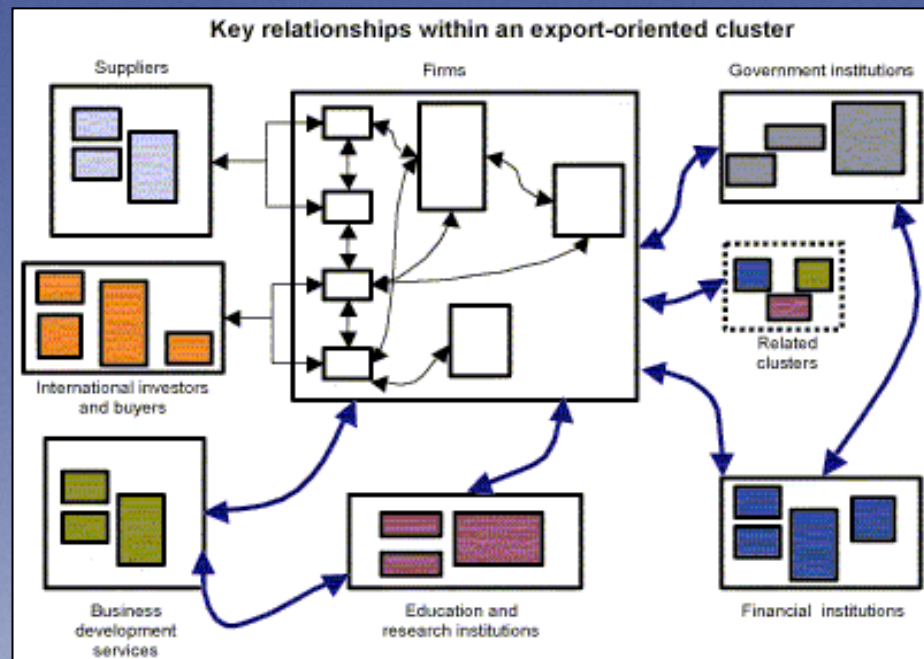




# *Innovations in Export Strategy*

*Competitiveness through  
export clustering*





**International Trade Centre**

**Executive Forum**



UNCTAD CNUCED



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# *Innovations in Export Strategy*

*Competitiveness through  
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Geneva 2005

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Study focusing on the impact of clusters and effective cluster promotion programmes on export competitiveness and performance – provides an overall picture on export cluster development and performance, by drawing from successful cluster initiatives, experienced in developing countries; identifies ‘best practice’ scenarios from which export strategy-makers could best approach the clustering option; includes bibliography (p. 41).

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This conclusion paper was researched and written by Gabriela Alvarez, Latitude sarl, Lutry, Switzerland ([www.latitudeglobal.com](http://www.latitudeglobal.com)) and Brian Barclay, Coordinator of the ITC Executive Forum.

The consultation was conceptualized and managed by Nuria Diez of the Executive Forum team.

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# Contents

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Acknowledgements	iii
Note	vii
<b>Introduction</b>	<b>1</b>
<b>Purpose of this conclusion paper</b>	<b>3</b>
<b>Part 1: Building competitiveness through clusters</b>	<b>5</b>
<b>Part 2: Insights about clusters</b>	<b>11</b>
<b>Part 3: Cluster-based export strategies – where to start?</b>	<b>29</b>
<b>Conclusion</b>	<b>31</b>
<b>Appendices</b>	
I. The consultation programme	33
II. The consultation participants	35
<b>Selected bibliography</b>	<b>41</b>



## Note

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Unless otherwise specified, all references to dollars (\$) are to United States dollars. The term 'billion' denotes 1 thousand million.

The following abbreviations are used:

ERP	Enterprise resource planning
IL&FS	Infrastructure Leasing and Financial Services Ltd
ISO	International Organization for Standardization
ICT	Information and communication technology
ITC	International Trade Centre
PPP	Public-private partnership
SMEs	Small and medium-sized enterprises
TEA	Tirupur Exporters' Association
UNIDO	United Nations Industrial Development Organization
WTO	World Trade Organization





## Introduction

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In 1985, knitwear exported directly from Tirupur, a small, drought-affected town in the southern Indian state of Tamil Nadu, amounted to \$4 million. Business consisted primarily of producing for the local market and for exporters in Mumbai and other major Indian cities. In 1990, a group of local businessmen got together to initiate what was to become one of the world's most successful industry clusters. By 2004, Tirupur's direct export of garments had reached \$1.2 billion. Direct employment within the cluster had reached 300,000. The export target for 2007 has been set at \$2.5 billion.

### *The relevance of clustering – an owner's perspective*

*I established Prime Tex in 1989 with 5 sewing machines and 20 workers in a small workshop in the centre of Tirupur. We produced babies' garments (knitted). We joined the Tirupur Exporters' Association and became an active proponent of TEA's cluster initiative.*

*Fifteen years on, we still produce babies' garments. However, Prime Tex now has 950 sewing machines and its own knitting facility. We employ 1,250 workers. Exports in our last financial year amounted to \$6.5 million.*

*Interaction with other members of the cluster has accelerated the learning process within our firm and has facilitated our understanding of the 'systems' that are relevant to our future competitiveness.*

*We now work to ISO 9001 norms and are ISO certified. This has paved the way for us to enter the higher end of the international market. We are recognized for our quality and reliability, and have minimized wastage. We have secured an ongoing business relationship with a high street, branded buyer.*

*As the cluster works to full compliance with social and ethical standards, our firm's labour relations have improved. We have achieved SA 8000 certification. We have had no labour disputes. And a consultative mechanism exists within the cluster to mediate any dispute should it arise.*

*Through our participation in the cluster, we keep up to date on market changes and fashion trends. We can, in fact, regularly monitor the market through contact with the numerous buyers who regularly visit the cluster.*

*Certainly, our current competitiveness is in large part due to our active participation in the cluster and the Tirupur Exporters' Association.*

Contributed by R. Govintharaaju,  
Proprietor, Prime Tex, Tirupur, India

While Tirupur and Prime Tex's experiences may be exceptional in terms of their level of success, they illustrate the impact that clusters, and an effective cluster promotion programme, can have on export competitiveness and performance.

It was with a view to exploring the practical lessons that can be drawn from Tirupur's experiences that ITC's Executive Forum organized the discussion 'Competitiveness through Export Clustering: Strategic Considerations' under its 2005 Consultative Cycle on Innovations in Export Strategy. The specific objectives of this discussion were:

- ❑ To provide a venue for public and private sector strategy-makers to review insights on export cluster development and performance, drawn from research and the growing experience of developing countries; and
- ❑ To identify 'best practice' scenarios from which export strategy-makers in the Executive Forum network could best approach the clustering option.

The consultation consisted of a preparatory e-discussion on the topic, conducted in March 2005, and the 9–11 April debate among cluster managers and facilitators in Tirupur.

The documentation supporting the consultation included an ITC pre-consultation discussion paper, UNIDO documentation on clusters, and a variety of papers provided by members of the Executive Forum network, including the paper tabled at the 2004 Executive Forum global debate in Montreux, Switzerland by A. Sakthivel, founder and President of TEA. All can be accessed at the Executive Forum website ([www.intracen.org/execforum](http://www.intracen.org/execforum)).

## Purpose of this conclusion paper

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This conclusion paper aims to summarize the major points raised during the Tirupur consultation.

The paper is structured in three parts. The first part provides a *brief overview* defining clusters and frameworks for understanding them. (A more detailed overview of this topic can be found in the pre-consultation discussion paper at the Executive Forum website.) Rather than repeating the extensive literature on the topic, we have focused on providing a brief summary from literature and supplemented this with a synthesis of the points of view presented during the e-discussion and in Tirupur.

The second part of the paper develops the *10 insights on successful cluster development*. The objective is to assist members of the Executive Forum network (and other export strategy-makers) to address the fundamental questions of when and how clusters, and formalized initiatives to support them, should be undertaken.

The final part seeks to *challenge strategy-makers* to consider the development and promotion of clusters as a key element of national export strategy.

Ideally, the exchange of views and experience on cluster development as an integral part of national export strategy will continue through the Executive Forum and between members of the Executive Forum network. It is through such ongoing dialogue that new ideas will evolve and new 'best practices' be generated.



## Part 1

# Building competitiveness through clusters

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Let's begin with a definition. One that is generally accepted comes from Michael Porter, who wrote: 'A cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities.'<sup>1</sup> Clusters encompass an array of linked industries and other entities important to competition, including governmental and other institutions – such as universities, standard setting agencies, think tanks, vocational training providers and trade associations.

*Clusters are attractive for many reasons. They catalyse economic transformation. They drive growth and enhance stability. Once they are rooted they are remarkably self-generating. In the recent downturn in information technology, the Ottawa community lost 25,000 jobs and then quickly recovered almost all of them. Clusters look like a good bet for economic success. No wonder everyone wants one.<sup>2</sup>*

Jocelyn Ghent-Mallet,  
former Director General, Industry Canada

Yes, everyone wants a cluster, or to be part of one. Clusters transform and stabilize industry and, indeed, agriculture. They create an environment that supports competitive positioning by the individual firm, particularly small and medium-sized enterprises (SMEs). At the same time, they reinforce inter-firm relationships and cooperation (i.e. they increase 'social capital'), thereby further raising competitiveness of not just the individual firm but, potentially, all firms in the cluster. They facilitate exchange of technical and commercial information and experience. They facilitate contact with suppliers and customers, and provide an ongoing rationale for joint marketing and sourcing initiatives. Similarly, they concentrate firm-level demand for support services, which, in turn, attracts relevant service providers to join the cluster, to orient their services to the cluster's specific needs, and to deliver their services more efficiently. They stimulate and consolidate research relevant to the needs of both individual cluster members and the cluster as a whole. They act as a magnet to professionals and skilled labour.

Simply stated, clusters produce more than the sum of their parts. They create synergies that translate into greater competitiveness, at the firm and cluster levels. They lead not only to improved export performance in terms of sales, but to improvements in terms of value-retention and value-addition.

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1 Michael Porter, *On Competition*, Harvard Business School Press, Boston, 1998.

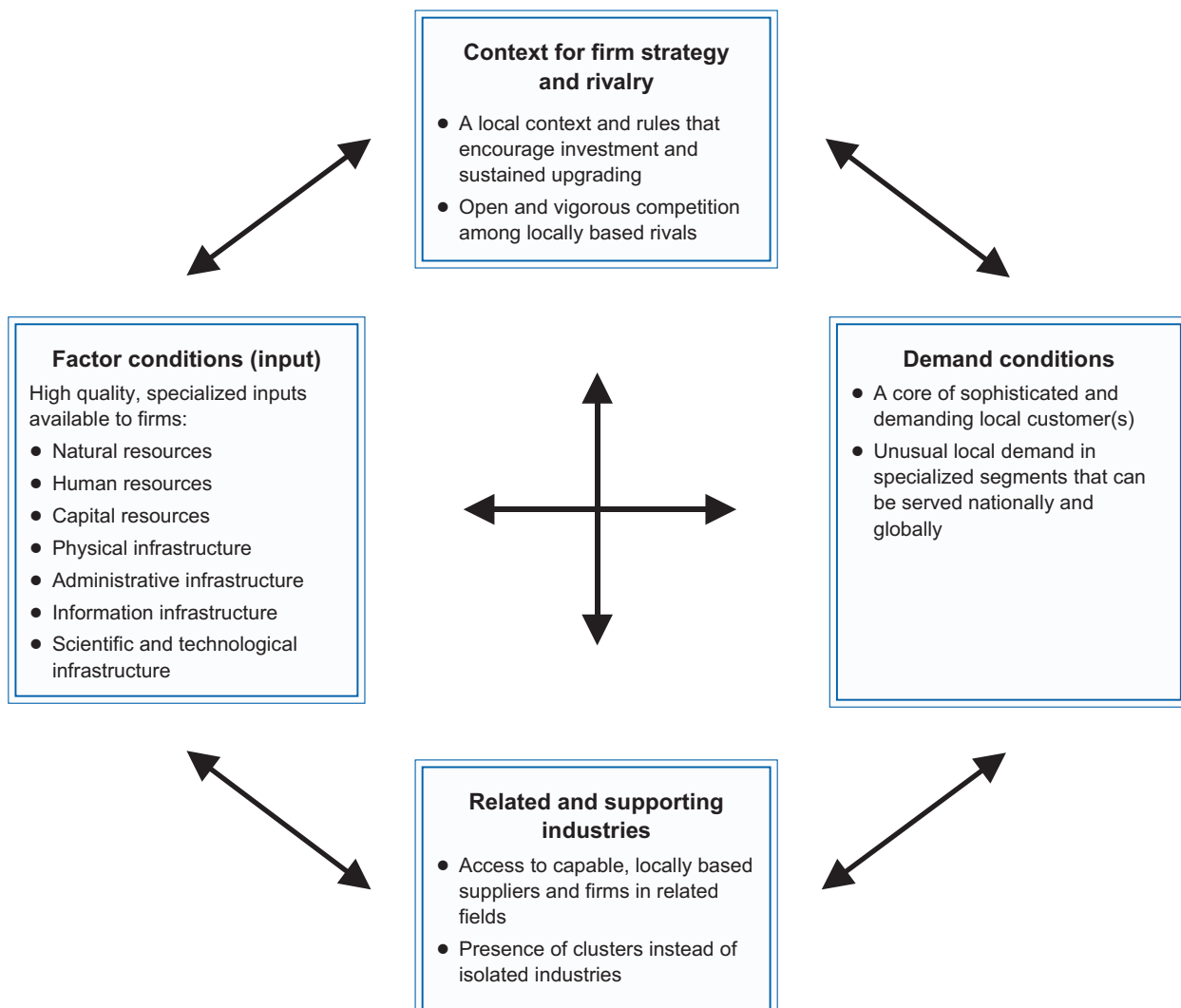
2 Jocelyn Ghent-Mallet, *Silicon Valley North: The Formation of the Ottawa Innovation Cluster*, Information Technology Association of Canada, 2002.

*But in reality, many clusters are in survival mode. They are crisis driven, rather than opportunity driven. They lack social glue and leadership, and the market dynamics are insufficient to create the needed commercial foundation upon which a successful cluster must rely. In these cases there has often been a failure to determine what drives the cluster: exports, opportunities in the domestic market, technology or employment. Strategy-makers must be clear about this before launching their interventions.'*

Summarized from a presentation by Mukesh Gulati,  
Project Manager, Cluster Development Programme, UNIDO, India

Michael Porter's *The Competitive Advantage of Nations* (1990) represented a major advance in the cluster concept in that it provided a common language, and a framework for linking firm-level and national-level competitiveness. Contrary to the view of many national planners that strategy should promote a diversified economy, Porter advocated specialization. In his 'diamond model', the proposition is that four sets of interrelated forces determine competitiveness and that these forces are strongest within the parameters of a specialized industry cluster.

### Porter's diamond



Within the context of any given sector's 'value chain', clusters provide the focus that is needed for enterprises, governments and institutions to align their efforts to specific competitiveness, value-addition and retention, and export performance targets.

As indicated above, enterprises, when part of a cluster, can 'save' effort and widen commercial prospects by taking advantage of the opportunities to access market information more expeditiously, obtain specialized inputs and technical support more easily and cost-effectively, participate in 'consortiums' to fulfil large orders, leverage market development and promotional expenses, group shipments to minimize transportation costs, share costs for ISO certification, and so on. In short, clusters enable a firm to pursue new efficiencies and to retain additional value within its own value chain.

As importantly, governments can improve the effectiveness of their support to a given *sector's* value chain by promoting the development of, and organizing their assistance around, clusters. This is particularly relevant given that WTO rules now require the elimination of fiscal incentives, which in many countries had represented the key instrument of support to the export community. Now the emphasis of government support must be on trade facilitation, infrastructure development, the provision of qualitative trade support services and related non-financial incentives. Tailoring such support to meet cluster requirements not only ensures greater alignment and coordination, but also facilitates monitoring and impact assessment (two critical aspects of effective management of national export strategy).

*From the public official's point of view, the cluster approach promotes horizontal collaboration and strategic partnerships. It breaks down silos that separate firms, institutions, jurisdictions and people. It focuses on strengthening economic foundations such as infrastructure and workforce development. The cluster strategy brings coherence and coordination to various programmes and funding at various levels of government that usually exist in isolation and lack cumulative impact.<sup>3</sup>*

Indira Singh, Executive Director, Projects Office, Ministry of Northern Development and Mines, Government of Ontario, Canada

Similarly, individual trade support organizations, either public or private, can customize their services specifically to the cluster's needs and export ambitions. Financial tools can be refined. Educational curricula can be adapted. Information services can be streamlined. Consulting and business development companies can adjust the 'knowledge' trade to the specifics of the cluster.

Indeed, looking at the 'big picture', clustering can effectively address directly the development dimension of national export strategy through its direct influence on skill acquisition, employment creation, regional development and other objectives associated with the national development agenda.

In summary, a cluster-based export strategy can build strong and competitive *regional* economies within the country, while concurrently achieving economic, social and commercial objectives at the national level.

<sup>3</sup> Indira Singh, *Can Government Catalyze Clusters? Example of Government Actions*, 6th Annual International Conference of the Competitiveness Institute, Gothenburg, 2003.

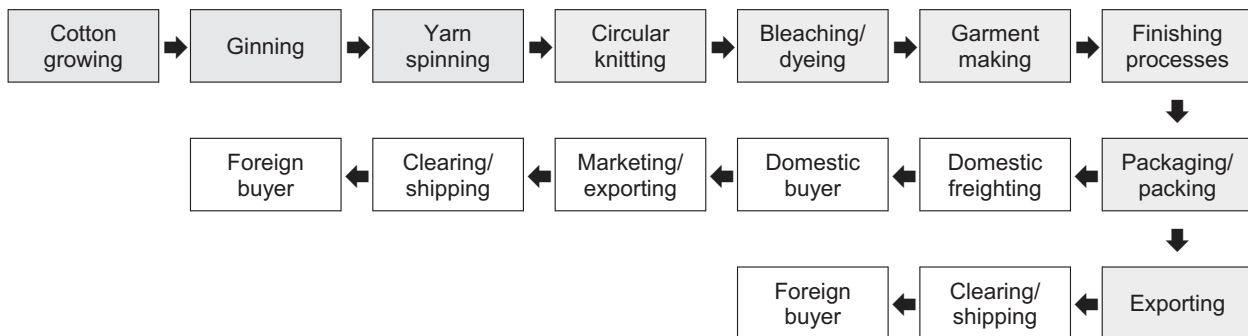


The evolution of the Tirupur knitwear cluster represents a good case-in-point.

Prior to 1985, Tirupur's knitwear value chain was characterized by low value production, low value-addition and low value-retention. There was limited, and mostly informal, interaction among firms. Linkages were weak between suppliers and buyers.

## The evolution of the Tirupur knitted garment cluster

### The Tirupur Cluster's Value Chain – pre-1985: Low value, value addition and value retention



The creation in 1990 of the Tirupur Exporters' Association (TEA) was the first real step in creating the cluster. The association's original objective was to advocate in favour of a reduction of government regulations and export controls that hampered the export development effort. The impact of TEA's initial efforts to forge cooperation among producers extended, however, far beyond this immediate objective.

By the end of 2004, the value of exports had risen from the 1990 level of \$100 million to \$1.2 billion. Investments had not only increased the cluster's capacity to produce at high quality standards, but had raised the efficiency of production, and substantially increased the level of value-retention. The number of garment-makers increased to more than 2,500 and the number of exporters from around 50 in 1990 to 500 in 2005. The average size of firm grew from a capacity of 50,000 garments/month and 50 employees, to 200,000 garments/month and 150 employees. Direct export, rather than through agents, became standard practice. Networks of local out-sourcers (jobbers) were established to increase the cluster's flexibility.

*Collective efficiency determines cluster success.*

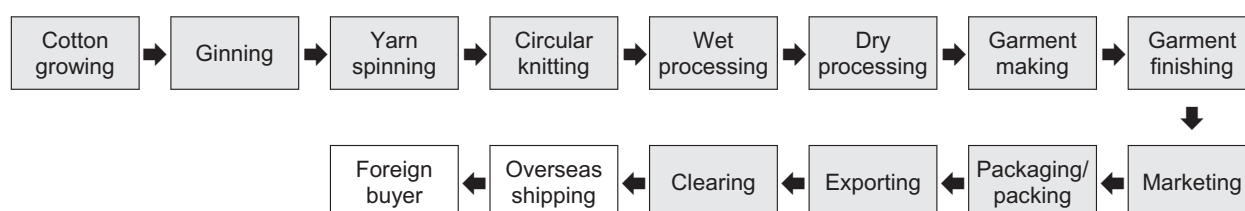
Didar Singh, Joint Secretary,  
Ministry of Heavy Industry, India

Growth in garment making also triggered a parallel expansion within supply and service industries (e.g. yarn spinning, bleaching, dyeing, compacting, mercerising and printing) Local spinning and dyeing capacity increased by 5 and 20 times respectively as garment-makers invested in their own facilities and specialized facilities were set up.

To reduce hassles associated with customs clearance of export garments, and to save time, minimize pilferage and damage to packing and reduce transport costs, TEA set up an inland container terminal. To ensure that the increasing demand for specialized skills was met, professional and vocational training facilities were established (including a fashion design institute). To accommodate contact between cluster members and the increasing number of international buyers visiting Tirupur, a trade fair complex was constructed.

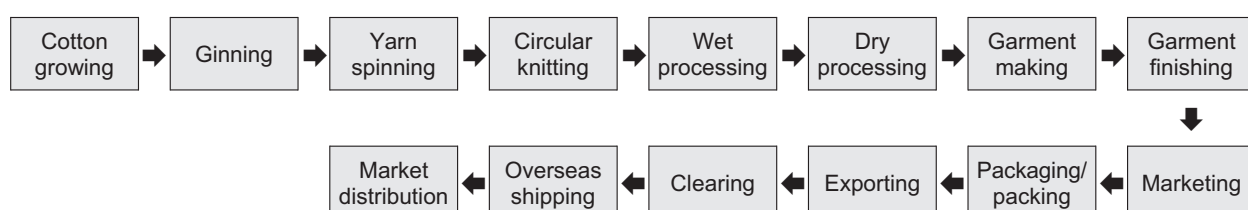
TEA built, initially under its own financing, an exclusive knitwear manufacturing complex. It launched a major water supply and sewerage programme with extensive support from Central and State Governments to meet not only the cluster's own growth requirements, but demand for water within the entire community of Tirupur. To further increase output and efficiencies, a new, world-class industrial park, capable of accommodating 60 garment enterprises, was commissioned, with financing organized directly by TEA.

#### The Tirupur Cluster's Value Chain – 2005: Higher value, greater value-addition, more value- retention



And TEA's plans to foster cooperation among its members have not stopped here. Consideration is being given to establishing a physical market presence (a distribution warehouse) in Europe, to be followed by a similar facility in the United States of America. In addition, a strategy is being work out to establish the 'Tirupur' brand to reinforce market awareness and penetration and enhance the overall value of the Tirupur cluster's product. TEA's export target for 2007 is now set at \$2.5 billion.

#### The Tirupur Cluster's Future Value Chain: Higher value, greater value-addition, more value-retention and direct channel management



*Industry should never expect government agencies to create, operate and maintain common facilities and services. Industry or business is not the core competence of government. And that is why government-run businesses have been miserable failures. It is for the industry to make use of the schemes of the government in the best possible manner.*

*Tirupur's success lies in the combination of its work culture and entrepreneurship, its well-managed labour relations, the integrity and transparency of its association, and the readiness of the Association to get involved in all aspects of the cluster's development and to establish relationships with all concerned parties.*

Summarized from a presentation by  
A. Sakthivel, President, TEA

Possibly the key differentiating feature of the Tirupur cluster is that, unlike the vast majority of cluster initiatives in developing countries, its evolution was, and continues to be, led and exclusively managed by the private sector.

It was only in 1992, after the first results were achieved, that the central and State governments became involved by voluntarily offering subsidies and incentives to units in the cluster (a practice that is no longer acceptable under WTO rules), and by joining in the financing of the water supply and sewage scheme. There is, undoubtedly, a lesson or two to be learned here.

## Part 2

# Insights into clusters

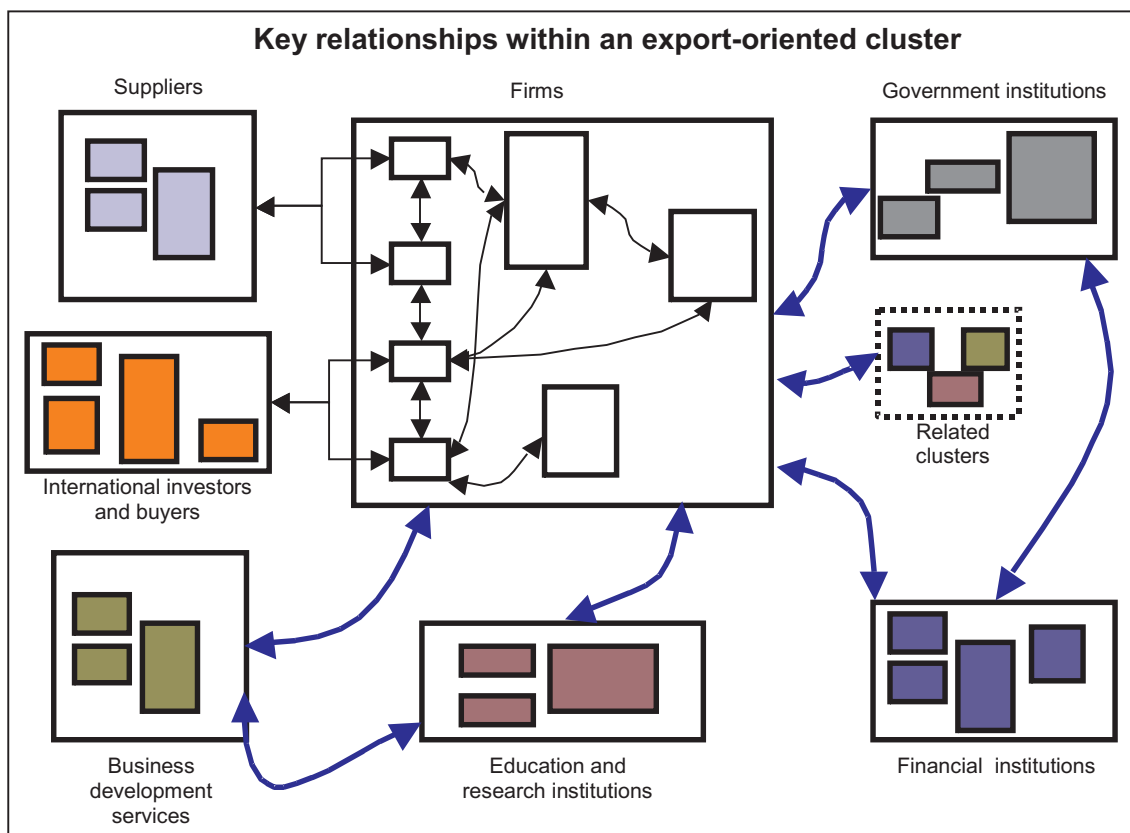
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This section presents 10 insights relating to export cluster formation, development and management, which emerged during the course of the consultation. These insights are:

1. The distinguishing feature of clusters compared to ‘concentrations of firms’ is what happens between the ‘boxes’, not inside them.
2. Clusters can be enhanced, and even induced, but they cannot be created ‘from scratch’.
3. Cluster initiatives require a catalyst and a leader if action by firms, government and support agencies is to be effectively aligned.
4. Effective cluster initiatives address each of the competitiveness and developmental ‘gears’ of a national export strategy.
5. The mix and timing of ingredients are more important than the ingredients themselves.
6. Trust is paramount.
7. Different structures fit different clusters, if they fit at all.
8. There is more to infrastructure financing than public sector funds.
9. Clusters can effectively overcome obstacles to export promotion obstacles facing SMEs.
10. Successful clusters are linked to global markets.

## 1. The distinguishing feature of clusters compared to 'concentrations of firms' is what happens between the 'boxes', not inside them

Clusters involve interactions between different types of players, including competing firms, suppliers, supporting organizations, educational institutions and governmental institutions. The most basic type of interaction, or relationship, involves the linkages between a firm, its suppliers and its customers. These linkages (also called 'vertical') can be arm's length or they can involve a true partnership relationship that is founded on information and process sharing and mutual trust.



A second type of relationship involves the 'horizontal' linkages between and among the firms in the cluster, with each firm managing the dual objectives of competing and cooperating in specific areas of common interest (e.g. combining forces to demand a specific government benefit or ruling, or to avoid some negative consequences of government action). Over time, these horizontal linkages can become more formalized and enduring relationships. Ideally, they will eventually extend to, and among, business development service providers or educational institutions.

It is this more complex set of interactions among the different players that determines the cluster's ability to compete and grow. At the centre is the collaboration between firms, as it is these relationships that guide and facilitate collective action, collective learning and innovation (i.e. the cluster's social

capital). But interaction alone is not enough. In the longer term, horizontal linkages must be established between firms and other participants in the cluster initiative. Firms must receive, and be aware of receiving, benefits from each of the other players. In short, there must be interaction, and specifically creative interaction, between the various 'boxes' of the cluster.

The ability of each of these non-firm players to understand and adapt their roles will, therefore, eventually be the principal determinant of the cluster's competitiveness.

*One of the biggest problems affecting cluster development is that the mandates of support agencies are poorly defined, which results in a lack of focus, an overlapping of activity and weak linkages with the client firms. Clarity of purpose is a central requirement of non-firm players in a cluster.*

Anjum Fayyaz, National Programme Coordinator,  
SME Cluster Development Programme, Pakistan

### ***Horizontal linkages in the hosiery cluster of Ludhiana***

*Despite supplying 95% of India's domestic market for woollen hosiery and holding a major share of the cotton hosiery market, the Ludhiana cluster's export capability was constrained by a variety of problems, ranging from lack of required skilled labour to inadequate product range, and from poor finishing to lack of market information. A study conducted by UNIDO suggested that greater use of information and communication technology (ICT) by firms in the cluster could significantly improve the cluster's capacity and export readiness. Firms had little experience with e-mail, web browsing and e-commerce and Internet access was expensive because of the lack of a point of presence (POP).*

*The Knitwear Development Group (KNIDGRO), an association representing 12 cluster initiatives, organized a series of awareness-building programmes for its member firms and negotiated a reduced cost of Internet access. It subsequently contacted all local ICT training institutions to request greater customization of existing courses to the needs of cluster firms and, in turn, negotiated a contract with one provider on behalf of its members. KNIDGRO next brokered a horizontal linkage with an Internet provider to establish an online e-commerce site for its members. A linkage was then established with a leading software developer to develop and pilot an ERP (enterprise resource planning) system for a number of its members.*

*ICT use in the cluster has dramatically increased as a consequence of this horizontal linkage, and despite the overall technological backwardness of the textile industry, the level of e-competence in the cluster is significantly greater than in other industries in the area.*

Summarized from the discussion paper 'Building Successful Export Clusters: What are the Essentials? The Experience of UNIDO Cluster Development in India', contributed by UNIDO

## 2. Clusters can be enhanced, and even induced, but they cannot be created 'from scratch'

As the commercial and developmental benefits of clustering can, potentially, be substantial, cluster evolution should not be left to chance or the 'alignment of stars'. Local and national strategy-makers, as well as ambitious entrepreneurs, have a clear vested interest in fostering cluster development through direct and concerted action. The danger lies, however, in trying to build an 'artificial' cluster. It can't be done.<sup>4</sup>

A number of local conditions must be in place, including:

- ❑ Confirmed production capacity within the target geographic area based on SMEs (and possibly one or more larger, prospective lead producers);
- ❑ Some form of actual or potential competitive advantage (defined in terms of process, product, location or cost); and
- ❑ A latent readiness among producers to cooperate.

Obviously, for an export-oriented cluster, there must also be international demand for the product.

Tirupur, in the 1980s, possessed these fundamentals. In their absence, any effort to create a cluster will, at best, lead to a weak, unsustainable cluster, at worst to a waste of public and private sector resources.

*Many attempts to manufacture clusters fail. A general review of the many attempts to establish clusters in Australia as engines of regional development suggests more than half fail, and as few as 10% are significantly successful.*

Extract from a paper by the Australian Centre for Innovation and International Competitiveness Ltd (ACIIC), University of Sydney NSW, Australia, 2004

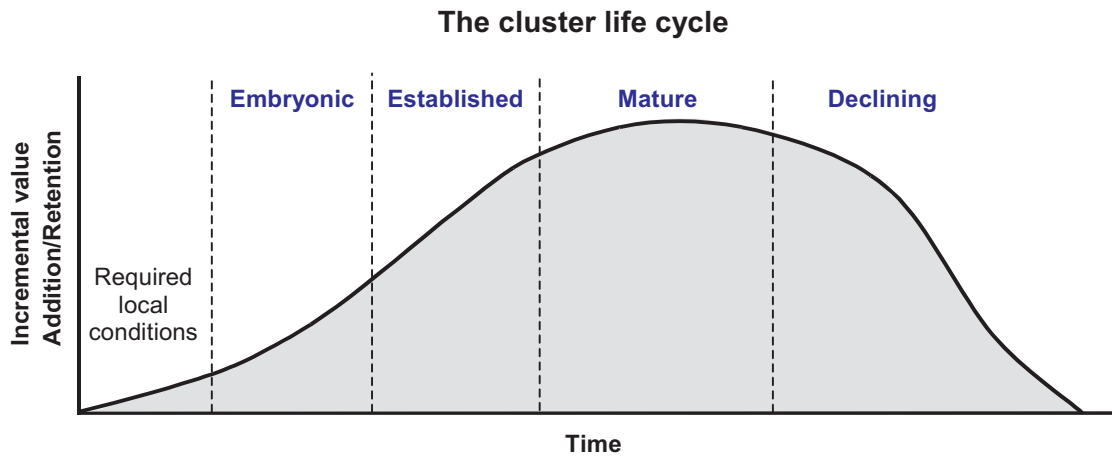
Notwithstanding this rather pessimistic assessment of the utility of trying to create a cluster, there are multiple examples of effective support to cluster development once the prerequisite local conditions are in place.

*The challenge in nurturing the development of a cluster is to ensure that it never reaches the stage of decline in its life cycle.*

R.M. Subramaniam, Adviser, TEA

<sup>4</sup> There have been numerous cases following an 'unrealistic dream' approach to cluster identification, as was the case for several countries that embarked on extravagant projects centred around information and communication technology clusters. These initiatives were based on hope rather than on a thorough analysis of potential and of local conditions.

Clusters are dynamic and have a recognizable life cycle. Experience suggests that public sector interventions to enhance a cluster's competitiveness (or developmental contribution) should differ depending on its position in the cycle.



In 'embryonic' clusters, for example, the prerequisite local conditions exist, but further development of the cluster requires a catalyst – the opening of an industrial park, or the building of specific needed infrastructure – or a combination of catalytic inputs (including, for example, the emergence of entrepreneurial leadership such as TEA). The software cluster in Bangalore, India, represents one of the higher profile examples.

Once a cluster reaches maturity, it runs the risk of stagnating and losing competitiveness, entering then into a decline phase. Firms and strategy-makers should then turn their attention to facilitating the cluster's transformation to an earlier phase of the life cycle (i.e. the embryonic or established stages). This can best be achieved through product diversification, market repositioning and/or technology acquisition.

Potential or embryonic clusters in the agricultural and artisanal sectors normally require fundamental interventions that target, at least initially, the institutional and learning aspects (i.e. the social capital element) of cluster development. Such prospective clusters are generally populated by micro-producers who are perpetually preoccupied with survival and have little means to self-start a cluster initiative. Awareness-building, the provision of basic organizational and business development services (information, product development and adaptation, and marketing support), and the assurance of ongoing support may well be required to 'induce' the development of such clusters.

The overall conclusion is that in clusters that are (in the first instance at least) 'developmentally' oriented rather than commercially oriented, the strategy-maker cannot expect natural entrepreneurship alone to provide the force behind the growth of the cluster. The type of public sector investment or intervention will, in these cases, need to be significantly more hands-on and enterprise-specific. Emphasis should be placed on coordination and facilitation and on 'channelling' entrepreneurial energy.



### *The Bangalore software cluster*

*In 1990–1991, Bangalore was home to 13 software services companies with combined foreign income of \$8 million. Today, there are more than 1,400 information technology firms in the city, generating export income of \$5 billion per year.*

*According to Rosenberg,<sup>5</sup> the principal catalysts of clusters in the ICT sector include:*

- The presence of educational institutions capable of producing a stream of engineers, technicians and scientists;*
- State support in the form of tax incentives and subsidies;*
- Living conditions that significantly enhance the quality of life, especially in university towns;*
- Availability of venture capital;*
- Prospects to establish forward and backward linkages with other participants and support industries in the sector's value chain.*

*Most, and probably all, of the catalysts mentioned above fit the case of Bangalore.*

*The renowned Indian Institute of Science is located in the city. So is the Indian Institute of Management and Bangalore University with its 14 engineering colleges.*

*State support was both extensive and targeted. Besides establishing a software technology park, where a number of the software firms are now located, the Government facilitated cluster growth (and evolution beyond the 'embryonic' stage of development), through the installation of satellite communication facilities, the provision of duty free imports of hardware, and exemption from income taxes and exclusion from customs and export clearance procedures.*

*Foreign direct investment and growth in the production of knowledge-oriented goods and services associated also help explain the dynamism of the software cluster. Over one hundred multinational companies, including IBM, Hewlett Packard and Motorola, have established production facilities in Bangalore. Such investment and the overall software orientation of the cluster have given it a very export-centric orientation.*

*Adapted from 'The Essential Ingredients of Bangalore's Success',  
a discussion paper contributed by Didar Singh, Joint Secretary,  
Ministry of Heavy Industry, India*

### **3. Cluster initiatives require a catalyst, a leader and a manager if action by firms, government and support agencies is to be effectively aligned**

A cluster can develop, grow and be competitive without its members ever embarking on aligned 'joint' initiatives. Silicon Valley in California is an example of a very successful cluster that occurred by the natural concentration of related businesses in a geographic area.

However, in most instances, and certainly in the vast majority of clusters in developing countries, a catalyst is required. This catalyst is normally an institution (as evidenced by KNIDGRO's activities in Ludhiana). In Tirupur's case, TEA assumed the role of both cluster catalyst and cluster leader.

<sup>5</sup> David Rosenberg, *Cloning Silicon Valley: The Next Generation High-Tech Hotspots*, Reuters/Pearson Education, London, 2002.

In fact, if a cluster is to grow, and not just evolve, coordination and management must complement the catalyst and leadership roles. Formal or informal associations may provide the required management input, though a formalized approach, such as that followed, albeit flexibly, by TEA would seem to be the best option. And a solid public-private sector partnership is an essential precursor to coordination.

<b>Government potential contributions to cluster development</b>	<b>Private sector potential contributions to cluster development</b>
Support cluster-specific information gathering and compilation.	Jointly develop mechanisms to collect and disseminate cluster information.
Organize its services around clusters.	Develop specialized education.
Foster linkages between universities and clusters.	Collaborate with local universities and institutions on cluster-related research.
Improve infrastructure requirements for clusters.	Market jointly through trade fairs and delegations.
Streamline regulations that affect clusters' ability to compete.	Collaborate on international market research.
Focus export promotion activities around clusters.	Find a balance between cooperation in some activities and competition in others.
Act as a sophisticated buyer for clusters' products and services.	Establish cluster-based trade associations.
Establish cluster-oriented free trade zones or industrial parks.	Establish cluster linkages with suppliers, customers and related businesses.
Focus efforts on attracting financing options around clusters.	Cooperate with government to streamline regulations.
Sponsor forums to bring together cluster participants.	Take the lead on infrastructure projects, involving financial institutions and governments.
Act as a catalyst for artisan clusters or clusters that need initial organizational support.	Foster trust among its members.
Incorporate interests of clusters in trade negotiations and international agreements.	Start with small projects. Advertise early successes to gain support for cluster activities.

*Focus on clusters is the centrepiece of the new approach in an increasing public private partnership in setting up support systems for small scale enterprises ... The Expert Group therefore recommends that state governments identify the existing clusters and then promote new types of organizations that are joint ventures between the state governments or local authorities and business associations in these clusters.*

Extract from the Report of the Expert Group  
on Small Enterprises, India, 1997

*But the key to success is management, not finance and not public-private partnership (PPP). If a cluster initiative is capable of netting the management expertise (and resources) of the capital markets, it will be sustainable. If a project-based PPP is established and managed with the objective of achieving the lowest possible life cycle costs, it will be successful. In short, it's all about management.*

Hari Sankaran, Joint Managing Director, Infrastructure Leasing  
and Financial Services Ltd (IL&FS), India

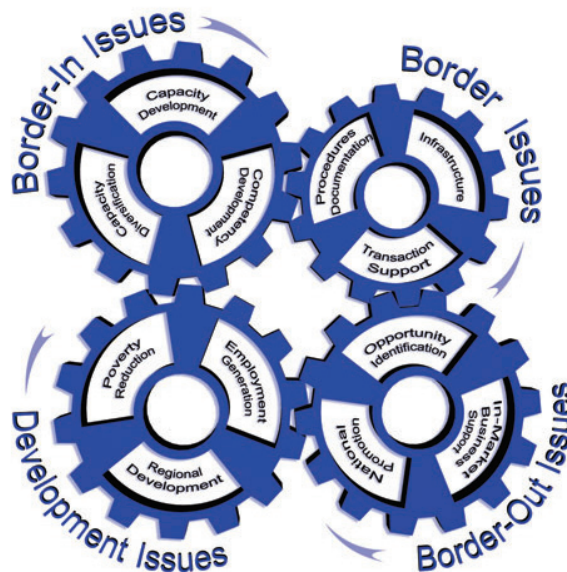
*But cluster management must have a community orientation.*

R.M. Subramaniam, Adviser, TEA

#### 4. Effective cluster initiatives address each of the competitiveness and developmental 'gears' of a national export strategy

To be effective, export strategy must address all factors influencing international competitiveness. This is true at the firm, the sector and the national levels. It is equally true at the level of the cluster.

##### *The four gears of export strategy*



Three of the gears deal directly with cluster competitiveness. The fourth gear, the development gear, is concerned with the contribution the cluster makes to socio-economic growth within the cluster's geographic area.

The geographic proximity of firms in a cluster facilitates the acquisition of tacit knowledge about how to do business. Undoubtedly, therefore, the easiest gear for cluster managers or coordinators to deal with is the 'border-out' gear. This gear deals with the dissemination of information and the organization of collaborative market development and market promotion activities (such as joint selling missions, promotional material, trade fair participation and in-coming buyer information services). Such activities are easier to 'sell' to prospective cluster members because they are farther away from the firm's core business and therefore less threatening as a starting point to promote inter-firm cooperation. Responsibility for initiating action rests directly with the cluster managers and coordinators.



Tirupur's cluster-level border-out activities go well beyond this. They include the organization of a semi-annual trade fair at a dedicated facility, and plans to establish a direct market presence through warehousing and distribution centres in key markets. TEA's pioneering efforts to launch a Tirupur brand should also be closely followed.

The 'border' gear deals with the cost of doing business and of getting goods to market. Issues of transportation, trade facilitation, company registration and transaction costs must be resolved. These fall within the responsibility of the public sector, so the public-private partnership must be fully operational if this gear of strategy is to turn smoothly. In Tirupur's case, it was the need to resolve 'border' issues (i.e. government regulations and bureaucratic requirements) that prompted the creation of the Tirupur Exporters' Association. And, in a unique way, the members of the cluster have remained the driving force behind the public-private partnership (e.g. expediting inspection and clearance through the building of its centralized freight terminal and investing in projects to enhance the overall business environment, such as the Tirupur water supply project).



The third gear of strategy concerned with competitiveness – the 'border-in' gear – is, perhaps, the one that best suits the cluster concept. This gear concerns the development of export capacity and competence. And as the trade performance of many developing countries and transition economies suggests, it is the lack of capacity and competence, rather than the lack of market access or the ineffectiveness of border-out efforts, that has been the greatest constraint on export expansion and diversification. While an increase in 'social capital' will undoubtedly result from the natural interaction among firms in the cluster, cluster leaders must seek to maximize inter-firm collaboration and networking,<sup>6</sup> and to promote capacity development (e.g. Tirupur's new industrial park), collaborative production arrangements, technology transfer and information exchange, and to upgrade competency among firms and business service providers (the Tirupur and Ludhiana examples).



<sup>6</sup> Networks are groups of firms that cooperate on a joint development project, complementing each other and specializing in order to overcome common problems, achieve collective efficiency and penetrate markets beyond their individual reach. As networking intensifies and more and more enterprises are involved, the territorial, or cluster, dimension starts to emerge with the involvement of business development service providers, associations of enterprises and government institutions.



These three competitiveness-oriented gears of strategy should undoubtedly be at the forefront of any cluster initiative, as they address the basic rationale for clustering (i.e. more efficient and effective industry and greater entrepreneurship within the SME sector). However, the fourth gear of strategy – the development gear – cannot be ignored when orchestrating cluster development. As in the case of the ‘border’ gear of strategy, the effectiveness of the development gear is determined by the effectiveness of the public-private partnership that must be in place to support it. For it is this gear that addresses directly such fundamental considerations as employment generation and poverty reduction, environmental protection, women in the workforce, and the development of backward regions. With careful planning, and a working public-private partnership, clusters, through their commercial success, can generate an equal measure of developmental success, without compromising competitiveness.

## 5. The mix and timing of ingredients are more important than the ingredients themselves

*It is the mix of ingredients, both conditions within the cluster and local externalities, and not the ingredients themselves, that will determine a cluster's success and sustainability.*

Didar Singh, Joint Secretary,  
Ministry of Heavy Industry, India

Cluster success stories cannot be explained by agglomeration economies alone. In this connection, *The Cluster Initiative Green Book*,<sup>7</sup> a survey of over 200 cluster initiatives (most of them in developed countries), identified three common ingredients or factors that respondents believed had an impact on attracting new firms to the cluster and/or increasing the cluster's international competitiveness. Specifically:

- ❑ Having the right resources. A budget that allows a cluster initiative to carry out significant projects without seeking separate funding is strongly related to attracting new firms.
- ❑ Having a strong and respected facilitator. He or she needs to have a deep knowledge of clustering, a strong network of contacts and enjoy the respect of cluster members.
- ❑ Building a common framework. A framework based on strengths, where efforts and time are devoted to sharing the framework among cluster members, developing collectively an explicit vision and specifying quantitative targets.

<sup>7</sup> Örjan Sölvell, Göran Lindqvist and Christian Ketels, *The Cluster Initiative Green Book*, Ivory Tower, Stockholm, 2003.

Other relevant factors frequently quoted include appropriate infrastructure, availability of venture capital and entrepreneurial spirit, and broad potential for the formation of backward and forward linkages. In sectors such as ICT, the presence of educational or professional institutions was also considered highly relevant. A stable business environment, suitable policy intervention, and large firms acting as catalysts appear to have been especially important in certain contexts, especially in developing countries.

Indeed, the list of factors influencing the level of cluster success is a long one. UNIDO<sup>8</sup> studied five successful examples of technically innovative and internationally competitive SME clusters and industrial networks from developing countries in order to identify their key success factors. Its conclusions are summarized in the table below.

Key Features/ conclusions	Brazilian shoe cluster: Sinos	Mexican shoe cluster: Guadalajara and Leon	Indian cotton knitwear cluster: Tirupur	Indian high technology industrial network: Bangalore	Korean chaebol networks
Evidence of SMEs growing and tech- nically advancing	Yes	Limited	Yes	Yes	Yes
Nature of markets	Demand-led	Demand-led	Demand-led	Demand-led	Demand-led
Key players	Foreign buyers		Buyers	Large firms and TNCs	Large chaebols
Role of large firms	Yes	Yes	Yes	Yes	Yes
Role of local support institutions	Important	Limited	Important	Very important	Minimal
Role of the State	Limited	Limited	Limited	Important	Important
Key constraints	Infrastructure		Infrastructure	Infrastructure	

A striking conclusion of the UNIDO analysis is the importance of the 'demonstration effect', i.e. demonstrating to firms in the cluster that commercial and technological advances are, indeed, being made.

Some may argue that a different set of factors is required for each cluster situation. Others may argue that certain factors must be in place in all instances if a cluster is to be successful. There is nevertheless one point of common agreement: that the availability of any particular ingredient does not guarantee that the recipe will be right. Ultimately, it is the combination of ingredients, and the timing of their application, that leads to cluster success, not the existence of any specific ingredient by itself.

<sup>8</sup> *Industrial Clusters and Networks: Case Studies of SME Growth and Innovation*, written by K. Nadvi for UNIDO, 1995.



Take the Bangalore ICT cluster example as a case in point. Yes, there were a number of specialized professional and educational institutions in Bangalore, but such reputable institutes and colleges exist elsewhere in India as well. State support in the form of tax incentives and subsidies was an important element, but many of these fiscal incentives were not location-specific. Venture capital was available in Bangalore, but so was it at the time in many other locations in India. So Bangalore's success was not due to any one factor or ingredient. It was the combination and positioning of ingredients, some provided by the public sector, some provided by the private sector, that accounted for Bangalore's initial and ongoing success.

## 6. Trust is paramount

For every rule there seems to be an exception. And the while the rule is that it is the mix and timing of ingredients that determine the success of a cluster initiative, there will be very limited success without the key ingredient, which is trust.

Without trust, and the institutions that foster trust among cluster members, clusters cannot succeed.

Successful clusters tend to have strongly embedded networks and relationship systems, based first and foremost on trust among firms. It is understandable, therefore, that the movement from embryonic to established clusters is accelerated through the creation of formal structures that endeavour to manage the balance between competition and cooperation by building trust within the cluster.

*There is no trade secret. We help each other. We work together.*

G. Karthikeyan, Secretary, TEA

The absence of trust was a clear constraint to the development of the machine tool cluster in Bangalore. There was no tradition of cooperation among producers, few obvious opportunities to cooperate, and a general feeling among entrepreneurs that there was a high level of 'unhealthy' competition. As a first step toward developing trust and cohesion with the cluster, cluster facilitators organized sets of periodic 'networking sessions' *by function* (CEOs, designers, etc.). The objective was to build the personal relationships needed to eventually achieve the requisite inter-firm (i.e. horizontal) relationships. These were followed by consortium-building sessions targeting smaller machine tool manufacturers.

## 7. Different structures fit different clusters, if they fit at all

There seem to be two points of relevance for the strategy-maker: First, organizational requirements vary substantially across different types of clusters (high tech, manufacturing, agricultural, artisanal). Second, an organizational structure that may be effective during the formative phase of a cluster may be less so as the cluster advances to a new stage in its life cycle.

In general, it appears that as clusters upgrade their capabilities and become more sophisticated, they tend to add formal organizational structures. This is certainly the case when a cluster becomes involved in infrastructure development or other initiatives involving a significant financial component.

*All our initiatives are undertaken as separate projects, managed separately, reported on separately. We have a different committee for each. This ensures effectiveness and transparency.*

A. Sakthivel, President, TEA

But there is no apparent ‘best practice’. Although TEA was clearly instrumental in the success of the knitwear cluster, two other equally successful Indian examples – the hosiery cluster in Ludhiana and the ICT cluster in Bangalore – do not have a cluster ‘organization’ *per se*. Indeed, a cluster that comes together as a group of already established organizations may not require an ‘additional’ structure beyond agreements of cooperation and joint projects among the existing organizations.

Clusters in northern Italy have traditionally been based on interpersonal relationships and long commercial relationships that built social capital in the form of strong trust between players. Formal structures and regulations were not favoured since they had in effect less power over networks than reputation and trustworthiness. This meant that fixed organizational structures and prescribed regulations were kept to a minimum and the cluster flourished on the basis of the dense but informal web of relationships.

*The key issue is to know when to intervene and when to let go. Sometimes there can be too much administration in cluster development – technology is rapidly changing and not always conducive to committee structures.*

Cluster practitioner observation, United Kingdom, 2002



Informal clusters, with no defined organizational structures, appear to be more predominant among micro-firms and small firms whose technology level is low relative to the industry, such as the clothing cluster in Santa Cruz de la Sierra, Bolivia. According to studies by UNIDO and the United Nations University Institute for New Technologies, no continuous learning for sustained skills upgrading takes place in the Bolivian cluster – a conclusion that may influence the thinking of strategy-makers wishing to promote cluster development in low-tech sectors (agricultural and/or artisanal).

## **8. There is more to infrastructure financing than public sector funds**

Many cluster objectives – for example networking, lobbying, and commercial cooperation – do not require large budgets. There are, however, other objectives that have more significant funding requirements, including infrastructure improvement, cluster expansion and technical training. Indeed, the matrix on page 21 confirms that the absence of adequate infrastructure, which undoubtedly reflects the absence of financing for infrastructure, represents the single greatest constraint to growth and competitiveness of most of the clusters assessed.

The data available confirm that governments (national and regional) and local industry represent the two main sources of funding for clusters. Nevertheless, the indications are that other financial sources are increasingly prepared to participate in high-cost cluster development projects. This potentially represents an important development for export strategy-makers, as it provides an alternative to having the public sector bear the financial burden of accelerating cluster development – at least in those cases where the strength of the cluster can stand up to the scrutiny of private firm analysis.

In more advanced cluster formations in developed countries – such as Silicon Valley and biotechnology clusters – venture capital is playing an increasingly important role in the emergence of clusters. Banks, insurance companies, public pension funds, business angels and foreign direct investment are also demonstrating readiness to participate in cluster-related activities.

The situation is quite different in developing countries, where financial institutions remain comparatively weak and highly risk averse and where financial markets have not evolved at the same pace as their counterparts in developed countries. The function of financial broker in these countries has traditionally been assumed by governments (which are usually cash poor), either solely or with support from a development finance institution, such as the World Bank. There are, however, examples where international players are to some degree filling the financing gap and where foreign investment has spurred growth, such as the wine industry in Chile. There are also new models of financing emerging where infrastructure is taken as a commercial undertaking with investments from private sector financiers and structured and organized by a specialized player. One example of such an arrangement is the upgrading of the water supply in Tirupur, which was organized by TEA and IL&FS.

### ***Infrastructure Leasing & Financial Services Limited: Offering alternative financial mechanisms***

*Infrastructure Leasing & Financial Services Limited (IL&FS) is a private investment institution whose activities reflect a growing trend among such institutions to participate in infrastructure development. IL&FS was in 1987 initially a joint venture between the Bank of India, the Unit Trust of India and the Housing Development Finance Company. Its shareholders now also include the International Finance Corporation, ORIX Corporation, CCF (formerly Crédit Commercial de France), and the Government of Singapore.*

*Its business model involves approaches infrastructure development as a commercial undertaking with a potential for positive income flow over the long term. It views any given infrastructure development project as 'a business' and of interest to private sector financiers who are more concerned with a proposition's earning capacity than with its initial cost (a perspective that many governments, given their tight budgets, cannot take).*

*The IL&FS approach provides an option for cluster managers (and export strategy-makers) who had previously been reliant on public sector funding. In a nutshell, private sector financing is secured in return for revenue generated by the project over a specified period of time. The approach to 'privatizing infrastructure' has been effectively applied in India in the telecommunications, power, road, water and supply sectors.*

*IL&FS was instrumental in supporting the Tirupur cluster to upgrade its water supply, effluent treatment, sanitation and sewerage system and introduce low cost sanitation. Based on a comprehensive analysis of the proposed project's 'economics' (including the anticipated long-term rate of return) and consultation with the prospective stakeholders, IL&FS incorporated the New Tirupur Area Development Company Limited (NTADCL) as a special purpose vehicle (SPV) under the Indian Companies Act. NTADCL represented a formal public-private partnership between TEA, the State Government of Tamil Nadu (GoTN) and IL&FS. This company had a duly constituted Board of Directors and professional management responsible for implementing the project.*

*NTADCL's management in turn, appointed a qualified consortium to construct, operate and maintain the facilities for a period of 30 years. The appointment of the consortium was undertaken on the basis of a lump sum turnkey contract. At the same time, NTADCL successfully approached financial institutions, local banks and private equity funds to mobilize the necessary resources to finance the project on a commercial basis.*

*The estimated cost of the project was approximately \$250 million, with government participation set at \$25 million. In other words, the approach successfully leveraged budgetary resources by a factor of 10.*

*The evolution of the public-private partnership is unique to every project. You just cannot generalize. You have to continually revisit the original assumptions. You must have this capability within the cluster.*

Hari Sankaran, Joint Managing Director, IL&FS

## 9. Clusters can effectively overcome obstacles to export promotion facing SMEs

In many developing country clusters, 'border-out' issues tend to be the primary focus (see page 19). This understandable preoccupation reflects the composition of the cluster, i.e. dominated by low volume producers with severely limited marketing resources. Acting on their own, individual members of the cluster simply cannot effectively promote its products and, even if they could, they cannot meet the minimum volume requirements of the foreign buyer.

The 'consortium approach' has proven an effective tool for overcoming, or at least, reducing these in-built and, undoubtedly, enduring constraints.<sup>9</sup> In the machine tool cluster in Bangalore, 56 SMEs were organized into 9 marketing consortiums. The consortiums' achievements included:

- The alignment of effort among firms and between firms and providers of business development services;
- The elaboration of common brochures;
- The establishment of joint marketing offices across the country;
- The appointment of common sales agents;
- The creation of common websites;
- Joint advertising campaigns;
- A common warehouse; and
- Collective participation in several international exhibitions.

One of the main achievements in terms of export-related activities so far has been the entry of one consortium into the Chinese market, which would have been impossible for any single firm to achieve.

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<sup>9</sup> An export consortium is a voluntary alliance of firms with the objective of promoting the goods and services of its members abroad and facilitating the export of these products through joint actions.

### ***Buyers meet sellers in the hosiery cluster of Ludhiana***

*The Ludhiana cluster's approach to raising awareness of 'border-out' issues and possible collaborative responses was to put cluster members in face-to-face contact with prospective buyers. With UNIDO support, a programme of buyers-sellers meetings was launched.*

*The first meeting was designed to build awareness of market requirements within the cluster and to establish initial (and, it was hoped, ongoing) dialogue between cluster firms and a small number of buying houses. The originality of this process created interest in staging a second meeting with much larger participation, which was organized by the cluster's 'formal' structure, the Apparel Exporters' Association of Ludhiana (APPEAL), in coordination with several support institutions. Twenty-nine buying houses participated. Visits were arranged to the production facilities of cluster members. The 'border-out' issues of market information, opportunity identification, buyer contact and business promotion were addressed, comprehensively and efficiently, in the cluster's own premises.*

*As a further promotional step, the CEOs of leading buying houses were subsequently invited to visit Ludhiana and make an assessment of the cluster's structure and manufacturing capabilities (and associated 'border-in' issues). Each cluster member was visited by a minimum of 10 buyers. Each cluster firm prepared a display of its products, based on a uniform layout to reinforce the concept of inter-firm collaboration and cluster unity. Informal evening get-togethers helped to build trust and provided the platform for informal networking.*

*The experience, in total, underlined the relevance of cooperative action in marketing and export promotion. Since that time cluster members have cooperated in participation in both international fairs and national buyers-sellers meetings.*

*Incremental sales in the vicinity of \$10 million are attributed to this cluster initiative.*

Summarized from the UNIDO paper prepared for the consultation,  
'Building Successful Export Clusters: What are the essentials?  
The experience of UNIDO cluster development in India'

## **10. Successful clusters are linked to global markets**

To be sustainable, clusters must be able to attract new members, venture capital, skills and other resources not only from the immediate geographical area but also from within the country and ultimately around the world. Firms inside a cluster must also have enough exposure to world markets to understand the market requirements and to identify and respond to emerging trends. In short, global market competitiveness represents the only true test of sustainable cluster success.

*Full-scale clusters are rarely found in developing countries, and external linkages become more important to the competitiveness of developing country firms than internal ones.*

Edward Feser, 'The Relevance of Clusters for Innovation Policy in Latin America and the Caribbean', World Bank, LAC Group, June 2002

In developing countries, the involvement of one or more leading buyers has proved beneficial for SME-dominated clusters. By communicating clear market requirements, providing support on logistical issues, and participating in quality improvement programmes, buyers with a long-term stake in the cluster can greatly influence the ability of SMEs to compete in the global marketplace. The challenge for cluster coordinators is to identify, and nurture, such global contacts, which, it is emphasized, do not have to be international buyers. They can be sizeable local buyers with extensive global connections.

Even in small agricultural or artisanal clusters, the integration of large buyers has proved beneficial. In Caldas, Colombia, Nespresso has established relationships with local cooperatives to produce 'specialty coffee'. The initiative includes joint activities in areas such as specialized technical education, tasting, quality control, infrastructure upgrading, logistics, and traceability. This has contributed to the Colombian sector competing successfully in the high value 'specialty and gourmet' coffee segment, where increased and consistent quality strongly influence the market price of the product.

*Buyers should be included in an export-oriented cluster. The potential development of the cluster is secured by investments, financing, forecasting, demand and involvement of the harmonized interests of all actors.*

Ion Pop, Director, Chamber of Commerce and Industry  
of Romania and Bucharest

## Part 3

# Cluster-based export strategies – where to start?

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Though the cluster concept is understood by most export strategy-makers, many still find it difficult to incorporate the concept, and its application, into approaches to enhance national or regional competitiveness.

Any process needs to be tailored to the particular situation of a region. However, drawing on the insights developed through this consultation, there appear to be several common steps for ensuring that the potentially significant contribution to national competitiveness of a cluster development programme is fully realized.

### **1. Identify relevant clusters opportunities (and only those with true potential)**

Many regions have one or more ‘natural’ clusters that are identifiable by the volume of sales they generate, the number of people employed, or similar criteria. Other regions possess resources that can serve as the basis for a successful cluster. It is important, however, to systematically identify relevant potential clusters through both a ‘top down’ and a ‘bottom up’ approach.

For the ‘top down’ input, a preliminary analysis based on employment or other ‘factor conditions’ will be useful. For the ‘bottom up’ approach, it is also necessary, and suggested by many authors, to highlight niche clusters that would not be identified through published statistics. Examples of such clusters could include organic foods or service clusters (e.g. health care, retirement or forestry consultancy).

In both cases, such analyses must highlight and focus on the individual characteristics and key issues of a cluster as well as identify issues that are particularly relevant for local governments and other institutions to consider and address (i.e. developmental, border-in, border and border-out issues).

### **2. Create the conditions, but recognize that requirements will change over time**

A second step involves identifying cluster needs and then generating the right conditions both within the cluster and ‘around’ it. If the cluster does not currently have the shared activities necessary for enhancing collective strength, this will need to be addressed. The first priority will likely be building ‘social capital’ and generating the trust and inter-firm/horizontal relationships upon which all clusters rely. Some of the enablers for building these collective activities include identifying and supporting natural leaders and key stakeholders in the group, identifying and building a common ground, and

establishing the basis for a strong first group of firms. (Often this may not involve the participation of all firms operating in the region, but rather a subset of this larger group.)

Creating the conditions ‘around the cluster’ involves rethinking the services provided by the Government and other institutions (such as education institutions) so that they can be centred around, and eventually integrated into the cluster.

Depending on the situation, and especially if a natural leader does not emerge among the participating enterprises, an ‘external facilitator’ will be required. His or her role will be to coordinate the first group of activities between the different private and public sector players.

### **3. Generate action, but focus and align this action across all the players**

Simple initiatives, and those that do not generate immediate conflict, should be chosen as the first activities of the cluster initiative. These should be designed to generate progress and momentum. The initial steps do not need to be overly ambitious, since their primary role is achieve ‘early wins’ and build trust among the members. After these first successful initiatives, more ambitious actions can be planned, and here is where a formal structure and programme can be useful to focus and align the activities across the growing number of players involved.

### **4. Extend and sustain**

Sustainable cluster success depends on building a strong global competitive position. This is a challenge that never ends. Successful clusters require:

- A constant focus on upgrading the capabilities of the cluster;
- Coordinating an ever-growing number complex infrastructure projects;
- Building more and stronger linkages and interactions within the sector’s global value chain; and
- Continually focusing on upgrading the cluster’s *basis of competitiveness*.

To maintain momentum, all members of the cluster must recognize the ongoing relevance of the cluster and the importance of being a part of it.

## Conclusion

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Cluster initiatives can be a very powerful tool for strategy-makers to enhance and improve the export competitiveness of a region. But a cluster initiative is not a magic wand. For every cluster that succeeds, there are many more that either fail to live up to expectations or fail to justify their cost in terms of resources and time expended.

This paper has presented a set of insights that can serve to guide strategy-makers in evaluating the relevance of a national cluster development programme to international competitiveness and value-addition and retention within export value chains.

We have certainly not been exhaustive. Rather, we have tried to capture what experienced cluster managers and coordinators feel are the key issues that national strategy-makers should be aware of before taking decisions on the likely value of cluster development to their countries.

This having been said, guidance and guidelines are best founded on the results of application. But cluster development is not a science. There are no standard formulas. What works once may not work again. What is successful in one country, indeed, in one cluster, may not prove to be successful in another.

We encourage strategy-makers and cluster coordinators and facilitators to continue to inform us of their experience: what works and what does not. In this way, we hope we will be able to refine our guidelines and generate more concrete ideas on what represents 'best practice'. In this way, the ITC Executive Forum should be able to facilitate and expedite effective decision-making in the area on national export strategy design and management.





## Appendix I

# The Executive Forum's Consultative Cycle 2005

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### Innovations in Export Strategy

#### COMPETITIVENESS THROUGH EXPORT CLUSTERING: STRATEGIC CONSIDERATIONS

Tirupur, India  
11-13 April, 2005

### The Programme

#### 11 April

- |               |  |
|---------------|--|
| 9:00 – 9:30   | <b>Welcome and Introductions:</b><br>Mr. Brian Barclay, Coordinator, Executive Forum<br>Mr. A. Sakthivel, President, Tirupur Exporters' Association (TEA) and<br>Chairman, India Apparel Export Promotion Council, New Delhi, India  |
| 9:30 – 10:30  | <b>Export Clusters: Putting Concept into Practice – The Case of the Tirupur<br/>Export Cluster</b><br>Moderator: Mr. Mukesh Gulati, UNIDO Cluster Development Programme<br>Project Manager<br>Commentator: Mr. R. M. Subramaniam, Cluster Specialist (30 minutes)  |
| 11:00 – 12:30 | <b>On Building a Successful Export Cluster: What are the Essentials?</b><br>Moderator: Ms. Gabriela Alvarez, ITC Executive Forum team<br>Round table commentators: <ul style="list-style-type: none"><li>● Mr. Shah Jagdish Sankalchand, Pharma Cluster</li><li>● Mr. Mathari Sarvatullah, Leather Cluster</li><li>● Mr. Ketul Acharya, Machine Tool Cluster</li><li>● Mr. G. Karthikeyan, Tirupur Garment Cluster</li></ul> <b>Moderated consultation</b> |
| 12:30 – 13:00 | <b>Questions and answers forum:</b><br>Ms. Gabriela Alvarez and Ms. Nuria Diez, ITC Executive Forum team   |
| 14:00 – 17:00 | <b>Meetings with:</b> <ul style="list-style-type: none"><li>● Tirupur Textiles Committee: 'Analyzing Cluster Benefits: Impact<br/>on the Balance Sheet'</li><li>● Mr. R. Govintharaaju, Proprietor, Prime Textile</li></ul>  |

## 12 April

- 9:00 – 10:30 **The Public-Private Sector Partnership: Who Leads What?**  
 Moderator: Mr. Isaac Njoroge, Chief Programme Officer,  
 Commonwealth Secretariat  
 Round table commentators:
- Mr. A. Didar Singh, Joint Secretary,  
 Department of Heavy Industries, India
  - Mr. Ozden Catalbas, Deputy of Regional Director,  
 Export Promotion Center of Turkey
  - Mr. Dao Cambodochine, Trade Strategy Consultant,  
 Cambodian Legal Research Development Center
- Moderated consultation**
- 11:00 – 12:30 **Evolution of the Cluster: Financing – Who Pays for What?**  
 Moderator: Ms. Lisa Beer, UNIDO Associate Expert  
 Commentator: Mr. Hari Sankaran, Infrastructure Leasing & Financial  
 Services Ltd., Mumbai, India
- Moderated consultation**
- 12:30 – 13:00 **Questions and answers forum:**  
 Ms. Gabriela Alvarez and Ms. Nuria Diez, ITC Executive Forum Team
- 14:00 – 17:30 **Visits to:**
- NIFT – TEA Knitwear Fashion Institute
  - Netaji Apparel Park

## 13 April

- 9:00 – 10:30 **Evolution of the Cluster: Internationalization**  
 Moderator: Ms. Gabriela Alvarez, ITC Executive Forum team  
 Commentator: Mr. Anjum Fayyaz, National Programme Coordinator,  
 SME Cluster Development Programme, Pakistan
- Moderated consultation**
- 11:00 – 13:00 **Evolution of the Cluster: Structure and Management**  
 Moderator: Mr. Brian Barclay, Coordinator, Executive Forum  
 Commentator: Mr. Deepak Padia, Pharma Cluster
- Moderated consultation**
- 14:00 – 16:30 **Visits to:**
- The TEA Inland Container Depot
  - Trade Fair Centre
- 16:30 – 18:00 **Review of Conclusions: Export Clustering – Essentials and Best Practice**  
 Moderator: Mr. Brian Barclay, Coordinator, Executive Forum
- 18:00 **Closing**

## Appendix II

### Consultation participants

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## Selected bibliography

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- Anderson, T., E. Hansson, S. Schwaag-Serger, J. Sörvik. 2004. The Cluster Policies Whitebook. Malmö, International Organisation for Knowledge Economy and Enterprise Development.
- Department of Trade and Industry. A Practical Guide to Cluster Development. London. 2003.
- Feser, Edward. The Relevance of Clusters for Innovation Policy in Latin America and the Caribbean. World Bank, LAC Group, June 2002.
- Harvard Business School. Cluster Meta-Study, Institute for Strategy and Competitiveness, October 2002.
- Harvard Business School Case Study, 2003 'The California Wine Cluster'
- McCormick, Dorothy. 'Can Africa industrialise through enterprise clusters?', The Courier ACP-EU. No. 196, January-February 2003.
- Morris, Mike, Glen Robbins and Justin Barnes. What should be the role of government in fostering clusters?. School of Development Studies, University of Kwazulu-Natal, 2004.
- Morris, Mike, John Bessant and Justin Barnes. Using learning networks to enable industrial development: Case studies from South Africa.
- Mytelka, Lynn, Fulvia Farinelli. Local Clusters, Innovation Systems and Sustained Competitiveness. United Nations University, Institute for New Technologies (UNU-Intech), 2000.
- Rosenfeld, Stuart A. A guide to cluster strategies in less favored regions. Regional Technology Strategies, 2002.
- Sakthivel, A. 'Tirupur Knitwear Export Cluster, India. Tirupur Exporters' Association, 2004.
- Sölvell, Örjan, Göran Lindqvist and Christian Ketels. The Cluster Initiative Greenbook', IKED, 2003
- Singh, Indira. Can Government Catalyze Clusters?: Examples of Government Actions. Prepared for the 6th Annual International Conference of The Competitiveness Institute, 2003
- Skae, O., ITC, 2004 'Measuring the Impact of National Export Strategy'
- White, Gunther. Action White Associates, 2001, 'Review of Knowledge Intensive Clusters in Canada Scoping Study'
- UNIDO. A guide to Export Consortia. 2003.
- UNIDO. Development of Clusters and Networks of SMEs. 2001.
- UNIDO. Report on the Expert Group Meeting on Cluster and Network Development with special emphasis on monitoring and evaluation issues. 2003.
- National Governors Association. A Governor's Guide to Cluster-Based Economic Development. Washington, D.C., 2002.
- USAID. EGAT Worldwide Assessment of Competitiveness Initiatives. 2003 Briefing.
- Visser, Evert-Jan, Peter de Langen. A Chilean Wine Cluster? Utrecht University, Erasmus University, 2003.