BIBLIOGRAPHIC INFORMATION

Title	Technological and Managerial Upgrading of SMI/Es Through Linkages with MNCs/LSIs: Lessons Learnt & Implications
Source	http://www.seri.com.my/oldsite/occational%20papers/TechnologicalManagerialUpgrading.PDF
Author 1	Ong, Anna Cheng Imm
Author 2	NA
Author 3	NA
Publication/Conference	Socio-Economic & Environmental Research Institute (SERI), 2000
Edition	NA
Document Type	Article
CPI Primary Subject	Economics
CPI Secondary Subject	SME & SMI; ; ;
Geographic Terms	Malaysia; Penang

Abstract

NA

Technological and Managerial Upgrading of SMI/Es Through Linkages with MNCs/LSIs:

Lessons Learnt & Implications ***(By Anna Ong Cheng Imm)***

(This paper had been presented into two parts in September & October Economic Briefing to the Penang State Government)

It is widely known that many MNCs/LSIs are developing supplier networks of competitive SMI/Es to complement their core activities. However, it is also a known fact that many of the local SMI/Es remain de-linked from the MNCs/LSIs, and thus are at disadvantage in terms of technological spillovers, access to markets, information technology as well as finance. The main reason for this de-linkage is that the local SMI/Es have not been able to comply with the corporate standards of the MNCs/LSIs as well as the international standards on price, quality, delivery, health, labour and environment.

There are many traditional obstacles to forging linkages: requirements for SMEs to be partnership ready; best practices in terms of programmes; new challenges; what the private sector needs from the public sector; what the private sector can do and the blueprint for growing competitive SMEs.

This paper attempts to discuss the implications of these issues for the development of local SMI/Es.

Issues & Challenges

Issues

Limited Financing for SMI/Es

Most SMI/Es, especially new start-ups face financing problems. This is mainly because the banking and financial institutions are reluctant to disburse funds to the local SMI/Es that lack collateral and track records. Limited financing will impede the growth of the SMI/Es in increasing the capacity, technological capabilities, as well as growth in other resources such as human resources.

Lack of Skilled Labour Force

The SMI/Es have to compete with the MNCs/LSIs in the recruitment of skilled and qualified engineers and technicians. Most SMI/Es, particularly the smaller ones and the new start-ups are unable to match the remuneration package given by the MNCs/LSIs. As such, they lack a skilled labour force that is capable of operating high-tech equipments and processes.

Low Technological Level/Outdated System

Low technological level and utilisation of an outdated system of production is very much related to limited financing. The lack of capital and assets to invest in the state-of-the-art machinery and equipment as well as to increase the skills capability of the labour force results in low technological level of the SMI/Es. The low technological level of the local SMI/Es is also attributed to the lack of skilled labour force and the mindset of the owners/proprietors of the SMI/Es. Local SMI/Es are commonly family-owned or are established by personnel with only technical expertise. As such, the owners/proprietors of these SMI/Es lack management expertise that would enable them to understand the importance of training and retraining of their labour force as well as the importance of providing a favourable working environment for their workers.

No Business Code

As many of the SMI/Es are family-owned and lack management expertise, most of them also do not have a proper business code. Without a proper system for conducting business, the SMI/Es experience slower progress in the adoption, absorption and implementation of newer technologies as well as management skills.

Low Reliability

Lack of business code, skilled labour force, finance and technological know-how contribute to low reliability in quality and delivery by the SMI/Es. Low reliability further de-links the SMI/Es from the MNCs/LSIs, as the

(Continued on page 2)

(Continued from page 1)
SMI/Es are unable to comply with the requirements of the MNCs/LSIs.

No Vision, No Strategy for the Future

As in the case of business code, the local SMI/Es also lack vision and a strategy for the future. Without a vision and strategy, the local SMI/Es are unable to chart their direction of growth and they do not have a target to benchmark their growth. This resulted in haphazard growth among the SMI/Es.

Small Scale/Volume of Production

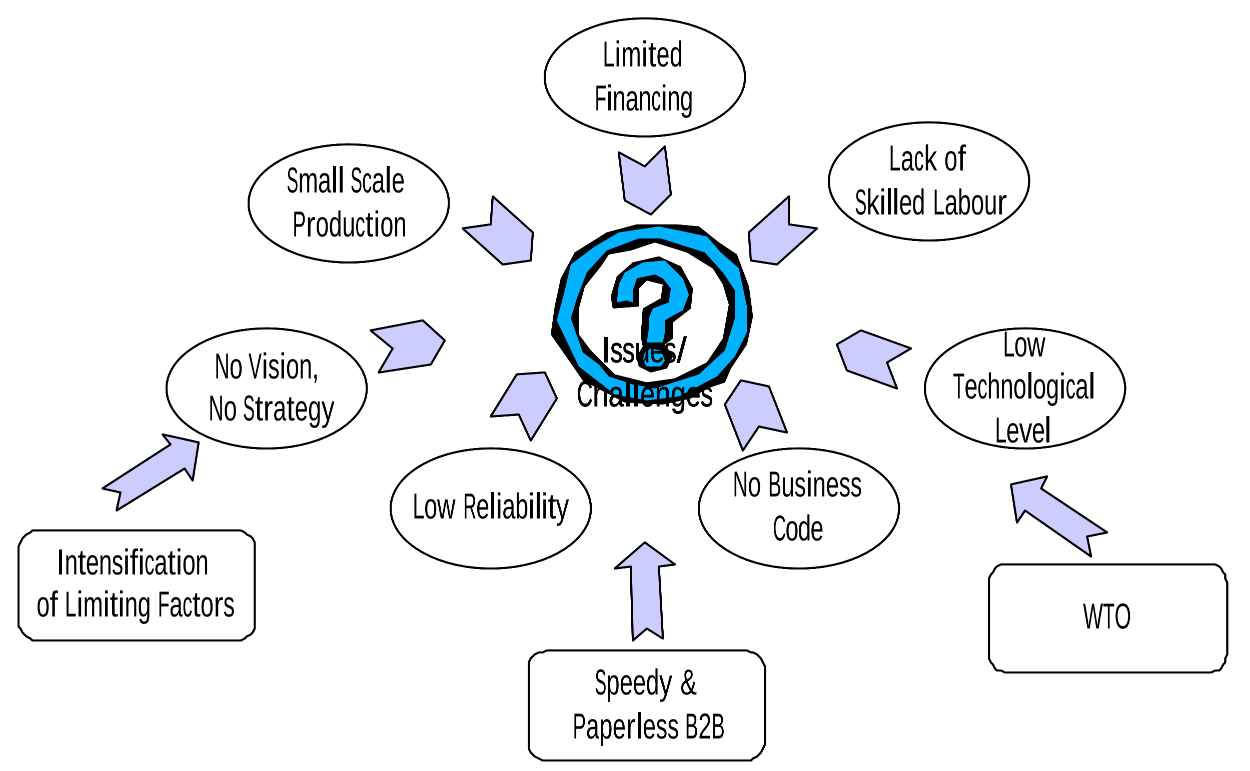
The SMI/Es, especially the smaller ones do not have economies of scale. Their volume of production is rather small making profit margin rather insignificant. This impedes their efforts to expand. The other impediments like lack of skilled labour force, financing and technology competency further aggravate this situation.

Challenges

Intensification of Limiting Factors

The limiting factors include time, rapid technological development, and lack of capacity for continuous innovation. Due to the rapid changes in technology, in the electronics industry in particular, product life cycles are getting shorter. This indicates shorter time to market and in order to be suppliers to the MNCs/LSIs that are competing in the global market, local SMI/Es have to upgrade their technological capability and capacity to meet the requirements of the MNCs/LSIs. The lack of volume of production may hamper the efforts of the SMI/Es to develop their technological capabilities. As the volume is too small to justify automation, SMI/Es will most likely maintain their original mode of production rather than adopting and implementing newer and more advanced ones. The lack of volume also discourages the SMI/Es from increasing their production capacity. This prevents them from receiving large orders when opportunities arise.

Figure 1: Issues & Challenges



(Continued on page 3)

(Continued from page 2)

Speedy & Paperless B2B

The trend of today's business-to-business (B2B) transactions are towards paperlessness and at a very high speed. Local SMI/Es will be required to adopt the ERP (enterprise resource planning) and eventually CRM (customer relationship management) systems and communicate via Internet if they want to be successful and competitive globally. Progress and advancement in communications and transactions will be based on speed and also paperlessness. As such, the local SMI/Es have to keep themselves abreast with the latest developments in ICT (information and communication technology), failing which they would be left behind in global competition.

WTO

WTO's commitment, which prohibits traditional strategies based on restrictions such as local content and partnership/joint venture rules, will pose a great challenge for local SMI/Es. The abolishment of local content and partnership/joint venture rules will result in greater competition for the local SMI/Es. SMI/Es that fail to meet the corporate requirements of the MNCs/LSIs will lose out as competitors from within the country as well as elsewhere will be competing for the same customers.

Implications

SMI/Es, especially new start-ups will encounter the issues discussed above. Sometimes the larger firms also face financing issues during an economic downturn. Skilled labour shortage is also a generic problem among the larger firms, especially when there is a mismatch between the supply of and the demand for workers. This is especially so when the countries are facing a full employment situation. As for technology, not all industries are high-tech in nature and thus, some large firms could also utilise technologies that have been in existence for sometime. Only firms that are involved in the electronics components, computer & peripherals as well as information and communication sectors need to continuously upgrade their technology capabilities and capacities.

It is rather common that SMI/Es, especially new start-ups and the smaller ones do not have a proper system for conducting business, lack vision and strategy and do not have economies of scale. All these characteristics, thus contribute to low reliability.

As such, all countries, whether developed, developing or underdeveloped would have this category of firms, no matter how advanced their large companies are. On the other hand, to become competitive in the global markets, these firms must be able to face the challenges mentioned earlier. The local SMI/Es must have the initiative to continuously upgrade their technological level in accordance with the requirements of their customers. These technologies may not be the latest in the market but must be able to comply with their customers' demands.

As businesses and manufacturing activities are increasingly becoming 'virtual', the local SMI/Es have to conduct their businesses via Internet or stand to lose out to other competitors. This is mainly because larger firms are beginning to source via e-business or paperless channels.

WTO and the forthcoming AFTA will lead to greater liberalisation and abolishment of protectionism. It is envisaged that the local SMI/Es that are presently supplying to the MNCs/LSIs in the electronics industry and the global markets will face little difficulty in competing with suppliers/ subcontractors from the other regions of the world.

On the other hand, other industries, which have been protected either by the government or the special trade systems would most likely be affected with the rectification of AFTA/WTO. The apparel industry, which is presently subjected to the quota-system of the Multi-Fibre Agreement (MFA) would have to compete with other regional suppliers of apparel products when AFTA/WTO is realised and the quota system abolished.

Although the local automotive industry has been given exemption from AFTA till 2005, and thus assured continuous business for its suppliers and vendors, it is just postponing the problem of facing global competition. The vendors would most likely face greater challenges when the exemption period expires. The Malaysian automotive industry, although is the best model for developing local vendors, is also an arena of protectionism by the govemment. Furthermore, the 'single sourcing policy for each product' by the national car manufacturer further reduces competition among the local vendors. As such, while the other export-oriented industries may face fewer difficulties with the implementation of AFTA/WTO, the automotive industry may have to put in more efforts to enhance their capabilities to compete in the global market.

Requirements for SMI/Es to be Partnership Ready

Establishing strategic alliances and forming joint ventures with overseas companies, particularly technology companies, have been identified as the best approaches to develop and enhance local companies. However, the

(Continued on page 4)

(Continued from page 3)
local companies must meet certain criteria or must be ready before the foreign companies would agree to form any strategic alliances or joint ventures with them. The requirements for the local companies, particularly the SMI/Es to be partnership ready are thus discussed below:

Competent & Capable

The SMI/Es must prove themselves to be competent and capable before the foreign partners would agree to a partnership. By being competent and capable means that the SMI/Es must be able to produce quality products on time.

Technically Skilled and Innovative

The SMI/Es must possess sufficient technical know-how in order to absorb and apply the technologies that are being transferred from the foreign partners. To do so, the SMI/Es must have continuous innovation activities/ programmes to enhance the technical capability to keep abreast with the technological changes from the foreign partners.

Responsive

Responsiveness and flexibility to changes and adjustments from the foreign partners indicate the willingness of the SMI/Es to transform from their existing status to a more progressive and advanced status in terms of technological, market, logistical, design and R&D capabilities.

Attitude

Competency, capability, innovativeness as well as responsiveness stem from the attitude of the SMI/Es or rather their will to succeed. The SMI/Es must be willing to change and adopt a more positive stance towards transformation for further enhancement.

Stable Vision & Financial Management

A stable vision and a sound financial management are areas in which most SMI/Es are lacking. However these are also requisites imposed by the foreign partners on the SMI/Es that seek strategic alliances and joint ventures. These areas are also very much related to attitude, responsiveness and flexibility as well as innovativeness. If the SMI/Es are willing to move towards the betterment of these requisites, then they will probably have a better vision of themselves as well as a better financial management.

Resourceful

In order to build their competitiveness and capabilities as well as to improve their understanding of the technological advances, SMI/Es must be resourceful and play the role of a learning organisation other than merely a manufacturing/assembling house.

Implications

As much as most SMI/Es would like to form strategic alliances and joint ventures with foreign companies to acquire technology, market access, management know-how and sometimes, financial support, there is room for improvement for most of the SMI/Es before they can meet the requisites or be ready for partnerships. This explains the reason why many SMI/Es have not built any strategic alliances or partnerships with foreign companies. It is not merely their reluctance to share information and know-how or to divest their equity to the foreign partners.

SMI/Es that are unprepared for partnerships and strategic alliances tend to lose out to SMI/Es that are partnership ready. SMI/Es that have built or are ready for partnerships have more opportunities for growth as they are/ will be exposed to the rapid developments in the global market, be it in terms of technology, market and product knowledge, logistics or even market sentiments.

Private Sector Needs from the Government

Both the SMI/Es as well as the larger companies require assistance from the government in order to develop into global companies. This assistance comes in many forms and while some of them are general and applicable to all industries, some are more relevant to the SMI/Es.

(Continued on page 5)

(Continued from page 4)

Simplify and Expedite Administrative Procedures

Large companies, particularly the MNCs/LSIs tend to compare Malaysia's administrative procedures to its neighbouring advanced countries like Singapore. A common complaint is the long and tedious approval procedure required by the government. While the government has provided adequate incentives and programmes for the industries, companies are finding it rather tedious to comply with the procedures and requirements that have been imposed on them.

Subsidise Licensed Software Purchases for SMI/Es

The recent crack down on software piracy might have affected the SMI/Es, which do not have the resources to purchase the various types of software used in production and administrative processes. Although the Technology Acquisition Fund (TAF) allows for the purchase of the Enterprise Resource Planning (ERP) system, there is still a need for more support to promote and motivate the SMI/Es to possess their own legal software. As such, there is a need for the government to subsidise licensed software purchases by the SMI/Es. This would encourage them to not only adopt ICT but also to automate their production processes.

Special Tax Incentives

To encourage further linkages between the MNCs/LSIs and the SMI/Es, companies are requesting more tax incentives. These include capital reinvestment, tax holiday for high value-added industries, and double tax deduction on R&D.

On the other hand, it should be noted that there are already incentives in place for MNCs/LSIs – suppliers/vendors, including SMI/Es linkage under the Industrial Linkage Programme (ILP). This programme provides single deduction on tax for the MNCs/LSIs while Pioneer Status is granted for the vendors/suppliers that meet the criteria for the programme. Presently, the MNCs/LSIs, which already have the Pioneer Status, High-Tech Incentives or Incentives for National Strategic Industries are not interested in signing up for such programmes although they are sourcing locally and developing the local vendors/suppliers. As such, the local vendors/suppliers, especially the SMI/Es do not stand to benefit much from the ILP.

Catalytic Role in Providing Logistic and Educational Infrastructure

The government should also play a catalytic role in providing infrastructural support to the population as well as the business and industrial community. The provision of world-class logistics and educational infrastructure is very important in assisting the industry, particularly the local SMI/Es to compete in the global market.

Partnerships in Creating Meso Institutions

It is important to have tripartite partnership to create meso institutions for skills development as well as global supplier programmes. The government has an important role in facilitating such partnership while the academia and the industry will have important roles in providing the courses and supply of workers as well as the latest know-how in the industry.

Contributions from the Private Sector

The private sector, namely the MNCs/LSIs also contribute to the efforts to link MNCs/LSIs and SMI/Es. Through local sourcing and linking with the local SMI/Es in terms of acquiring services from them, the MNCs/LSIs contribute to the following:

Access to MNCs/LSIs Expertise

SMI/Es that are supplying or providing supporting services to the MNCs/LSIs will have greater access to the MNCs/LSIs innovation centres as well as their engineers and consultants. Access to these capabilities would enable local SMI/Es to enhance their know-how and capabilities, thus providing them greater opportunity to compete in the global market.

Assignment of MNCs/LSIs staff to SMI/Es

It is a norm that the MNCs/LSIs assign their technical and professional staff to the SMI/Es that are supporting

(Continued on page 6)

(Continued from page 5)
or supplying them. This would enable transfer of technical know-how to the SMI/Es, thus preparing them for greater challenges in innovation and technological changes.

Upgrading Process

Many of the MNCs/LSIs assist their dedicated suppliers at all stages right from the plant layout phase and gradually moving towards upgrading of technological capabilities in terms of design capability, flexible manufacturing as well as ISO certifications. Although not all local SMI/Es are fortunate enough to benefit from such assistance, it is imperative that vendors/suppliers that have been developed through such means carry out this tradition of developing more vendors/suppliers.

Other Modes of Skills Upgrading

Most of the MNCs/LSIs support the efforts of the skills training centres. A classic example is the support given by the MNCs/LSIs to the Penang Skills Development Centre (PSDC), which was established based on a tripartite agreement between the government, industry and academia. By supporting such training and skills upgrading programmes, the MNCs/LSIs are actually facilitating greater access to their training programmes. In addition to such support, the MNCs/LSIs also participate in the adoption, mentoring and coaching programmes such as the Global Supplier Programme, which is jointly promoted by the PSDC and the Small- and Medium Industry Development Corporation (SMIDEC). Such programmes are aimed at upgrading the technical and management capabilities of the SMI/Es. In addition to participating in training programmes, the MNCs/LSIs also render technical resources and leadership skills to the skills training centres. This is evident in the case of PSDC.

Assessment, Review and Benchmarking

To keep abreast with the rapid development in technology, MNCs/LSIs constantly carry out assessment, review and benchmarking exercises. By doing so, the MNCs/LSIs update themselves with the latest technology as well as market trends. SMI/Es are less capable of conducting such activities, as by the nature of their low cost structure, they have lower resource capabilities. The MNCs/LSIs normally share their knowledge particularly on market trends with their dedicated vendors/suppliers, which also include SMI/Es. By doing so, the SMI/Es could update themselves with the latest trends in the global market.

Brokering Strategic Alliances

As customers, the MNCs/LSIs also help to broker strategic alliances or carry out business matching for their vendors/suppliers. It is common for local vendors/suppliers to land themselves with overseas projects due to the recommendations of their MNCs/LSIs customers locally. Such support given to the local vendors/suppliers, including SMI/Es allow the SMI/Es to go global.

The business association with the MNCs/LSIs also generates awareness among SMI/Es on the availability of support schemes, incentives and training programmes as well as facilitates business-to-business and business-to-consumers transactions.

Financial Support

Lastly, some MNCs/LSIs also provide financial support or assist the SMI/Es in applying for bank loans. Most SMI/Es, especially new start-ups lack collateral and track record to qualify for bank loans and the MNCs/LSIs render their support by providing machinery & equipment, consigned materials as well as orders.

(Continued on page 7)

(Continued from page 6)

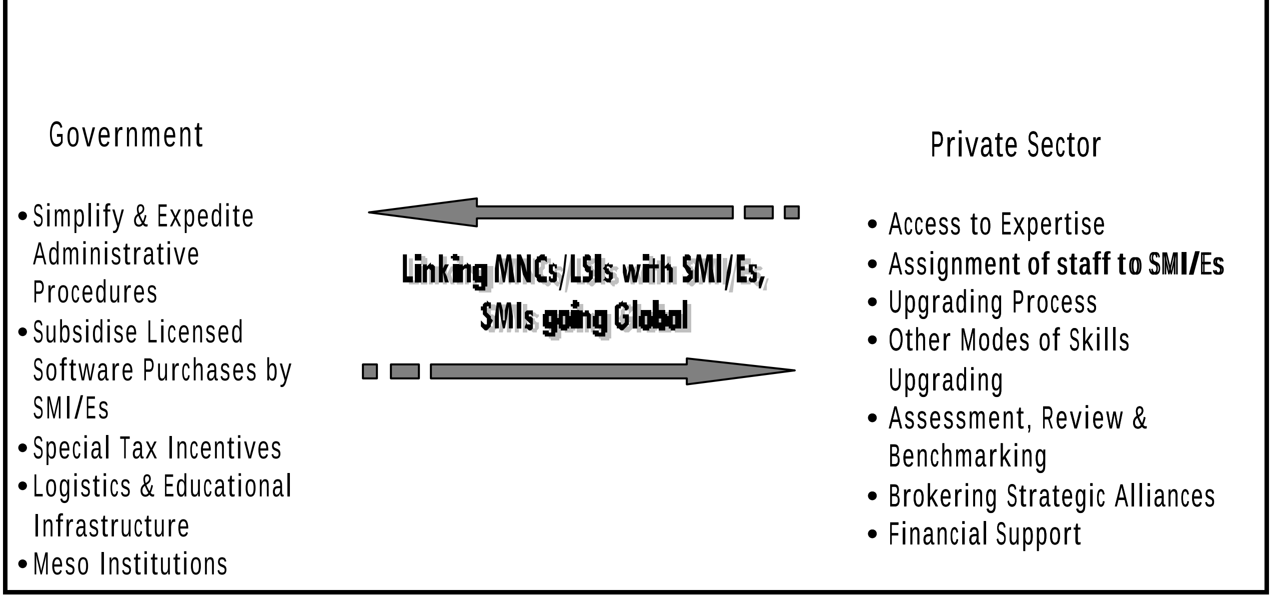


Figure 2: Contribution from the Government & Private Sector

Strategies for Growing Competitive SMI/Es

The strategies to build competitive SMI/Es are based on three basic approaches, namely the measures taken by the government, the MNCs/LSIs and the SMI/Es respectively. The government and the MNCs/LSIs will play the role of facilitating the growth of the SMI/Es while the SMI/Es have a big role to play in improving and upgrading themselves.

Provision of Basic Foundations by the Government

The government can facilitate the growth of competitive SMI/Es by providing the basic foundation for the SMI/Es. These foundations, which can help the SMI/Es to meet the requirements of the MNCs/LSIs include education and logistics infrastructure as well as a strong institutional framework.

Provision of Assistance by the MNCs/LSIs

The MNCs/LSIs can help to develop the SMI/Es as has been proven by Intel, Motorola and Osram (previously Siemens) in Penang. The MNCs/LSI can assist by providing assistance in terms of machinery & equipment, technology, training, orders as well as by seconding senior technical staff to manage the SMI/Es.

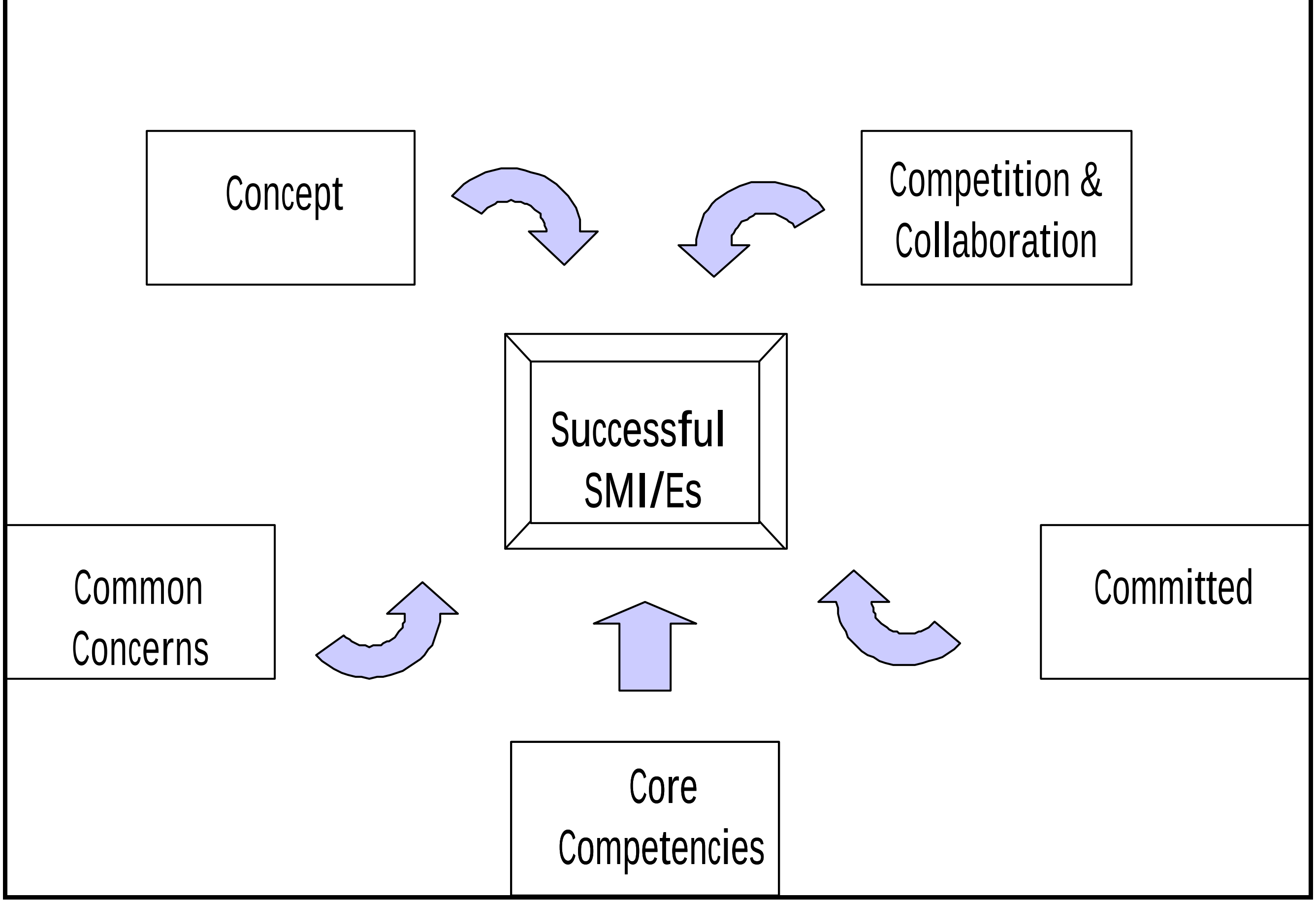
Improvement and Upgrading by the SMI/Es

Most importantly the SMI/Es must be enthusiastic enough to help themselves and have the will to succeed. As such, they must understand the total concept of their business; understand that there are common concerns among the industry, including SMI/Es and also strive to overcome those concerns; be capable of competing in the global market and willing to collaborate for the betterment of their business; must be fully committed and be focused on their core competencies or niche areas.

(Continued on page 8)

(Continued from page 7)

Figure 3: Improvement & Upgrading Role of the SMI/Es



SOCIO-ECONOMIC AND ENVIRONMENTAL RESEARCH INSTITUTE
(SERI)
10 Brown Road
10350 Penang
Tel: 604-2283306, Fax: 604-2267042
Email: seripg@tm.net.my
Website: http://www.seri.com.my

October 2000