

Strategies for Enhancement of Competitiveness of Small and Medium Industries

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Introduction

The Present-Day knowledge economy demands knowledge-intensive enterprises, which only can survive in the ongoing process of globalization and increased international competition. Knowledge as a factor for competitive advantage has replaced traditional factors like labor and capital. Knowledge resides only in the human mind, it can only be harnessed by focusing on increasing human capabilities through the process of increased communication, cooperation and knowledge-producing organizations. This paper dwells upon a few case studies, how enterprise in India are facing this challenge, and particularly, how small-scale enterprise, are moving towards clusters for international competition.

In most developing countries, **Small and Medium Enterprises** (SMEs) constitute the bulk of the industrial base and contribute significantly to their exports as well as to their GDP or GNP. For instance, India has nearly three million SMEs, which account for almost 50 per cent of industrial output and 42 per cent of India's total exports. It is the most important employment- generating sector and is an effective tool for promotion of balanced regional development. These account for 50% of private sector employment and 30-40% of value - addition in manufacturing. It produces a diverse range of products about 8000.

It also is including consumer items, capital and intermediate goods. However, the SMEs in India, which constitute more than 80% of the total number of industrial enterprises and form the backbone of industrial development, are as yet, in technological backwaters vis-à-vis advances in science and technology. These suffer from problems of sub-optimal scales of operations and technological obsolescence. While most of the large companies, even in developing countries, have financial as well as technical capacity to identify technological sources and evaluate alternate technology that would suit their requirements, unfortunately, this capacity is conspicuously missing in most SMEs. It is these features of SMEs that make them an ideal target for technological upgradation through technological cooperation with foreign and local enterprises, with R&D institutions and centers of technology development. As the countries integrate into the global village, these SMEs will have to respond accordingly and thus deserve special attention. To enable SMEs to mitigate problems of technological backwardness and enhance their access to new technologies, it is imperative to give them a conducive environment, which in the present context of globalization, calls for a human-centered approach with tacit knowledge playing a predominant role. As knowledge resides only in the human mind, it can only be harnessed by focusing on increasing human

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capabilities through the process of increased communication, cooperation and linkages, both within the enterprise as well as across enterprises and knowledge - producing organizations. How are SMEs in India facing this challenge? How are these moving towards industrial cluster for international competition? What policy measures are required? These are some of the questions, which are dealt with in this paper, taking a few examples from the Indian scenario.

Need for Access to New Technology

Small enterprises in India, with their dynamism, flexibility and innovative drive are increasingly focusing on improved production methods penetrative marketing strategies and modern scientific management capabilities to sustain and strengthen their operations. They are poised for global partnership and have the potential to absorb latest technological diverse industrial fields. Small in India is more than beautiful, it is efficient, adaptable and adds value in economic and social spheres. As the country integrates into the global village, the small and medium sectors will have to respond accordingly. They deserve special attention as they play a pivotal role in country's socio-economic development. The problems faced by the SMEs, particularly in accessing technology and maintaining competitiveness have been formidable. The reasons for the inability of SMEs to identify their technology needs are:

- 1 Poor financial situations and levels of R&D;
- 2 Poor adaptability to changing trade trends;
- 3 Desire to avoid risk;
- 4 Non-availability of technically trained human resources;
- 5 Emphasis on production and not on production costs;
- 6 Lack of management skills;

- 7 Lack of access to technological information and consultancy services;
- 8 Isolation from technology hubs.

To enable SMEs to mitigate the above problems and enhance their access to new technologies for increasing their competitiveness in the international market, it is imperative to give them a conducive environment which includes:

- i. Formulation of appropriate national policy and programmes;
- ii. Building up technological capacity;
- iii. Knowledge flows and technology databases;
- iv. R&D and inter firm linkages.

Formulation of policies and programmes:

Conducive policy environment is a prerequisite. Major policy reforms aimed at substantially deregulation industrial sector and liberalizing foreign investment as well as technology imports, have been the most significant development since 1991. The post liberalization era in the Indian economy has enhanced opportunities and challenges for the small industries sector. The ultimate objective of promotional policies is to enhance SME's capacity to grow so that they become viable units. The national policies and programmes may be oriented to

- 1 Setting up industrial Districts/Technology Parks/Clusters to promote sourcing of new technology, innovation and effective transfer;
- 2 Organizing local information services, data banks and seminars in collaboration with professional bodies;
- 3 Sending experts to SMEs to assist them with the introduction of new technologies;

- 4 Establishing - training centers for human resource development for SMEs;
- 5 Establishing business center s;
- 6 Promoting strategic alliances with R&D institutions, Universities and other enterprises at national, regional and international levels.

This calls for promoting indigenous industrialization with emphasis on self-reliance, through use and creation of local resources and at the same time adoption, absorption and diffusion of the imported technologies. This strategy involves an expanded role of SMEs which can alleviate building up of technological capacity.

Building up technological capacity

Access to advanced technologies and assistance in its adoption is crucial to build up Indigenous Technological Capacity (ITC) to face international competition. In the present scenario of globalization, knowledge of and access to latest advances holds the key to international competition. In this venture the industrial sectors, which are able to identify their technology needs and adopt in time, will benefit the most.

In India most of the SMEs are building up ITCs through the process of learning by doing. This is central to incremental innovation and technological change. It has been pointed out that engineers on the shop floor play a vital role in supporting the operator's effort to acquire new skills and come up with new ideas. This is a must for a learning organization. In such an organization, every one in group is an expert and can give his/her knowledge to the managerial staff, including engineers and workers at the shop floor within an enterprise, are an important factor in the information flow and the innovation process is exemplified by the studies on firms in the electronics sector in India. The studies show that learning by doing and entrepreneurial capacities have been

instrumental in strengthening human ware and techno-ware at the enterprise level.

Knowledge flow and technology database

In India, an important technology information data bank is the National Research and Development Centres (NRDC) and SMEs. NRDC acquires, evaluates, develops and transfers all worthwhile technologies generated at the various national laboratories.

The technologies available with NRDC for commercial exploitation cover a wide range of products, namely drugs and pharmaceuticals, pesticides and herbicides, plasticizers, resins, electro-chemical products, metals paints and varnishes, leather chemicals and auxiliaries, electrical and electronic goods, building materials, etc. It provides a comprehensive international patent search and also has a few renowned Inter-national databases on-line for carrying out the search through the Ministry of Science and Technology, the Government institutions and institutions and industry under the scheme called National information System for Science and Technology (NISSAT). There are information banks on food, leather, drugs and pharmaceutical, machine tools and aeronautical. SME units can approach them for assistance, especially with regard to the latest developments in the field of technology. An important database on local innovations is the 'Honey Bee Database' supported by SRISTI. [The Society for Research and Initiatives for Sustainable Technology and Institutions (SRISTI) is a voluntary organization in India, which has received national and international recognition as a center of excellence for Research on people's innovations]. This is one of the biggest stores of knowledge on local innovations by frames and artisans, covering about 72 countries. It is a Knowledge network, which pools the Technological solutions developed by people around the world. Networking of these databases can be immense use to mitigate the numerous technological problems of the SMEs.

R&D and inter firm Linkages

At present, there are 2900 R&D institutions in India of which 1350 are in the private sector. Out of these, over 1250 are in-house R&D units, employing over 45,000 Scientific and technical personnel and incurring an expenditure of the order of seven billion rupees per annum. However, the small-scale sector is largely devoid of such facilities and is mainly supported by public R&D for acquisition of new technologies. In general, SMEs lack financial resources, academia and / or R&D institutions. Over the past decade, emphasis in the concept of technology transfer has gradually shifted towards a new set of strategies which can be described as creative partnership or strategic alliances to form learning organizations underlines the idea that forms of technological cooperation's are no large one-way but involve a longer term mutual benefit beyond short term financial success. According to Cooley, learning by doing is not enough. Those who know what they are doing-crafts people within skill and experience - are the ones who best understand what needs to be done. This depicts an inherent feature of entrepreneurial capabilities which helps pushing the organization. Learning by interaction is pushing the organization towards a learning organization. Learning by interaction is an important feature of technological upgradation and can only happen when firms cooperate and interact through strategic alliances and other forms of linkages. For this to happen, the most viable systems are clusters, which offer good opportunities for inter-action and industrial upgrading. The common feature of these new forms lies in the sharing of knowledge in technological capabilities and in cooperative intentions, which may or may not include government incentives. The diverse forms of alliances include:

Long - term multi-project partnerships that the production Research and marketing division in single Country or across several countries to accomplish strategic Goals;

Flexible networking mechanisms that promote research Consortia at the pre-competitive and development phases such partnership have technical education, training and retraining, innovation and sustainability as inherent

Role of financial institutions

The availability of financial resources on affordable terms and in a non-bureaucratic manner is yet another problem the SMEs confront, hindering access to new technologies. It is imperative, therefore, to influence existing financial networks and, if need be, to set-up a separate mechanism for funding smaller enterprises, especially those categorized as micro-enterprises. One of the important ways to promote access to new technologies among SMEs in developing countries is to provide venture capital, which in a way helps in indigenous development of technologies. Financial institutions such as Industrial Development Bank of India (IDBI), Industrial Credit and Investment Corporation of India (ICICI), Industrial Finance Corporation of India (IFCI), and banks are providing assistance for commercialization of indigenously developed technologies and adoption of imported technologies for wider domestic Applications through venture capital companies. A SRISTI Venture Capital Fund 15 is also supporting a large number of small innovations One of the main factors of the Success of Knitwear cluster at Tiruppur is the state intervention in the supply of short-term credit to facilitate networked production . In order to create a business environment, with adoption and assimilation of new technologies that are resource-efficient and have little waste output, the supportive infrastructure also needs to be strengthened in many developing countries. There is need for such institution. It is engaged in technology promotion, development, utilization and transfer activities. The department has launched several initiatives to encourage increased utilization of locally available R&D options through its major

schemes, Viz. Programme Aimed at technological Self-Reliance (PATSER), and Scheme to enhance the efficacy of transfer of technological (SEETOT). Technology Bureau for small Enterprises-a result of collaboration between APCTT and small Industries Development Bank of India (SIDBI), represents under one roof, Synergy of technology and finance which facilitates capability building and identifying market channels.

The Small and Medium Enterprises (SME) sector in India is under going a 'Big' transformation riding on the government's recognition of its significance, in term of its contribution to the GDP and its huge potential for employment generation.

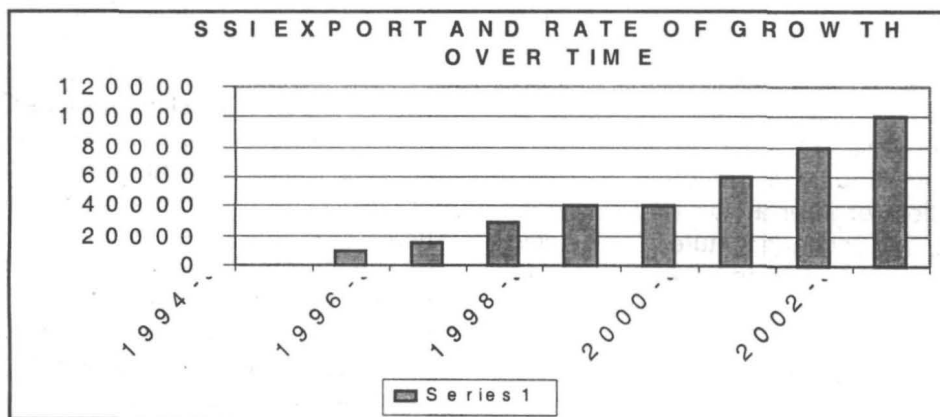
The textile industry in India is a highly fragmented and wide spread sector. The industry which generally divided into sub-sector such as spinning, weaving, knitting, garmenting, processing and finishing adds over 95 percent of the cloth production that comes directly from these widely dispersed Small and Medium Scale Enterprises (SMEs).

IN 2004-05, the industry contributed around

4% of GDP, 14% of the industrial production and about 20% export earnings. In addition, the industry provides almost 18% of employment to the industrial sectors. India's share to the global textile and clothing trade is about 6% and the export has been growing steadily at an annual rate of 3.5% during 2004-50, the Textile contributed Rs.264 billion and garment to the tune of Rs.280 billion.

Although, Information and Communication Technology (ICT) has set a wide reaching revolution in almost all the advantages again of ICT are yet to reach the Small and Medium Enterprises (SME). Therefore in a bid to enable small entrepreneurs achieve business in the world market. To achieve such an indigenous end, the SME Business Services Limited is using Best of the breed, internationally renowned, well established and patented, World Access of Network Directories Technology to bridge the gap between gap between the local SMEs and the global market place.

The SMEs i.e. The Small and Medium Enterprises in India are in for a dynamic transformation and ready to become the next



big players in new age entrepreneurship. They're being more professional and result oriented and is now ready to face the competitive world market",

According to a report on the SME sector, India has nearly three million SSL's which, account for almost 50% of industrial output and 42% of India's total exports quipping to be the future drives of economic growth. The sector is growing at an increasing rate. Whoever is bigger is growing at a huge level.

The SME constitutes almost 350 clusters in India. These clusters are overwhelmingly predominant with small industries while the quantitative strength of medium and large corporations in areas such as sales turnover and production is comparatively moderate.

The SME has now changed in its overall outlook. It has now become the modern, outgoing backbone of the industry. In a developing economy like India, SME constitutes the bulk of industrial base and contributes significantly to the exports as well as to the GDP. As a result of globalization coupled with the WTO regime, India SMEs are beginning to show signs of a steady transformation with the Industry understanding a sweeping change in its entirety, moving away from family managed shows to infusion of professions in the sector.

The SMEs are charging in a number of ways. Firstly, the sector is stressing more on the telecommunications, which has now become the backbone of the enterprise. Secondly, they're.

Switching to a professional outlook changing their working partners to **24x7x365** complete with the international working conditions.

Over the past few decades, the SME sector has been reflecting the socio-economic policy of the country in furthering development and growth, accentuating especially on the labour-intensive modes of production and employment generation. "Today the SME is the major source of quality employment in the country. SME's

are the largest employer after agriculture in India estimated 290 lakhs persons are getting employment on this sector. And with the growth in Indian economy and resultant investment made by SME sector, there are still newer opportunities for employment.

Employment Initiatives by SMEs

The small and tiny industrial Sector (SSI) is an important and vibrant constituent of the economic structure of the economic and the structure of the country. Our country has about 35.31 lakhs SSI units providing the employment to more than 199.65 lakhs persons. 40 % of the industrial production and 35% of the National exports are contributed by the SSI sectors. As on 31. 3. 2004. There are 4.75 lakhs registered SSI units in the Tamilnadu having an investment of Rs 13.292 crore providing employment to 34.65 lakhs persons

To generate more employment in the agro and rural industries sector. The govt has fixed a target of creations of 25 lakhs additional to the opportunities in rural area during the 10th Plan under the Rural Employment Generation Programmed (REGP) being implemented through the Khadi and village industries commissions (KVIC).

In the first two years 10th plan 8.32 lakhs job opportunities have already been created under the REGP and a target of creation 5.25 lakhs of the jobs have been fixed for the current financial year 2004-2005.

Further a target of creation 16.5 lakhs employments has been fixed under the Pradhan Mantri Yojana (PMRY) for the 10th Plan Period. In the first two years of the 3.75 lakhs employment opportunities has been fixed for 2004-05.

The vital objective of the foreign made policy (FTP) was providing the thrust to the employment generation particularly in semi-urban and rural areas. The FTP announced special focus initiatives in the employment intensive & jewelry

and leather & foot wear sectors.

The employment generation has been encouraging not only in this sector. But in other sector across the board. A study commissioned by the Ministry reveals that export generated on the incremental direct employment of 10 lakhs jobs in the year 2004-05 over the previous year.

The total employment generated during the year corresponding to export activity valued at 78 billion was 1 crore jobs of the direct employment in the logistics, transport and related sectors. The study further reveals that we achieve our target of 150 dollars over the next four years.

The SME units now days are gradually turning ancillaries which are keen to capitalize on the availability of abundance trained and dedicated man power a report on improving technology performance in small and medium enterprises. The Technological performance is emphasized to focus on what enterprises actually to technologically. The report says further that an enterprise must bring together at each productive point people with the right technological knowledge, equipment with the right technological capabilities, and materials suitable for the purposes and the moment it must also been sustained. Thus the people, equipment, facilities and processes in the enterprise must embody sufficient technological knowledge and flexibility to select wisely among alternatively for each step in the process.

Keeping track of the new technology, government policies and announcements, the direction of the various indicators of the important economies of the world is the big challenge for the SME's. 'Hiring the right people with a focus on the domestic and the international market coupled with courage to face the international market in terms of quality and price is the biggest challenge for this ever-increasing closet.'

SME sector is the second largest employment provider, after agriculture and the

output from small scale industries sector alone constitutes about 40 % of the value added in the manufacturing sector and high share in the national exports.

Secondly, the small-scale sector serves as agree field for nurturing of entrepreneurial talent and helping the units to grow into medium and large enterprises. At a time when the country is aiming at high growth rates, promotion of entrepreneurs, is an important matter and naturally this segment becomes a major area for policy focus in India. Government of India has announced a special policy package for the SMEs for

Stepping up credit flow to this sector. In terms of the package, public sector banks have been advised to fix their own targets for financing SMEs with the objective of doubling the credit flow to the SME sector by FY 2010. Besides, the government as also introduced the SME development bill, 2005 in parliament, which seeks to facilitate the promotion and development of SME and enhance their competitiveness. A small industrial unit is an industrial undertaking in which investment in plant and machinery does not exceed Rs. 1 crore except in respect of certain specified items under hosiery, hand tools, drugs and pharmaceuticals, stationery items and sports goods where this investment limit has been enhanced to Rs. 5 crore. Unit's whit investment in plant and machinery in excess of SSI limit and up to Rs. 10 crore are being treated as medium enterprises. As per a world bank study, in low-income counties with GNP per capita between \$ 100 and \$ 500, SME's account for over 60 % of GDP and 70 % of total employment in middle income countries they produce close to 70 % of GDP and 95 % of total employment Even within OECD countries, SME's comprise the majority of firms and contribute over 55 % of GDP and 65 % of total employment.

The small-scale industries sector alone accounts for around 95 % of industrial units over 40 % of manufacturing sector output, 36 % of

exports and provide direct employment to over 18 million persons! Reserve Bank of India, based on recommendation of an Internal Working Group has advised that units having investment up to Rs. 10 crore in plant and machinery may be treated with as SMEs. A bill aimed at overall development of SMEs is also likely to be enacted by the parliament of India. The world department indicates that small firms obtained only 19 percent of their financing from external sources while large firms meet up to 44 percent of their financing needs through external sources. To protect, support and promote small enterprises as also to help them become self-supporting, a number of protective and promotional measures have been undertaken by the Government. The promotional measures cover

- Industrial extension services
- Institutional support in respect of credit facilities,
- Provision of development sites for constriction of sheds,
- Provision of training facilities,
- Supply of machinery on hire-purchase terms,
- Assistance for domestic marketing as well as exports,
- Special incentive for setting up enterprises in backward areas etc.
- Technical consultancy & financial assistance for technological up gradation.

While most of the institutional support services and some incentives are provided by the Central Government, others are offered by the state governments in varying degrees to attract investments and promote small industries with a view to enhance industrial production and to generate employment in their respective states.

Besides it must be noted that the small and medium enterprises of India have diverse, vast and different product and techniques base which makes applicability of any scheme and adaptability of any technique less effective. Elements of bureaucracy, corruption and red-tapism, lack of lobbying capacity on the part of these entrepreneurs slow down the phase of their potential growth.

Prospects and Opportunities

By the very nature of their operations, industrial units in the small-scale sector enjoy certain inherent advantages over their larger counterparts.

The free economy will usher in accessibility to bigger markets, greater linkages for SSI with larger companies and marketing outfits, improved manufacturing techniques and process. Various measures adopted by Government of India, Reserve Bank of India and SIDBI have attempted to alleviate the problems of SSI sector. These initiatives coupled with other developments in the economic environment will enhance the prospects of SSIs.

With increasing globalization and entry of multinationals, immense opportunities have been created for outsourcing, sub-contracting and ancillarisation of the products manufactured by corporate particularly in non-core sectors like automobiles,

Engineering and consumer electronics. SSI the vibrant sector can derive maximum benefit of these developments.

The modern information network available today will open the gates for applied research and keeping abreast with advancement of technology with changing trends. SIDBI has set up a Technology Bureau for the SSI in association with the Asia Pacific Centre for Transfer of Technology (APCTT), a body under the UN umbrella. The centre facilitates technology tie-ups between Indians small enterprises and overseas companies.

By its less capital intensive and high labour absorption nature, SSI sector will make significant contributions to employment generation and also to rural industrialization. This sector is ideally suited to build on the strengths of the traditional skills and knowledge, by infusion of technologies, capital and innovative marketing practices. This is the opportune time to set up projects in the small-scale sector. This expectation is based on an essential feature of the Indian industry and demand structures. The diversity in production systems and demand structures will ensure long term co-existence of many layers of demand for consumer products /technologies /process. There will be flourishing and well groaned markets for the same product / process, differentiated by quality, value added and sophistication. This characteristic the Indian economy will allow complementary existence for various diverse types of units.

Conclusion

The SMEs in India reflect the following features since the liberalization of the economic reforms of India since 1990-91. Broadly they are

1. The Government of India along with the State Governments and specialized institutions have taken care to change the outlook of business from one of protection and restriction to that of substitution and liberalization.
2. These in turn have created a sense of competition both with respect to capacity production and employment generation.
3. The SMEs have to a certain extent taken advantage of the flexibility on import fronts and thereby have utilized modern international techniques to remain in business.

However, in terms of cost competition, technological optimum utilization and vibrant international marketing strategy is still missing among the SMEs of India

These have resulted in not creating any conducive base for the SMEs as also existed prior to the liberalization process and hence it clearly does not reflect positive correlation between the opening up of the economy and attainment of higher growth targets. To overcome these shortcomings a threefold manifestation is required both domestically and at the international market field.

The domestic market must capture the latest of the available resources both in terms of techniques and financial assistance and build for themselves and infrastructure which should promote their interests not only in the short run but also in the long run as this heritage of competitiveness and efficiencies must be passed on to the next generations of future entrepreneurs.

Bottlenecks apart, the Indian bureaucracy and administration must now be allowed to be dominated by professionals rather than politicians.

At the international level, there must be an open and welcoming attitude with fewer restrictions in the WTO regimes. The Trans-agglomerates should also provide the Indian small and medium enterprises with a 'level playing field' to display their talents, potentials and cost competitiveness.

These are not only requirements from international arena for Indian small and medium enterprises but for many such small and medium enterprises of other developing nations, who may also be sailing in the same boat. Time is not far away when these changes come over the world domination by small and medium enterprises will be unstoppable. Probably these SMEs will have to provide healthy environment for others to survive and flourish.

Any effective technological capacity-building exercise to enhance competitiveness of SMEs will have to address issues that can be broadly classified under the generic heads of a

conductive policy frame-work, knowledge acquisition and dissemination, new technology demonstration and networking, and financing and institutional support systems. In each of the above categories, the barriers must be clearly identified and enabling strategies developed so that the technological capacity-building process in SMEs becomes meaningful, in terms not only of international trade and business or of the environment, but also of making it responsive to the needs of the people. Constant learning by doing and interaction is the hub of the activities for innovation with tacit knowledge playing a crucial role, as exemplified by Indian SMEs and clusters. Here human centered systems play a crucial role for flexible manufacturing and customer orientation. There have been many successful examples of industrial clusters in India, China, South Korea, Japan and European countries. The study of these innovation models can be highly useful for greater cross-culture exchange of innovative experiences between different countries.

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