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Understanding Competitiveness in a Global World

This chapter sets out the framework and context within which we explore competitiveness in small states. It looks at the importance of knowledge in the new globalised world, and the challenge to small states to harness this. The role of policies and institutions are explored, including the potential for a National Innovation System.

2.1 The Importance of Knowledge in Globalisation

Accelerating globalisation is the international landscape within which strategies for improving competitiveness in small states need to be developed. The process of world economic integration over the last two decades has involved a merging of national markets for goods, services and factors of production (labour, capital and technology) into world markets (see Crafts, 2000; Ghose, 2003; Stiglitz, 2003). The outcome is an international market that seems indifferent to national boarders and state regulation. Globalisation is being driven by powerful factors: falling trade barriers (through the implementation of the Uruguay Round and economic liberalisation), increasing technological advances (for example ICT, biotechnology, robotics and automation technologies), declining communication and transport costs, migration of technical and professional manpower and highly mobile multinational corporations seeking out new investments. The process has profound implications for small states and enterprises within them.

From the viewpoint of small states competitiveness, one feature of globalisation is particularly relevant: knowledge and technological progress have become more important to the realisation of economic prosperity within an integrated world economy (see UNIDO, 2002; ADB, 2003). It should be noted that this is true for all sectors of the economy, and that it applies equally to manufacturing and the services sector. In many small states significant focus has been given to the opportunities that globalisation and the knowledge economy will bring to the services sector, for example the promotion of the idea of back office centres to attract investment in areas such as call centres and data processing. However, globalisation and the knowledge economy is also exerting a profound influence on the behaviour of *manufacturing* enterprises and the environment around them by altering production processes, new product introduction, supply-chain relationships between firms, demand conditions and regulations (Box 2.1).

Box 2.1: The Knowledge-driven Global Economy and Small States

Globalisation is radically altering the nature of industrialisation and enterprises in small states. Knowledge and technological progress have become central to economic prosperity in an integrated world economy. This has led to the term 'knowledge-driven economy' to describe an economy in which the generation and exploitation of knowledge has come to play the predominant part in the creation of wealth. The term refers to the exploitation and use of knowledge in all production and service activities and not just those sometimes classified as high tech or knowledge intensive. Knowledge and technology have always been important but five mutually reinforcing processes are increasing its importance for economic prosperity in small states:

1. *Revolutionary changes in ICT* are transforming every stage of manufacturing (for example finding new technology, management of supply-chain relationships and accessing distant markets) and creating entirely new products (for example digital televisions) and new services such as software services). Enterprises need to develop efficient manufacturing capabilities (via engineering and research and development) to cope with rapid technological progress.

2. The rise of *globally integrated value chains*, driven by multinational corporations (MNCs), are creating 'first mover' advantages for enterprises that manage to insert themselves early into subcontracting relationships. Over time, such enterprises can learn and improve their competitiveness by accessing the new technologies, managerial practices, technical skills and marketing connections of MNCs.

3. *New rules of the game* (introduced through the WTO and by foreign buyers of output) mean that enterprises have to comply with higher technical, environmental and labour standards in export markets such as ISO 9000 and ISO 14000, technical barriers to trade (TBT) and sanitary and phytosanitary measures (SPS).

4. *Changing consumer demand* (associated with rising incomes and changing tastes) for more sophisticated, customised and environmentally friendly products places new demands on enterprises. This means that there is a premium on accessing up-to-date market information and ensuring that production processes and product designs are more flexible and closely adapted to changing markets.

5. *Increasing global competition* associated with falling trade barriers and transport costs require enterprises to add more value in production processes to compete against lower-cost rivals.

These processes are revolutionising the way in which enterprises and governments in small states need to operate. They call for a renewed focus on knowledge as a means of improving firm-level competitiveness and on coherent policies to support industrial restructuring. Close interactions between business associations and governments are also increasingly important to implement a coherent policy framework for competitiveness and to ensure that national obstacles (for example cumbersome bureaucratic procedures and inefficiencies in infrastructure) are swiftly dealt with.

Source: Based on UNIDO (2002)

This new manufacturing context, based on knowledge and technological progress, provides unparalleled new opportunities and poses new risks for enterprises in small states. On the one hand, it has the potential to offer enterprises in small states with access to a virtually unlimited pool of global assets. These assets include not only new markets in both developed and developing countries, but perhaps more importantly resources such as new technologies, information, skills and capital. A lack of resources and small markets at national level will pose less of a constraint to industrial growth and structural transformation as enterprises link up with foreign buyers and multinationals and draw on vast global resources and markets. Hence, the dynamics of globalisation can propel faster industrial growth, exports and greater economic prosperity in small states than ever before.

On the other hand, world economic integration brings about a sudden, marked increase in competition for enterprises in domestic markets – from imports, the entry of new foreign investors and expanding large domestic firms. There is also likely to be more intense competition within the developing world for export markets, foreign investment and resources. Many small states have underestimated the intensity of global competition and its effects on their enterprises. Accordingly, adjusting to increased global competition has placed unprecedented demands on the capacities of enterprises, business associations, support institutions and governments. In general, old structures, institutions, behavioural patterns and public policies seem ill-adapted to deal with the challenge of global competition. There is an imperative to look outside familiar paradigms for innovative policy and enterprise solutions, and to examine how the competitiveness of the system as a whole can be increased.

2.2 Diverse Perspectives on Competitiveness

Competitiveness is regularly mentioned in newspapers and popular discussions of economic issues in small states but a common definition is not used.[3] This makes it difficult to interpret some of the views and proposals. Closer analysis suggests that two distinct perspectives underlie most discussions.[4] Each has a different definition of competitiveness and proposes a different solution.

One is embedded in standard macroeconomic theory and is concerned with simultaneously ensuring internal (i.e. full employment) and external balance (i.e. current account equilibrium) in the short run. This perspective highlights links between changes in the balance of payments, movements in the real exchange rate, shifts in resource allocation between sectors and changes in competitiveness. Emphasising the behaviour of the real exchange rate as the mechanism for adjustment, it implicitly associates it with short-run competitiveness. Hence, a country is deemed to be more competitive if its real exchange rate depreciates and less competitive if it appreciates. Real exchange rate management is widely used by central banks in small states to track short-run competitiveness and make adjustments as required.

A second perspective has micro-level origins and is associated with business and entrepreneurship studies. It seems to reduce competitiveness to a matter of entrepreneurship in the sense of having a sufficient number of individuals with the initiative and discipline to establish and operate a business for exports. This has somewhat broader policy implications than the first perspective. In its simplest version, it holds that entrepreneur-led firms need access to new market information, stable macroeconomic conditions, market-driven signals and the supply of human capital. Some variants of this perspective also emphasise the role of foreign investment in transferring technology and stimulating local entrepreneur-led firms.

Box 2.2: Defining Industrial Competitiveness in Small Developing States

A concise definition of micro- and macro-level competitiveness from a technology and innovation perspective can be found in OECD (1992):

In microeconomics, competitiveness refers to the capacity of firms to compete, to increase their profits and to grow. It is based on costs and prices, but more vitally on the capacity of firms to use technology and the quality and performance of products. At the macroeconomic level, competitiveness is the ability of a country to make products that meet the test of international competition while expanding domestic real income (adapted from OECD, 1992:237).

The OECD definition of industrial competitiveness is simple and internally consistent. It highlights the relevance of price and non-price factors at the micro-level and emphasises that technological and marketing considerations are the paramount drivers of enterprise success. It translates these ideas to the national level by suggesting that industrial outputs (i.e. goods and services) have to meet the price, quality and delivery standards of increasingly open, domestic and international markets. This is particularly pertinent in today's progressively integrated world economy with falling trade barriers, accelerating technological progress and increasing MNC activity. The definition also links the performance of a country's industries to rising living standards, thereby adhering to the empirically observed relationship between exports and economic growth. This last point is particularly important for policy purposes and the UK Government White Papers on competitiveness and the US Competitiveness Policy Council have followed the OECD in viewing competitiveness as the ability to raise living standards.

Macroeconomic and entrepreneurship factors are necessary conditions for the competitiveness of small states. Few would be able to create competitiveness without a stable macroeconomic environment and dedicated entrepreneurs. It is increasingly believed, however, that these factors on their own may be insufficient to ensure a continuous

process of competitiveness at enterprise level in small states. The recent literature on technological capabilities and the related literature on national innovations systems stresses the difficult firm-specific processes that are involved in building technological and other critical export capabilities (for example marketing and human resources) in developing countries.[5] This approach, termed the technology and innovation perspective on competitiveness, can be readily adapted in this study to the circumstances of small states.

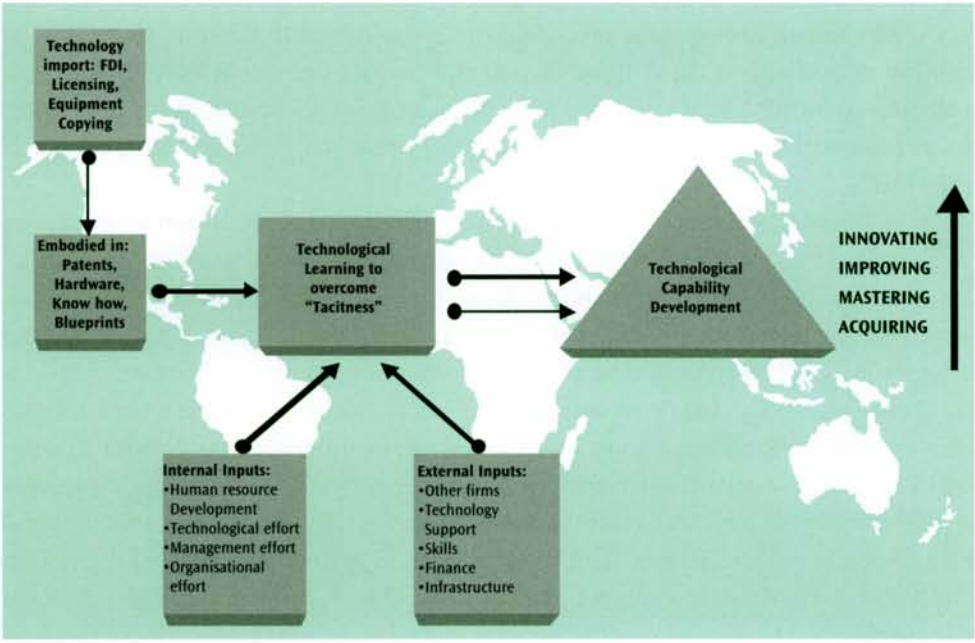
The technology and innovation perspective recognises that small states have access to a global pool of technologies and are typically users of imported technology rather than producers. It focuses on manufacturing enterprises as the main actors in the process of accumulating technological and other export capabilities (for example marketing and human resources). It emphasises the notion that enterprises have to undertake conscious investments to convert imported technologies into productive use. New technologies have a large tacit element (i.e. person-embodied information which is difficult to articulate in hardware or written instructions) that can only be acquired through experience and deliberate investments in training, information search, engineering activities and even research and development. This directly leads to the issue of defining the notion of industrial competitiveness and making the link between the enterprise and national levels (see Box 2.2).

2.3 Enterprise-level Learning and Competitiveness

Figure 2.1 shows a simple representation of the learning process at enterprise level in a typical small state. The diagram links four critical elements of this process: imported technology, firm-level effort, inputs into enterprise learning and phases of technological development.

Starting at the top left of the diagram, enterprises begin by importing technology in embodied forms (foreign direct investment, licensing, equipment and copying). Then they invest in building their abilities to master the tacit elements of the technology. They draw upon a variety of internal inputs (human resources, technological effort, management effort and organisation effort) and external inputs (other firms, technology support, skills, finance and infrastructure) to build up their capabilities. The process starts with capabilities needed to master the technology for production purposes and may deepen over time into improving the technology and creating new technology. These concepts are illustrated in Box 2.3 by examples of learning in African small and medium enterprises in Kenya and Ghana. These examples were selected because of the similarities with enterprises in small states. Kenya and Ghana are not small states. Chapters 4 and 5 on Mauritius and Trinidad and Tobago provide case studies of enterprises in small states.

Figure 2.1: The Enterprise-level Learning Process



Box 2.3: Building Competitive Capabilities in African SMEs

Buyer–Seller Relationships for Competitiveness in a Kenyan Garment SME

Bedi Investments Ltd. is unique in Kenya – a local SME which began in the local market and then moved into exports. Bedi was established in 1975 by a Kenyan entrepreneur as a small family-run garment firm, producing for the local market. The entrepreneur was not content with remaining small and localised, and developed a business strategy for Bedi's future growth. Over the years, the firm integrated backwards into making fabrics and yarns and emerged as one of the most modern integrated textile-garment plants in the country. The firm is currently managed by the founder's three sons, all UK engineering or business graduates. The firm has a good base of technical manpower by local standards (2 per cent of employees are engineers and technicians) and by the mid-1990s was spending 1 per cent of sales on training. Bedi gradually moved into exports and was wholly export-oriented by the mid-1990s, exporting goods to the value of US$4 million.

Bedi's move into exports was greatly assisted by a long-term stable marketing arrangement with a foreign buyer. Bedi made contact with the foreign buyer at an overseas trade fair and began exporting on a small scale. The foreign buyer soon became impressed with the price of Bedi's products and their timely delivery and decided to assist with quality improvement. The foreign buyer encouraged the

Box 2.3 (continued)

adoption of ISO 9000, providing Bedi with information about the ISO programme and helping with implementation. Initially, the buyer arranged for an audit by a qualified consultant from abroad and subsidised its cost. It then helped Bedi to implement the post-audit changes in the process, including the purchase of new equipment, metrological tests, training workers and quality personnel, and a detailed monitoring system. Finally it helped Bedi with the process of verification and certification by an independent accredited agency. In 1994, Bedi had a 26-strong quality control department (7.3 per cent of employees) and its internal reject rate was under 1 per cent. The implementation of the ISO 9000 system doubled Bedi's labour productivity growth to 6 per cent per year (between 1984–89 and 1989–94), and enabled it to expand further into exports by attracting two more foreign buyers.

Bedi's technological capabilities have improved significantly over time. It has a good capacity to search and negotiate terms for imported technology; one of the best production capabilities in the Kenyan garment industry (a strong emphasis on quality control and low reject rates, well maintained equipment and negligible equipment breakdown rates, and frequent changes in plant layout); and good technological linkages with foreign buyers and equipment suppliers. However, it lacks independent design capabilities and relies heavily on foreign buyers for product designs. This is a common characteristic of firms in the early stages of export development. The improvement in technological capabilities is due to a strong base of human capital, investment in training, long experience in production and technology transfer from buyers.

Learning to Compete in a Ghanaian Food-processing SME

With 80 staff, Astek Fruit Processing was one of Ghana's leading SMEs in the early-1990s. Using high quality local pineapples, the firm produced an orange pineapple drink as well fresh fruit juices and concentrates on the domestic market. Its volume of sales grew at 15–20 per cent per year between the late 1980s and the early 1990s. In the same period, its capacity utilisation rate doubled to 40 per cent and was expected to reach 80 per cent by the mid-1990s.

The firm made a good initial choice of technology. New equipment was purchased on a turnkey basis from Italy. The Italian equipment was cheaper and more suited to the smaller scale of production of the local market than rival sources of technology. The Italian equipment supplier sent two engineers to Ghana for two weeks to install the equipment and to train the workers. Prior to this, the Ghanaian production manager spent a month at the equipment suppliers' factory in Italy. The two Italians did the layout and provided the necessary engineering services but the Ghanaian production manager and other local technical staff also participated in designing the layout of the plant and positioning and wiring the equipment. Local technical staff worked

Box 2.3 (continued)

alongside foreign engineers in a subsequent investment in a Tetra Pack technology (which sought to substitute paper packing for cans to reduce costs).

Learning about the technology during the start-up and expansion had a significant influence on Astek's acquisition of plant operation capabilities. The firm had a comprehensive quality control system and a laboratory, with trained scientists, that performed checks on the fruit, the process and the final products. The equipment was well maintained by a full-time maintenance team headed by a graduate engineer. Moreover, it developed its main product, the orange pineapple drink, through in-house efforts and experimentation with different formulations.

Two factors underlie the strong local market and technological performance of this SME. It is owned and managed by a highly educated scientist, who has a Ph.D in chemistry from London University and previously worked for the Ghana Standards Board) and his two sons, who have degrees in business studies and mechanical engineering. It has also developed close relationships with technology centres and banks in Ghana and had ready access to technological services and finance.

Source: Bedi – based on Wignaraja and Ikiara, 1999; Astek – based on Lall *et al.*, 1994

Five features of the process of building technological and other export capabilities (for example marketing and human resources) in enterprises in small states are particularly relevant here:[6]

1. *The process of acquiring capabilities is unpredictable*. Investments in capabilities, like financial investments, carry considerable risk and the outcome is uncertain. Firms face technical difficulties and financial uncertainties especially in research activities. Moreover, firms can rarely insure against failure in capability building. The implications of fundamental uncertainty are clear: the reality cannot be fully modelled and the direction of change never achieves equilibrium.

2. *Capability building is an incremental and cumulative process*. Enterprises cannot instantaneously develop the capabilities needed to handle new technologies; nor can they make jumps into completely new areas of competence. Instead, they proceed in an incremental manner building on past investments in technological capabilities and other export capabilities and moving from simple to more complex activities.[7]

3. *Capability building involves close co-operation between organisations*. Small firms rarely acquire capabilities in isolation. When attempting to absorb imported technologies, they interact and exchange technical inputs with other firms (competitors, suppliers

and buyers of output) and support institutions (technology institutions, training bodies and SME service providers) in a national innovation system. Hence, interaction and interdependence between organisations (i.e. collective learning) in a national innovation system is a fundamental characteristic of capability building.

4. *Success in acquiring firm-level capabilities can spill over into comparative advantage and export success.* Differences in the efficiency with which micro-level capabilities in enterprises are created are themselves a major source of differences in comparative advantage between countries. Small states with relatively efficient firm-level learning processes will witness rapid export growth and upgrading while weak learning processes in others will be associated with poor export performance.

5. *Capability building is affected by a host of national policy and institutional factors.* Firm-level learning can be stimulated by the trade, industrial and macroeconomic regime, as well as supported by institutions providing industrial finance, training and information and technological support. In general, macroeconomic stability, outward-oriented trade and investment policies, ample supplies of general and technical manpower, ready access to industrial finance and comprehensive support from technology institutions are conducive to rapid capability building.

2.4 Role of Policies and Institutions

Perhaps the best way to analyse the influences on capability building in firms is to view them as being a part of a system of interconnected elements that are all geared towards collective learning in firms and, hence, attainment of competitiveness. This scheme, termed the national innovation system (NIS) is shown in Figure 2.2.[8] The NIS approach emphasises that innovation and learning are a process that involves more than firms, support institutions, governments and other actors because of synergies and systems effects. It also suggests that the innovation and learning process hinges on the internal interactions between the actors in the system and the external links of the system.

Three levels can be envisaged in a NIS in a small state. The first is made up of the *industrial clusters* within a country. This contains all the firms (producers, buyers and suppliers) engaged in a given industry. In turn, national industrial clusters are linked to various players (for example foreign buyers of output and multinationals) in global industrial clusters (represented by global knowledge in Figure 2.2). As they provide access to imported technologies, skills and international markets, these external links are crucial to local technological development and competitiveness. Of course, links with regional industrial clusters (i.e. regional buyers of output and regionally-based multinational firms) may be more relevant to some small states, particularly micro-states, than global ones.

The second level is the set of *institutions and factor markets* which support learning processes in industrial clusters. There is a strong emphasis on processes of interactive

learning, i.e. the exchange of knowledge and information between organisations involved in the development of capabilities. These institutions and factor markets include education, finance, technological support and physical infrastructure. Some small states may rely more on regional institutions and factor markets than national ones. Examples may include airlines and commercial banks based in larger small states which have expanded into the regional market, as well as regional technology institutions and universities which are mandated to service the region.

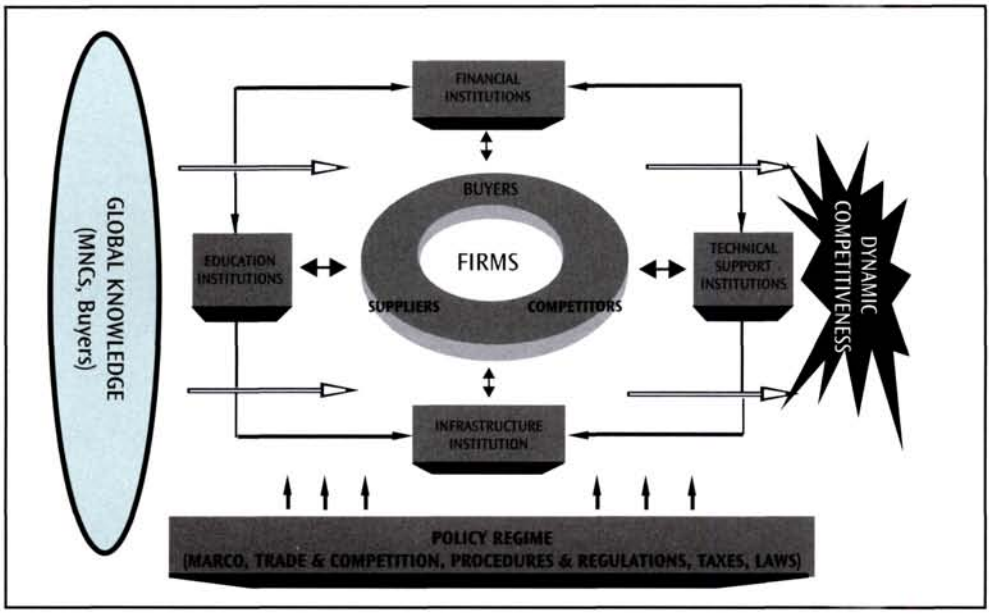


Figure 2.2: National I

The third level is the *set of policies* that stimulate the learning processes between industrial clusters and institutions. A range of policies that influence technological activity fall under this heading, including the political and macroeconomic environment, the trade and competition regime, business and transactions costs, the tax regime and the legal system. Clearly regional trade and investment policies will also influence enterprise learning within given small states.

There are significant differences between national innovation systems across small states due to the following underlying factors:

- The level of technological and other capabilities of enterprises which are contained in industrial clusters;
- The effectiveness of institutions and factor markets which provide education, finance, technological support and physical infrastructure to enterprises;

- The efficiency of collective learning processes involving enterprises and institutions;
- The supportive nature of the policy framework;
- Systems effects;
- The intensity of external links.

Not surprisingly, a few more efficient systems will witness more sustained competitiveness than others. These systems are characterised by a good base of capable firms, efficient institutions, significant collective learning, strong systems effects and well-developed extensive external links with foreign sources of knowledge. Furthermore, efficient systems adopt business-friendly policy frameworks (i.e. those that encourage exposure to competitive pressures and low transactions costs), which stimulate collective learning processes between firms and institutions. Efficient systems witness smoother transitions to higher levels of national capability development from collective acquisition of technologies to collective improvement and eventually to collective innovation. Higher national capability development is in turn associated with better industrialisation, technologically advanced production and competitiveness.

Most NIS in small states, however, are deficient in these aspects and in their competitiveness relative to industrial leaders. Weaknesses in NIS in small states arising from missed markets, deficiencies in key institutions, poor quality and intensity of internal interactions and weak external links are generally referred to as systems failures. Box 2.4 shows a scheme for classifying systems failures for developing countries developed by UNIDO which is also relevant to small states. Since systems failures directly affect how enterprises respond to globalisation, remedying them is the principal aim of a coherent policy framework to promote competitiveness in small states.

Box 2.4: Gaps in NIS in Small States and All Developing Countries

There are pervasive weaknesses in NIS in small states, and developing countries generally, which inhibit collective learning processes and the development of industrial competitiveness. UNIDO (2002) advocates a linking, leveraging and learning (LLL) industrial learning strategy to transform NIS in developing countries and classifies these weaknesses under three broad headings as follows:

1. **Those that relate to the ability of national industries to link with global industrial clusters:**

- **Firms and clusters may lack strategic intelligence about the organisation and dynamics of global industrial clusters (for example evolution of technologies, markets and MNC behaviour) and are unable to diagnose their relative strengths and weaknesses;**

Box 2.4 (continued)

- Business associations and trade promotion organisations may lack information about global industrial clusters and be unable to provide services to forge links with foreign partners;
- Policy-induced barriers (high and variable effective protection and controls on MNCs) or geographical isolation may hamper the entry of foreign partners (foreign buyers and multinationals) and imports.

2. Those that relate to the ability of national industries which are already linked to global industrial clusters to leverage technology from them:

- Firms may not be able to devise favourable contracts with foreign partners, which provide for extensive transfers of technology, skills and marketing expertise;
- Leveraging institutions (such as investment promotion organisations, SME promotion agencies and regional development agencies) may not be able to provide a range of services to firms to leverage resources because they are top-down, bureaucratic and lack technical manpower.

3. Those that relate to the ability of national industries which are already linked to global industrial clusters and leveraging resources to initiate collective learning processes:

- Firms may not be aware of the need for learning and lack basic manufacturing capabilities;
- Producers, suppliers and buyers in an industrial cluster may not connect with each other or form clusters;
- Firms and other actors may be unable to organise collective learning processes to reap systems effects;
- Institutions providing training, technological support, industrial finance and physical infrastructure may be weak or fragmented and unable to provide high quality support services to firms;
- The incentive and regulatory framework may not be conducive to innovation and learning because of residual import protection, overvalued exchange rates, high corporate taxes, poor enforcement of patent laws, excessive rules on MNC operations and weak enforcement of competition laws.

Source: Adapted from UNIDO (2002)