an important contribution for many SMEs/SMIs which cannot subscribe to any and every service.

## E. Organizational chart: three options

Depending on the range of services rendered, the number of its members and correspondents, its geographical zone of application, and its financial resources, the SPX may be set up according to three formulas, as set forth below. There may be all kinds of variants, also depending on other available SME/SMI structures.

## F. Personnel

### *Profile—training—terms of reference*

One of the keys to the success or one of the causes of the failure of an SPX is the judicious or injudicious choice of the manager responsible for its establishment, guidance and promotion. The following description shows that the choice is not an easy task.

To its initial value, the staff of the SPX will add the joint accumulation of the training provided by the project and the exceptional experience conferred by the activities of the SPX. For legitimate protection of the exchange's financial and intellectual investments, the SPX staff must be recruited under contract and remain in service for at least three years after their training period. Any premature termination would be possible by payment of an indemnity equivalent to the price of the training received.

#### *Basic profile of the manager (and of the staff engineers):*

Trained mechanical engineer with 10 to 15 years of industrial experience in various functions, such as in a design office, maintenance service, manufacturing service. Examples of relevant experience:

Head of a design office in a factory producing industrial equipment,

Navy or airforce engineer officer,

Workshop superintendent in a factory producing industrial equipment who has held various posts in different subsectors.

**Organizational chart no. 1**
Smaller option (three persons in two departments)

One manager/male or female

One deputy (engineer)

One personal assistant

| SPX | |
|---|---|
| Subcontracting | Partnership<br>Development<br>Communication<br>Promotion |

Database
Subcontracting
Available capacities
Information

Partnership
Development
Fairs and exhibitions
Materials and equipment

**Organizational chart no. 2**
Medium option (five persons in two departments)

One manager/male or female

One deputy (engineer)

One deputy (economist)

Two secretarial support staff

| SPX | |
|---|---|
| Subcontracting<br>Partnership | Development<br>Communication<br>Promotion |

Database
Subcontracting
Available capacities
Information
Partnership

Development
Fairs and exhibitions
Materials and equipment

**Organizational chart no. 3**
Full option (seven persons in three departments)

One manager/male or female

One deputy (engineer)

One deputy (economist)

One deputy (commercial officer)

Three secretarial support staff

| SPX | | |
|---|---|---|
| Subcontracting<br><br>Technician | Partnership<br>Development<br>Economist | Communication<br>Promotion<br>Commercial officer |

Database
Subcontracting
Information

Partnership
Development

Fairs and exhibitions
Materials and equipment
Available capacities

He must have some knowledge of all aspects of the *metal-working, mechanical and electrical engineering* industries, and can therefore communicate with every head of an enterprise or any specialized staff member. In addition, he must be enterprise-minded so that he can be aware of the imperatives of supply, cost prices and management. He must have an inquiring mind and brief himself on all the ins and outs of subcontracting and partnership and make the best use of this knowledge for the benefit of his organization.

He is the trainer and leader of his team. He must have dynamism and a spirit of service and be capable of promoting the SPX, both with the government authorities, the professional organizations and the enterprises themselves. He is in some way a "salesman" for service in the full acceptation of the term, and is very strict in his neutrality, confidentiality and loyalty.

The manager of an SPX is in fact the head of an enterprise, who must manage his organization in such a way that he ensures its sustainability, while respecting the principles, the professional ethics and the methodology contributed by UNIDO. Having an analytical and combinative turn of mind, he is capable of devising suitable solutions when deficiencies are detected.

### *Personnel training*

The personnel will receive specific training provided by UNIDO, dispensed through assistance by experts in the field and training courses and study tours abroad.

The SPX team must be trained in:

- **The code of ethics** that must be a guide for its departments and its engineers/executives.
- **The methodology**, with the application of procedures for:
  - Visits and surveys,
  - Analysis and treatment of cases in the nine types of action,
  - Matching and follow-up.
- **The establishment of the necessary "instruments":**
  - Nomenclatures, coding systems, survey forms, UNIDO guides, methodology for contact with heads of enterprises, discussion points, folders, presentation material, circulars, standard information letters, methodology for the processing of cases, with checklists, work sheets, various documents for processing, etc.,
  - UNIDOSS software, management, surveys, analyses,
  - An appropriate stock of documentation,
  - A library of leaflets and catalogues of industrial components.
- The management of information on:
  - The database (UNIDOSS),
  - Documentation,
  - Equipment,
  - Members,
  - Finance.

### *Terms of reference of the staff of an SPX*

The functions described in the annex exist in every SPX and their degree of development depends on the country context or the number of national enterprises in the country. Functions are assigned, under the responsibility of the manager, according to qualifications, competences and the number of persons recruited.

# G. Premises and equipment

## *The SPX headquarters premises*

The SPX must satisfy three demands:

Efficiency,
Confidentiality and neutrality,
Consideration for its visitors.

- ❒ Efficiency implies the availability of a documentation room for filing, storing and consulting documentation, which calls for special management to ensure that documents will not disappear but will be kept in an orderly fashion.
- ❒ Confidentiality implies having **a separate office for the manager,** so that cases can be handled without visitors being present.
- ❒ Neutrality makes it necessary that functions be carefully separated (management of rosters, handling of cases, follow-up of cases handled), thus requiring **three separate offices.**
- ❒ Consideration for visitors implies having a **meeting room** so that they can be properly received and enabled to conduct a confidential dialogue with a single contact person.

These factors determine the premises necessary for the operation of the SPX.

## *Equipment necessary for the SPX*

- ❒ Normal furniture, desks, filing cabinets (filing and archiving facilities are important in an SPX)
- ❒ Two to three telephone lines (one outgoing line, two incoming lines and possibly one cellular telephone)
- ❒ One fax line
- ❒ One photocopying machine (format: A4—A3 with reduction)
- ❒ One microcomputer for word processing (with printer)
- ❒ One microcomputer for UNIDOSS software (with printer)
- ❒ Pre-printed forms etc.: (headed paper, files, folders, presentation leaflets and operating instructions)
- ❒ Miscellaneous office supplies
- ❒ Vehicles: The engineers/executives must have enough service vehicles to provide an appropriate and dynamic service.

# H. Financial provisions

In a sustainable SPX, the budget rests on four pillars:

- ❒ Subsidies and/or contributions in kind by the government authorities.
- ❒ Contributions from professional organizations.
- ❒ Membership dues of industrialists, in the form of a flat annual subscription depending on their size or the size of their staff; membership dues based on the payment of commission on the amount of business handled should not be charged.

- ❒ Income-generating activities (open also to non-members) such as contributions to shared costs for certain specific activities, e.g. participation in fairs and exhibitions, or establishment of an EIG, the organization of training seminars, market studies and prospecting missions, etc.

In the case of the least developed countries, where much work still has to be done, it is inconceivable to consider establishing a balanced operational budget from the outset. It is necessary to take into account the establishment costs, comprising the equipment of the centre, the training of the engineers/executives and all the expenses of awareness-creation and promotion incurred even before the service becomes operational. The service will not be able to respond to needs until a number of preliminary assignments have been carried out, such as surveys. Owing to the small number of enterprises at the beginning of operations, they cannot be charged their relative proportion of expenses. It is precisely in the least developed countries that exceptional assistance must be rendered to enable them to negotiate as quickly as possible the initial stages on the road to development. The primary role of an SPX is full justification for taking these initial needs into account, by appropriate financing from international aid, for example. However, it is recommended that enterprises be required to pay subscriptions from the beginning of their membership, because it would later be very difficult to transform a service rendered free of charge into a service against payment.

As an indication, to determine the amount of the financial commitment and establish realistic budgets, the basic figures are shown in the annex:

1. Initial investment budget, equipment
2. Establishment and personnel training budget—(estimate)
3. Operational budget (estimate of expenses).

# IV. Operational aspects

## A. Standby service and working hours

The criterion of service to enterprises makes it necessary for the centre (or SPX) to be permanently available. Working hours and working days must be aligned to those of enterprises.

Consequently, it is essential that a staff engineer or key staff member be on duty to respond immediately to inquiries. Key staff members must not all be absent simultaneously. The secretarial assistant or assistants have an important role to play in persuading callers to be patient, in giving them the best possible information and referring inquiries to the engineers concerned. The SPX must never give the impression of a rigid administration. For the period of paid vacation, a standby service must be ensured, because that is the time at which the enterprises very often need the services of the SPX, in particular to deal with unforeseen circumstances of every kind, many of them caused by the maintenance operations carried out in this period.

## B. The nine types of intervention

### V. *As in Visits to enterprises*

These are undertaken for:

Awareness-creation and for providing information to heads of enterprises and their staff,

The promotion of the SPX itself and for recruiting new members,

Carrying out the various surveys intended for establishing the internal database of the SPX with regard to equipment, machines and installations, production to order or from catalogue, hours available, needs, etc.,

Case studies,

Serving as a mediator in the eventuality of difficulties arising between a main contractor and a subcontractor,

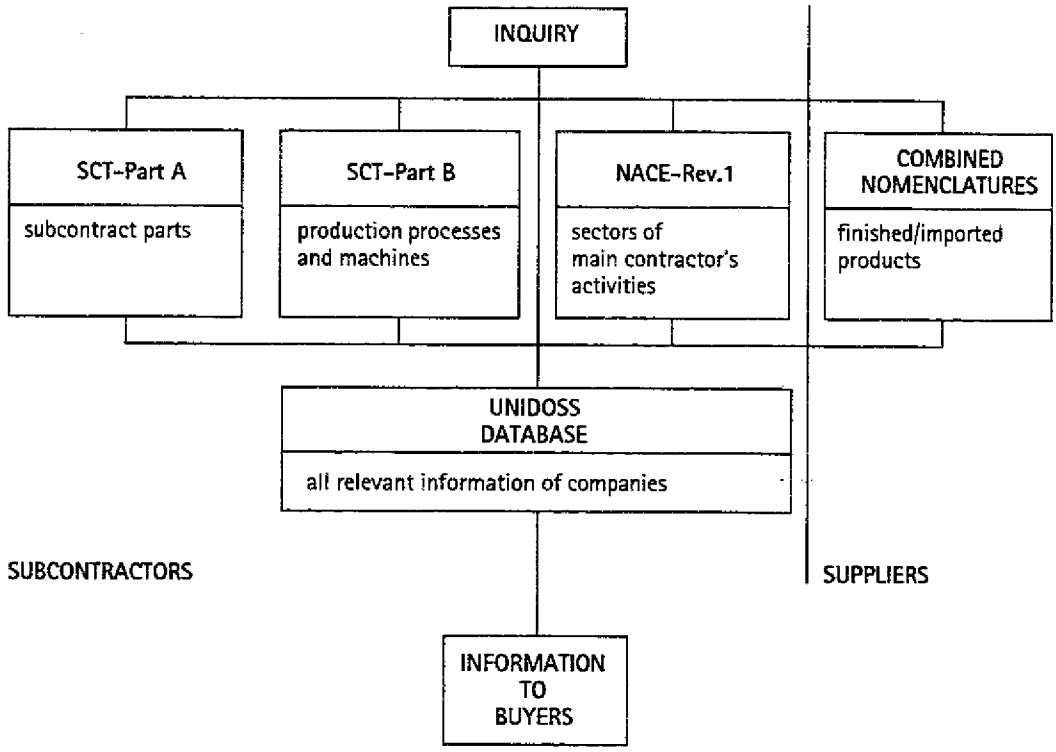
Updating information on enterprises.

Visits to enterprises are the real driving force of the SPX; the more visits are made, and the more convincingly the arguments are presented, the more opportunities will be detected and consequently the more assignments will be found for the engineers/executives.

### B. *As in data Bank*

This is set up and processes the forms (or questionnaires) prepared by the engineers/executives or key staff during their visits to enterprises. The action to be taken comprises, among other things, filing and coding information according to the nomenclatures used and storing them in the UNIDOSS data bank, as shown in the following diagram:

Schematic diagram of the nomenclatures adopted by UNIDO and their application by subcontracting and partnership exchanges




## S. *As in Speciality Subcontracting*

This involves inquiries received or elicited by the SPX and their processing according to the methodology advocated. They must have priority in the concerns of the engineers/executives.

## C. *As in Available Capacities*

This involves an occasional survey, carried out three times a year as a rule, the purpose of which is to ascertain the machine-hours available in equipment that is not fully utilized and to disseminate such information. This operation makes it possible to monitor the development of the general, sectoral or subsectoral situation. It reveals overcapacity and by comparison under-capacity.

## I. *As in Technical Information*

This involves answers to the questions: Who makes this or that? Who is the agent for such and such a product? What does ... mean? This information is essentially related to technical and industrial services. Technical documentation is compiled in this section, comprising entries from two sources: that of suppliers' catalogues, obtained through action by the SPX and from a mini-library of technico-economic reference works, reviews, magazines and periodicals, for which subscriptions are taken out, and from yearbooks of all kinds.

### M. As in Second-hand Machines, Material and Equipment

Enterprises often have machines in more or less good condition which are out of use and could be of service to other enterprises, either in their current condition or as a source of spare parts or to produce special equipment. There are also accessories and materials that are not in use and unused stocks of materials. The compiling and distribution by the SPX of this type of information can provide services in two ways, first of all to the owners of the stocks, to clear storage space and earn money, and then to the purchasers, who can satisfy their needs on interesting terms.

### P. As in Partnership

According to the definition used by UNIDO, which applies to subcontracting linkages, the role of this section is to search for and match potential partners at the different levels possible, namely, provincial, national, regional, and international, on the basis of existing networks, other SPXs, Chambers of Commerce and Industry, etc. The UNIDOSS system includes a specific worksheet on partnership.

### D. As in Development

The issue here is to exploit the data on enterprises gathered in the framework of operating the SPX, either through the inventories and surveys or as the result of searches made following inquiries, by analysis of import statistics, or by the creative thinking of the engineers/executives. In this context, the SPX may take the initiative either by passing information to the existing structures, which could take charge of the problem detected, for example, a special technical training course, or by promoting the creation of a specially constituted Economic Interest Group, say, for supplies, or by setting up a specific scheme, such as a numerical control club, etc. The "analytical" function of the UNIDOSS software is useful for this purpose. Furthermore, owing to its potential, the SPX can intervene so as to provide advice, arbitrate on disputes, intervene as a mediator, and prepare expert opinions.

### F. As in Fairs, Exhibitions, Training, Education, Promotion

This category of services includes the publication of newsletters, circulars, and possibly yearbooks, the organization of awareness seminars or training courses, in appropriate workshops, the organization of participation in fairs and exhibitions in the country or abroad and in certain cases the organization of a specialized subcontracting and partnership exhibition in the geographical zone served by the SPX.

UNIDO has developed a standard event combining five main themes:

Subcontractors who present their know-how, (normal exhibition)

Main contractors who present their needs, (exhibition in reverse)

Others who are seeking strategic alliances, (partnership)

Industrial services

A space for the presentation of technological innovations concerning a particular subject (for example: laser cutting).

## C. The role of checklists

For each of the elements in the range of services rendered by the SPX, it is necessary to set up machinery that makes it possible to deal with the problem, by proceeding

rapidly and efficiently, leaving as little as possible to chance. The procedures developed by UNIDO in this field comprise:

- A checklist which makes it possible to verify whether the inquiry is complete in all respects,
- A schedule that defines the timing of the operations to be carried out.

All of these instruments are included in the UNIDOSS operational and analytical system and its software. When all engineers/executives properly assimilate this method, they can reply with precision, and at any time, to any inquiry from an enterprise. There is nothing more disappointing for an enterprise which applies to an SPX than to receive the reply that it will have to await the return of staff engineers who are absent on duty or for personal reasons.

## D. The standardized tools

UNIDO has developed a number of standardized tools, which have the advantage of harmonizing relations between the various users and correspondents. A particular product, machine, or technical operation therefore has the same definition, whatever its location, thus making possible clear lines of communication:

The survey forms or questionnaires, (see annex),

The coding nomenclatures for entering in the (UNIDOSS) data bank,

The UNIDOSS analysis and operating system,

All the operating tools, work sheets, standard files, filing of the documentation, etc.,

Legal aspects (the key clauses of contracts and standard contracts),

Specialized subcontracting exhibitions (the guides prepared on this subject),

And so on.

## E. Operational log (and the workload)

The principal indicator of the SPX's activity is the registration of the various concrete cases and mail exchanged through the post or by fax. Here it should be pointed out that all the actions of the SPX, through visits or by telephone, must be confirmed in writing. This requirement does not in any way involve extra work, since on the one hand modern word-processing facilities are available, and on the other hand time is gained by proper organization of the work done, independently of time management, which has an important place in the strategy and development of the SPX.

The operational log shows the activities and productivity of the SPX which are the justification for members' subscriptions and the contributions of the government authorities and professional organizations and for preparing the quarterly report on the SPX's activities. In parallel, it also makes it possible to justify the creation of posts for staff engineers or other staff.

The needs of the SMEs/SMIs are such that there will be great demand for the services of the SPX. It must take care particularly to avoid trying to do everything itself and dissipate its energies endlessly so that it would finally no longer render the services for which it was set up! The follow-up provided by UNIDO has many times made it possible to refocus the activity of SPX managers, who were carried away with their own enthusiasm and had prepared a programme that it was impossible to carry out in view of the workload induced!

# V. The survival of SPXs

SPXs are like enterprises: they are born, they live, and they die. Some have a long life (such as the SPX at Nancy, which was one of the first to be set up in 1961), while others die young. Others again are reborn from their ashes and live a second life after 10 or 15 years of lethargy (such as the Istanbul SPX).

The causes of mortality are well known and the conditions for survival can be summarized as follows:

## A. The staff of the SPX

If the staff of the SPX can respond precisely and rapidly to inquiries from industrialists, provide reliable solutions, imagine new alternatives and practical innovations, then the first condition for the success and therefore the survival of the SPX is assured. Consequently, the SPX staff must receive remuneration and career development prospects commensurate with their professional experience and qualifications. Otherwise, they will receive more attractive and better paid offers of employment from enterprises and will leave the SPX (after having received excellent training there and after having made the acquaintance of many industrialists). That is indeed the main cause of mortality among SPXs.

## B. The institutional basis of SPXs

At the outset it should be reiterated that the SPX is above all an association of industrialists for industrialists, operating on a non-profit basis, enjoying complete autonomy, but having the government authorities and professional organizations among its membership, and being managed by a team of qualified engineers, specially trained in this profession.

- Experience shows that SPXs incorporated in Ministries of Industry and public bodies are monopolized by the State, cut off from their industrial base and thus doomed to disappear. This method of setting up an SPX in a ministry or a public body should be considered only as a transitory start-up stage before the SPX is transferred to the private sector, preferably on an autonomous basis.
- SPXs incorporated in private sector institutions such as Chambers of Commerce and Industry, Federations of Industries, professional or sectoral associations can survive when the special nature and the necessity of their mandate are recognized and they are granted operational autonomy. They are then considered as specialized services offered by the Chamber or Association to its affiliated enterprises or members.
- However, the complete autonomy of the SPX is the most appropriate and durable institutional form. The exchange is then an association of industrialists with an autonomous budget and operational structure, managed by a Board of Directors (or National Board), which should be made up of all organizations/institutions/associations, public or private, that are concerned with or interested by or in industrial subcontracting, sourcing and other forms of inter-enterprise relations. Moreover, the affiliated enterprises themselves should also be widely represented on the Board and should possibly even take over its management.

For these reasons, UNIDO proposes "legal statutes for the establishment of autonomous SPXs" as a standard tool intended to ensure the necessary sustainability of the SPXs (attached as an annex). An analysis of the sustainability of SPXs according to their degree of institutional and financial autonomy has been conducted for the SPXs in Latin America and is summarized in a comprehensive table.

## C. Financing modalities for SPXs

Here also, experience shows that when financing comes exclusively from a single source, the SPX tends to disappear. An SPX financed exclusively by a Government becomes a department of the civil service and is rapidly isolated from its industrial base. The same development is found with SPXs entirely subsidized by UNDP or under bilateral aid programmes. Moreover, SPXs financed exclusively by affiliated enterprises, on the erroneous assumption that they constitute remunerative operations (generating profits), will be rapidly absorbed by other more remunerative activities, which will be more profit-oriented, and will abandon specific subcontracting promotion activities.

Hence, in line with the tripartite participation proposed for the composition of the Board of Directors, it is proposed that financing contributions be obtained from:

- State or government authorities, in recognition of the SPX's contribution to the national economy,
- Professional or industrial associations and federations, in recognition of the contribution to the development of the private industrial sectors concerned,
- Affiliated enterprises themselves, in recognition of the contribution to their own growth, productivity and competitiveness,
- In addition, the SPXs should provide various income-generating services, to both members and non-members, such as:

  Participation in international subcontracting and sourcing fairs and exhibitions and partnership forums,

  Training seminars and conferences,

  Market studies (national and international),

  Sectoral studies on needs and incentives for investment,

  Technological and management quality evaluation (ISO 9000) and technical assistance required,

  Legal assistance and advice in relation with contracts, disputes, taxation, etc., but the SPXs should never finance themselves by means of commissions charged on contracts concluded (with the risk of serious undesirable development in the professional and ethical respects).

However, none of these four sources should have a dominating position.

Ideally, each of them should account for at least 10% and at most 50% of total financing.

## D. Flexibility and adaptability of SPXs to changes in conditions and the environment

It is sometimes claimed that the SPXs have fulfilled their (temporary) role and tend to disappear when all the industrial enterprises in the region or zone covered by the SPX are mutually acquainted.

That may be so in certain cases, but usually it is not entirely true, because:

- Manufacturing capacities and competences of enterprises incessantly change,
- New enterprises, with new technologies and new processes, come on to the market and wish to undertake subcontracting operations,
- Export markets become accessible through the SPX,
- New forms of enterprise collaboration emerge (partnership, strategic alliances, licence and market agreements, etc.) for which the SPXs may play a unique and privileged role.

It is therefore up to the SPXs to adapt to change, to innovate and to discover new niches, new services, new markets and new customers, in order to justify their existence and ensure their survival.

*Part five*

# The stages of establishment

# I. How to establish an SPX

The experience accumulated by UNIDO through its action in various regions of the world shows that it is important to proceed in progressive stages to succeed in the sound and durable establishment of a rational subcontracting and industrial partnership organization. It is highly inadvisable to rush through the stages or to miss one or other of the sequences envisaged, otherwise difficulties will be encountered that would seriously endanger the expected results. The old saying that time does not respect what is done without respect for time ... is inexorably verified. The mobilization of finance requires the construction of a substantiated case, which can be prepared only after serious study and thought. The mobilization in the country of the dynamic elements concerned, in order to rally them to a common cause makes necessary an in-depth awareness campaign, which inevitably takes time.

While the basic principles that govern the establishment and operation of an SPX remain untouched—whatever the geographical sectors in question—institutional and structural arrangements must be adapted to the special context of each country.

## A. Feasibility study

The first action consists in conducting a feasibility study, which takes the following course:

- An expert is sent to a country with local support to prepare the necessary meetings and to guide them (and put the message across) in the field. Two to four weeks should be spent in the field, in addition to the time necessary for the preparation of a technical report drawing the first conclusions and formulating recommendations for the subsequent stages, or, if such action proves impossible, stating the reasons why the establishment of a subcontracting and partnership promotion and organization centre is not feasible or not justified.

The feasibility study comprises:

### *Taking into account the country's industrial development strategy*

This entails a review of the priority sectors defined, the texts promulgated for that purpose, the resources applied and earlier and ongoing assistance.

### *Analysis of industrial data*

First of all it is necessary to survey macroeconomic and statistical data and to identify specific parameters, such as:

- The number of enterprises and a breakdown by professional and geographical sectors,
- The size of the labour force, quantity and quality of production,
- Identification and role of support structures of every kind for the SMEs/SMIs, advisory services, information networks, etc.,

- Specific information on the engineering and metallurgical industries sector and its sub-sectors,
- Analysis of existing data: production, technologies, organizations, location, subcontracting volumes and national and international flows. Determination of the degree of integration of production,
- Determination of factor costs: remuneration of staff, price of energy, transport, particularly air freight, taxation, etc,
- Customs: existence or non-existence of statistics, relevant nomenclatures, dues and taxes on subcontracting,
- Taxation: taxation regime, tax base (production, value added), rates and amounts, any exemptions and tax incentives,
- Social welfare costs: for enterprises and employees, nature, amounts, modalities, payments,
- Access to finance: conditions to be met, rates charged, beneficiaries, guarantees, other aspects of the banking and credit system,
- Vocational training: number, size and curricula of schools, institutes and faculties training engineers and technicians. Permanent training programmes, refresher courses, etc., including any private technical schools,
- Legislation on non-profit associations, statutory provisions and regulations,
- Inventory of professional organizations in all industrial sectors and search for and compilation of documentation obtained from professional organizations, Chambers of Commerce and Industry, employers associations, federations of industry, associations of engineers or heads of enterprises, etc.

## *Consultation of the dynamic elements in the country*

By interviews and dialogue, including the following subjects:

- Presentation of the rational organization of subcontracting on the UNIDO model to:

  The government authorities concerned, responsible for industry, the economy, the SMEs/SMIs, vocational training, decentralization or organizational structures of the territory, the development plan or strategy, etc.

  The professional organizations, institutions, and structures in the SMEs/SMI environment.

  The enterprises: the main contractors and existing and potential subcontractors.

- Overall identification of subcontracting needs and opportunities or services to be rendered by a subcontracting/partnership organization.
- Compilation of suggestions, comments and recommendations.
- Surveys of the resources needed to finance operations:

  Subscriptions of enterprises.

  Contributions of professional organizations.

  Subsidies from the government authorities.

## *Exploring the possibilities for financing a specific SPX establishment project*

This entails detecting whether there are real possibilities for successful action of a national inquiry permitting the mobilization of funds to carry out, either globally, or in several progressive and complementary phases, a technical cooperation project for the establishment by UNIDO of a Subcontracting and Partnership Promotion Centre (or Exchange) (SPX).

## *The search for potential and operational counterparts to participate in preparatory assistance and in the establishment of the SPX*

On the assumption that feasibility is assessed positively, it is important, from the feasibility study stage, to establish benchmarks for exploring the possibility of later assistance by existing institutions that are capable of serving as the logistic base for the execution of the preparatory work of establishing a subcontracting promotion and organization centre in the country. One of the institutions that might provide reliable support should be chosen to perform a pilot function. That choice demands great care, for it will very largely condition the subsequent operations.

It should be stressed here that what is involved is a working basis for creating a subcontracting and partnership promotion body and not the integration of that body in an existing institution. The latter option cannot be envisaged, for one of two situations will apply: either the host structure will be correctly performing its function and will be unable to dissipate its energies by undertaking activities as specific as those of an SPX, or it will not be performing its functions. In that case why should the particularly difficult tasks of an SPX be entrusted to it when it is not achieving its own targets?

On the other hand, a factor that should be borne in mind is the reasons for which certain institutions do not function correctly. They can easily be identified and as a rule are mainly:

- Insufficient autonomy: the institutional framework is a straitjacket and the managers cannot take responsibility,
- Mediocre competence of the managers: recruitment for reasons of complaisance with terms of reference that are too vague or even non-existent, the result of which is that services rendered are notoriously inadequate,
- Lack of motivation resulting from a level of remuneration that is incompatible with the required competence, working hours and the responsibilities to be assumed.

The choice of the manager of the pilot counterpart is also a vital decision, because he will accumulate, during the preparatory work, experience that it would be desirable to turn to account and exploit in the framework of the structure to be created.

## *Summary budget estimates*

- Equipment and the logistic infrastructure,
- Start-up and launch,
- Staff training,
- Operational functioning, taking existing structures into account as far as possible. (See also the investment, establishment and training budgets in annex 5.)

## Conclusions

These constitute a reasoned diagnosis based on:

- ❒ The genuine political will of the government authorities,
- ❒ The recognition by the local operators of the economic issues at stake,
- ❒ The spirit of enterprise of the main contractors and the subcontractors,
- ❒ Matching potential or needs, and
- ❒ Prospects for raising the necessary finance.

## Recommendations

Accompanied by the following:

- ❒ The proposal of a national counterpart for piloting the project,
- ❒ The proposal of a subcontracting and partnership promotion structure suited to the country conditions,
- ❒ Proposals for institutional arrangements, namely:

### a) National Subcontracting and Partnership Commission

Composition—Terms of reference—Operation—Targets

### b) SPX in the form of a non-profit Association*

Aims:

Statute—internal rules—organizational chart according to one or other of the three options described in Part four, (III. Structural aspects)

Structural definition:

Size—number of affiliates

National and international network

Premises and materials

Operational definition:

Geographical coverage

Field of operation—sectors concerned

Field of operation—range of services

Definition and assignment of tasks to the necessary staff

Budget and monitoring (audit) and evaluation machinery (see Standard budgets in annex 5)

# B. Preparatory assistance

The objective in this second phase is to organize, with the assistance of the national counterpart, a structure suited to the country conditions, in the geographical sense, taking into account the distances involved, the location and number of the operators concerned, main contractors and subcontractors, and also the SME/SMI support and environmental structures, and to prepare the corresponding plan for concrete action.

*It should be reiterated that the SPX is a non-profit association of industrialists, for industrialists, endowed with total autonomy but incorporating the government authorities and the professional associations, and managed by a team of qualified and specially trained engineers.

The expert who conducted the feasibility study undertakes a second mission of a duration equivalent to the first, and performs the following tasks, in coordination and collaboration with the counterpart chosen:

- *The choice and designation of a national to be responsible for the project,* or a competent, organized, active and motivated staff member who is familiar with the operators concerned in the project (see the terms of reference in the annex).

- *Initiation and documentation of the counterpart with initial training* on the strategy of the project, whose vectors are:

  Awareness-creation among all the parties involved,

  Promotion of the idea of industrial subcontracting and partnership,

  Coordination and dialogue with potential operators,

  Coordination and harmonization with existing structures,

  Execution according to the UNIDO Guide.

- *Individual awareness-creation and consultation visits* to potential operators:

  Government authorities,

  Professional organizations and quasi-public institutions,

  Enterprises (main contractors and subcontractors).

Talks take place at three principal levels:

1) **Presentation by the expert of the advantages of subcontracting** in a development plan for the national economy, the professional sectors, the enterprises, and the government authorities. He outlines and comments on:

  The place of subcontracting, a universal development vector,

  UNIDO's experience in the promotion and organization of industrial subcontracting and partnership,

  Partnership, and its definition for SMEs/SMIs,

  The design, organization and role of an SPX, according to the UNIDO concept,

  The prospects of implementation for the country.

2) **Compilation of data**

After making this presentation, the expert will gather information as well as the opinion of his contacts with regard to the idea of participating in creating a body for the promotion, organization and development of subcontracting and partnership in the country, and in particular will solicit the opinion of the contact persons consulted, regarding:

  The advantage, to them and to the country, of creating an SPX as presented,

  The formulation of remarks and suggestions,

  The possibility that they would become members of the National Coordination and Organization Commission which is to be envisaged, prior to the establishment of an SPX in the form of an association,

  Their intention to become founder members of the SPX and to pay subscriptions to it,

  Their possible candidature for membership of the Board of Directors.

3) **Compilation of documentation**

The lack of documentation is a major obstacle in communication, information and training and consequently productivity. It is therefore necessary—in this case—to make arrangements to remedy the matter, at least partly, by means of the SPX "Information and Documentation" service.

The existence or non-existence of specific documentation in an enterprise is a significant indicator. The existence, non-existence or inadequacy of technical documentation in organizations, institutions and teaching establishments is another significant factor. The same applies to the existence or non-existence of economic and technical publications in bookshops and kiosks.

## Organization of a coordination meeting

Persons who replied positively to the previous approach will be invited to the meeting by the pilot counterpart. The agenda will comprise:

- Approval of the operational model for an SPX in the country.
- The approval of the relevant income and expenditure budgets and in particular determination of the subscriptions of enterprises,
- The drafting of appropriate statutes, on the basis of the standard statutes proposed by UNIDO (see annex 3),
- The preparation of an assembly of founding members,
- Preparations for coopting a Founding President.

The choice of the President cannot be left to the inspiration of the moment. One of the criteria of success is a dual system—an honorary President and an appointed manager—complementary and dynamic.

In the case of the President, one of the following two options must be chosen:

- Either a President chosen among the notables, whose reputation and prominence immediately confer an image of respectability on the SPX. In this case, the President is a personality whose schedule of work does not permit him to follow continuously the operation of the SPX and therefore to cooperate regularly with the manager. That role will be delegated to an industrialist working as the Secretary-General of the Board of Directors,
- Or a President chosen from among the young active heads of enterprises, not yet having responsibilities outside his enterprise, thus making him suitably available to represent the SPX with government departments, institutions and other professional organizations, in order to relieve the manager of these tasks.

If such a division of responsibility is not possible, the task of the manager would be too demanding and the personnel structure of the SPX would have to be strengthened to cope with the resultant workload.

## Organization of a constituent meeting: the Constituent Assembly

Persons who have declared their willingness to stand as founding candidates during the previous meeting will be invited. It will then be their task:

- To adopt the legal statutes of the **Association** and designate the head office;
- To elect a **Provisional Committee** (or a small Board of Directors), which becomes the official representative of the Association, consisting of a Chairman, a Vice-Chairman, a Secretary and a Treasurer;
- To appoint an **interim secretariat**. The newborn Association, not having any resources to begin with, takes the decision to entrust the logistical aspects of its operation to a provisional secretariat capable of providing a standby service. This function is normally delegated to the pilot counterpart chosen previously;
- To draft financing requests. The Association constituted entrusts to its interim secretariat the task of drafting and presenting—on its behalf—requests to poten-

tial donors to obtain the necessary finance for the establishment of the structure defined (the SPX). The existence of the Association is clear proof of the commitment of the national parties involved and of the determination of the industrialists to contribute to it. This constitutes a much more credible assurance for the donors than a declaration of intent from a more, or less, recognized or a more, or less, suitable structure;

- To adopt transitional provisions pending the mobilization of the necessary funds for operational establishment. To the extent that the funds raised for preparatory assistance so permit, transitional provisions may be drawn up so that the actual start-up of the SPX can take place, with a skeleton structure consisting of:

  One manager/male or female (engineer),

  One senior technical deputy,

  One personal assistant who would later constitute the hard core of the fully operational structure.

## *Organization of an Awareness Forum for industrialists*

Under the patronage of a prominent national personality—for example, the Minister for Industry or for the SMEs/SMIs—and in the presence of representatives of potentially interested international organizations (World Bank, UNDP, UNIDO, etc.), all the heads of enterprises and the senior staff of support organizations and institutions for SMEs/SMIs, the members of associations of industrialists, students at engineering colleges, representatives of the press, radio and television, etc. will be invited to a National Forum on industrial subcontracting and partnership.

That event will be organized by the pilot counterpart, with the following programme:

- Address by the Minister acting as patron for the meeting,
- Presentation of the work by the previously designated President of the SPX,
- Presentation by a senior UNIDO expert on subcontracting and partnership,
- Questions from the floor and replies by the promoters of the SPX and the UNIDO expert,
- Conclusions introduced by the representative of one of the international organizations prepared to provide support for the establishment of the operational structure.

The number of participants, and the number and scope of the statements constitute a life-size test. It is also a very efficient means for direct awareness-creation among the persons present and for induced awareness through the media fall-out. Checking off against an attendance list enables the staff of the SPX to prepare subsequent personal contacts with the Forum participants.

## *Preparation of a project document for the execution of the subsequent phases*

On the basis of the affiliation of heads of enterprises and of the founding bodies, and as well as of the number of persons attending the Awareness Forum, the national counterpart can formulate on their behalf requests which are much more significant than if they came from isolated institutions, however worthy of note the latter may be. It is also on the basis of genuinely detected and expressed needs that a project document can be drafted that will serve as a guide for implementation of subsequent phases, on the lines demanded by the donors approached.

### *Consultations in preparation for the recruitment of permanent staff*

In the light of the terms of reference based on the operational configuration of the SPX and of the profile required (see annex 5), the national counterpart, in coordination with the UNIDO expert, can commence consultations to explore the various possibilities of recruiting permanent staff for the SPX as well as national consultants, in particular for the purpose of determining the scale of remuneration to be introduced in the light of the national structure of salaries and the labour market. At this stage, some caution should be exercised, neither undertaking premature poaching of staff, which would not be well received by the enterprises concerned, nor holding out false prospects of positions which could not be fulfilled in the event of difficulties in raising the required finance.

**Results**: All the elements necessary for starting up a subcontracting and partnership promotion body (SPX) are to hand. In certain cases, preparatory assistance may lead to the actual start-up of services to enterprises with a transitional small staff structure.

## C. Assistance in the establishment of the SPX

As defined in the project document, the procedure for commencing activities, with the assistance of international experts, will proceed in the following sequence:[1]

- For the permanent staff, and in coordination with the national consultants, who themselves are trained according to their specialities, the international experts,
  - Soliciting candidatures for the staff of the SPX,
  - Tests and selection of the candidates,
  - Recruitment under contract,[2]
  - Initial training (and trial period), and later
  - Application of the continuous training programme, locally and abroad.[3]
- For logistics, in coordination with the pilot counterpart and the manager of the SPX:
  - Search for and choice of premises,
  - Choice of equipment and supplies,
  - Preparation of maintenance contracts,
  - Installation and start-up.
- Practical demonstration in the field

  Initiation and testing of the staff recruited regarding the principles governing the SPX, the range of services rendered and the use of standardized instruments, with the international experts and national consultants, by speciality:
  - Subcontracting nomenclatures and terminology,
  - UNIDOSS software, management of the data bank,
  - Financial management of the SPX,
  - Quality assurance and certification,
  - Organization of and participation in fairs and exhibitions,
  - Technical information and documentation service,
  - Legal aspects, standard contracts, etc.

The objectives, the results expected, the technical assistance activities to be carried out, the contributions in cash and in kind, prior conditions, etc. are described in detail

[1] See (*1*) page 87.
[2] See (*2*) page 87.
[3] See (*3*) page 87.

in the specific project documents, which serve as a legal agreement between the country of establishment of the SPX, the Executing Agency (UNIDO) and the donor. Standard project documents already exist, moreover, and are therefore not reproduced in this Guide.

### *(1) Remarks concerning international experts*

The recruitment of experts for long-term assignments abroad is a very doubtful practice. Most experts cannot afford long interruptions in their existing activities and responsibilities, and thus cannot honour commitments of this nature. However, in this case, the question of (two-way) journeys arises. On the face of it, one might think that planning for long-term missions would make it possible to reduce expenses under this budget item. The reality is quite different. Experience with long-term contracts has shown that the expert often tends to replace his counterpart in carrying out the activities envisaged. After his departure, the counterpart, who has not gained the necessary experience, is in difficulty and the project very often collapses.

If the expert abides by his role as a trainer, he then tends to proceed at the counterpart's pace. Therefore, his "cost of production" in terms of the results achieved is very high. That is why it is preferable to assign experts for short-term missions for the following tasks:

- ❒ Planning and organization,
- ❒ Training and demonstration.

They then leave the counterpart to work on his own. After a previously agreed period (two to three months), they return in order to:

- ❒ Monitor the activities performed,
- ❒ Make corrections if necessary,
- ❒ Proceed to a subsequent stage of training and demonstration,
- ❒ And so on.

Proceeding in this manner, 6 m/m, for example, can be spread over three to four years, which is the minimum period for the establishment of an SPX, in a favourable context.

### *(2) Remarks concerning staff recruitment contracts*

For legitimate protection of the financial and intellectual investments of the SPX, its staff must be recruited under contracts stipulating a loyalty clause of at least three years' service after the training period. Any premature departure would entail the payment of compensation equivalent to the cost of the training received, indexed with an amortization coefficient.

### *(3) Remarks on training the staff of the SPX*

This training comprises:

- ❒ Courses for initiation in major functions in the area of subcontracting and partnership (quality, strategic alliances, cost of production, offsetting, value analysis, legal aspects, etc.),
- ❒ Study tours to operational SPXs and participation in local, regional, or international fairs and exhibitions.

This training must be spread out over time in order to permit on the one hand reliable and consistent assimilation of training and on the other hand so as not to hamper the permanent operation of the SPX. The training system must operate on the basis of short courses.

## D. Assistance for operational functioning

In the course of the work, a great variety of concrete cases and special situations arise in the work, which may create problems for the management staff. Furthermore, the range of services rendered cannot be assimilated and mastered in a short period of time. To deal with that situation, it has been verified in the field that the training cycle must be spread over several years, in the same way as the specialization studies that high-tech engineers will undertake after obtaining their basic diplomas, for example, in aeronautics, ship construction and mechanical welding.

In the case of a structure for the organization of subcontracting, training is carried out in the field. The activities comprise:

1. Visits for:

   Awareness,

   Surveying,

   Soliciting membership,

   Detecting opportunities.

2. The analysis of inquiries and the processing of the opportunities detected, according to their nature:

   Application of the checklist and follow-up of the guiding principle.

3. The recruitment of members, and the operation of the Association, the Management Committee, the Board of Directors, and the Annual General Meeting.

4. The management of the data bank and the technical rosters:

   Follow-up action on membership management (new and existing enterprise members),

   Financial management,

   If the SPX plays its role properly, the loyalty of the enterprises, through their regular subscriptions, constitutes the most reliable guarantee of survival.

5. The promotion of the SPX and of the concept of subcontracting and partnership, by the organization of training events and information events for enterprises:

   Seminars—forums—conferences—participation in specialized fairs and exhibitions, the organization of a national subcontracting and partnership exhibition.

**Results**: An autonomous SPX, whose sustainability is confirmed by its results, that can serve as a pilot model for the creation of other bodies in the country, when economic and geographical conditions so require.

## E. Assistance and support for subcontracting SMIs

In addition to assistance to subcontractors, potential partners or suppliers in the organization of production clusters or associations and the negotiation of agreements with main contractors, as has been recommended by two expert group meetings organized by UNIDO, the new generation of SPXs provides subcontractors and suppliers with multi-disciplinary information and assistance in fields such as:

- Technical support (design of products, technology, equipment, innovation);
- Total quality management, standards and certification;

- Market studies and commercial strategies (including participation in international fairs and business promotion forums);
- Access to credit and financial incentives and facilities;
- Management (modernization, flexible manufacturing and just-in-time production management, financial management, management of stocks);
- Advice on legal matters (contracts, codes of conduct, conciliation or settlement of disputes);
- Management of human resources (training).

This assistance and information can be provided directly—in the form of studies, advice, training, awareness seminars and industrial fairs—or the enterprises can be referred to the competent specialized bodies.

## Conclusion

What is true of all other innovative ventures also applies to industrial subcontracting and partnership: they often encounter great resistance to change. This is the area in which there are the greatest difficulties in creating awareness among and in motivating the owners of SMIs, who often have an individualistic temperament, and the executive staff of large enterprises, who place their reliance on the number of their staff and the volume of the resources placed at their disposal to consolidate their positions.

"Have it made or make it yourself" that summarizes the issue at stake (the buy or make decision).

To illustrate the reluctance expressed, it should be pointed out that in all the regions of the world, in every country and every province, the opinion-leaders contacted tend to reply a priori: You know, here, we are in the East, the West, the South, the North, etc.—and we have a different mentality.

You know, here, subcontracting and partnership cannot be envisaged owing to the prohibitive prices charged, mediocre quality, highly unreliable delivery dates.

You know, here, geographical and macroeconomic difficulties are so great that they paralyse any idea for real development.

Special circumstances do in fact exist, almost always of economic origin, such as the transition from a more or less planned economy to a more or less free market economy, with varying degrees of privatization. They are no justification for departing from the basic principles presented above, and at most they require adaptation which cannot be explained in advance in this Guide. The Guide therefore has no other ambition or purpose than to state these fundamental principles, which remain universal and unchanging and are therefore generally applicable to all economies, given the required adaptation.

In fact, the laws of economics induce imperious needs that apply to all without exception. Competitiveness, productivity and profitability demand rationalization, quality, innovation in anything and everything. Subcontracting and partnership are powerful and efficient vectors for this. Those who can adapt to these demands—the main contractors and the subcontractors—will have an assured future, and those who ignore them will irremediably disappear. This document is a simple guide, but professional training is still necessary. Familiarity with the instruction manual of an aircraft does not mean that one is capable of flying it. The Guide shows the right path, it is susceptible of improvement, and UNIDO is the appropriate teacher (or coach) for helping to prepare and create modern SPXs, suited to special needs.

The very best data banks in the world cannot replace the role and the mission of the engineering staff of an SPX. Computerization and information highways are valuable and efficient tools or even the management tool *par excellence* for this activity. However, they will never be able to replace critical analysis, practical work, research, reflection, innovative solutions and the professional genius of the human race.

# *Annexes*

# Contents

# ANNEX 1 Bibliography (documentary sources)

The list of books, reports, papers and other publications to be part of a bibliography on the subject of industrial subcontracting is not being included here since this Guide does not result from a theoretical survey but from the practical experience acquired by the authors. Thus all the publications and other bibliographical documents which they have come across during their professional experience are part and parcel of that practical experience. In this way, the Guide also reflects the experience acquired by UNIDO through all the technical surveys and final reports established by UNIDO experts in the field in various parts of the world upon their interventions related to the establishment of SPXs in developing countries and in economies in transition. Within a comprehensive bibliography, one should also include the surveys and information provided in numerous publications, papers and articles published by academic and research institutions. Such a list would be unusually long and dull.

On the other hand, the list of UNIDO methodological documents on this subject is given here as reference:

1. Leaflet on Promotion of Industrial Subcontracting and Partnership (E, F, S*)
2. Report on UNIDO Expert Group Meeting on Industrial Subcontracting Exchanges and Policies, Vienna, 22-24 May 1991 (E, F, S)
3. Report on UNIDO Expert Group Meeting on Chambers of Commerce and Industry, Vienna, 5-7 July 1993 (E, F, S)
4. Report on Expert Group Meeting on the UNIDO Industrial Subcontracting System (UNIDOSS) and Partnership, Vienna, 20-24 June 1994 (E, F, S)
5. Report on the second Expert Group Meeting on UNIDO Industrial Subcontracting System (UNIDOSS), Vienna, 8-10 November 1995 (E, F, S)
6. Industrial Partnerships (with a view to more lasting, equitable and modern industrial subcontracting relations) by C. Altersohn, 1993 (E, F, S)
7. "To Make or to Buy?—To Manufacture or to Subcontract?" (V.8790987) (E, F, S)
8. Proposed Legal Statutes for an Industrial Subcontracting and Partnership Exchange (V.908045774e) (E, F, S)
9. Notebook for the Practical Use of Appropriate Terminologies/Nomenclatures for Industrial Subcontracting by C. De Mars (E, F, S)
10. The Standard Questionnaire for Collecting Information from Main Contractors and Subcontracting Enterprises, 1996 (E, F, S)
11. Practical Guide for Subcontracting Agreements with model contracts by J. A. Boon and M. Souhaité, 1992 (E, F, S)
12. Practical Guide on the Organization of Subcontracting Fairs, by J. M. Detoubet, 1985 (E, F)
13. Practical Guide on how to participate in Industrial Subcontracting and Partnership Fairs, by F. Theux, 1993 (E, F)
14. International Directory of Industrial Subcontracting and Partnership Exchanges, 1993
15. Note describing UNIDO's computerized Subcontracting System (UNIDOSS), (E, F, S)
16. The User's Manual on UNIDOSS software versions 1.2.3 and 2, by J. C. Montes, July 1996 (E, F, S)

*E (English), F (French) and S (Spanish) means the documents are available in those languages.

17. User's Guide on the UNIDO Subcontracting System UNIDOSS V-2, by J. C. Montes, 1996 (E, F, S)

18. The SPX Club

19. Note on the Sustainability of SPXs, May 1996, (E, F)

20. Comparative Study of the Promotional Framework for the Development of Industrial Subcontracting with the SSIs in India and Selected Asian Countries, DP/ID/SER.0, 26 July 1996 (V.96-84995) (E)

21. Demo diskette on UNIDO Programme for the Promotion of Industrial Subcontracting and Partnership, June 1996 (E, F, S)

22. Video-cassette (18 minutes) on UNIDO experience in establishing Subcontracting and Partnership Exchanges (COL, PER, TUN), (E, F, S)

23. Report of the Programme Evaluation of UNIDO Programme for the Promotion of Industrial Subcontracting and Partnership, Vienna, GM/R.6, 4 October 1996 (V.96-86399)

24. "Analysis of Practical Case Studies on Industrial Subcontracting and Partnership" by D. Garrigos and A. de Crombrugghe (E)

25. "Business Code of Conduct for Industrial Subcontracting and Partnership Relations", Vienna, 1997

26. "UNIDO Global Experience on Industrial Subcontracting and Partnership" by A. de Crombrugghe and J. C. Montes, paper presented at the "Business Development Services Conference" organized by the Donor Committee on Small Enterprise Development, Rio de Janeiro, March 1999

27. UNIDO SPX Web-page available in E, F, S on the Internet: http://www.unido.org/spx

## YOU ARE A MAIN CONTRACTOR:

You are looking for:

- Equipment
- Specialized skills
- Special know-how
- Immediate availability
- Better quality
- A technical reply and information service.

## You are a subcontractor:

You are looking for:

- Market opportunities
- Ideas for diversification
- Specialization sectors
- Additional skills
- A technical reply and information service.

## TO SUM UP:

**You need an intermediary:**

**DO NOT HESITATE TO CONTACT THE SPX**

## Have you at least once a year:

- ☐ 1. Complained of your lack of equipment to meet demand?
- ☐ 2. Discovered that you were over-equipped in terms of your real needs?
- ☐ 3. Wasted an hour searching your documentation without finding the information you were seeking?
- ☐ 4. Regretted that you do not have at hand a specialist available for rapid advice over the telephone?
- ☐ 5. Hesitated before participating in specialized exhibitions?
- ☐ 6. Been looking for machines, equipment, or second-hand equipment?
- ☐ 7. Tried to obtain international contacts to develop technical or commercial cooperation within a partnership?
- ☐ 8. Had difficulties with the legal aspects of an order?
- ☐ 9. Experienced annoyance at quality, prices, delivery dates? Your own and others?

**If you have checked at least one of these boxes you certainly need... To join the SPX**

# UNIDO SPX

## SUBCONTRACTING and PARTNERSHIP EXCHANGE

Your service:

**Permanent*

**Competent*

**Diligent*

**Confidential*

Your partner for increasing your performance

Address: .....

Telephone: .....

Fax: .....

Internet: .....

## The SPX

Is an independent non-profit organization: An association of industrialists for industrialists with the support of the government authorities (Ministry of Industry) and professional organizations (Federation of Industrialists, Chambers of Commerce and Industry).

## Fields of action:

In the service of all sectors of industry:

- Castings (steel, iron, non-ferrous metals),
- Forging, stamping, die work,
- Sheet-metal work, locksmithing, boiler-making, mechanical welding,
- Heat treatment, surface treatment,
- Cutting out, deep drawing, wire drawing and processing,
- Turning, milling, boring, grinding,
- Gear-cutting, broaching,
- Tools, moulds,
- Maintenance,
- Electricity, electronics,
- Plastics, rubber and derivatives,
- Industrial services.

## Objectives:

- To contribute to the most complete and rational possible utilization of existing capacity and new capacity to be created to achieve greater profitability, higher productivity, and greater competitiveness.
- To promote and strengthen the country's industrial fabric, particularly by promoting the specialization of enterprises.
- To help in improving quality and reducing manufacturing costs.
- To promote all action to increase development by improving national integration.
- To foster trade flows in the country, the region, and internationally.

## Missions:

### *To inform, document, and assist heads of enterprises and their executives on the potential of subcontracting and partnership*

- To conduct ongoing surveys of capacity in the country, in terms of dimensions, quality, know-how.
- To detect subcontracting opportunities and carry out the relevant matching.
- To detect project ideas from contacts with heads of enterprises and unsatisfied subcontracting inquiries.
- To publicize the genuine potential of enterprises.
- To seek out gaps and industrial opportunities that could lead to developments.
- To carry out promotion activities and organize the participation of enterprises in specialized subcontracting and partnership fairs and exhibitions.
- To prepare and publish specialized yearbooks and promotional documentation.
- To provide technical information.
- To carry out promotional activities: know-how and dissemination.

## Code of ethics:

- The SPX does not interfere in the commercial dialogue and takes no commissions on its action.
- It is not a substitute for heads of enterprises.
- It is not a supply service.
- It acts with neutrality and confidentiality.

## Methodology:

- It intervenes precisely and rapidly to satisfy the requirements of competence, quality, competitiveness and timeliness. Therefore, it does not respond to inquiries that are too general in nature.

## Operational structure:

- A team of energetic and competent staff engineers, duly trained in rendering optimum service to enterprises seeking subcontractors or partners.
- A constantly updated data bank on know-how and existing capacity in its field of action.
- Appropriate technical documentation.
- A network of external SPXs, connected case by case.

Applying to the SPX connects you to provincial, national and international networks, it enables you to foster contacts, seize opportunities and meet interesting partners.

Address: .....

Telephone: .....

Fax: .....

Internet: .....

ANNEX 3

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
(UNIDO)

# PROMOTION OF INDUSTRIAL SUBCONTRACTING AND PARTNERSHIP

PROPOSED STATUTES FOR
AN INDUSTRIAL SUBCONTRACTING
AND PARTNERSHIP EXCHANGE

## *Introduction*

The statutes for an industrial association for the creation and operation of a "National Subcontracting and Partnership Exchange" (NSPX) are based on a model designed and proposed by UNIDO experts for the Moroccan NSPX.

Experience gained in both the developing and industrialized countries shows that an industrial subcontracting and partnership exchange can survive the efforts to set it up and put it into operation only if it has operational and budgetary autonomy. In most cases, this autonomy cannot be gained other than at the price of institutional autonomy, by the creation of a non-profit-making association covering all the industrial enterprises and institutions benefiting from the services of the NSPX and governed by a governing board composed of all the public bodies concerned with promotion of subcontracting (Industrial Promotion Agency, Development Bank, Foreign Trade Office, etc.), private institutions representing the enterprises benefiting from the promotion of subcontracting (Chambers of Commerce and Industry, Federation of Industries, professional associations and so forth) and the affiliated industrial enterprises themselves.

A key item in the success of subcontracting and partnership exchanges, no matter in which part of the world, is the existence of an autonomous association provided with an autonomous budget and an administrative board covering all the principal economic agents in industrial subcontracting. This is why the UNIDO programme for the promotion of industrial subcontracting has published these model legal statutes relating to the establishment and operation of a "National Subcontracting and Partnership Exchange", which were designed and drawn up by the UNIDO experts for the Kingdom of Morocco in order to facilitate and promote the creation of associations of this type in all countries receiving UNIDO assistance in the field of promoting industrial subcontracting.

# NATIONAL SUBCONTRACTING AND PARTNERSHIP EXCHANGE

# STATUTES

## Section I. Denomination, creation and objectives

### *Article 1. Objective and denomination*

Under the terms of the Decree of ..... the organizations, institutions and industrial, commercial and service enterprises which subscribe to the present statutes or will subscribe to them in the future hereby found a non-profit-making association entitled the "National Subcontracting and Partnership Exchange", abbreviated to NSPX.

### *Article 2. Social headquarters*

The headquarters of the Association shall be established at ..... located at ..... .

### *Article 3. Lifetime*

The lifetime of the Association shall be unlimited.

### *Article 4. Objectives*

The Association shall not pursue any profit motive and shall abstain from any political or trade-union activity.

It shall have the following objectives:

*(a)* Promotion of cooperation between small-scale and large-scale industries in the field of subcontracting both nationally and internationally and in all economic sectors;

*(b)* Promotion of national production with a view to the gradual substitution of imported products;

*(c)* To further, in accordance with economic requirements, the expansion of existing industrial capacities and the creation of new capacities;

*(d)* To carry out industrial surveys in order to study opportunities for subcontracting, marketing circuits and existing or potential outlets;

*(e)* Organization of meetings, seminars and discussions between those concerned with supply and demand in the area of subcontracting;

*(f)* To arrange for member enterprises to take part in national, regional and international subcontracting fairs;

*(g)* To provide technical assistance in the area of management so as to improve the capacity of the subcontracting units. Such assistance may be provided as well by the staff of the Exchange and personnel from abroad;

*(h)* To promote partnership agreements between different enterprises in order to permit the fullest and most rational utilization of facilities, machinery and manufacturing capacities already existing or to be established in the country;

*(i)* To enable each member to obtain from the NSPX, should he so desire, information providing more effective guidance in the matter of his investments in the means of production, thereby facilitating the decision-making of the members on the basis of the technical and technological documentation available;

*(j)* Publish a bulletin containing information and contacts;

*(k)* More generally, to use any other additional resource for attaining these objectives.

The role of the NSPX shall be to transmit the information with which it is provided both by the subcontracting members and those placing orders (main contractors). It should not be in any way held liable for the information which it provides, for the transactions concluded on the basis of such information, for contacts taken up by the enterprises which have been brought together through its intermediary or, in a general sense, for any other consequence of its actions, more particularly in the financial domain.

The NSPX may assist and advise enterprises on technical, legal and costing matters, particularly within the framework of their response to subcontracting bids and inquiries.

## Section II. Composition, admission and expulsion

### *Article 5. Composition*

The Association shall be composed of an unlimited number of:

*Honorary members*

The General Assembly may, at the suggestion of the Board, nominate honorary members for services rendered to the Association.

*Regular members*

These shall be the enterprises which, having subscribed to a service or having paid the membership fee, share the aims of the Association.

*Corresponding members*

Any enterprise which approaches the Exchange or which wishes to attend the conferences, working meetings, briefing sessions, or promotion activities organized by the Exchange shall necessarily be a corresponding member.

Corresponding members shall not seek to offer their services. as subcontractors, except if they become regular members.

*Ex-officio members*

As defined in article 9 below.

These shall be physical or moral persons who desire to be part of the life of the NSPX.

*Article 6. Admission*

The Association is open to all enterprises or services subscribing in writing to these statutes and to the internal regulations, whose application has received the written approval of the Bureau represented by its Chairman.

Companies are represented in it by their President/Director-General, manager or duly appointed senior executive. Once these terms have been fulfilled, admission is gained on payment of the subscription to a service or membership fee for the current year.

*Article 7. Resignation or expulsion*

Membership of the Association is cancelled:

*(a)* By resignation;

*(b)* By non-payment of the subscription to a service or membership fee under the terms fixed in the internal regulations;

*(c)* By expulsion proposed by the Board to the General Assembly, which gives a ruling by an absolute majority, and as a last resort, on grounds of serious infringement of the statutes and internal regulations. The party concerned shall be summoned by registered letter, with acknowledgement of receipt, to defend his actions before the Bureau of the Assembly;

*(d)* Through bankrupcy or legal settlement.

Any member ceasing to belong to the Association for any reason at all thereby forfeits any right to the funds that he may have paid to it under any heading.

For members who resign or are expelled for non-payment of the subscription or membership fee, and who wish to re-join the association, shall submit a new application for membership.

## Section III. Financial arrangements

*Article 8*

The operational costs of the NSPX services shall be borne by all the registered members in accordance with a system of subscription and membership fees, the amount of which shall be fixed by the General Assembly each year and which may be revised by it at the proposal of the Governing Board.

The NSPX may receive gifts in cash or in kind and grants from public or private bodies or from enterprises concerned with its development in the regional, national or international economic interest, as well as a government subsidy.

Its revenue shall also be composed of:

— Payments for services rendered by the Association;

— Any other resources authorized by laws and regulations.

## Section IV. Administration and operation

*Article 9. Governing Board*

The NSPX shall be administered by a Board consisting of 7-18 members elected by the General Assembly by majority vote. Members of the Board shall be elected for a three-year period, with a third of the Board being replaced each year. The members leaving office at the end of the first or second year are designated by drawing lots within the Board. Outgoing members may stand for re-election.

The following are *ex-officio* members of the Board by co-option of the latter:

(1) The Ministry of Industry, as represented by the Director of Industry.

(2) The Chamber of Commerce and Industry, as represented by its President and/or its Director-General.

(3) The National Federation of Industries.

(4) The Federation of Metal, Mechanical and Electrical Industries.

(5) The Federation of Small and Medium-sized Industries.

(6) The Industrial Development Agency and/or Foreign Trade Office.

(7) The Industrial Development Bank.

(8) The Presidents of the provincial branches of the NSPX.

Moral persons nominated for the Governing Board shall appoint their permanent representatives.

*Ex-officio* members of the Board, as defined above, shall not be subject to re-election when a third of the Board is replaced, as provided for in the first paragraph. Their status as *ex-officio* members of the Board shall automatically be cancelled if their financial contribution terminates.

The functions of the members of the Governing Board shall be unpaid.

The chairmanship of the Association is normally conferred upon the President of the institution hosting the NSPX.

The Board shall be made up of at least one third of the regular members as defined in article 5 above.

The decisions of the Board shall be adopted by a majority vote; in the event of a tie, the chairman of the meeting has the casting vote.

The deliberations of the Board shall be valid when, on the convening of all its members, one third of them is present. Procedures for the functioning of it may be established in further detail in its internal regulations.

The Board shall monitor financial management and approve the accounts for the past year. It shall authorize the expenditure necessary for the Association to fulfil its mission.

The Board shall meet at the invitation of the chairman, or if he is prevented therefrom, at the invitation of one of the vice-chairmen, or at the request of at least one third of the members.

The Board shall be the legal representative of the Association. It may delegate, with or without the right of substitution, all or part of its authority to the Bureau as defined below in article 10. It may appoint additional members on a provisional basis by co-option until the next General Assembly.

The General Assembly shall adopt, at the proposal of the Board, internal regulations which shall be binding for the members of the Assocation.

### *Article 10. Bureau*

The Governing Board shall elect from among its members: two vice-chairmen, one of whom is appointed by the *ex-officio* members, a general secretary and a treasurer, who together with the chairman form the Bureau; the latter may recruit the administrative or technical staff needed for the functioning of the Association.

As far as the election of the Bureau is concerned, the Governing Board cannot take a vote when convened for the first time unless at least half its members are present or represented. When convened a second time, the election is valid irrespective of the number of persons present.

### *Article 11. General Assembly*

The General Assembly shall be composed of all the members of the Association as defined in article 5 above.

The General Assembly is convened by the Chairman of the Governing Board and meets at least once a year, in regular session, to hear a report on the activities of the Association and to approve the yearly accounts. It is obliged to meet within 30 days if the request to convene is formulated in writing by not less than a quarter of the members. Voting by correspondence is accepted.

The General Assembly may deliberate only on the items of the agenda. The latter is decided on by the Governing Board. However, if a request is submitted a month in advance of the holding of the Assembly, then the inclusion on the agenda of an item proposed by at least a quarter of the members is mandatory.

The General Assembly may be regular or extraordinary.

The Regular General Assembly shall fix the amount of the membership dues.

The Regular General Assembly is convened by a simple letter. When the majority of members are present or represented, its deliberations on all subjects which are not the domain of the Extraordinary General Assembly are valid.

The Extraordinary General Assembly is alone entitled to modify the statutes, dispose of all or part of the Association's property and to dissolve the Association. It shall be first convened as a Regular General Assembly but the meeting cannot be opened unless at least half of the members are present or represented. Its decisions are valid if they are taken by an absolute majority of members present or legitimately represented.

In the opposite case, the Extraordinary General Assembly is reconvened with the same agenda, this time by registered letter sent not later than 10 days before the date of the meeting. The Extraordinary General Assembly then holds its deliberations, regardless of the number of members present or represented, and may take valid decisions by a simple majority.

*Article 12. Operation*

The Bureau is invested with the broadest powers for the administration of the Association.

The Association's funds are deposited.

Expenses are controlled and signed by the Chairman.

The Chairman represents the Association in all acts of civil life and wherever else it is necessary to do so.

At the proposal of the Bureau, the Governing Board nominates a director to whom it may delegate some of its authority to ensure current management under the control of the Chairman of the Association.

For this purpose the Chairman remains in periodic contact with the Director so as to advise him and issue instructions on the management operation.

## Section V. Dissolution

*Article 13*

The dissolution of the Association can only be decided by an Extraordinary General Assembly.

If dissolution is decided on, the Assembly will nominate one or more commissioners to be responsible for liquidation of the Association's assets. It shall appoint the beneficiaries and determine the terms thereof within the framework of the laws and regulations in force.

## Section VI. Transitory provisions—membership fees

During the period of preparation and establishment of the NSPX, the registered enterprises shall be admitted free of cost to the Association for the first year. Subsequently, they shall pay a yearly subscription according to a pro forma rate in order to benefit from the services of the NSPX, in accordance with a scale established by the Governing Board and approved by the General Assembly of regular members.

The scale fixed shall evolve as a result of the efficiency of the NSPX in such a way as to achieve self-financing as public subsidies are gradually reduced, or even possibly suspended.

## Annex: introduction on legal enactment

### Creation of an industrial association for the establishment and operation of a National Subcontracting and Partnership Exchange

— Pursuant to Decree Law No. ..... of ..... (establishing the status of the Chambers of Commerce and Industry), as amended and supplemented by Decree Law No. ..... of .....;

— Under the authorization given by decision of the Ministry of Industry and Commerce;

the following has been agreed:

The creation of a National Subcontracting and Partnership Exchange as defined in the studies made and the tests performed, corresponding to the needs of the industrial, commercial and service enterprises, and of particularly important general interest in promoting the economic development of the country, it has therefore been decided:

To establish an association governed by Decree of ..... and by the statutes defined below;

To award a public grant for its operational budget to ensure the launching of it and its subsequent continuation.

# ANNEX 4 UNIDOSS

## UNIDOSS subcontracting system

Within the framework of its Programme for the Promotion of Industrial Subcontracting and Partnership, UNIDO has been designing and developing over more than a decade a comprehensive and modern methodology to facilitate management of the information of the Subcontracting and Partnership Exchanges (SPX), established with UNIDO assistance.

The data in question relate to the manufacturing capabilities and equipment of industrial enterprises, the classification of enterprises according to a set of given industrial nomenclatures, the selection of enterprises according to a variety of combined criteria and the matching of demand for and supply of subcontracting work between main contractors or procuring enterprises and subcontractors or suppliers.

This methodology has recently been converted into a comprehensive and coherent computer software system. This software is called UNIDOSS, standing for UNIDO Subcontracting System, and is available in English, French and Spanish.

UNIDOSS is a computerized management tool which allows the SPX to enter and retrieve information on industrial enterprises. It can be run on a standard PC and consists of the following:

- standard questionnaire for collecting information on subcontracting/supplying enterprises as well as on main contracting/procuring enterprises;
- a series of industrial nomenclatures (sectors of activities, finished products, subcontracted products, manufacturing equipment and processes, regions, countries, accessories) and standard terminologies;
- the computer software;
- the UNIDOSS user manual.

UNIDOSS performs the following basic functions:

- recording of manufacturing capacities and capabilities of industrial enterprises based on the detailed questionnaire;
- classification of these enterprises according to a set of given industrial nomenclatures, such as products, sectors of activity, manufacturing processes and equipment;
- search for subcontracting enterprises according to a set of numerous different criteria (including an exhaustive analysis of the recorded equipment and its technical characteristics) in order to match them with inquires received from procurers and contractors.

The UNIDOSS software will never be a substitute for specialized staff operating an SPX, but it will facilitate the handling of the recorded information and allow for a comprehensive search thereby optimizing the matchmaking process. It will also allow for standardized mailings to the selected enterprises as well as for an organized monitoring of the various inquiries and consultations.

In addition, this system makes it possible to carry out economic analyses on specific subsectors and regions, in order to detect manufacturing deficiencies and propose remedies, to perform technological and quality assessments and to formulate marketing and investment strategies.

UNIDOSS is protected by a licence agreement granted free of charge to those institutions benefiting from a UNIDO technical cooperation project for the establishment of an SPX.

So far, some 45 SPXs are using UNIDOSS under licence agreement in more than 25 countries, including Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Mexico, Paraguay, Peru, Uruguay and Venezuela in Latin America; Algeria, Jordan, Lebanon, Morocco and Tunisia in the Arab region; Czech Republic, France, Poland, Slovakia and Turkey in Europe and Mauritius and Madagascar in Africa. Many other countries are seriously envisaging to install the UNIDOSS system, including Côte d'Ivoire, India, the Russian Federation, Saudi Arabia, Senegal, South Africa and Viet Nam.

A recent survey shows that on average, SPXs using UNIDOSS consulted 80% of their registered enterprises, of which 40% led to the conclusion of contracts, which is an excellent performance. In other words, the survey shows that 36.5% of the SPX registered enterprises concluded a contract. In general, the number of contracts concluded increases proportionally to the number of registered enterprises.

An international directory of SPXs using UNIDOSS has been established in order to facilitate networking and industrial cooperation between themselves as well as with similar institutions in all parts of the world. This is achieved by using common technical terminologies.

The acquisition of the UNIDOSS will also give access to the SPX Club which is described in annex 9. Membership in the Club allows for an exchange of information between institutions worldwide, linked in a network, for exchanging business opportunities and for promoting or marketing purposes, and access to a series of support services provided by UNIDO on preferential bases. The Club is a global industrial sourcing network.

This information, as well as the *International Directory of SPXs* and access to other networks, and full descriptions of instruments and facilities are accessible on the Internet at the WEB page:

***http://www.unido.org/spx***

All inquiries should be addressed to:

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# ANNEX 5

## 1. Initial investment or equipment budget (minimum configuration)

| Items | Amount | Remarks |
|---|---|---|
| Furniture—filing cabinets | | – |
| Telephone (3 lines + 1 cellular phone) | | 2 incoming and 2 outgoing lines |
| Fax line | | – |
| Photocopying machine with reduction | | Publication of bulletins/catalogues *with printer* |
| Micro computer for word processing + documentation and management software | | |
| Micro computer for UNIDOSS—data bank | | on network; expendable papers and forms |
| Pre-printed matter (leaflets, etc.) | | – |
| Miscellaneous supplies | | books, yearbooks and international technical documents |
| Stock of documentation | | |
| Service vehicles | | Visits to enterprises |

## 2. Establishment and staff training budget—(estimates)

*Standard cost for a study tour or training course abroad*:*

| | | |
|---|---|---|
| One air journey (fixed dates) | $ 1,500 | |
| 1 medium-term stay, 12 days' per diem | $ 2,000 | |
| One registration/supervision | $ 1,000 | |
| Documentation and contingencies | $ 500 | |
| | $ 5,000 | for one trainee |

*Example of a training plan:* (over three years):

| | |
|---|---|
| International expert: | 14 h/m (flat rate UNDP cost: US$ 14,000/month) |
| National consultants: | 16 h/m |
| Training courses and study tours: | 12 |
| Executing agency—supervision | |

*International experts are required for:*

Code of ethics—methodology—management
Nomenclatures
UNIDOSS (software)
Legal aspects
Quality aspects
Fairs and exhibitions

## 3. Operating budget (estimate of expenses)

| Personnel | Annual budget |
|---|---|
| One manager—staff engineer:<br>One assistant staff engineer:<br>One personal assistant:<br>+ social welfare costs and overtime | Depending on factor costs in the country |

*Three times a year, 1 per quarter, for example: purchasers—offsetting arrangements—strategic alliances—value analysis—quality—just-in-time—UNIDOSS—specialized fairs and exhibitions—etc.

SPX

SCALE OF ADMISSION FEES AND SUBSCRIPTIONS (1)

| Category (2) | Total wage-earning staff of enterprise | Admission fee for a member not belonging to a professional organization affiliated to the SPX (3) | Admission fee for a member belonging to a professional organization affiliated to the SPX (3) | Annual subscription |
|---|---|---|---|---|
| 1 | 1 to 10 | 150 | 100 | 150 |
| 2 | 11 to 30 | 300 | 200 | 300 |
| 3 | 31 to 80 | 450 | 300 | 450 |
| 4 | 81 to 150 | 600 | 400 | 600 |
| 5 | 151 to 300 | 900 | 600 | 900 |
| 6 | More than 300 | 1200 | 800 | 1200 |

**NB:** The admission fee is charged once and for all on joining. Only the subscription is renewable annually. In the first year, it is added to the admission fee.

(1) As an indication, in United States dollars, for an industrialized country paying a minimum gross monthly salary of the order of $1,000

(2) Depending on the country context, the number of categories may be higher.

(3) The professional organizations members of the SPX are for example:

Industrial Association of...

Association of...

Chamber of Commerce and Industry of ...

Other...

| Items (1) | Annual amount | Remarks |
|---|---|---|
| Salaries + social welfare costs for 13 months | | |
| Vehicle costs | | |
| Mission/operating expenses, monthly estimate | | against vouchers |
| Fees: | | |
| Legal adviser | | |
| Accountant | | |
| Guards—maintenance of premises | | |
| Computer maintenance | | 10% of the investment |
| Rent—including charges | | |
| Telephone—fax | | |
| Postage | | |
| Electricity—water supply | | |
| Insurance | | |
| Office supplies | | expendable |
| Taxes and dues | | |
| Documentation and subscriptions | | |
| Provision for replacement of equipment (2) | | |
| **TOTAL** | | |
| Contingencies: 8% | | |
| **GRAND TOTAL** | (3) | |

(1) The expenses from specific activities are not included. They will be covered case by case out of the resources levied directly from the beneficiaries or participants.

(2) The provisions for the renewal of equipment determine the sustainability of the service.

(3) In view of inflation, income must be indexed in order to cover expenses, which depend on factor costs, country by country.

As from year X, the SPX will have to be able to finance itself on the basis of the threefold structure that has proved itself in all countries in which it is in place.

For example, on the basis of an operating budget of the order of US$ 120,000 per year:

| | |
|---|---|
| $40,000 | government authorities, in cash or kind |
| $40,000 | professional organizations and large main contracting companies |
| $40,000 | industrialists |

assuming a membership of some 100 enterprises. The resultant cost per firm would be of the order of $400 per year on the average ($200 for a small company, $600 for the largest firms, which is quite tolerable and amortizable if the SPX renders the services expected).

Of course, it will not be necessary to wait X years to generate income from subscriptions, but it is the minimum time required for the SPX to be self-financing.

# ANNEX 6 Terms of reference of the SPX staff

## A. SPX manager

Support staff:

Personal assistant,

Staff engineer, subcontracting department,

Staff engineer, development/partnership department.

### *Role and functions*

1. To recruit, train and direct the permanent and temporary staff necessary for the operation of the SPX services. To guide and supervise the operation of the services.
2. To define and manage the execution of the annual programme of activities of the SPX in conformity with the guidelines fixed by the Board of Directors.
3. To define and supervise the organization and operation of the specific SPX rosters, in conformity with the methodologies fixed.
4. To study and define the organization of all specific action following up the operation of the SPX, such as seminars, technical meetings, round tables, partnership and subcontracting exhibitions, the organization of clubs of enterprises and all events aimed at awareness-creation, information, the training of staff and enterprises and in general the promotion of the SPX and the rationalization of subcontracting in the country.
5. To receive and visit heads of enterprises in relation with important cases of subcontracting and partnership linkages.
6. To promote contacts and ad hoc clusters of subcontracting enterprises.
7. To provide secretariat services for the Board of Directors and the management committee of the SPX.
8. To participate in the work of the ad hoc committees.
9. To represent, on specific mission assignments, the SPX in all events and with appropriate bodies in the country and abroad and in particular with other subcontracting exchanges.
10. To provide liaison with UNDP and UNIDO as well as with any body that can provide assistance for the national subcontracting and partnership programme (ministries, Chambers of Commerce and Industry, other professional organizations, national and international bodies, etc.).
11. To report on the activities of the exchange to the SPX Board of Directors.
12. To prepare and present the budget of the exchange to the SPX Board of Directors.

### *Permanent training*

Participation either as a student or instructor in all training activities designed for the development of subcontracting through courses, seminars and other initiatives in the country or abroad.

## B. Staff engineer, subcontracting department

### *Promotion of the SPX*

On an ongoing basis, identifies potential prospects for using the services of the SPX either as main contractors or as suppliers of services.

Establishes contacts by means of circulars, letters and telephone for arranging personal meetings.

Visits prospects, provides documents, comments on all services offered by the SPX, explains its functioning, and its code of ethics for cases of subcontracting, technical and development question-and-answer service.

Alerts contacts to:

- The role and importance of subcontracting in industry,
- The advantage of the rational organization of subcontracting for increasing the productivity of enterprises,
- Matters related to promotion by means of specialized fairs and exhibitions.

Particularly stresses the potentialities of the data bank placed at the disposal of industrialists to facilitate their choice of investments to promote national integration and exports and for permanent technical documentation.

Arranges for visits, drafts confirmation correspondence.

### *Surveys*

After having aroused the awareness of the head of the enterprise and obtained his agreement, the engineer:

- Visits the production installations and completes the survey forms in conformity with the relevant instructions
- Prepares the file for each enterprise, comprising three sections:
  - Basic information (survey forms plus technical and commercial documentation, reports *n* visits).
  - General correspondence (general correspondence file).
  - Activities (recapitulation of approaches to the enterprise or for the enterprise on the subject of the cases handled by the SPX).
- Opens specific files for each of the cases surveyed in relation with subcontracting, technical and development question-and-answer service.
- Makes a special survey of equipment, machines and installations that are not in use and can be proposed for second-hand by other enterprises.
- Processes the documentation, either received from the enterprises visited or assembled in the framework of the technical information service.

### *Processing of cases*

For each case surveyed, identified, or received, the staff engineer must:

- Assign a (chronological) identification number to the case.
- Prepare a specific file comprising all the documents relative to the case.
- Define all the parameters according to the chronology described in the checklist prepared for that purpose.

Process the cases according to their degree of urgency or difficulty, either by telephone, fax, telex or mail, strictly following the procedure fixed by the code of ethics, and in particular:

- Acknowledge receipt,
- Start searches,
- Carry out matching,
- Fill in all the "tools" provided for.

### *NB*

All telephone contacts must be recorded on a detailed sheet, all important points must be confirmed in writing, and all these documents must appear in the case file.

### *Follow-up*

With the help of the "tools" set up either manually or by computer, the staff engineer must concern himself with the results obtained following his action. For that purpose, he must again contact the initial inquirer to ascertain whether and how far he is satisfied.

Any deficiencies detected or anomalies reported must be registered and passed to the development section for interpretation and the recommendation of solutions.

He prepares a monthly report on his activities, which must mention, among other things:

The number of visits made,

The number of enterprises surveyed,

The number of cases handled,

The number of enterprises contacted.

### *Permanent training*

Participation either as a student or instructor in all training activities designed for the development of subcontracting through courses, seminars and other initiatives in the country or abroad.

## C. Staff engineer, development, partnership and promotion—communication department

1. Designs and provides guidance in:
   - Information to industrialists,
   - Staff training, in particular by the organization of seminars and courses and participation in national and international fairs and exhibitions,
   - Legal studies on subcontracting,
   - Management of the rosters.
2. Processes the technico-economic data obtained from interpretation of the inventories made by the SPX as well as from its action in concrete cases and from information gathered.
3. Carries out related studies and resultant matching activities.
4. Passes on problems regarding concrete cases or families of cases to specialized bodies.
5. Forwards information on opportunities for investment/development to the bodies concerned.
6. Participates in visits to factories and in the work of planning, organizing and implementing specific action of the SPX.
7. Exploits all opportunities for the development of compensation operations in the light of the potential identified by the exchange.
8. Exploits foreign trade and customs statistics and derives from them all relevant conclusions, in liaison with the management of the rosters.

9. Contributes to the organization of—collective or individual—participation by subcontracting enterprises in specialized exhibitions abroad and in the country.
10. Manages a partnership roster and prepares detailed files.
11. Participates, on specific mission assignments, in national and international events in order to arouse interest in cooperation and identify opportunities for technological and industrial partnership.
12. Prepares and distributes the SPX liaison bulletin (publication/reporting, description of an enterprise, note on the cyclical situation, availability, machines and equipment available for second-hand, etc.) as well as all publications and yearbooks necessary for the promotion of the SPX.

### *Follow-up*

With the help of the "tools" set up either manually or by computer, the staff engineer must concern himself with the results obtained following his action. For that purpose, he must again contact the initial inquirer to ascertain whether and how far he is satisfied.

He prepares a monthly report on his activities.

### *Permanent training*

Participation either as a student or an instructor in all training activities designed for the development of subcontracting through courses, seminars and other initiatives in the country or abroad.

## D. Personal assistant to the manager

### *Secretarial duties*

1. Assists the manager of the SPX in the administrative performance of his tasks.
2. Manages and arranges the filing of correspondence, verifies follow-up replies.
3. Manages and carries out office tasks (data input, typing, registration of mail, telephone, telex, fax, desktop publishing, reproduction, etc.).
4. Receives messages and forwards them to the services concerned.
5. Arranges appointments for visits to enterprises and SPX meetings.
6. Ensures the permanent availability of general information on the services of the exchange.

### *Management of rosters*

1. Verifies the survey forms gathered by the researchers.
2. Carries out the computer input of the parameters resulting from the survey.
3. Reports any anomalies detected.
4. Manages and supervises the filing of enterprise dossiers.
5. Manages matching and follow-up procedure.
6. Manages the enterprise roster (new establishments, expansion, alterations, legal settlements and liquidation).

## *Documentalist work*

1. Assists in the management of the technical documentation of the SPX (catalogues, technical fact sheets, technical books, specialized reviews, professional yearbooks, documentation produced, enterprise documentation, documentation on processes and know-how, etc.).
2. Prepares the coding slips for computer filing.
3. Carries out the labelling of documents.
4. Files documentation.
5. Manages incoming and outgoing documents.
6. Prepares notes on specialized reviews (summaries of publications of interest to subcontracting).
7. Collects and files press articles relative to the subcontracting exchange.

ANNEX 7

# Main contractor's inquiry form

(Inquiry checklist)

Date: .....

No.: ☐ ☐☐☐

Company name: .....
Address: .....
City: ..... Country: .....
Telephone: ..... Fax: ..... Contact: .....

NEEDS (complete one form per operation)

- **Nature:** Request for addresses ☐ Request for prices ☐ Firm order ☐
- **Purpose:** Sharing workload ☐ Technical services ☐ Continuous partnership ☐ Other ☐
- **Reply required by (date):** .....
- **Designation:** Products or components ☐ Parts ☐ Work processes Operations ☐
- **Codes (reserved):** ..... ("Combined") ..... (EEC-A) ..... (EEC-B)
- **Description of inquiry:** _____
- **Quantities:** Total: ..... Frequency of delivery: .....
- **Expected duration of contract:** .....
- **Delivery dates:** Standard parts: ..... Advance series: ..... First delivery: .....
- **Possible standby stock:** Quantity: ..... Extra ☐ Included ☐
- **Tools or model:**
  - Provided by main contractor ☐
  - Specifications (ownership and maintenance) ☐
  - To be created ☐
    - Property of main contractor ☐
    - Shared ☐
  - Included in the price ☐

**MATERIALS:** Provided by main contractor ☐ To be provided by subcontractor ☐

- Quality: ..... Variety: ..... Standard: .....
- Detailed specifications: .....

  .....
- Quantity: .....
- Condition: .....
- Packaging details: .....
- Delivery conditions: .....
- Place of delivery: .....
- Estimated value: .....
- Other parameters: .....

## TECHNICAL SPECIFICATIONS: Documents transmitted

- List of drawings: No. ..... Index No.: ..... Date: .....
  No. ..... Index No.: ..... Date: .....
  No. ..... Index No.: ..... Date: .....
- Nomenclatures: No. ..... Index No.: ..... Date: .....
  No. ..... Index No.: ..... Date: .....
  No. ..... Index No.: ..... Date: .....
- Manufacturing range: No. ..... Index No.: ..... Date: .....
  No. ..... Index No.: ..... Date: .....
  NO. ..... Index No.: ..... Date: .....
- Tolerances: – Dimensional: ..... Standards: .....
  – Special: ..... Standards: .....
  – Defects not tolerated: .....
  – Percentage of defects accepted: .....
  – .....

## SPECIAL CHARACTERISTICS:

Subsequent finishing work:

- Surface treatment: .....
- Heat treatment: .....
- Special machining: .....
- Other: .....

Finishing work requested:

- Painting ☐ to be specified: .....
- Other protection ☐ to be specified: .....
- Marking of parts ☐
  - Mark of Supplier ☐
  - Customer ☐
  - Labelling ☐
  - Other ☐
- .....
- .....

## RECEPTION:

Checked by main contractor ☐ Subcontractor ☐ Organization to be specified ☐

Nature and modalities: attach specifications: .....

## PACKAGING, SALES PACKAGING:

- In bulk, Sacks ☐ In display packs ☐ In containers ☐

Boxes ☐ Recessed boxes ☐ Lorry ☐

Other ☐ Other ☐ Other ☐

- Provided by main contractor ☐ Provided by subcontractor ☐

## DELIVERY AND TRANSPORT:

- Arranged by subcontractor for the account of the main contractor ☐
- Collection by main contractor ☐
  - Mode of transport: .....
  - Mode of delivery: .....

## PRICE: to be agreed upon:

Tools: .....

Parts, products or structures: .....

Losses of materials: .....

Tests and checking: .....

Packaging, sales packaging: .....

Carriage: .....

Penalties for delay: .....

POSSIBLE PRICE REVISION CONDITIONS:

.....

.....

.....

.....

.....

PAYMENT CONDITIONS:

.....

.....

.....

.....

.....

CANCELLATION CLAUSE: (advance notice)

.....

.....

Ownership of documents and possible exclusivity clause .....

General conditions for sales withheld: (specify reference text) .....

.....

REMARKS:

.....

.....

.....

ANNEX 8

United Nations Industrial Development Organization

PROGRAMME FOR THE DEVELOPMENT OF INDUSTRIAL SUBCONTRACTING

# STANDARD QUESTIONNAIRE FOR COLLECTING INFORMATION FROM MAIN CONTRACTORS AND SUBCONTRACTING ENTERPRISES

THE INDUSTRIAL SUBCONTRACTING AND
PARTNERSHIP EXCHANGE

INFORMATION SYSTEM "UNIDOSS V-2.3"
July 1998

UNIDOSS

UNIDOSS

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION SUBCONTRACTING SYSTEM



# QUESTIONNAIRE FOR COLLECTING INFORMATION FROM MAIN CONTRACTORS & SUBCONTRACTING ENTERPRISES

## STRUCTURE OF THE QUESTIONNAIRE:

I. GENERAL INFORMATION ON THE ENTERPRISE
II. SERVICES OFFERED AND MEMBERSHIP
III. ENTERPRISE'S ACTIVITY
IV. PRODUCTION RELATED DATA

## SUBJECT:

The standard questionnaire, or enrollment form, has been designed to collect information from subcontractors and occasionally from main contractors and to store it in a micro-computer's data bank. The information will be retrieved as required from the computer. This standard questionnaire is part of a package or "INFORMATION SYSTEM" comprising:

a computer software or program entitled UNIDOSS "**U**nited **N**ations **I**ndustrial **D**evelopment **O**rganization **S**ubcontracting **S**ystem".
a set of standard nomenclatures,
this standard questionnaire,
an operating manual for the entire information system.

It is therefore necessary to use jointly the 4 components of the package (software, nomenclatures, questionnaire and instructions) to use the information system UNIDOSS.

## THE STANDARD NOMENCLATURES:

As a result of an analysis of the industrial nomenclatures or classifications to be referred to in the field of industrial subcontracting, it was recommended to apply the various industrial nomenclatures in use in the member countries of the European Communities (EC) (Subcontracting terminology, 1990).
The EC Nomenclatures here referred to, are as follows:

*a)* Nomenclature of Economic Activities NACE; statistical nomenclature of industrial activities in the European Communities, Rev. October 1, 1990, which is used to codify the main industrial

sector of the enterprise and the secondary sectors. It is used to codify the enterprise code, the sub-sectors of activity in chapter III "Activity". It is available in English, French and Spanish.

*b)* **COMBINED** Nomenclature; customs code, for import/export statistics for the European Communities. September 1990 edition. Replaces the harmonized system and is compatible (six digits) with national nomenclatures such as Predicast (USA), NIMEXE (EC), NBM (Brazil) and most nomenclatures used for international trade. UNIDOSS uses the Combined nomenclature to codify final products (catalogued), raw materials and components in chapters III and IV at "Activity" and "Production" areas. It is available in English, French and Spanish.

*c)* Nomenclature of Subcontracting Products **"EEC-A"** classified by industrial sector: metal (prefix 1); plastic and rubber (prefix 2); electrical/electronic (prefix 3), textile and clothing (prefix 4) and industrial services (prefix 5). EEC-A nomenclature is used to codify specific subcontracting products, in chapter IV for "Production". It is available in English, French and Spanish.

*d)* Industrial Processes and Machinery **"EEC-B"** nomenclature, classified by industrial sector: The metal sector (prefix 1), plastic and rubber sector (prefix 2), electrical/electronic products (prefix 3), textile and clothing (prefix 4) and industrial services (prefix 5). EEC-B nomenclature is used by UNIDOSS to codify production processes, machinery and equipment of the enterprise, and to classify the specialized subcontracting supply and subcontracting demand in chapters III, IV about "Activity" and "Production". It is available in English, French and Spanish.

*e)* Nomenclature of **REGIONS**: Classifies the industrial regions within each country with a two digits code. Each country is divided into regions where the subcontracting exchanges operate. It is used in section 1 of the "General Information chapter".

*f)* Nomenclature of **LEGAL FORMS**: The various legal forms that each country accepts for the registration of companies and their corresponding abbreviation. It is used in section 1 of the "General Information chapter".

*g)* The Nomenclature of **MACHINE ACCESSORIES**: a special nomenclature has been designed by a UNIDO expert to codify the machine accessories or ancillaries in chapter IV "Production" of the questionnaire. It is available in English, French and Spanish.

*h)* Other nomenclatures: list and codes of **COUNTRIES** (in three languages), **LANGUAGES** and their codes (in three languages), **PRODUCTION UNITS** and **TECHNICAL SPECIFICATIONS** of the production systems.

*i)* A special nomenclature **"ADDITIONAL INFORMATION"** is included to all other data desired by the user to organize other activities for management purposes not integrated in the other areas of the information system.

# I. GENERAL INFORMATION ON THE ENTERPRISE

| ENTERPRISE DATA | | | | | |
|---|---|---|---|---|---|
| Main activity sector (Nace) | | Main Region | | Serial number | |
| Enterprise name | | | | | |
| Acronym | | | | Legal status | |
| Correspondent | | Title | | | |
| Telephones | | Established (year) | | | |

| HEADQUARTERS AND PLANTS | | | | | |
|---|---|---|---|---|---|
| Management | | Title | | | |
| Address | | Num. | | Office | |
| City | | Postal code | | | |
| Region | | Country | | | |
| e-mail | | | | | |
| Comment | | | | | |
| Telephones | | | Fax | | |
| | | | Telex | | |

| HEADQUARTERS AND PLANTS | | | | | |
|---|---|---|---|---|---|
| Correspondent | | Title | | | |
| Address | | Num. | | Office | |
| City | | Postal code | | | |
| Region | | Country | | | |
| e-mail | | | | | |
| Comment | | | | | |
| Telephones | | | Fax | | |
| | | | Telex | | |

| ENTERPRISE DATA | | | |
|---|---|---|---|
| Code | | Acronym | |

| ADDITIONAL PARTICULARS | | | | | |
|---|---|---|---|---|---|
| **Personnel data** | | | | | |
| Managerial admin. | | | Clerical | | |
| Technical | | | Workers | | |
| Supervisory | | | Others | | |
| TOTAL | | | | | |
| **Economic Magnitude** | | | | | |
| Total investment | | | Currency: | | |
| Registered capital | | | Annual turnover | | |
| Exporter | ❒ | | Export/turnover | | % |
| Total area | | $m^2$ | Covered area | | $m^2$ |
| Plant shutdown | from | to | Installed power | | KW |
| (month/year) | from | to | Referenced year | | |

| CLIENT'S REFERENCES (MAIN CONTRACTORS) | | | |
|---|---|---|---|
| ENTERPRISE NAME | CITY | COUNTRY | |
| | | | |
| | | | |
| | | | |
| | | | |

| PARTNERSHIP INFORMATION | | |
|---|---|---|
| ENTERPRISE POTENTIAL | MARKET by SECTOR | OTHER CLIENTS |
| | | |
| | | |
| | | |
| CLIENTS: Industry ❒ Commerce ❒ Services ❒ Public sector ❒ | LANGUAGES SPOKEN | GEOGRAPHICAL MARKET |
| | | |
| | | |
| OTHER INFORMATION | | |

# THE ELECTRONIC DOSSIER OF ENTERPRISES

## I. GENERAL INFORMATION ON THE ENTERPRISE

### A. ENTERPRISE DATA.

1. *Main Activity Sector:* This is a two digits code for the activities identified in the summary table of the NACE Nomenclature.
2. *Main Region:* This is a two digits code identifying different regions of the country. This list of regions with code numbers will be prepared by each national Subcontract Exchange.
3. *Serial number:* This is a three digits code, identifying each individual enterprise by chronological order of registration.

Based on the above, the code number of the enterprise will be:

SECTOR – REGION – SERIAL NUMBER

□ □ – □ □ –□ □ □

1. *Enterprise Name* is the official registered name.
2. *Acronym* is the abbreviated name or the initials of the full name. The acronym plus the main region are used as base criteria to validate the existence of each new enterprise being entered into the system.
3. *Legal Status* of the company, i.e. Public, Limited, Joint Venture, etc.
4. *The date* when the enterprise was founded is recorded as Established.
5. *Management* is the General Manager of the enterprise.

### B. HEADQUARTERS AND PLANTS.

1. *Correspondent:* person dealing with subcontracting and his/her title in the enterprise.
2. *Headquarters and Plant Address:* All Headquarters address and plant address should be recorded. Each one is identified by the manager (correspondent) in charge. Each address is composed of three parts: the street name, the number and the office.
3. *City:* Name of the city where the plant or headquarter is located.
4. *Region:* Code and region employing the REGION nomenclature.
5. *Country:* Code and country name employing the COUNTRIES nomenclature.
6. *E-mail:* specify the internet mail address of the enterprise or of the correspondent.
7. *Fax:* Indicate the fax number to contact the correspondent.
8. *Postal Code:* This code must be recorded as an area postal code if used in the city, or as a P.O. Box depending on each case.
9. *Comment:* a brief note on how to arrive at the plant or headquarter or similar information.

### C. COMPLEMENTARY DATA ON THE ENTERPRISE.

1. *Personnel:* Amount of all types of personnel should be recorded. The total number will appear automatically.
2. *Magnitude:* The invested and social capital and annual turnover in local currency adapting the number of zeros to the currency to be used. It is important to consider that this amount should not change considerably with time as a consequence of high devaluation rates. Therefore the currency selected is an important decision when starting to use UNIDOSS system.
3. *Percentage of exports over turnover:* Select a representative year of the exporting activity of the enterprise and calculate the percentage of exports.

4. *Total and covered area:* Indicate the total and covered areas used by the enterprise in $m^2$ (or $ft^2$).
5. *Annual plant shutdown:* the period of holidays, if any, should be noted here.
6. *Reference year:* The year when the economic data was extracted.

### D. CLIENT'S REFERENCES (OF MAIN CONTRACTORS).

1. Here the names of selected companies for which the enterprise has been working satisfactorily as a subcontractor, should be recorded, as well as cities and countries where they are located. The number of references that can be recorded is unlimited.

### E. PARTNERSHIP INFORMATION.

1. *Enterprise potential:* Indicate the topics in which the enterprise considers to have its biggest potential in relation with its most important clients.
2. *Markets by sector:* For the major enterprise's target markets indicate the coverage and segments in which the enterprise has its major competitive forces.
3. *Clients and Other clients:* Indicate if the clients are mainly industrial, trading, services or public sectors. Other cases should be indicated under the "Other information" chapter.
4. *Languages:* Every language used to make business, publicity, etc. should be recorded using the nomenclature "Languages".
5. *Geographical Market distribution:* The countries to which products are sold should be recorded under this chart using the "Countries" nomenclature.

## II. OFFERED SERVICES AND MEMBERSHIP

### A. UPDATING OF DATA.

1. The page begins with Enterprise *Code and Acronym.*
2. The gathering of information and its updating is made at a certain date and by a certain person, and must be recorded into the system as follows:
   - an authorized person, defined by a user code (same as the one used in the UNIDOSS software).
   - the renewal date.
   - free comments to help in the information management and control.

### B. MEMBERSHIP AND SERVICES.

This option is available to users who have organized a membership and charging scheme of enterprises enrolled in the Subcontracting information system.

1. *Member:* it should indicate whether the enterprise has a membership status or not at the UNIDOSS office service. In order to indicate such status, it should mark the corresponding box.
2. *Confidentiality:* it should indicate whether the enterprise authorizes the diffusion and/or edition of the collected information in this questionnaire. If the diffusion of the questionnaire has not been authorized, it will be impossible to print any enterprise data from the UNIDOSS software.
3. *Membership fee:* indicate the amount of money that the UNIDOSS office receives for the registration in the database, usually the payment is done once each year.
4. *Inscription date:* date when the membership was accepted and registered in the database.
5. *Last payment:* the periodical maintenance quotas can be registered, showing in this place the amount of the last payment received.
6. *Payment date:* date of last payment.

## C. VISITING OFFICER'S PARTICULAR OBSERVATIONS.

1. Observations should be recorded on the functions listed under the 3 columns "Management", "Production Management" and "Means of Production" with a rating from 0 to 5 as follows: 0 Unknown; 1 Poor; 2 Fair; 3 Good; 4 Very Good; 5 Excellent.
2. The relevant indexes (average of the qualifications excluding 0), will be calculated by the computer.
3. In the fourth column "Others", it should be indicated whether technical documentation, catalogues or other information are available.

| ENTERPRISE DATA | | | |
|---|---|---|---|
| Code | | Acronym | |

# II. OFFERED SERVICES AND MEMBERSHIP

## UPDATING OF DATA

| | OFFICER | DATE (day/m/year) | REMARKS |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## MEMBERSHIP OF THE ENTERPRISE

| REGISTERED MEMBER | ❐ | CONFIDENTIALITY OF DATA | ❐ |
|---|---|---|---|
| Membership fee | | Date (dd/mm/yyyy) | |
| Last payment | | Date (dd/mm/yyyy) | |
| | | | |
| | | | |
| | | | |

## VISITING OFFICER'S OBSERVATIONS

| MANAGEMENT (index 0 to 5) | | MANAGEMENT OF PRODUCTION | | MEANS OF PRODUCTION | | OTHERS |
|---|---|---|---|---|---|---|
| Techn. know-how | | Supplies | | Equipment | | Technical doc. ❐ |
| Marketing | | Storage/stock | | Layout | | Catalogues ❐ |
| Design/develop. | | Supervision | | Maintenance | | Others |
| Organiz./methods | | Labour skills | | Material handling | | |
| Index 1 | | Index 2 | | Index 3 | | |

## III. ENTERPRISE'S ACTIVITY

### A. SECTORS AND GROUPS OF ACTIVITY.

1. The page begins with Enterprise *Code and Acronym.*
2. These indicate the sectors/sub-sectors of activity in which the enterprise has been working or where the products could be classified.
3. The descriptions, quantities (and units of measure) of the sectors or sub-sectors can be recorded without any limit on their number.
4. The additional *details* facilitate a better description of the activities, improving the contents in the "NACE" nomenclature position.

### B. PRODUCTS (Catalogued Items).

1. *Catalogued Products (catalogued Items)* should be noted with their installed manufacturing capacity, actual production or output and units used.
2. The *Units of Measure* are included as a nomenclature designed by a UNIDO expert and is part of the UNIDOSS Information system.
3. The *Codes* used here will be the COMBINED Nomenclature with 6 digits to maintain a standard code between countries (sufficient for Subcontracting), but the system is capable to support 10 digits.
4. The additional *Details* facilitate a better description of the products, improving the contents in the "Combined" nomenclature position.

### C. SUBCONTRACTING DEMAND (Main Contractor).

1. *The Subcontracting Demand* for units acting as main contractors (for order-givers). Subcontracting works proposed to be given out to others should be recorded with their technical specification, in short, quantity and units used. If more information is available, it may also be recorded and kept in the company's file for consultations.
2. The *Code* here will be the EEC-B Nomenclature (specifically designed for subcontracting operations or works and machinery) with 6 digits or less as required. As for the EEC-A code, the EEC-B code should be prefixed:
   1/ for the metal sector.
   2/ for plastic and rubber sector.
   3/ for electric and electronic sector.
   4/ for textile and clothing sector.
   5/ for industrial services sector.
3. The additional *details* facilitate a better description of the Demands, improving the contents in the "EEC-B" nomenclature position.

### D. COMPETITIVE ADVANTAGES OF SUBCONTRACTOR.

1. The page begins with Enterprise *Code and Acronym.*
2. Indicate the main *competitive advantages* for which the subcontracting enterprise is seeking subcontracting works.
3. Other general reasons can be specified in the option "Other reason".

### E. ASSISTANCE ADVISABLE FOR THE SUBCONTRACTOR.

1. Indicate the *Assistance required by* the subcontracting enterprise from the main contractor or from another source in order to properly fulfil all the required subcontracted works.

| ENTERPRISE DATA | | | |
|---|---|---|---|
| Code | | Acronym | |

# III. ENTERPRISE'S ACTIVITY

| GROUPS OF ACTIVITY (NACE 5 digits) | | | |
|---|---|---|---|
| | ACTIVITY DESCRIPTION & DETAILS | Quantity | Units |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| *CATALOGUED PRODUCTS (Combined–10 digits)* | | | | |
|---|---|---|---|---|
| | *PRODUCTS DESCRIPTION & DETAILS* | *Capacity* | *Produce* | Units |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| SUBCONTRACTING DEMAND (EEC–B 6 digits)–acting as main contractor | | | |
|---|---|---|---|
| | OPERATION/MACHINERY DESCRIPTION & DETAILS | Quantity | Units |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| ENTERPRISE DATA | | | |
|---|---|---|---|
| Code | | Acronym | |

| COMPETITIVE ADVANTAGES OF SUBCONTRACTOR | | | |
|---|---|---|---|
| Idle capacity | | High quality production | |
| Appropriate equipment | | Advanced Technology | |
| Produces at low cost | | Performance & productivity | |
| Has skilled labour | | Deliver on time | |
| Technically competent | | | |
| Other reason | | | |

| ASSISTANCE ADVISABLE FOR THE SUBCONTRACTOR | | | |
|---|---|---|---|
| Equipment | | Technical | |
| Accessories and tools | | Quality management | |
| Raw material | | Financial | |
| Managerial training | | International management | |
| Labour training | | | |
| Others | | | |

| QUALITY MANAGEMENT | | |
|---|---|---|
| Rating 0 to 3 | AREA OF THE QUALITY MANAGEMENT 0: Unknown; 1: Never; 2: Case by case; 3: Always | % |
| | Control of specifications, design and projects | |
| | Control of measurement, testing and equipment | |
| | Control of raw materials | |
| | Control of products, conformity with standards | |
| | Product verification status (inspection and testing) | |
| | Control of after-sales service | |
| | Training and quality improvement | |

## F. QUALITY MANAGEMENT.

1. The *Quality Management* must be determined at different levels in the Enterprise. To measure the aspects related to the Subcontracting quality, and based on the ISO 9000, record in an objective manner the management and/or control that is "always" fulfilled (3), done "case by case" (2) or "never" (1) done for the "Control of specifications, design & projects; control of measurement, testing & equipment"; "Control of raw materials"; "Control of products and *(non-) conformity with standards*". *Other aspects such as "Product verification status, (inspection* & testing)", "After sales services" and "Quality training and improvement", are highly important questions for modern quality management.
   For those cases, where statistical measures are available, the percentage on which such concept applies can be indicated. Other aspects, such as after sales and training or continuous improvement, are fundamental for modern management of quality, however, it is not possible to give an average measure of its application.

## G. ADDITIONAL PARTICULARS.

1. The page begins with Enterprise *Code and Acronym.*
2. To register all additional information not contained in the other "Electronic Dossier" pages, UNIDOSS counts with this option where you can register all the information, typing in your system a nomenclature of your own where it can consign the interest information codes, which will validate afterwards the feeding of this data.

As an example, the following options are prepared: 10/Patents/Licences; 20/Standards; 30/Main *Stockholders; 40/Rent/Owner; 50/Specialized works; 60/Special Handling Facilities; 70/Special Trans*portation Facilities; 80/Foreign Collaboration; 81/Type of Collaboration; 82/Rate of Participation; 90/ Banker. The user can define new codes and information as a complement of the UNIDOSS questionnaire, in the nomenclatures area.

## H. QUALIFICATIONS.

1. *Patent/licence*: The patents show the ingenious and innovation capacity duly registered. The licences show the transfer of a particular technology belonging to an enterprise.
2. *Approvals*: It has to do with the licence authorization for manufacturing, distribution, assembling, etc., which shows how national and multinational firms back up the qualities of the enterprise, the product or process.
3. *Quality labels*: The quality "Labels" highlight certain qualities that comply with a pre-established regulation related to the above-mentioned product.
4. *Quality certificates:* These certificates are issued by a competent organization, highlighting the quality analysis of a (1) product, (2) process, (3) enterprise, (4) other, and (0) unknown. The name of the organization must be indicated, plus the date of issuance of the certificate and the termination date of the certificate.

## IV. PRODUCTION RELATED DATA

### A. SUBCONTRACTED PRODUCTS.

1. The page begins with Enterprise *Code and Acronym.*
2. *Products Manufactured under subcontract* by the enterprise are recorded with the installed manufacturing capacity, actual production or output and units used for each product.
3. The *Units of Measure* are included as a nomenclature designed by a UNIDO expert and is part of the UNIDOSS information system.
4. The *Codes* used here will be the Nomenclature EEC-A (specially designed for subcontracted products), with 5 digits or less as required. As products could belong to various sectors like metal, plastic, electronic, all having EEC-A codes, these sectors will be prefixed by:
   1/ for the metal sector.
   2/ for plastic and rubber sector.
   3/ for electric and electronic sector.
   4/ for textile and clothing sector.
   5/ for industrial services sector.
5. The additional *details* facilitate a better description of the Products, improving the contents in the "EEC-A" nomenclature position.

### B. COMPONENTS AND MATERIALS USED.

1. *Components and Materials Used* are recorded along with their country of import, quantity and units used.
2. The *Code* used here will also be the COMBINED Nomenclature with 6 to 10 digits.
3. The additional *details* facilitate a better description of the raw materials, improving the contents in the "COMBINED" nomenclature position.

### C. SPECIALIZED SUBCONTRACTING SUPPLY (Subcontractor).

1. *Specialized Subcontracting Supply:* used for the enterprises acting as "Subcontractors or "order receivers". Record here the works, machinery or operations where the subcontractor considers to have some particular advantages or specialties so that the information system would help to identify highly specialized industries.
2. The *Code* used here is the EEC-B. The number of records to be registered is not limited.
3. The field *Details* is used to specify more details about the specialty of the enterprise.

### D. MACHINES AND OPERATIONS.

1. The page begins with Enterprise *Code and Acronym.*
2. *Machines and Operations:* The *Code* of the EEC-B nomenclature is to be used (with 6 digits) prefixed by 1/2/3/4/5 if the operations are in sectors metal/plastic/electric/clothing/services.
3. The *Description,* the manufacturer, type/model, origin, year of manufacture (or purchase), condition with a rating from: 1 Poor; 2 Fair; 3 Good; 4 Excellent; 0 Unknown, number of shifts (1, 2 or 3), rate of utilization in percentage (%), number of similar machines or operations, and number of persons operating the machine should be recorded.
4. The Complementary Data of the EEC-B nomenclatures are integrated in the nomenclature as a sixth digit; that means that the complementary data is integrated in the machine's codes.
5. The *Technical Characteristics* of each machine or operation are defined in the Nomenclature EEC-B, at the VII column. Here are recorded the technical characteristics that measure the capacities of the machines or operations, always with a value for the data to be registered in the computer. In case of data such as material (in letters), it must be translated in several alternatives, one of which should contain the production flow (20 Kg/hr. of aluminum, iron, steel,...) and it is the 20 Kg/hr. value which must be registered.

| ENTERPRISE DATA | | | |
|---|---|---|---|
| Code | | Acronym | |

| ADDITIONAL PARTICULARS | |
|---|---|
| Description | Information |
| 10 Patents licences | |
| 20 Standards | |
| 30 Main Stockholders | |
| 40 Rent/owner | |
| 50 Specialized works | |
| 60 Special handling facilities | |
| 70 Special transportation facilities | |
| 80 Foreign collaboration | |
| 81 — Type of collaboration | |
| 82 — Rate of participation (% of equity) | |
| 90 Banker | |
| | |
| | |

| QUALITY CERTIFICATES | | | | |
|---|---|---|---|---|
| TYPE | Certified by | Applies on 1. Product; 2. Process; 3. Enterprise; 4. Others | Date dd/mm/yyyy | Expires dd/mm/yyyy |
| | | | | |
| | | | | |

| QUALITY LABELS | APPROVALS |
|---|---|
| | |
| | |

| PATENTS/LICENCES |
|---|
| |
| |
| |

| ENTERPRISE DATA | | | |
|---|---|---|---|
| Code | | Acronym | |

# IV. PRODUCTION RELATED DATA

| SUBCONTRACTED PRODUCTS (EEC-A, 6 digits) | | | | |
|---|---|---|---|---|
| SUBCONTRACTED PRODUCTS DESCRIPTION | | Capacity | Produce | Units |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| COMPONENTS AND RAW MATERIALS (Combined, 10 digits) | | | | |
|---|---|---|---|---|
| RAW MATERIAL & COMPONENTS DESCRIPTION | | Origin | Quantity | Units |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| SPECIALIZED SUBCONTRACTING SUPPLY (EEC-B, 6 digits) | | | |
|---|---|---|---|
| PRODUCTION SPECIALIZED SUPPLY (details included) | | Quantity | Units |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| ENTERPRISE DATA | | | |
|---|---|---|---|
| Code | | Acronym | |

| MACHINES AND OPERATIONS (EEC-B, 6 digits) | | | |
|---|---|---|---|
| Particular | Machine 1 | Machine 2 | Machine 3 |
| Code | | | |
| Description | | | |
| Manufacturer | | | |
| Type/model | | | |
| Origin | | | |
| Year manufacture | | | |
| Condition 0 to 4 | | | |
| No. of shifts | | | |
| Utilization % | | | |
| Number of units | | | |
| No. of operators | | | |

| TECHNICAL CHARACTERISTICS FOR EACH MACHINE | | | | | | |
|---|---|---|---|---|---|---|
| Characteristic | VALUE | Units | VALUE | Units | VALUE | Units |
| 1) | | | | | | |
| 2) | | | | | | |
| 3) | | | | | | |
| 4) | | | | | | |
| 5) | | | | | | |
| 6) | | | | | | |
| 7) | | | | | | |
| 8) | | | | | | |
| 9) | | | | | | |
| 10) | | | | | | |

| ACCESSORIES OF MACHINES (Nomenclature accessories, 6 digits) | | | | |
|---|---|---|---|---|
| | ACCESSORIES | TYPE | MAKER | Quantity |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

6. Each machine or operation recorded takes 1 column of the 3 above-mentioned frames. This means that one page of the questionnaire holds 3 different types of machines. If more than 3 types of machines are available, use a second, third or more similar pages and paginate them accordingly.

## E. ACCESSORIES OF MACHINES.

1. The accessories or ancillaries will be separately listed down and coded. A special 6 digits nomenclature has been designed using the first digit as indicator of the sector usually (1/2/3/4/5 for metal/plastic/electric/clothing/services).

ANNEX 9

# The SPX club

1. Purposes of the SPX club

The purposes of the Club are:

*(a)* to allow all members to network with UNIDO and to have access to a series of UNIDO support services and

*(b)* to encourage networking and international cooperation between the Industrial Subcontracting and Partnership Exchanges (SPXs) and with other industrial promotion organizations (IPOs) worldwide, using common technical terminologies.

Thus the Club shall become a Global SME Partnership and outsourcing Network.

2. Membership

*(a) Full members or ex-officio members*

The Industrial Subcontracting and Partnership Exchanges (SPXs) or Promotion Centres which have adopted the UNIDO subcontracting system and methodology and have signed the UNIDOSS licence agreement.

*(b) Associate members*

The Club is also open to Industrial Promotion Organizations or Institutions (IPOs) and to industrial firms acting as main contractors, both in industrialized and in developing countries, which have an interest in participating in the network.

*(c) Membership fees*

There are no membership fees nor annual fees, but some services will be provided against payment of a fee (see 3c below).

3. Services offered

*(a) Services free-of-charge for all members*

Registration in the international directory of members and associate members.

Networking and contacts with other member SPXs and IPOs

Access to other UNIDO Support Services and Networks, such as:

IPPN: the "Industrial Partnership Promotion Network", which includes various other networks such as the UNIDO Investment and Technology Promotion Offices (ITPO), and selected major cities in emergency economies.

National focal points or sources of information utilized by UNIDO for its cooperation programmes.

Code of Conduct for industrial subcontracting, supply and partnership relations.

*(b) Services free-of-charge for full (ex-officio) members*

The UNIDOSS software (V-2) and its operating manual

Methodological guides, case studies and specialized publications (related to industrial subcontracting and partnership) produced by UNIDO, such as:

Guide on the creation and management of SPXs

Legal guide for subcontracting agreements

Proposed legal statutes for SPXs

Guide for the organization of subcontracting exhibitions/fairs

Cooperation agreements between UNIDO and selected organizers of world-famous international subcontracting, partnership and procurement exhibitions/fairs.

(c) *Services provided against contribution to the expenses*

Specialized training seminars

Organized by UNIDO (in Vienna)

Organized by selected institutions in collaboration with UNIDO

A roster of specialized consultants (for evaluation/audits of SPX operations, assistance in technical matters, legal matters, UNIDOSS data processing, promotion, exhibitions/fairs, market surveys, lean production and just-in-time management, etc.)

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