SME CLUSTER AND NETWORK DEVELOPMENT IN DEVELOPING COUNTRIES: THE EXPERIENCE OF UNIDO

by

Giovanna Ceglie (UNIDO Programme Coordinator)

and

Marco Dini (UNIDO Expert)

INTERNATIONAL CONFERENCE ON BUILDING A MODERN AND EFFECTIVE DEVELOPMENT SERVICE INDUSTRY FOR SMALL ENTERPRISES

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INTRODUCTION

The guiding principle of UNIDO's approach towards SMEs is that **small-scale manufacturing enterprises can play a key role** in triggering and sustaining economic growth and equitable development in developing countries. However, this potential role is often not fulfilled because of a particular **set of problems characterising SMEs which are related to their size.** Individually, SMEs are often unable to capture market opportunities which require large production quantities, homogenous standards, and regular supply. By the same account, they experience difficulties in achieving economies of scale in the purchase of inputs (such as equipment, raw materials, finance, consulting services, etc.). Small size also constitutes a significant hindrance to the internalisation of functions such as training, market intelligence, logistics and technology innovation-- all of which are at the very core of firm dynamism. Furthermore, small scale can also prevent the achievement of specialised and effective internal division of labour which, according to classical economic theory, fosters cumulative improvements in productive capabilities and innovation. Finally, because of the continuous and fierce struggle to preserve their scarce profit margins, small scale entrepreneurs in developing countries are often locked in their routines and unable to innovate their products and processes and look beyond the boundaries of their firms to capture new market opportunities.

Through **networking**, individual SMEs can address the problems related to their size and improve their competitive position. On account of the common problems they all share, small enterprises are in the best position to help each other. Through horizontal co-operation (i.e. with other SMEs occupying the same position in the value chain), enterprises can collectively achieve scale economies beyond the reach of individual small firms and can obtain bulk-purchase inputs, achieve optimal scale in the use of machinery and pool together their production capacities to satisfy large-scale orders (Pyke, 1992). Through vertical integration (with other SMEs as well as with large-scale enterprises along the value chain), enterprises can specialise on their core business and give way to an external division of labour (Marshall, 1920). Inter-firm co-operation also gives rise to a collective learning space, an "invisible college" (Best, 1998), where ideas are exchanged and developed and knowledge shared in a collective attempt to improve product quality and occupy more profitable market segments. Lastly, networking among enterprises, providers of business development services (BDS) and local policy makers can help to shape a shared local development vision and give strength to collective actions to enhance entrepreneurial strategies.

This paper is an attempt to reflect upon UNIDO's experience in promoting business development services focused on networking as a strategy to develop small-scale enterprises. The following section, "Origins of the Cluster/Network-Based Approach", provides the rationale for the approach. "From Theory to Practice" illustrates real cases of networking development projects drawn from some of the countries where the approach is currently being implemented. The section entitled "Methodology" emphasises the key components of a methodology that have emerged as a result of a five-year long experience in project implementation. A concluding section reflects upon some of the key "Lessons Learned" and highlights what emerge as the most significant issues that might prove useful to consider in further applications.

Prior to a closer examination of the main elements of UNIDO's experience, a working definition for the concept of 'networks', 'clusters' and 'networking' needs to be introduced. In this paper the term **network** refers to a group of firms that co-operate on a joint development project -- complementing each other and specialising in order to overcome common problems, achieve collective efficiency and conquer markets beyond their individual reach. The term **cluster** is used to indicate a sectoral and geographical concentration of enterprises which first, gives rise to external economies (such as the emergence of specialised suppliers of raw materials and components or the growth of a pool of sector specific skills) and secondly favours the rise of specialised services in technical, administrative and financial matters. Such specialised services create a conducive ground for the development of a network of public and private local institutions which support local economic development promoting collective learning and innovation through implicit and explicit co-ordination[1]. And lastly, the verb **networking,** refers to the overall action of establishing the relationships characterising both networks and clusters. In this paper, therefore, networking development services indicate those services aimed at promoting the development of clusters and networks.

1 This definition takes into consideration Humphrey and Schmitz, 1995

ORIGINS OF THE CLUSTER/NETWORK-BASED APPROACH

Evidence of well performing SME clusters has been extensively reported in literature (Goodman, Bamford, and Saynor 1989, Pyke, Beccattini and Sengenberger 1990, Sengenberger, Loveman, and Piore 1990, UNCTAD 1998, among others). In many performing clusters, like the Italian industrial districts, inter-firm networking primarily emerged spontaneously as the result of the peculiar historical and social environment surrounding the SMEs (Brusco 1982, Sabel and Piore 1984, Beccattini 1990, Best 1990). Spontaneous networking has also been observed in some developing countries (Schmitz 1990; Navdi 1995), but it appears to be relatively uncommon. Even less common is the spontaneous emergence of other features of successful clusters such as institutions promoting collective learning and innovation.

In spite of the potential benefits for the enterprises, therefore, evidence shows that inter-firm co-operation and the other features of successful clusters do not always emerge spontaneously. Three factors are among the main ones significantly hindering this process : a) the significance of the transaction costs that need to be borne to identify suitable network partners and to forge relationships, b) the imperfect market functioning for the provision of crucial inputs for networking development such as information and innovation; and, c) the high risk of "free riding" that is especially faced in contexts where the legal framework to back up joint endeavours is relatively underdeveloped.

The available literature vividly bears out that the intervention of an "external agent" that acts as a catalyst to facilitate the emergence of clusters and networks can greatly reduce the significance of the above factors. Among cases of developing countries, Navdi (1995) provides interesting examples of successful interventions aimed at fostering co-operative relations within SME clusters drawn from the experience of Brazil, Mexico and India. Along the very same lines, Humphrey and Schmitz (1995) describe the main features of the Chilean PROFO (*Proyectos de Fomento*) program consisting of a carefully designed set of public incentives which has stimulated the establishment of approximately 450 SME networks with significant results in terms of increase in SME profitability and sales (Dini 1998).

Taking stock of these experiences and of the general reflection on the clustering and networking phenomena, UNIDO has promoted a new technical assistance programme for SMEs. This is characterised by an emphasis on the promotion of efficient systems of relations between enterprises and between enterprises and institutions which allow enterprises to overcome their isolation and reach new collective competitive advantages beyond the reach of individual small firms. The programme[2] also emphasises the development of local institutions to act as facilitators of the networking process, or "system integrators". These should support the emergence of a joint entrepreneurial vision involving the whole business system - composed by firms, their suppliers, buyers and support institutions - and be able to enact that vision through common development projects. Indeed, it is this emphasis on the whole business system - and not on the individual enterprise - that constitutes the main difference between networking programmes and other traditional technical assistance programmes.

While highlighting this difference, it should also be pointed out that networking projects are not in competition with other business development services but, on the contrary, usually enhance their use by the enterprises. The collective projects generated by the networks, in fact, demand technical and financial inputs for their execution. This demand is not directly satisfied by the networking project (as it is not part of its core functions) but is channelled, by the "system integrators", to other available providers of technical/financial services. This way the relationships between the enterprises and the local service providers can be optimised while the usage rate of the services is increased. If gaps are detected in the support system, the networking project can take steps to overcome them by initiating institution building (such as in the cases of Jamaica illustrated in the next section).

[2] The term *programme* here indicates a technical assistance framework implemented through country *projects*

FROM THEORY TO PRACTICE

In order to illustrate UNIDO's experience and its crucial aspects, the following cases have been selected which exhibit some of the more significant features of the projects implemented over the last five years.

The case of **Honduras** represents a project which evolved from the creation of SME networks into the establishment of a specialised institution (CERTEC) acting as a networking promotion agency. Considerations on diffusion and sustainability of impact as well as on funding mechanisms of networking BDS will be made here. The case of **Nicaragua** illustrates three main points: first, how, as a result of its successes with network brokering, a project has achieved significant influence on policy making at the national level; secondly, the importance of capacity building of local BDS providers and thirdly, how the principles of economies of scale and scope inform the delivery of support services. The case of **Mexico** highlights a project promoting vertical integration arguing for the direct involvement of large-scale manufacturers into suppliers' upgrading efforts. And finally, the case of **Jamaica** presents an example of entry at the top institutional level (whereby the effort to bring about cluster-based development lays at the operational core of the national SME support agency) and a case of creation of specialised service centres (for garments, fashion, furniture, etc.).

HONDURAS: evolution of a networking project

In 1993 the Honduran Government requested UNIDO to design and implement a technical assistance project for the development of the SME sector. Due to the unsupportive institutional environment which characterised the SME sector at the onset of the project, the project focused directly on the enterprise level, relying on a group of eight national consultants with engineering and management skills under the guidance of the local UNIDO director.

Initially, the national consultants[3] concentrated on identifying groups of enterprises with similar characteristics and growth constraints and helped them to establish common development projects . The client base was constituted by micro and small enterprises with an average staff between 2 and 15. The enterprises were selected based on either personal knowledge of the consultant or through the assistance of the local producers' associations (AMPIH: Asociación Nacional de Mediana y Pequeña Industria de Honduras and ANDI: Asociación Nacional de Industriales) or through other local institutions such as INFOP (Instituto Nacional de Formación Profesional), the local training institute. Following a visit to the enterprises selected, weekly joint discussions ensued, organised by the consultant, to support the group of entrepreneurs in analysing their problems, identifying common solutions and outlining a common workplan.

The workplan envisaged a division of tasks among network members and often group saving schemes to establish a common fund to finance common activities. The consultants also assisted in the implementation of the workplans, calling upon other local BDS providers to provide specialised inputs. Among the institutions which most actively participated were PASI (Programa de Apoyo al Sector Informal) for the provision of credit and INFOP (Instituto Nacional de Formación Profesional) for the provision of training. The close contact with other institutions also helped in channelling the entrepreneurs' demand for different and improved services, leading up to a lasting upgrade of the locally available business services.

Over its five years of operation, with an investment of approximately US$ 680,000 (contributed by the Government of the Netherlands), the project has established 33 networks with common development projects involving some 300 enterprises. Common projects focused on, for instance, joint purchasing of raw material, joint establishment of shops to retail finished products, launching of new production lines, product or process specialisation, sharing of large orders (including public procurement), and creation of new enterprises which complement existing production facilities. It should be noted that

[3] In the projects described in this paper, the consultants promoting networks/clusters are also called 'network/cluster brokers'. The terms consultant/broker will therefore be used interchangeably.

the assistance given by the project to the networks has consisted entirely of technical assistance while no funding of working capital or investment, whatsoever, was granted. On the financial side, the project only acted as an intermediary between the networks and the financial institutions to help the enterprises meeting the requirements for obtaining loans. One example of a network developed by this project is described in Box 1.

Box 1: Emasim: Metalworking Network

Emasim is a group of 11 enterprises in the metal working sector in Tegucigalpa. Their average employment is 4 workers. At the beginning of the project, the entrepreneurs were invited to participate in a training course at INFOP to improve their technical capabilities. It was through this course that the entrepreneurs started to get to know one another better and, with the help of a project consultant, began analysing their problems while searching for common solutions.

The consistent supply and cost of raw materials was identified as the most urgent problem. In response, a common raw material supply centre was created, a common loan obtained from PASI and an internal revolving fund established to be used by members of the network as working capital. Based on the progress achieved through this initiative, the network members expanded their co-operation to the production level, by exchanging tools, identifying and sharing large orders (for instance in metal construction and maintenance works at supermarkets and banks) and examining ways to complement their production processes. In order to diversify production and target new market segments, the network decided to collectively invest in new larger equipment and establish a separate independent enterprise to manage the new equipment and provide services to the network members. Among the quantitative results registered in this network, it can be noted that, to date, collective sales have increase by 200 % (in comparison to the total individual sales prior to network establishment), employment increased by 15% and fixed assets by 98%.

In most cases, the collective projects have launched new businesses for the networks, increased the revenues of the participating enterprises and generated new employment. A recent in-depth evaluation of six networks, selected among the 33 mentioned above, showed a positive trend for all basic performance indicators. For instance, comparing the data at the beginning of the project with the present data, sales increased between 35% and 200%, employment increased between 11% and 50% and investment in fixed assets increased between 10% and 100%.

As of 1996, the idea of charging a fee to the networks for the service provided to them was introduced for two reasons: to increase the resources available to the project for enlarging and extending the activities and, more importantly, to ensure a more active/convinced participation of the entrepreneurs. The fee is determined on the basis of the workplan decided upon by the consultant and the group. It varies depending on the time requested from the consultant and it is stipulated in a simple contract signed by the network and the broker which is reviewed and renewed yearly. The fee normally increases yearly. For instance, in the case of EMASIM, the network described above, with the first contract (signed after 3 years of fully-subsidized assistance) the network committed itself to pay 20% of the cost of the services (including direct and indirect costs); the second year the fee went already up to more than 40% of the cost.

As the project implementation advanced, two inter-linked themes emerged namely: 1) how to increase the impact of the project by creating additional networks - thus benefiting more entrepreneurs - and by accelerating their development process; and 2) how, over time, to guarantee the sustainability of the networking promotion effort.

In an attempt to address the first theme, a three-point strategy was adopted: First, the project consultants started *training other "network brokers"* in order to diffuse network creation capabilities and multiply results. New network brokers were selected from locally active institutions (especially entrepreneurial associations) and from other technical assistance projects. More and more local institutions are currently demanding the service of training of network brokers. Secondly, the project consultants invested time in drafting a *network development methodology* to facilitate the transfer of knowledge to new brokers in order to accelerate their learning process. At the same time, working instruments were devised to assist and facilitate their work. One such instrument is described in Box 2. Thirdly, *the scope of networking was increasingly broadened* to include 1) the development of vertical

networks involving relations between small enterprises and larger ones and 2) the development of clusters where the emphasis shifted from the pure entrepreneurial strategy of the horizontal networks to a strategic vision of local development involving local institutions and local governments.

Box 2. The Network Evaluation Tool (NET)

As a result of the network development experience acquired in the Honduras project , the Network Evaluation Tool (NET) was developed. This tool is structured on the basis of a matrix which intersects network development indicators with network development stages in order to measure the level of network development. The development indicators used are: *group cohesion*, *group organisation, capacity of problem analysis, capacity of strategic planning, production and organisation changes, economic variables changes,* and *relations with external economic environment*. The development stages, as described in the methodology chapter, are: promotion *and motivation, strategic planning, pilot projects, strategic projects* and *self-management*. At each intersection of development indicators and development stages, the results the network should achieve are described. Achievement, partial achievement or "non-achievement" of the results is translated into scores that, at the end of the application, indicate the level of network progression. This score is then graphically represented permitting the assessment of a network's evolution over time and comparisons with other networks for benchmarking purposes. The tool is also a useful instrument to constantly assess and redesign the network development methodology. It provides feedback to network brokers on their own work so that they, in turn, can adjust the services rendered to the enterprises accordingly.

In an attempt to address the second theme of long-term sustainability, a process of project "privatisation" was implemented. A foundation was established whose employees are the team of national consultants and whose members are local private and public institutions. The foundation, called CERTEC (Centro de Recursos y Tecnologìa), started working within the UNIDO project in 1997. After one year of operation, during which US$ 60,000 in revenues was generated, representing more than 50% of total annual costs, the institution became independent from UNIDO and is now managing its own budget and strategy[4].

Finally, two elements of the Honduras experience are worth highlighting. First, it should be stressed that the type of BDS provided evolved from *direct assistance* to the enterprises *to higher level functions* of training other intermediaries (network brokers), improving the intervention methodology and devising new integration modalities. This resulted in a substantive multiplication effect. For example, between 1997 and 1998, CERTEC trained 71 brokers who have since organised 59 networks/clusters with the participation of 1,200 enterprises.

Secondly, a consideration should be made of the type of funding requested by a BDS provider like CERTEC. The financing of an institution like CERTEC has to draw from a combination *of public and private funds*. In the case of CERTEC, a tripartite funding is envisaged for the next years of operation, namely a) service fees, i.e. funds generated by the sale of services to the enterprises (networking services) and to institutions (associations, local and central government for services such as training of network brokers), b) membership fees and c) public funds which, in the case of CERTEC, will be contributed by an international donor.

As it will be mentioned in the final section, "Lessons Learned", the investment of public funds in institutions such as CERTEC is justified by the fact that CERTEC aims at implementing development measures for the SME sector which is predominantly populated by enterprises that are not, as clients, in a position to fully fund the operating costs of the organisation. Pushing CERTEC to survive under pure commercial conditions would entice CERTEC to look for wealthier clients, thus giving second priority to the demands of small enterprises for whose promotion the institution was created.

[4] Revenues have been generated by selling services to the networks and to client institutions especially for training of network brokers. It should be noted that, while as mentioned above, the fees paid by the networks do not cover entirely the cost of those services, the fees charged to institutional clients fully cover the cost of the service plus a certain amount of overheads which are used to subsidise the other services only partially covered.

NICARAGUA: broadening the scope of networking

The Nicaragua project started in 1995 with PAMIC (Programa Nacional de Apoyo a la Micro Empresa which has, since 1998, become INPYME, Instituto Nacional para la Pequeña y Mediana Empresa) as the counterpart. During the first phase of the project, the strategy has been similar to the one described in the Honduras case. Some 20 networks (horizontal) were created (one example is described in Box 3) by a team of seven national consultants assisted by short-term international consultants.

Box 3: Ecohamaca: Handicraft Hammock Sector

EcoHamaca is a network of 11 enterprises operating in the handicraft hammock production sector. While the network members all compete with one another in the local market, they are trying to collaborate in an attempt to break into foreign markets. Prior to UNIDO's assistance, none of the local producers had direct exporting experience. Through the work of the project the producers were assisted in standardising their production in order to collectively reach quantities suitable for export and at the same time improve the quality and design of the products and the pricing systems. The group selected an ecological friendly strategy and therefore focused on changing the wood used for the poles (from cedar wood which is close to extinction to other more abundant exotic species) and the dying substances from chemical to natural ones. This strategy proved to be successful since it permitted the group to penetrate important markets like the EU and USA. To date, the producers have exported on eight different occasion to destinations such as Sweden, Finland, USA and Peru and over 3,000 hammocks are exported on average every month. In order to consolidate results and further common work, the group has acquired legal status and has hired a manager whose tasks presently include the identification of more formal training schemes for the workers, the research of other technical and financial assistance inputs from a variety of local SME support institutions and strengthening their marketing strategy. Ecohamaca now has a presence on Internet.

The main difference vis-à-vis the Honduras case is that the Nicaragua project has had, since the beginning, a public counterpart. Due to this distinction, three consequences have emerged. Firstly, the project has had an *easier entry into local policy dialogue and formulation*. As a result, the project has had leverage in proposing the networking strategy as a key SME development strategy. Networking promotion has now become one of the main axes of government approach for private sector support. Secondly, the project has also played a more prominent role in *inter-institutional co-ordination* and has had greater access to local people and resources (channelled through the counterpart). Thirdly, the Nicaraguan project, from the onset, displayed a much *clearer prospect of sustainability*. The long-term prospect is that the project, with its team, will be taken over by the counterpart and it will become one of its strategic branches. At the moment, however, the project is maintaining its autonomy in operational terms and is managed independently although in close consultation with the counterpart. This will guarantee that the project team acquires the necessary skills and experience ensuring the needed maturity in its dialogue with the counterpart and in general with the public sector.

Further and complementary to the above, three other points are worth emphasising with regard to this project (which has now entered its second phase of three year duration with a budget of US$ 1.3 M financed by the Government of Austria).

First, as mentioned above, the project is actively promoting *inter-institutional networking* at two levels. Through the establishment of an inter-institutional committee, the project shares activities with other local BDS providers (including other multilateral and bilateral donors). This committee is presently co-operating on a variety of issues including improving loan access for SMEs, co-ordinating the design and application of evaluation criteria for SME assistance intervention, transferring of network development methodology to other service providers and executing specific joint projects in localities or sectors of common interest (for instance wood and furniture in Masatepe, leather and shoes in Leon, etc.). On a more comprehensive scale, the project has been invited to assume an important role in the National Committee for Competitiveness and Sustainable Development - formed by high level policy

makers and main representatives from the private sector as well as the main economics university of Nicaragua - and is contributing to the dialogue to design an overall SME development policy.

Secondly, an important component of this project is *local capacity building*. The national consultants working in the project are local professionals with no international experience and no direct knowledge of cluster or network practices or policies. The project is therefore investing in training them in order to up-grade and specialise their skills, which should result in improved services to the enterprises. Training is provided by international consultants and UNIDO staff via thematic seminars and on-the-job training. As further explained in the section "Lessons Learned" other forms of training are also being implemented such as joint learning programs abroad on best practices of clusters/networks development.

Thirdly, the project, like in the Honduras case, is now *diversifying its activities* to also include, in addition to the promotion of horizontal networks, the training of new network brokers, the promotion of industrial integration along production chains (SME/Large Enterprises subcontracting with emphasis on supplier upgrading) and the promotion of industrial districts (in Nicaragua the term industrial district is used to mean clusters as defined in the introduction of this paper). This evolution has come about quite naturally while realising that economies of scale and scope can extend beyond the boundaries of horizontal networks. As exemplified in the following box on Masaya, the task is to find "the right equilibrium" in scale and scope of the joint action and to aim the common development projects to achieve maximum economic efficiency and return. In Masaya this has translated into a progressive evolution of the scale of the common project from networks to sector to cluster to national level, as schematically described in the box below.

Box 4: Masaya Handicrafts

Masaya is a town south-east of Managua with a strong handicraft tradition. One of the main local products is hammocks. Initially, the project assisted networks of hammock producers to upgrade their products for export (see box "Ecohamaca" above). While implementing the network's projects, it became evident that the main factor influencing hammock prices was the cost of the cotton yarn used as raw material . After studying the relationship of the cost of cotton yarn to quantities purchased, it became clear that the best prices could be obtained for quantities greater than those required by the single networks, i.e. co-ordinating the purchase of yarn at the level of the whole hammock sector of Masaya. The brokers , therefore, focused on creating a local purchase centre offering raw material to a large number of Masaya hammock producers.

Another important factor which was identified for improving the performance of the hammock sector was design. In response to this, the project is working towards improving design according to market trends and creating new products (for instance hanging chairs, deck chairs, cribs, etc.). The design of the new products, in order to be successful, is being done in co-operation with the wood and furniture sector. At the same time, since the most interesting market for this line of products is the export market, the need to build-up an export promotion strategy has arisen. The resulting launch of the common brand, "made in Masaya", is being developed to promote local identity accompanied by activities to increase the quality of local products. This brand will be extended to all handicraft products from Masaya and therefore to the entire cluster.

Finally, other initiatives will have a national dimension. For instance, actions to facilitate export transactions which are part of the export strategy for Masaya, will obviously extend their effect to all Nicaraguan enterprises.

The conclusion emerging from the experience in Masaya is that the concepts which guide the implementation of network/cluster-based projects is demand orientation and creative solution design. Brokers should look at the entire business system, tap all available resources, and design the intervention in order to take maximum advantage of economies of scale and scope.

MEXICO: promoting vertical integration

In the second half of 1997, the Mexican Confederation of Industrial Chambers (CONCAMIN), the Fundación para la Transferencia Tecnológica a la Pequeñas y Medianas Empresas (FUNTEC), the United Nation Development Programme (UNDP) and UNIDO, gave birth to the Program of Industrial Integration (PII). Through a flexible and decentralised set of initiatives, the PII aims at stimulating and supporting local projects to promote networks of SMEs as well as sub-contracting networks between small- and large-scale enterprises.

The two projects initiated in the states of Chihuahua and Jalisco, over the first six months of the program, are focused on this second feature[5] -- aiming at increasing the competitiveness of local SMEs by stimulating a deeper and broader integration with the multinationals established locally[6]. In the case of Chihuahua, the entrepreneurial counterpart has been the association of "maquiladoras" firms. In the case of Jalisco, the participating association is the Camara de la Industria Electrónica. In both Chihuahua and Jalisco, the entrepreneurial counterpart covers one third of the operating costs; another third has been contributed by the state government while the remaining third has been funded by the PII.

Both projects are in the process of establishing two technical centres (Centres for Suppliers Development) with the following aims: a) helping enterprises to identify sub-contracting opportunities; b) co-operating with the technical personnel of the lead-firms on the definition of support programs targeted at up-grading the capabilities of the identified sub-contractors; c) identifying and channelling technical support, training and loans (when required) from locally available institutions to the subcontractors to assist them in meeting the needs of the main contractors.

While both centers are still in their initial phase, some lessons can, nevertheless, be derived from the experience gained during their design and initiation.

1. Despite the well known scepticism that many foreign multinationals, and especially "maquiladoras" firms, have towards local producers, the fact that lead-firms are playing an important role in both centres in terms of direct (financial) support and sensitisation of other partners, proves that in Mexico large-firm openness towards establishing linkages with small firms is improving.

2. The benefits that a Centre for Supplier Development presents for the client enterprises are twofold. First of all, such a centre can co-ordinate the demand for the goods and services of the main-contractors. It becomes possible, therefore, to achieve significant economies of scale that not only lower the prices of production inputs but that can also justify new investments by the subcontractors to meet the demands of a pool of lead firms. Secondly, such a centre can co-ordinate supply and help establish horizontal networking among subcontractors. This type of action is crucial when there is a significant gap between the lead firms and their subcontractors,--especially in terms of production capabilities, technology and management. The creation of a network, with the task of organising and improving the offer of a group of subcontractors, can provide an efficient measure to fulfil an intermediate position that is frequently missing in the supply chain.

3. In spite of the advantages previously mentioned, the idea of a centre implies a collective action by the main-contractors which can often be extremely complex. The establishment of a consensus over the design of the centre and the co-ordination of the technical inputs for its management are all initiatives characterised by significant transaction costs which are often high enough to freeze or to radically slow down the development of any collective project. It is precisely the reduction of such transaction costs that justify the existence of a PII whose main added value is, therefore, to speed up the decision-making process at the enterprise level, minimise the time wasted in negotiations, promote the emergence of a consensus and co-ordinate the contributions at various levels.

4. The experience of the Mexican project indicates that a support measure focusing on subcontractors has the best prospect for maximising its impact when the lead firms participate not only in its funding, but also commit their own technical personnel to the selection of the potential subcontractors and

[5] According to the document program, 12 projects will be initiated over the three years of the Program.
[6] Multinationals in Mexico have very little interaction with local subcontractors. In the case of Chihuahua, for example, the integration level (which is slightly higher than the national average and has grown over the last years) barely reached 3% in 1997.

design of the support initiatives. This type of participation ensures not only that the initiatives are genuinely demand-lead but also the transfer of the knowledge base accumulated by the main-contractors to the subcontractors.

5. Lastly, it needs to be noted that, in spite of numerous similarities, the two centres initiated in Jalisco and in Chihuahua are profoundly different from the traditional subcontracting exchange schemes that operate in many countries with the aim of linking the demand and the supply of subcontracting services. The centres in Jalisco and in Chihuahua do not operate on the idea that the main obstacle to the creation of such links is an information failure (which is at the basis of traditional types of subcontracting exchanges). While instruments that tackle the information gap are used (like the creation of databanks on demand and supply) the centres mainly concentrate upon technical support initiatives trying to address the basic problems of capacity failure and difficulty in establishing relationships based on trust.

JAMAICA: an example of institutional networking

The Jamaica project is another example of entry at the institutional level. The project, which was initiated in 1994 (second phase started in1997 for a duration of 3 years; total budget for the two phases approximately US$ 1.5 M contributed by the United Nations Development Programme - UNDP) was requested by the Jamaican Government to assist the public development agency, JAMPRO, in implementing a support strategy for the local SME sector.

The Productivity Centre, located within JAMPRO, is the focal point for project implementation. Unlike the other projects described, the activities of the Jamaican project are directly implemented through the staff of the Productivity Centre . An international chief advisor, funded by the project, has been requested by JAMPRO to assist the local team. There are two main features of this project to be noted: institutional capacity building and network promotion. Institutional capacity building consisted of strengthening the capabilities of the Productivity Centre to act as a networking promotion agency and of creating specialised centres, co-ordinated by JAMPRO, to provide "real services" to the SMEs. As a result of the project, the Productivity Centre is now performing the following functions: identifying SME needs and designing the public institutional answer to meet these needs; networking and co-ordinating actions with other local institutions active in SME related fields (such as HEART, the national training agency, community colleges, University of West Indies, vocational schools, specialised service centres, etc.) favouring streamlining and specialisation of services; acting as an information hub on issues related to SMEs ; acting as network broker. Specialised centres have been created/upgraded (mainly within existing institutions) by the project in fields such as garments and fashion, furniture, food processing, handicraft, and in the metalworking sector. The centres provide technical services to the entrepreneurs (see box below as an example) and act as "second level" networking institutions also linking the entrepreneurs with other service providers for services they do not offer.

Box 5: Network Support System for the Fashion Industry

An institutional support network has been established involving educational, training, and technical institutions to help the Jamaican SMEs operating in the fashion sector. At the heart of the network is the JAMPRO Design Centre and, through its fashion division, offers the following services: information on fashion trends, advice to manufacturers on design improvements using CAD systems, linkages between manufacturers and local and foreign designers, and information on suppliers of inputs for the fashion industry. Other important actors in the networks are the two Apparel Technical Centres -- one in Kingston and one in Montego Bay -- to provide training and technical assistance to producers in areas such as computerised pattern making and grading, product development, and flexible manufacturing systems. These centres have both the functions of diffusing best manufacturing practices and stimulating SMEs to network for joint purchase of raw material, joint marketing etc.

What should be emphasised about this project is that the entry at the top institutional level has guaranteed highest local ownership of the initiative and, in turn, good prospects of sustainability. Moreover, JAMPRO is ideally positioned to articulate a coherent structure of services for the SMEs, playing the role of system co-ordinator. The challenge of this project is now to help the support

institutions to study and implement a coherent fee structure to recover at least part of the service costs from the client enterprises.

METHODOLOGY

On the basis of the experiences described in the previous section, and UNIDO's current overall involvement in cluster/network related projects (including projects in 11 countries), it is possible to draw some conclusions on the methodological steps and principles which characterise UNIDO's networking initiatives. Four phases, which also represent distinct intervention levels, need to be distinguished: a) the promotion of networks, b) the restructuring at the firm level, c) the improvement of the institutional environment and d) the improvement of the dialogue between the public and private sector. These phases do not require strict adherence. On the contrary, as the case studies amply demonstrate, their sequencing and relative importance must be fine-tuned in accordance with the surrounding environment.

The promotion of networks[7]

The experience of UNIDO proves that it is possible to initiate and develop effective relationships among independent entrepreneurs based on collaboration and production integration even when the entrepreneurs had no previous knowledge of each other. The central element for the development of a network is the creation of a sufficient level of trust through a process of mutual learning which can be suitably stimulated and guided by an external agent (the network broker) trained to perform such a function.

In somewhat simplified terms, it could be argued that the mutual learning process has the following two features. First of all it is an *empirical process* based on trial and error within which theoretical and conceptual elements necessarily play a limited role. In order to create a relationship based on trust, entrepreneurs need to be exposed to an interactive process starting with "role assignment" leading to "criticisms based on the analysis of the results" and finally "reassignment of responsibilities" within which they can assess, empirically, the capability and commitment of their partners. Secondly, the process is an *incremental* one because it is assumed that, lacking any previous experience with trust, the group needs to act gradually; it will therefore start by undertaking initiatives with low risks for the participating enterprises and only subsequently shift to more complex ones as mutual trust increasingly builds.

In practical terms, through UNIDO's experience in the field, five different phases have been identified for the establishment of an effective and viable network of enterprises: a) promotion and motivation; b) strategic planning; c) pilot projects; d) strategic projects; e) self-management (Rabellotti 1998).

The *promotion and motivation phase* initially consists of a set of promotional initiatives which need to be launched to contribute to a) the identification of a critical mass of SMEs sharing similar growth constraints, b) their sensitisation to the benefits of networking, and c) the emergence of groups and of group leaders. In this first stage, the network brokers normally organise large and open meetings to introduce the principles of networking and to indicate their possible applications. As a result of this promotional initiative, entrepreneurs group around issues (problems and/or opportunities) that they have in common. There appears to be no such thing as an optimal selection criterion for enterprises to be part of the same network. The entrepreneurial characteristics that appear to be most conducive to collective actions, and which needs to be stimulated by the network brokers, are a willingness to learn and an openness to discuss and develop relationships with other people. Similarly, there appear to be no general rules concerning size or location of the groups. Nevertheless it should be noted that limited number and geographical concentration reduce co-ordination costs. The viability of a collective project depends, in other words, on the trade-off between the critical mass of enterprises which is necessary to sustain the joint action and, inevitably, its co-ordination costs.

Once groups have emerged, it becomes possible to move to the *strategic planning phase* which involves the following elements: a) analysis of common problems and opportunities; b) establishment of a

[7] This section will primarily focus on horizontal networks of enterprises.

common workplan; and c) group organisational structure. For the identification of common problems and opportunities, it is necessary that the network brokers carry out an in-depth analysis of the growth constraints of the enterprises and of their causes and that they do not rely exclusively upon the perception of the entrepreneurs. Often, the entrepreneur is biased towards short-term needs, for instance shortage of working capital, not realising the causes of those needs which could be, in the case of working capital, inappropriate cash-flow management. A crucial component in delineating a group work plan is to reach a consensus concerning a definition of the evaluation criteria of the collective action to be applied in the short-, medium-, and long-term. Such criteria need to be both quantitative (like those described in the Honduras case) and qualitative, and be easily understood, computed and, needless to say, be in line with the objectives that the group has selected. An important function of the network brokers is to inject the group with a mind-set founded on continuous improvement based on periodical evaluation of the results obtained and setting up of new objectives. From this point of view, the monitoring system needs to be perceived by the entrepreneurs as a useful tool in evaluating the performance of their partners (and of the network brokers) and to keep track of the evolution of the project also evaluating the return on investment and time. From the viewpoint of the network brokers, the criteria are the key instrument to evaluate performance of the network and decide on whether or not to continue assistance. Finally, it is during this phase that the group selects its legal status and the rules which govern its internal organisation such as the key features of its representative bodies (function, duration, etc.), the fines to be levied upon “free riders” and the affiliation fees. These rules can be characterised by different degrees of formalisation but, above all, they need to be thoroughly transparent and be readily understood and implemented.

The strategic planning phase opens the door for the implementation of a *pilot project phase* through which co-operation should start bearing concrete results to the participating enterprises. In general, the projects undertaken over this phase are of a commercial and/or promotional kind: joint participation in fairs, joint purchase of raw material, design of a collective catalogue, etc. The idea is to generate visible results (although of a short-term nature) in order to engender optimism and trust and consolidate the network’s willingness for furthering co-operation.

When successful, pilot projects are expected to give way to *strategic projects* -- those focused on specialisation and complementation at the production level. Strategic projects commonly involve one or more of the following components: a) an increase in the degree of specialisation by process and by product of the network members, b) the provision of common facilities also through the creation of new enterprises (as in the case of EMASIM described above), or c) the launch of new product lines and common brands (as in the case of EcoHamaca also described above).

The final stage of the network-building exercise, *self-management phase*, coincides with the group of enterprises earning greater autonomy from the network brokers and the capability of independently carrying out further joint activities. Self-management is not always an easy step and it has been observed that often networks tend to lean on broker's assistance for a longer time than initially envisaged. In order to avoid dependency, two rules apply. The first is that the workplan established by the network members and the broker must have a specific time frame and must not continue for an undefined time period. In this way, the network knows from the beginning that they can count on the broker only for a limited period of time and must use this time wisely. The second rule is that the fees which are normally charged to the network for the assistance given by the broker, and which are quite low at the beginning, must be progressively increased to encourage network autonomy and, from the broker point of view, allow investment on new target beneficiaries.

The last element, which is worth being stressed in such a process of enterprise network establishment, is the role and profile of the network leaders. In the initial phases of group establishment, the network brokers are the real leaders. As groups mature, the function of the network brokers must shift towards softer co-ordination and a progressive transfer of responsibilities from network brokers to entrepreneurs must be ensured. Often, in order to balance the reduction of the assistance by the broker, networks contract a manager to assist in the implementation and up-grading of the workplan (see the EcoHamaca case as an example).

Restructuring at the firm level

In addition to engendering a collective competitive advantage, network creation often also brings about a transformation within the individual member enterprises aimed at adapting their production and organisational capabilities to the requirements of the common objectives. If, for instance, the network embarks upon process specialisation whereby the network members subcontract each other, the individual enterprises will be pushed to improve their internal organisation to respect the quality standards, production schedules and pricing levels decided by the group. Group pressure will stimulate individual enterprises to fully commit to implementing the necessary improvements and will sanction members for failing to accomplish common objectives.

While networks can generate positive changes in the individual enterprises, the opposite also holds true: enterprise restructuring can greatly contribute to improve network prospects. Therefore, the objective of individual improvements should also be kept in mind by the network broker who should help to orient the efforts of the enterprises and liase with the various BDS providers operating in the surrounding environment.

Improving the institutional environment

There are two types of DBS institutions that are involved in the network programs of UNIDO: the institutions which are direct actors in project implementation (have a primary and proactive role) and those which have an indirect role (support the implementation of actions designed by the first type of institutions). The Cluster/Network Brokers and the Networking Unit belong to the first type of institutions. The Cluster/Network Brokers play a pivotal role at the level of direct assistance to the enterprises. They are the agents (institutions and consultants) who facilitate the generation of the networks as described above. The Networking Unit is the actor which plays the strategic role within the networking projects: it a) bears the responsibility of designing and promoting the networking strategy in a given country, b) identifies the sectors/regions to address depending on their potential, c) carries out extensive awareness building among the small-scale enterprises and the local institutions, d) trains network brokers, e) manages the available funds, searching and implementing a sustainability strategy, f) monitors the development and impact of the networking initiative, and g) provides feedback to the various actors involved.

At the beginning of a networking project, the functions of the networking unit and of the network/cluster broker are usually assumed by the same institution/team of professionals. As the scale of activities of the project increases and there is a need for specialisation, the two functions are progressively split and assumed by different actors, as described in the case of Honduras.

The external institutions, on the other hand, essentially support the realisation of the networks' work plans requiring a wide range of technical and financial services. It is the task of the networking unit to ensure that networks can draw the assistance they require from within the environment that surrounds them. In a relatively weak institutional environment, this task often implies upgrading the capacity of specialised service centres or, in some cases, even bringing about their establishment, which the case of Jamaica illustrates.

Improving the dialogue between private and public sector

Finally, a fundamental component of a networking/cluster project concerns the establishment of co-operative relations between the public and the private sector. The aim of such relations is to promote the emergence of a co-ordinated industrial policy and identify, develop and implement coherent actions to support the entrepreneurial effort.

In each of the UNIDO projects described, the creation of a public/private Project Advisory Committee, or the participation in existing co-ordinating bodies such as the National Committee for Competitiveness in Nicaragua, has contributed to sensitising policy makers on the benefits of clusters and networks thus favouring the internalisation of the key principles of networking development within the strategy of public SME support agencies. At the same time, this co-ordination also allowed the projects to convey to the policy makers issues of concern to the private sector (such as, reforestation policies in Nicaragua to guarantee regular supply of raw material to the local furniture sector; banning illegal imports

of leather goods in Honduras, improving credit access to the SME sector in Nicaragua). On each of these issues, the projects have contributed to elaborating proposals for the consideration of the public decision-makers.

LESSONS LEARNED

The experiences gained during five years of UNIDO's involvement in network/cluster related projects permit certain conclusions to be drawn. The nine 'lessons learned' presented below do not purport to be a "summa" of prescripts to apply in networking projects, but rather a selection of some observations that may prove useful in designing future projects:

1. An important principle in the design and provision of networking development services is **demand orientation.** In UNIDO's experience, project strategies must be flexible and vary from network to network and from cluster to cluster depending on the nature of the constraint/objective of the client base. One important requirement is that the intervention must be designed after a thorough analysis of the client base' needs as well as of the surrounding economic environment from which resources can be tapped to satisfy those needs.

Consideration should be made of the type of demand orientation used in these projects. While projects are initiated on the basis of a beneficiary's demand, beneficiaries should be helped in formulating these demands based on an analysis of their growth constraints and of the causes of those. In this sense, demand orientation, is not passive but proactive with the brokers playing an important role in helping the strategic planning process of the enterprises. Especially in developing countries, where small enterprises have a weak capacity to develop a strategic response to market challenges, this approach has proven the most suitable in UNIDO's experience.

2. Three principles guide UNIDO's work with respect to networks, namely, they need to be a) **business oriented**, b) **production grounded** and, c) **targeted at SMEs**. *Business orientation* refers essentially to two components: first, networking must aim at visible improvements in the economic situation and prospects of participating SMEs; and secondly, it must grant the group a new competitive advantage which the enterprises alone could not reach. While the first point might seem an obvious one, it has been repeatedly observed that networking can often be interpreted as pure exchange of information or as an end in itself rather than as a means to achieve concrete economic advantages. In the Honduras case, for instance, it took great efforts to change network meetings from social events to business talks. A further step is to translate business talks into action and ensure that the actions are profitable and lead to positive structural, as opposed to temporary, changes in the enterprises. The second point emphasises the fact that, while other technical assistance schemes promote the network concept as purely applied to groups of enterprises participating in the same activity, in UNIDO's approach a network should also have a further scope. Although common activities are useful, as in the case of joint training which reduces the fixed cost of training, in UNIDO's experience networks should also aim at generating a new competitive advantage translating into the generation of new business without which the networks do not fulfil their whole potential (as in the case of EcoHamaca where the participating SMEs where able to enter the export market thanks to the joint action).

The second principle, *focus on production,* points to the importance of process- and product-innovation and structural improvement as opposed to, for instance, an increase of sales resulting from an occasional participation in a fair. While activities like information exchange and joint participation in fairs are important parts of a network workplan, they are not the end objective of UNIDO's approach which is rather to improve the business prospects for the SMEs producing long-term changes in the production capability and organisation. It might surely be argued that a new market opportunity stemming, for example, from the joint participation in a fair, might spur the creation of networks and the development of co-operative relationships among members. In UNIDO's experience, however, such a transition rarely occurs automatically. In some projects, the networks have been exposed to market opportunities (especially for export) which they could not fulfil due to a lack of organisational capabilities and productive capacity. Supporting a network, therefore, should involve not only the search for new market opportunities, but also provide the assistance required to restructure the network's production organisation to respond to new markets in a timely manner, with the right quantities and quality.

Finally, the *focus on SMEs* refers to the fact that, even though networks may involve other partners (such as large-scale firms, retail chains, etc.), the primary beneficiaries need to be the SMEs. For instance, in the case of Mexico, while multinational industries are among the main actors involved in the project, the focus is clearly on supplier development and local development.

3. **Networking is a multidimensional concept and does not only apply to enterprises**. Institutional networking, networking between private and public sector, country networking (as in the case of the Joint Learning Programme outlined in point 5 below) are equally important concepts in UNIDO activities. The idea is to specialise and co-operate to the maximum extent, so that each actor in the economic system can dedicate itself to core functions and perform them to the best of its abilities. In practice, this principle translates into the natural evolution of the networking units which, as described in the cases of Honduras and Nicaragua, specialise into strategic functions, decentralising the implementation functions to other network brokers after an initial period when they centralise all such functions. By the same token, this principle implies a suitable division of labour among network brokers and BDS providers, whereby the network brokers do not pretend to solve all problems of the enterprises but help the enterprise to identify other service providers which may be of assistance – as is the case in Jamaica where JAMPRO is working towards diffusing the specialised function to other institutions.

4. The key resource in networking initiatives is the **people** involved (policy makers, brokers, other service providers). With this in mind, it is important to discern four factors that can increase the likelihood of project success: people's ownership, empowerment, skills, and incentives. At all levels, project actors must:

a) **own the project**, and feel it is their interest to execute it. To this end, it is important to adequately invest in raising awareness, at all levels, to involve local actors in project design, and encourage their continual feedback for improving project implementation;

b) **be empowered to act.** In other words, all the actors involved must have the leverage, credibility and resources to play their role. If, for instance, counterpart institutions do not have credibility vis-à-vis the beneficiaries, project activities will not have the desired impact;

c) **have the right skills to act.** In addition to an appropriate academic and professional background, the skills of network brokers must encompass such invaluable "extra-curriculum" skills such as the capacity to build teams, deep knowledge of local social rules and an openness to establish contacts. Network brokers must possess a rare combination of technical background, business mentality and "social sensitivity" to produce market feasible projects for collective benefit;

d) **have the right motivation and incentives.** The issue at stake is that, in addition to the leverage and skills to act, network brokers must also have the right motivation to look for clients and help them improving their business. UNIDO's experience indicates that appropriate incentive schemes can enhance brokers' motivation and channel their efforts into projects that hold the possibility of higher impact and longer-term gains for the networks. However, what types of incentives work best in achieving the desired results, and what types of results should be encouraged? On the latter issue, while incentives anchored to the financial gains of the networks assisted may seem to be a sound idea, there lurks the danger that this could bias the choice of projects/firms leading network brokers to select relatively 'easy' targets (i.e. larger enterprises) or promote relatively 'short term' activities with quick returns rather than longer term but more structural changes. In UNIDO's experience, the incentives must be anchored not only to financial performance of the networks but to more comprehensive criteria involving qualitative assessment. The qualitative assessment is made based on the achievement of the objectives indicated in the workplans agreed upon by the network broker, the network and the overall project co-ordinator (depending on the various cases it can be the UNIDO project manager or the director of the project counterpart).

Regarding the nature of the incentive, in UNIDO's experience the most effective incentive for network brokers has been training -- such as the study tours discussed below in point 6. Study tours, and the possibility to learn about successful experiences of other countries and regions, has proven to be, especially among young professionals, a very positive stimulus to improve performance. A less tangible, but effective motivator, is simply the existence of a framework that allows network brokers to work together and exchange ideas thus fostering a sense of teamwork. The positive atmosphere created when such teamwork is encouraged and the sense of "not going it alone" not only applies to enterprises in a network but also is key in supporting, encouraging and motivating the brokers.

5. The importance of investing in people has been emphasised in the point above. What warrants further expansion is one of the critical ways to support these key actors through providing **the necessary training and exposure to best practices.** The importance of continuous training, as well as the need to diffuse information related to best practices to orient networking agents' decisions, is most important. In UNIDO's experience, the kind of training that has emerged as valuable and effective, in transferring knowledge on the "nuts and bolts" of networking, is to rely heavily on concrete cases of successful networks and clusters and let networking agents hear directly from other agents who have implemented

successful networking projects. To this end, UNIDO has elaborated on the idea of the "Joint Learning Programmes" aimed at giving first hand exposure to cluster and network agents from developing countries to successful cluster/network experiences. To date, this programme has run in the Emilia Romagna region of Italy and focused on the experience of Italian industrial districts. This programme will be expanded to the overall European experience by inviting other countries to participate. A second programme is being planned in Chile based on the Latin American network/cluster promotion experiences. In addition to this specific training, a series of working tools, such as the "NET-tool" (see the Honduras case) are also being systematised to facilitate the work of the network brokers and accelerate the transfer of knowledge to new networking agents. Other instruments are being developed such as a practical manual for network brokers and a set of monitoring and evaluation indicators for networking projects. All these instruments are constantly evolving and are meant to stimulate creative thinking rather than impose rigid boundaries.

6. A combination of **private and public investment** appears to be the best way to finance networking development services. The main elements which appear to militate against an exclusive reliance on the market is that networking development services aim at balancing some market failures, as described in this paper's introduction, and therefore the market can not be expected to entirely cover their costs. Such a realisation should not, however, lead one to believe that networks need to rely entirely on public funding. The elements which diminish the appeal of exclusive reliance upon public funding are first, the limits it is likely to impose upon the accountability of project managers to market feedback and therefore clients' satisfaction; secondly the fact that clients' co-financing ensures selectivity of clients on an objective basis (or, from another angle, less discretionality by the service provider in targeting one or another beneficiary). Finally, the balance between private and public funding needs not be the same over time. As the initiative progresses and the impact becomes more visible, It normally changes in favour of a higher market share.

7. Evaluation criteria for **networking development services need to be carefully designed** as seen in the Honduras example. While quantitative evaluation indicators are always auspicious, there are three aspects to consider: a) the scarcity of reliable and comparable data on the performance of small firms; b) the understandable unwillingness of the entrepreneurs to release confidential data about their businesses; c) purely quantitative measure often fail to take into consideration results like institutional building as well as indirect results such as those resulting from the work of second (or third etc.) generation brokers. On the other hand, in spite of the difficulties related to quantitative measurement of service impact, gathering of objective data is essential not only for evaluating the return on the investment made by the donor but also to disclose the possibility of charging private sector beneficiaries who, understandably, require to know with a certain degree of objectivity what benefits they can expect from buying certain services. In UNIDO projects, a combination of both qualitative (related to the specific objectives of clusters/networks workplans) and quantitative criteria (of the type mentioned in the country cases) is used for evaluating networking development services.

8. The introduction of the elements of market cost recovery should be pursued as early as possible in order to avoid that the beneficiaries become accustomed to full subsidies and **risk that the enterprise becomes dependent on the service provider.** Progressively increasing the share of the cost that enterprises have to cover is one a way to reduce such a risk. It is the task of the network brokers to lead the networks towards a process of self-management (as described in the Methodology section) and to develop an autonomous capacity to identify new collective strategies, implement the joint projects and liase with SME support institutions. By the same token, in UNIDO's experience, the long-term impact of networking development projects may be endangered unless networking institutions/cluster-brokers can free themselves from dependence on the continuous assistance provided by UNIDO and develop an autonomous "strategic thinking" capability to continually improve and upgrade their services in line with the dynamics of the entrepreneurs.

9. And lastly, there is **no single and pre-defined path to be followed** in the implementation of cluster/networks promotion initiatives that can be effortlessly replicated across countries, regions and industrial sectors. Cluster/network support initiatives need to be *flexible* and in tune with the characteristics of the environment where SMEs operate. While the elements that comprise the intervention are always those described in the Methodology section (network, firm, institution, and policy) the "dosage" and "sequence" need not be the same for all projects and all countries. A bottom-up approach, centred on fostering an entrepreneurial vision and supporting local actors' initiative to realise it, appears to be the best in UNIDO's experience.

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