

Egypt's Industrial Development Strategy
Industry: The Engine of Growth
(الصناعة قاطرة التنمية)

Forward

We live in an ever-changing world, constantly surrounded by overwhelming changes and challenges, a world in which we can no longer go on without having clear answers to critical questions: How do we want our future to be? What do we need to realize it?

Indeed, we look forward to a future in which higher income, sufficient employment, and a better global posting are realities. This, however, needs from us to seriously rethink the present. The truth is that our aptitude far exceeds what we've accomplished so far. This, in turn, should lead us to reconsider our performance, with an aim at faster growth and a better utilization of our real capabilities. To grow, we need a powerful growth driver, and industry, having the strongest forward and backward linkages, and having the greatest potential to grow, will be the overriding engine for growth. But growth, though important, is not our only objective. What we need more is comprehensive development; growth with higher welfare for all. Thus, we opt for an industry-led development pattern; as industry will push the entire economy forward to its full potential.

Public policy has a great role to play towards the desired development, one that far departs from the traditional interventionist policies and is not limited to that of a regulator. It is our duty, as a government, to set up the base for development, namely "Building Domestic Capabilities". Private businesses invest, produce and employ, but it is the government that creates a business friendly environment, supports entrepreneurs, and promotes national skills. Thus it should be prepared to step in whenever needed.

In this context, this strategy puts forth a twenty-year vision for the Egyptian industry that defines strategic targets, and carefully identifies the instruments through which public policy can contribute to industrial development. A vision for Egypt to be the leading industrial power in the Middle East and North Africa by the year 2050. This is an ambitious goal, but one that is certainly attainable. All goals and means are within our reach, and in the end it will all depend on our performance.

Implementation is already underway. Many of the designed programs are off the ground, and more will be forthcoming. Implementation is a national task and the Ministry of Trade and Industry will not be the sole actor, several public and private partners will be involved. Success will be the result of a concerted Egyptian effort.

Our future is now in the making, and we have a long way to go. Yet, with determination, a strong will and enough stamina, our success is only a few steps away.

Minister of Trade and Industry
Eng. Rachid Mohammed Rachid

1. Industrial Take-off: Building on Solid Base

Future industrial policies in Egypt will be focused on enabling the industrial sector to be the engine of growth through the expansion of exports and job opportunities. At present, the industrial sector in Egypt is a major contributor to economic growth, employment generation, and export proceeds. Roughly accounting for 20 percent of GDP (excluding informal industrial activities), there are around 26,000 formally registered industrial establishments employing nearly 2.4 million workers and around 1.5 million workers in informal industrial establishments which represents around 20% of the labour force. In addition, manufactured exports account for nearly 3% of GDP, 40% non-oil export proceeds and 11% total current account receipts.

The industrial sector is a major growth driver having strong backward and forward linkages with both the agriculture and services sectors. It is expected to play an instrumental role in reinvigorating economic growth in the Egyptian economy over the medium and long terms. Learning from the successful experience of other developing countries, the industrial sector is bound to become the driver for increasing growth rates, generation of sufficient employment opportunities, and fostering Egypt's integration into the global economy.

The industrial sector is best-positioned as a potential growth driver because:

- It enjoys strong forward and backward linkages with other important economic sectors such as agriculture and services;
- It offers high prospects for employment creation especially in labour-intensive industries;
- It acts as a catalyst for technology transfer and attraction of FDI; and
- It offers high prospects for deepening Egypt's drive to integrate further into the global economy.

Comparative performance indicators suggest that there is a large room for improving the competitiveness of Egypt's industrial sector. The legacy of state intervention in the industrial sector coupled with absence of a clear vision and strong commitment to enhancing industrial competitiveness are seen as primary reasons for the current state of affairs. The time is ripe for envisaging a national strategy for improving industrial performance.

It has to be emphasized from the outset that implementing the Industrial Development Strategy has to be phased. Three phases are envisaged, each of which leads to, and paves the way for the next. The first phase to be carried out in the short term should have as its objective the increase in exports and employment. In the medium term, the objective will be enhancing industrial efficiency by building up the necessary institutions for high quality industrialisation. Finally, the building of innovation capacity will be the target for the long term.

Parallel to this process is the process of technological advance. Thus, in the short run, the focus will be on leveraging of the existing base of resource-based and low-tech

industries; and, therefore, on labour-intensive exports. The next stage will witness the upgrading of the technological content of both production and exports by moving to medium-tech industrialization. The highest level, based on high-tech production and exports, will represent the final stage of this process.

2. Strategic Vision and Targets:

Industrial policies are not limited to sectoral objectives, but represent a consistent set aiming at fostering economic and social development with industry being the leading sector. The future path for the Egyptian industrial sector is thus to become the engine of growth, employment creation, and export development with the objective of deepening Egypt's integration into the global economy as a competitive player.

By the year 2025, Egypt will be a leading industrializing nation in the MENA region in terms of industrial performance as well as a main export hub for medium-technology manufactured products.

Vision formulation is an important phase in the process of designing and implementing industrial development strategies. The vision for industrial development should realistically be based on the country's resource endowment (including human resources) and state of domestic capabilities and facilitating drivers for industrialization such as skills, technological attainment, infrastructure, and level of integration with international markets. Yet, the vision should not be void of ambition. Ambitious industrialization strategies coupled with strong institutional ownership can yield quite successful outcomes.

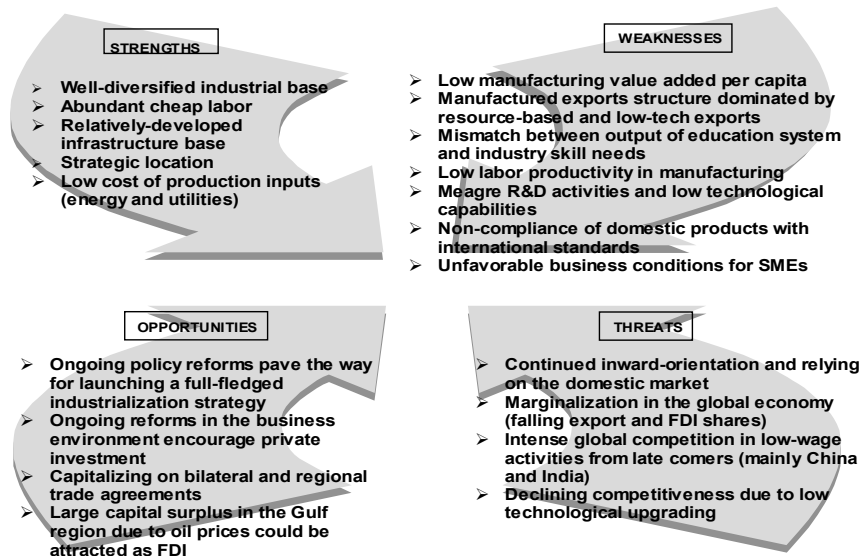
As a relative latecomer, Egypt's potential can be realized through a process of "leapfrogging" by taking the advantage of accumulated experiences of others. This can be brought about by a well-formulated strategy that effectively diagnoses the areas of weakness in current industrial performance and at the same time capitalizes on existing strengths and opportunities to achieve sustained industrial growth.

Egypt's proposed Industrial Development Strategy (IDS) is centred around three major axes:

- ✓ achieving higher growth in industrial production through an aggressive utilization of export development and FDI attraction where both are vehicles for deepening Egypt's regional and global integration drive;
- ✓ effecting a leapfrog in industrial productivity through a carefully-designed set of policies and programs aiming at leveraging industrial competitiveness; and
- ✓ achieving a gradual shift in the industrial structure from resource-based and low-tech activities to medium- and high-tech industries.

2.1. Take off: The Challenge and the Potential

The present wave of policy reforms provides Egyptian industry with an enabling environment to remedy its weakness and realize its potential.



The future path for the industrial sector is to become the engine of growth, employment creation, and export promotion with the objective of deepening Egypt's integration into the global economy as a competitive player.

As such, Egypt is bound to become ...

- *the leading industrialized country in the MENA region*
- *positively integrated into the world economy; and*
- *an investment magnet in the region.*

Building on this vision, and given the time framework of this strategy, the Egyptian economy is foreseen in the year 2025 to be a leading industrializing nation in the MENA region in terms of performance as well as a main export hub for medium-technology manufactured products.

The ultimate objective of the IDS is to provide the Egyptian economy with such a powerful driver as to sustain economic growth at rates sufficient for absorbing the annual entrants to the labour force. Thus, the IDS is to be seen as an integral part of a national development strategy aiming at enhancing economic prosperity through providing productive job opportunities for the working-age population, and increasing Egypt's returns from regional and global integration.

The time span for the proposed strategy is 20 years, to the year 2025. This rather long time span allows for the design of sets of short, medium, and long term policies and programs that will bring about the long-awaited industrial take-off for Egypt's manufacturing industries. The stated numerical targets are to be seen as indicative figures for the likely path of the industrial sector once the strategy goes to the implementation phase.

2.2. Industry Has to Grow Faster than the Economy

Building on the premise that the IDS is an integrated component of the overall economic development vision for Egypt, the starting point for setting growth targets for the industrial sector is determining the overall rate of economic growth needed to sustain the annual increase in the labour force. There is consensus that real gross domestic product (GDP) growth should be no less than 6% to accommodate the annual number of entrants to the labour force, estimated as 640,000 each year.

To achieve this growth rate, the amount of economy-wide investments needed in 2006 is estimated as LE 115 billion. This implies a significant increase in gross domestic investment compared to historical records. However, the following supporting factors could help in realizing this increase:

- recent reforms in the business environment which signalled to investors the seriousness of the government's commitment to reform;
- structural reforms pertaining primarily to reductions in tariffs and tax rates and to the reinvigoration of the privatization program;
- evidence of excess liquidity in the economy (and in the banking sector in particular) awaiting to be channelled to productive investment opportunities, in contrast to the period 1997-2000 where the economy suffered from a liquidity crunch;
- growing evidence of increase in FDI inflows; and
- ongoing reforms in the financial sector that promise an increase in access to bank lending, which has been among the most important impediments facing domestic investors.

The strategy horizon starts with a targeted real growth in industrial production that is less than the targeted real GDP growth of 6%. The reason for the negative growth premium at the early stages of the strategy horizon is that growth rates in industrial production have been lower than those of GDP in recent years. The growth premium gradually turns into a positive differential where, starting the year 2011, real growth rate in industrial production will exceed that of GDP by 1 percentage point to reach 3 percentage points by 2019. (Table 1)

Table 1: Growth and Investment Targets in the Industrial Sector

	2005	2006	2007	2008	2009	2010	2011	2015	2020	2025
Real Growth Rate in Industrial Production (%)	3.3	4.0	5.0	5.5	6.0	6.0	7.0	8.0	9.0	9.0
Premium Over Real GDP Growth (%)	-1.7	-1.5	-1.0	-0.5	0.0	0.0	0.1	2.0	3.0	3.0
Nominal Industrial Production (LE Bn)	92	101	111	122	134	147	162	241	413	728
Share of Industry in GDP (%)	17.1	16.8	16.6	16.6	16.6	16.6	16.7	17.7	19.7	22.6
Nominal Investments in the Industrial Sector (LE Bn)	12	16	22	27	32	35	45	77	130	229
Industry Share in Total Investment in the Economy (%)	NA	14.0	15.9	17.4	18.9	18.9	22.3	26.9	29.5	33.8

Nominal industrial production is to increase from its current level of LE92 billion, to LE 147 billion by 2010, and to LE 728 million by 2025. Hence, the share of industry in GDP will gradually increase from 17.1% to 22.6%. For this to be achieved, investments in the industrial sector will have to increase from its current level of LE 12 billion to LE 35 billion by 2010, and LE 229 billion by 2025. This in turn requires an increase in the industry's share in total investments from 14% to 33.8% by 2025.

2.3. Financing industrial growth: Where would it come from?

Three principal actors are responsible for undertaking investments in the industrial sector: *the government, the domestic private sector, and foreign investors.*

The government is foreseen to be playing a declining role in financing industrial investment under the assumption of continued divestiture of state-owned enterprises under the privatization program. There will be a gradual decline in the share of government investment in total investment in the industrial sector from 20% in 2006 to 5% by the end of the strategy time span. Despite the decline in its share, government investment in the industrial sector is to increase in absolute value from LE 3 billion in 2006 to LE 11 billion by 2025. (Table 2)

Table 2: Financing Industrial Investment

	2005	2006	2007	2008	2009	2010	2011	2015	2020	2025
Nominal Investments in the Industrial Sector (LE Bn)	12	16	22	27	32	35	45.2	77	130	229
Public Business Sector Investment (LE Bn)	NA	3	4	5	5	5	6.8	8	7	11
Foreign Direct Investment (LE Bn)	NA	7	8	9	11	13	14.1	16	20	27
Domestic Private Sector (LE Bn)	NA	6	10	12	17	17	24.3	53	104	191
Financing Through Bank Credit (LE Bn)	4	7	11	13	17	14	17.5	27	50	86
<i>Industrial Sector Share in Annual Credit Flow to Private Sector (%)</i>	<i>35.0</i>	<i>35.0</i>	<i>36.0</i>	<i>37.0</i>	<i>38.0</i>	<i>38.5</i>	<i>38.5</i>	<i>39.0</i>	<i>42.5</i>	<i>45.0</i>
Financing Through the Capital Market (LE Bn)	NA	-1	-2	0	0	3	6.9	26	53	105

With regard to FDI inflows to the industrial sector, it is targeted to attract FDI inflows with an average of LE 10 bn each year in 2006-2010, LE 16 bn in 2015, LE 20 bn in 2020, and LE 22 bn in 2025. Those targets are largely conditioned by the ability of the whole economy to attract above-average inflows where there are already signs of a rebound in FDI inflows after the recent batch of economic reforms.

Finally, new investments in the industrial sector by private *domestic* entrepreneurs are to reach an average of LE 12 bn each year in 2006-2010, LE 53 bn in 2015, LE 104 bn in 2020, and LE 191 bn in 2025. These impressive developments are expected to occur in reaction to ongoing reforms in the financial sector which will both increase credit

extension from the banking sector to the industrial sector and also enhance the functioning of the capital market to offer alternative means for non-bank financing.

2.4. How Many Jobs to be Created?

Currently, the formal industrial sector employs around 2.4 million workers, with an estimated 1.5 million in informal establishments; this represents around 20% of the labour force.

As indicated earlier, the objective of enhanced employment creation is at the heart of the IDS and helps integrate it with the overall development objectives of the government. With the targeted growth in industrial investment, there will be both a direct and indirect impact on job creation. The following targets relate only to the direct impact of industrial investment assuming a constant cost per created job. (Table 3)

Table 3: Employment Targets

	2005	2006	2007	2008	2009	2010	2011	2015	2020	2025
Nominal Investments in the Industrial Sector (LE Bn)	12	16	22	27	32	35	45	77	130	229
Direct Jobs Created (In Thousands)	101	134	185	223	268	294	377	642	1084	1911

With the targeted increase in industrial investment, and assuming a constant average cost of job creation, the industrial sector will generate nearly 1.5 million jobs over the next six years between now and 2011; and by 2025, the industrial sector will generate about 1.9 million jobs annually.

2.5. Targeting Export Markets

The objective of exports growth is also intricately intertwined with that of industrial growth. At present, the domestic market is insufficient to achieve the foreseen growth rates in industrial production as it remains constrained by the low purchasing power dictated by low per capita incomes.

Relying on export markets opens new opportunities for sustaining an export-oriented manufacturing growth strategy. Not only will this help manufacturing enterprises enjoy economies of scale in production, but also induce them to invest in skills and quality upgrading. Export-orientation also allows domestic enterprises for joining global value chains where most of global trade activity takes place. The objective is not only to increase the level of manufactured exports, but also to reinvigorate the technological structure of manufactured exports to increase the base of medium and high technology manufactured exports

Table 4: Export Targets

	2005	2006	2007	2008	2009	2010	2011	2015	2020	2025
Export Propensity (Manufactured Exports % of MVA)	19.6	20.0	22.0	22.0	24.0	24.0	26	30.0	34.0	40.0
Manufactured Exports (LE Bn)	18	20	24	27	32	35	42	72	140	291

The strategy targets an increase in the overall export propensity of the manufacturing sector from its current level of 20% to 40% by 2025 as it increases incrementally. This incremental increase will be realized as the Egyptian industrial sector responds to export development policies and to improved quality of production. In nominal terms, manufactured exports are to increase from their current level of LE 18 billion in 2005 to LE 291 billion by 2025.

2.6. WHICH SECTORS TO GROW?

Traditionally, the most important industrial sectors in terms of contribution to manufacturing value added are engineering and electrical machinery, food processing, chemicals and pharmaceuticals, textiles and garments, building materials, furniture, and paper and paperboard.

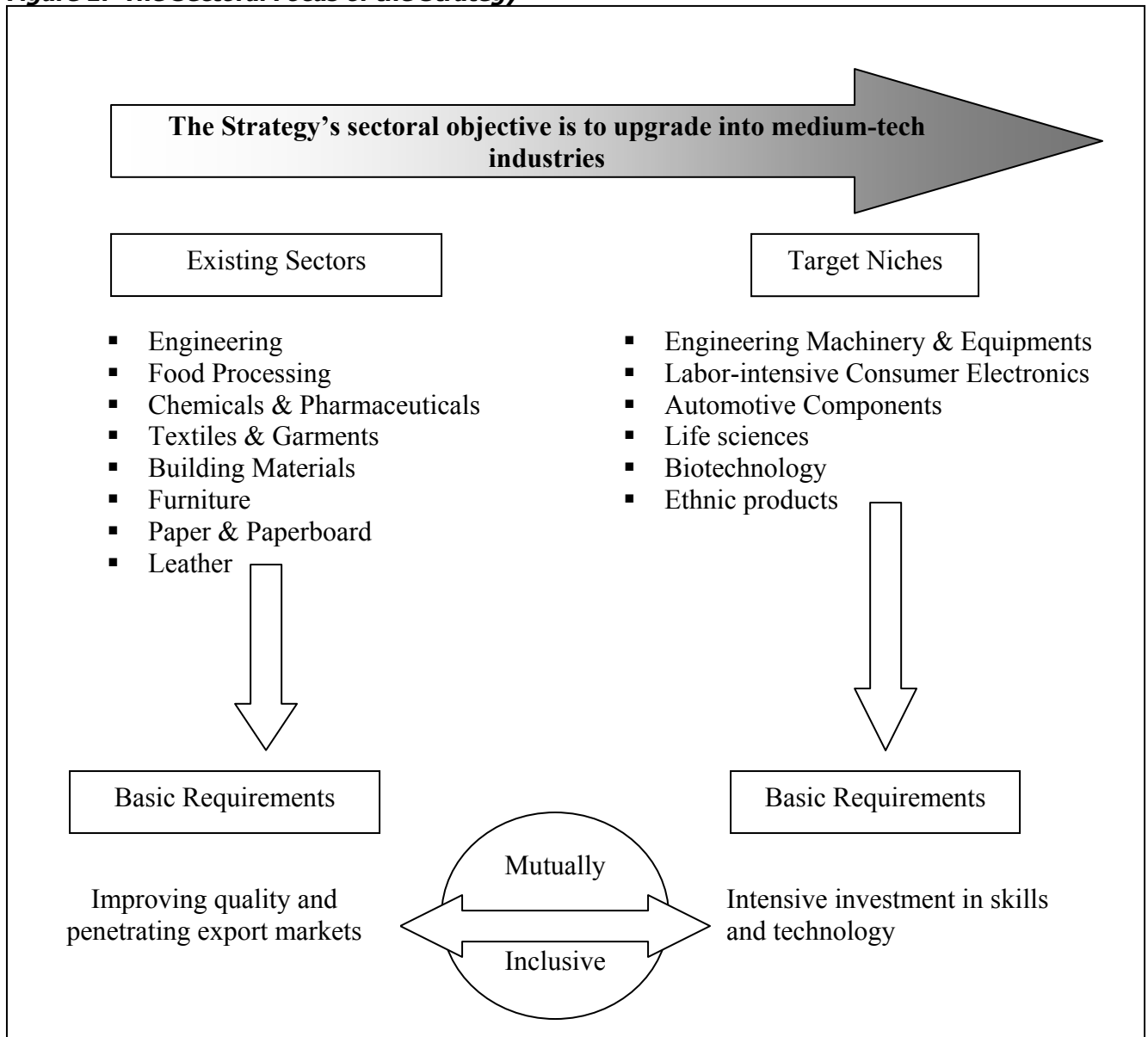
The sectoral focus of the strategy should be closely aligned with the objectives of export development and deepening Egypt's integration into the global economy. To realize this objective, the IDS proposes the promotion of medium and high technology activities as new industrial niches for the Egyptian manufacturing industries. This does not mean discarding existing activities in the resource-based and low-technology category, but means supporting the development of other sectors that will ensure the long-run competitiveness of the whole industrial sector. (Figure 1)

Along with the existing sectors, the strategy proposes further focus on the following sectors:

- *engineering machinery and equipment (renewable energy);*
- *labour-intensive consumer electronics;*
- *automotive components;*
- *life sciences;*
- *biotechnology; and*
- *ethnic products.*

The objective is to go beyond simple assembly operations towards upgrading and maximizing value added in the whole value chain. This is bound to increase the share of medium-technology activities in total MVA. Medium-technology industries are the heartland of industrial activity in mature economies, comprising the bulk of skill and scale-intensive technologies in capital goods and intermediates.

Figure 1: The Sectoral Focus of the Strategy



As such, industries require massive investments in technology and skills upgrading and promise strong economic spill-over effects that should facilitate technological upgrading in the future. Those activities are globally operated through global value chains. That is why attracting FDI is of utmost importance if the objective is to create a proliferating network of medium-technology industries. Linking to global value chains is the most suitable route for domestic enterprises; however, a period of massive investment in skills and technology is needed first.

This strategy will be complemented with a comprehensive sectoral development strategy (SDS). SDS will draw a precise sectoral map to identify the needs and the potentials of each sector, and to set distinct export and production targets for these sectors. The

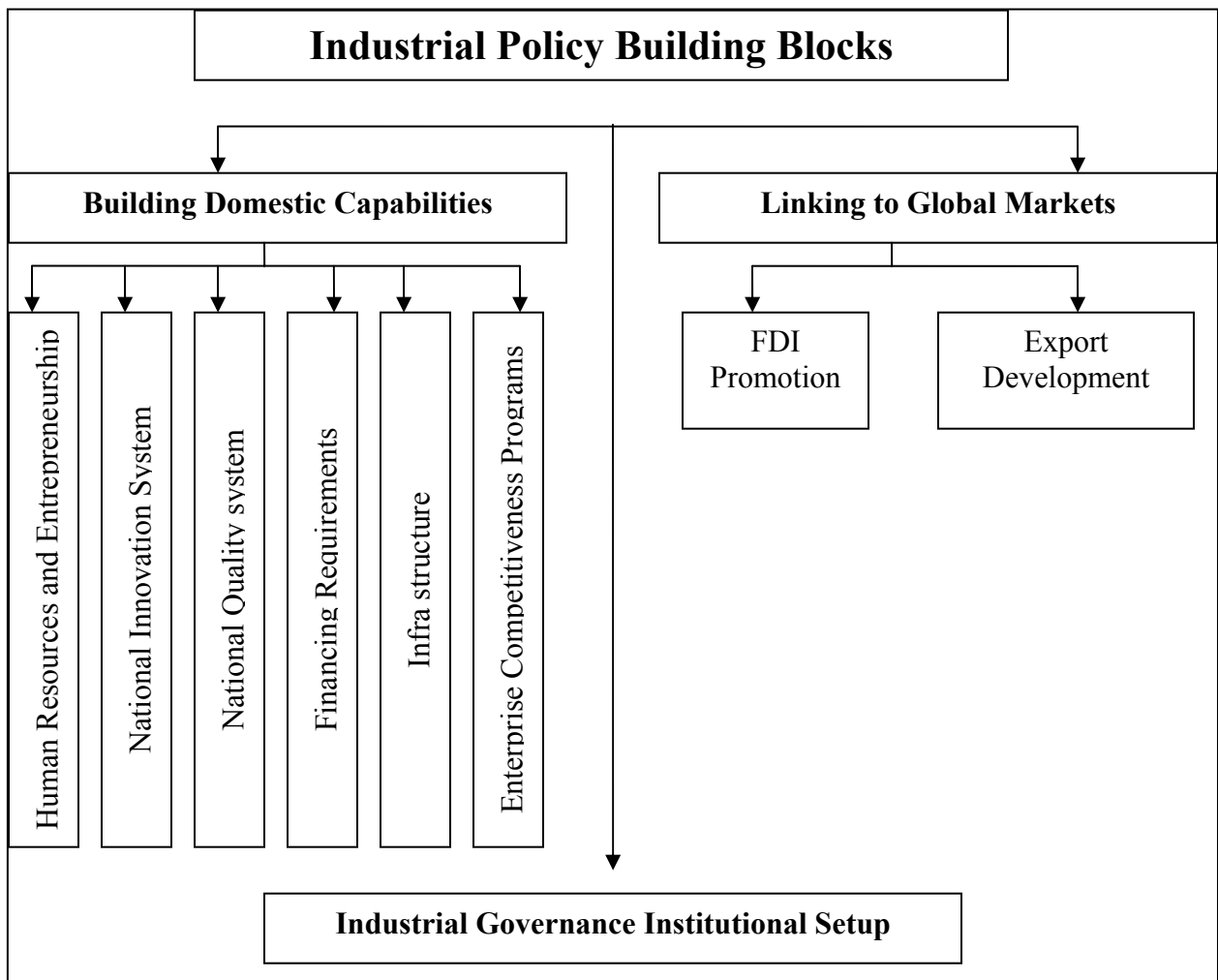
principle objective of the sectoral strategy is to identify public support required at the sectoral level.

3. Building Blocks of Industrial Strategy

Industrial performance is a reflection of many inter-related structural factors, the interactions of which impart significantly on the industrial performance of the economy. The institutional setup, domestic infrastructure, pool of human capital skills, technological capabilities, as well as overall stability of the macroeconomic policy framework are but a few of those drivers that have largely conditioned the success of the developing countries that were able to achieve competitive industrial performance.

The study of the experiences of successful industrializing economies suggests that five key drivers have been instrumental in explaining divergences in industrialization experience, especially among the developing world regions. These are: skills, technological effort, inward FDI, royalty and technical payments abroad, as well as the digital infrastructure.

Figure 2: Industrial Policy Building Blocks



Those drivers of industrial performance are the main focus of industrial policy conduct. The conduct of industrial policy in Egypt is seen as a two-pronged approach to build domestic capabilities and help Egyptian enterprises link to global markets. Both routes will complement and reinforce each other in enhancing industrial competitiveness.

The **first** building block of industrial policy relates to the deepening of domestic capabilities through concerted action on six fronts: (i) human resources and entrepreneurship; (ii) the national innovation system; (iii) the national quality system; (iv) financing requirements; (v) infrastructure; and (vi) enterprises-based competitiveness programs. The **second** block pertains primarily to strengthening links with international markets and deepening Egypt's integration into the global economy via the unitization of FDI promotion and export development tools. The **third** block relates to enhancing the presence of a set of social values conducive to the desired development, while maximizing the positive social and environmental impact of industrialization. (Figure 2)

3.1. Building Domestic Capabilities

The analysis of successful industrialization experience points to the instrumental role of domestic drivers in shaping success in sustaining industrial competitiveness. Technical skills in the labour force, R&D expenditure by private enterprises, the numbers of patents acquired by residents, and ISO certification by domestic enterprises are but a few examples of the performance criteria that lead to successful industrialization outcomes.

Domestic capabilities are built over time. The role of public policy is to strike a balance between working on improving the business environment for enterprises to allow them to invest in skills and technological development; and, at times, to intervene to address market failures (in markets for labour, capital, and technology) through carefully designed policies and programs that are largely aligned with the vision for the industrial sector.

3.1.1. The Human Element: Promoting Skills and Entrepreneurship

The quality of human resources is a fundamental pillar in building industrial competitiveness. Egypt is endowed with a large pool of labour that constitutes a potential asset to the Egyptian industrial sector. Yet, the skills of the majority of the Egyptian labour force are not up to the global challenge. Much of the new businesses find it difficult to locate the skilled labour they require for their operations and management, especially on the intermediate and the high skill levels. **The problem is not a question of quantity, but an acute scarcity of quality labour.**

In the context of the overall projected economic growth, the next six years promise 4.5 million jobs to be created in the economy as whole. This strategy pledges one-third of that figure in industry during the same period, and further anticipates an average of one million jobs to be created annually from 2012 to 2025. This projected employment presupposes the availability of skills compatible with the demand of the industrial sector.

Thus, employment targets will only be realized if matchmaking is made possible between supply of and demand for skills in the industrial sector.

The strategic objective of the industrial development strategy is not only to offer job opportunities for the better-qualified, but also and more importantly to make available a wide pool of highly qualified labour at all skill levels, enough to propel the demanded industrial leap. This is foreseen through a solid industrial training system that is carefully designed to meet the short, medium, and long term objectives of the strategy.

The short-term objective is to directly *upgrade* the skills of the current and immediate entrants of labour into the industrial sector. This will be achieved through targeted training activities in the existing sectors, upon the demand of industrial units. At this stage, close partnership with the private sector is key to the articulation of demanded training. It is noted that significant improvement of skills for the already-employed workforce is made less possible by the short span for training. Further deepening of skills is thus deemed as the consecutive target.

On the medium term, the strategic objective is *inducing a shift in the skill structure* towards higher proportion of medium and highly-skilled labour. Engaging in new industrial niches entails growing deeper skills to match the demand of medium-technology manufacturing. This stage requires further focusing on technological skills as well as leveraging managerial and entrepreneurial skills. It is the role of the Government to bring about the shift in quality, as well as the structure of skills in the prospective industrial labour force. This will be made possible through the forward planning of industrial training that immediately starts with the inception of the implementation of the current plan.

On the long term, the ultimate objective is building an *innovation-oriented society*. For this target, the inevitable tool is the serious revisiting of the education system. Equally important is the close integration to world markets that places the national workforce amid the constant challenge of coping with global competitors.

Upgrading the Skills of Egyptian Workers: The New Industrial Training System

The industrial training system was carefully deliberated to provide an answer for how to hit the preset targets. The system has placed each and every part to serve a particular function over the various time spans. It assumes three basic functions: strategic planning, demand surveying, and training delivery. (Figure 3)

Strategic planning and coordination of industrial training activities will be assumed by the Industrial Training Council (ITC). ITC will be an independent entity with no common interests with training providers whether public or private. The central function of ITC is the estimation of medium and long-term demand in industry, building on the surveyed demand of the operating industrial units. It is through this function that the prospective labour force will be enabled to serve the needs of the new industrial niches. Along the same objective, the council will in charge of pooling resources allocated for industrial training and manage them efficiently to produce the demanded skills. It will not provide

training itself, but will assume the role of the coordinator by outsourcing training to the most competent private and public training providers.

Thorough portraying of the outstanding demand will be conducted through close partnerships with the industrial units. The necessary channels are readily available. They exist through capitalizing on linkages established by the Federation of Egyptian Industries, Local Development Committees of industrial parks, and IMC Business Resource Centres. Yet, there is need to foster the ability of businesses to properly assess their demand remains. In this respect, industrial businesses will be guided to conduct comprehensive skills audit, whereby they can assess their training needs. This will help defining the demand for upgrading the current labour, as well as estimating the size and attributes of prospective labour.

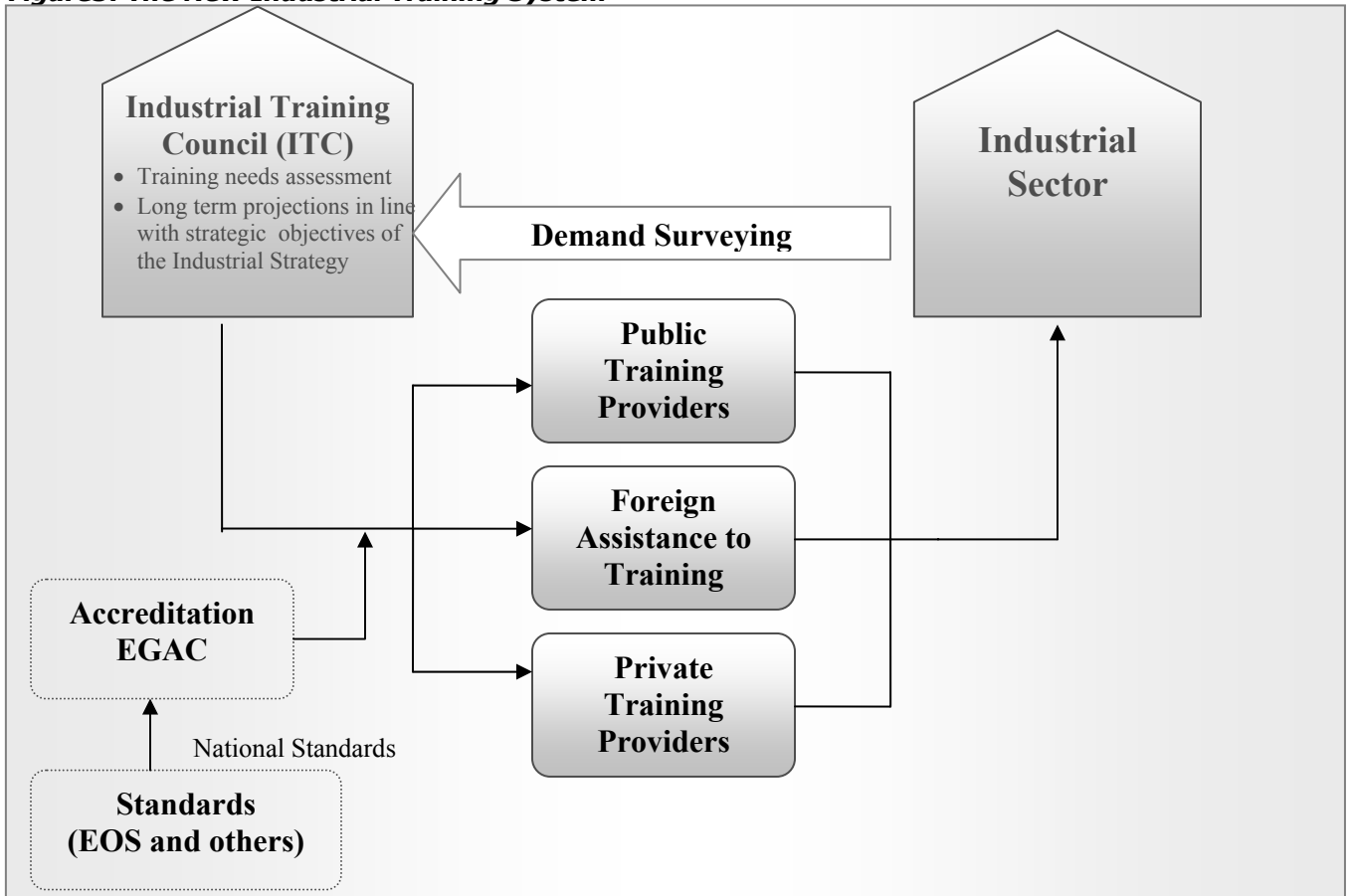
Training will be delivered by accredited training providers. Accreditation is charged to the Egyptian Accreditation Council (EGAC). The Egyptian Organisation for Standardization (EOS) will provide a standardized skill and occupation classification that is compatible with the international classification, yet adapted to suit Egyptian industry. Standardisation and accreditation will guarantee the delivery of reliable and competitive training services.

Public and private providers should compete on equal footing to provide training to industrial enterprises, against a charge for the services they deliver. Within the next five years, by means of a comprehensive Technical and Vocational Education and Training Program (TVET), public training institutions will be strengthened and equipped to meet the standards of world-class training (see box 1). The new structure also gives room for new private entrants to contend for public-funded services.

Public policy will no longer opt for subsidising training providers. Rather, public contributions will go for financing market-priced, high-quality, demanded training. ITC, through public-private partnerships, will ensure the provision of the needed training services through the most competent provider. This will mostly take place through competitive bidding.

Public-private partnerships will be the key for adopting a demand driven approach for designing training services, whereas public-private competition will be the module for service delivery. Partnership and competition between public and private organs will be a synergy that synthesizes a robust industrial training paradigm.

Figure3: The New Industrial Training System



BOX 1: THE TVET PROJECT



TVET

Reform of the TVET System

A Project Co-funded by the European Union and the Government of Egypt

برنامج إصلاح التعليم الفني والتدريب المهني
مشروع ممول من الإتحاد الأوروبي والحكومة المصرية



TVET is a six-year project, launched in July 2005, and co funded by the European Union and the Government of Egypt under the auspices of MFTI. The project is designed to set out and implement a comprehensive policy for the reform of technical and vocational education and training in three particular sectors: industry, building and construction, and tourism.

The project operates on two tracks: national and micro levels. On the national level, an integrated, decentralized system for training delivery will be devised. The new training delivery system will be carefully fitted into the new industrial training system to insure compatibility and to guarantee the provision of the required training services.

On the micro level, the project will provide direct support to enhance the capacity of the training delivery units, be it public (productivity and Vocational Training Department, PVTD) or private. It will provide an inclusive package for upgrading training providers. This includes on-site training, technical assistance to training centers, training of trainers, as well as financing the purchase of new equipment.

The activities of TVET will be conducted in collaboration with other partners such as IMC and Mubarak Kohl initiative. By the conclusion of the six years, training providers will be rendered fit enough to shape the required skills demanded by the industrial sector.

3.1.2. Deepening Technological Capabilities

With the mounting pace and intensity of innovation in products and production processes, technology has become a vital element of industrialization. Thus, Egypt's long-run industrial competitiveness can neither be realized nor sustained without building a solid technological base for the industrial sector.

On the world technology map, countries are classified as innovators, adopters, or technologically excluded. Egypt currently falls within the excluded segment. The prime objective of the industrial strategy is to upgrade the Egyptian industrial sector from being technologically excluded to being a technological adopter in the medium term. This will be realized through directly linking the industrial sector to the world technology markets through sustainable technology transfer channels.

Innovation of new products and techniques is not believed to be a short-term target. Targeting innovative activities in the short run is precluded by several limitations. Building a robust innovation base will not materialize unless a full fledged business

model is realized for the production of technology in Egypt. Moreover, Egyptian calibre will have to absorb, digest, and master foreign technology before it can realize innovation on a wide scale.

On the long term, the industrial sector will be able to develop a technological edge in specified niches, where it has been most able to capitalize on imported technology to upgrade from adopters to innovators. The pace of transition between stages will depend on the efficiency of the local competencies in digesting and developing the transferred technology.

From exclusion to innovation, several milestones are projected. The first is rendering the products and production process, commonly used in the industrial sector, as equally competitive and efficient as those of other contestants in the global market place. This will be accomplished through upgrading packages and technical assistance directly delivered to the industrial enterprises. This is expected to have a direct impact on the quality of delivered output of the industrial sector and should thus bear straight on higher exports.

The second milestone is introducing medium-tech industries. Imported technologies will be used for extensive capacity building in the targeted niches, which are mostly a selected set of medium-technology industries. This stage should end in upgrading the technological structure of Egyptian manufacturing value added and exports. Imported technologies will be mainly sourced from the technology transfer centres that are already established by MTI.

Technology Transfer Centres (TTCs)

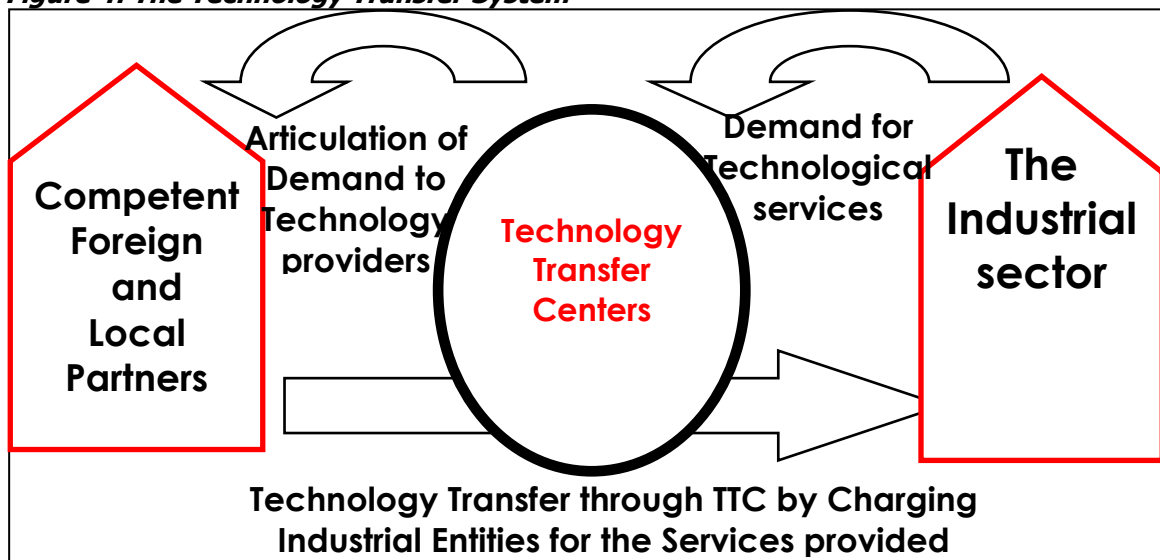
The main objective of establishing of TTCs is fulfilling the technological needs of the Egyptian industry, and particularly exporters, to become constantly competitive. They are meant to transfer and diffuse new technologies and innovations, by the efficient management of top-notch technologies, brought about from global technology markets. Technology will be either imported from foreign partners or provided by local agents, and will be channelled to local manufacturers through a well-established market for technology. (Figure 4)

TTCs will operate on three principles:

- First, is the adoption of a demand-driven approach in providing technological services to the private sector. TTCs will conduct regular demand surveys to identify the needs of the private sector and assess the gap between local and global technologies used by each sector. This will be done in collaboration with existing export councils, new industrial clusters, as well as the Federation of Egyptian Industries, capitalizing on their readily established channels with the industrial units.

- The second principle is twinning with competent foreign partners which will provide the required technology. Each centre will establish strong partnership with one or more foreign technology transfer centre in order to provide state-of-the-art technologies to local clients. Close ties with foreign TTCs, shall place local TTCs, and thus the whole industrial sector, in a worldwide network of technology transfer and innovation centres.
- The third principle is providing technological services through a business model; i.e., charging clients for the services provided. This will secure financial sustainability of TTCs in the long run and help to extend the services they provide to the industrial sector.

Figure 4: The Technology Transfer System



TTCs will be sectoral, sub-sectoral, or horizontal centres. There are nine technology transfer centres with sectoral orientation each serving particular industries, as well as seven projects for the transfer of cross-cutting technologies that have broad applications in the industrial sector. The nine targeted sectors are: ready-made garments, leatherwear, textiles, plastics, engineering, traditional industries, food, furniture, and marble and granite. The diagram above highlights the fashion and design centre which was renovated by MTI to serve the ready-made garments sector.

TTCs will provide a broad range of services to the industrial sector: technology transfer through patents and licensing, technical assistance in product and production development, quality audits and management, advanced human resources development such as training designers and senior engineers, environment and social management, and contracting R&D and innovation projects.

TTCs will not rely exclusively on foreign sources for providing its services. Each centre will twine with one or more local research institutes that are able to supply high-quality technical assistance and consultancy services to the industrial units through a TTC. In this

respect, TTCs will act as liaisons between manufactures and local technological services providers, following the same business model adopted with technology transfer.

This approach will have a number of positive spill-over effects on the local services providers. First, it facilitates the reorientation of their efforts towards a demand-driven approach. Second, it gradually helps building local research and innovation capabilities, by practically engaging with the industrial sector. Third, it insures market-determined rewards for the services providers that will encourage the expansion of local R&D activities.

BOX 2: THE FASHION AND DESIGN CENTRE



The Fashion and Design Center (FDC) was renewed in 2001 as a technology transfer center for the garment industry. The center provides quality training in the fields of fashion design, pattern making, quality control, and marketing. It also operates as a fashion house that provides collections to the garment factories.

The center, though an affiliate of MFTI, is privately managed by an Italian Fashion House through a profit-sharing management contract. The Italian counterpart is responsible for supplying training programs, designs, and technologies tailored to the needs of the Egyptian market, and reflecting an Egyptian identity in export markets.

The center currently trains over 200 fashion designers, and through its Style Studio, directly delivers a sum of 30 collections and runs around 10 fashion shows annually. The center also assumes a set of image building activities for marketing of FDC brand and projects.

In line with the targeted ethnic products as one of the industrial niches, the center has embarked on a number of Value Creating Projects. Two projects, **Saint Katherine and Siwa**, have been launched for the creation of modern designs inspired by the Bedouin culture and heritage. The project's activities include the training of a group of designers from the Saint Katherine area in the fields of fashion design and pattern making in a modern framework that brings together the authenticity of the Bedouin design with the modern Italian expertise. This directly helps in creating job opportunities for the trainees, while also raising the quality of products to enable them to compete in the domestic and international markets.

3.1.3. The National Quality System

Tapping upon foreign markets requires alignment to international quality measures. Conformity to well-defined standards, hence, is a precondition for placing Egyptian exports on equal footing with competing products in the global market place. The realization of international standards requires a strong conformity assessment system that brings Egyptian products at par with internationally-approved levels. The Egyptian Conformity Assessment System has been recently reshaped, renovated, and will soon be well in place. The new system is acknowledged as the National Conformity Assessment System.

The System is developed as a decentralized structure consisting of both private and governmental organizations. A National Quality Council, aided by several support functions, will hold the system together. The system, with due respect to existing Egyptian structures, is developed with a view to aligning it with international best practices. The system will grant access to conformity assessment services needed by Egyptian businesses when exporting or selling to the local market. Such services will be recognized on an equal footing by the conformity assessment systems in global markets.

The first building block of the system is the grounding of a set of reference standards that guides the conformity assessment process. Second is the erection of an accreditation system, held together by a single, competent, accreditation body. The system is then complemented by a parallel structure that supplies the needed support services. The structure of the National Quality System is elaborated in (figure 5).

On November 2003, a National Quality Plan has been launched by the Ministry of Industry to fortify the National Conformity Assessment Infrastructure through the following measures:

- formation of the National Quality Council;
- harmonisation of national standards with international standards;
- recognition of the National Accreditation Body;
- upgrading and accreditation of laboratories;
- strengthening conformity assessment organisations;
- supporting the establishment of the National Quality Institute;
- launching national quality awareness campaigns; and
- managing National Awards for Excellence.

The National Quality Council

A vibrant National Quality Council comes on the top of the Conformity Assessment Structure and holds the system together. The core technical activities are carried out by conformity assessment providers backed by the Egyptian Accreditation Council (EGAC), the Egyptian Organization for Standardization and Quality (EOS), and the National Institute for Standards (NIS). The supporting structure operates under the National Quality Institute (NQI), a new institutional body.

The purpose of the National Quality Council, to be established, is to set up national strategic direction and monitor the implementation of the National Quality Plan. The National Quality Council will also urge a process by which the conformity assessment activities would reach international recognition.

In this context, the National Quality Council will be prepared to discuss any measure that can be of benefit to the announced objectives. The aim of the National Quality Council is to set the strategic action for the conformity assessment organizations and agree upon operational policies and plans to achieve regional and international recognition. The main objectives of the National Quality Council are:

- approve implementation mechanisms for NQP;
- underscore the National Interest, as seen by various ministries affected by the NQP and the industry at large;
- propose amendments to the NQP to accommodate new requirements;
- propose actions related to multi-ministerial and/or political disciplines; and
- review governmental rules and conformity assessment issues that are put on the agenda of the National Quality Council and that relate to easing trade and industrial modernization.

Harmonization of National Standards: EOS

Egyptian standards are currently being reviewed against international standards by EOS in order to assess their technical equivalence and modernize them, while ensuring that differences do not constitute technical barriers to trade. Ongoing, is the harmonization of 2400 existing standards including 400 technical regulations (mandatory standards) and the development of 1000 additional new standards. Also, in the pipeline, is the automation of harmonization and standardization procedures. With the conclusion of the ongoing activities, both harmonization and standardization practices will be fully enhanced to improve the efficiency of the conformity assessment system.

In addition to the standards development, the Industrial Control Authority monitors the products of industrial firms to ensure compliance with the standards and consumer protection.

Towards International Recognition: EGAC

The Egyptian Accreditation Council (EGAC) has been established to be the sole national body responsible for the accreditation of the conformity assessment bodies. EGAC now has a log of applicants of certification bodies, inspection bodies, as well as laboratories. It will be fully recognized internationally, and should take part in bilateral and multilateral recognition arrangements at the highest international level. A set of parallel activities are now running to support EGAC in implementing the activities related to the accreditation, enhancing the demand for accreditation, and leveraging the technical capacity of the accreditation body. Such activities will eventually render EGAC fit for international recognition, through peer evaluation and multilateral recognition with: the International

Laboratory Accreditation Cooperation (ILAC), the European Cooperation for Accreditation (EA), and the International Accreditation Forum (IAF).

In 2002, due to better understanding and awareness for the need of quality and accreditation, the industrial committee took a step ahead in accrediting their laboratories. Around 6 labs were accredited. Presently, there are 60 accredited testing/calibration labs and 2 accredited certification bodies. Moreover, 150 more laboratories and 5 certification bodies are in the pipeline for accreditation in compliance with international standards.

Upgrading the National/ Primary Standards for Egypt: NIS

Reliable testing is acknowledged as a key element in the improvement of the overall conformity assessment system. In view of that, the National/ Primary calibration facilities are now being extensively upgraded. The new facilities should enhance the traceability of measurements with the least possible degree of uncertainty. The NIS is the entity responsible for the national traceability. NIS labs will be upgraded to comply with ISO/IEC 17025, and the environmental conditions for the NIS laboratories have to be improved to cope with international levels to achieve international recognition through self declaration, peer assessment, and/or accreditation by a recognized body.

Full-Fledged Services for Quality-Assessment Institutions: NQI

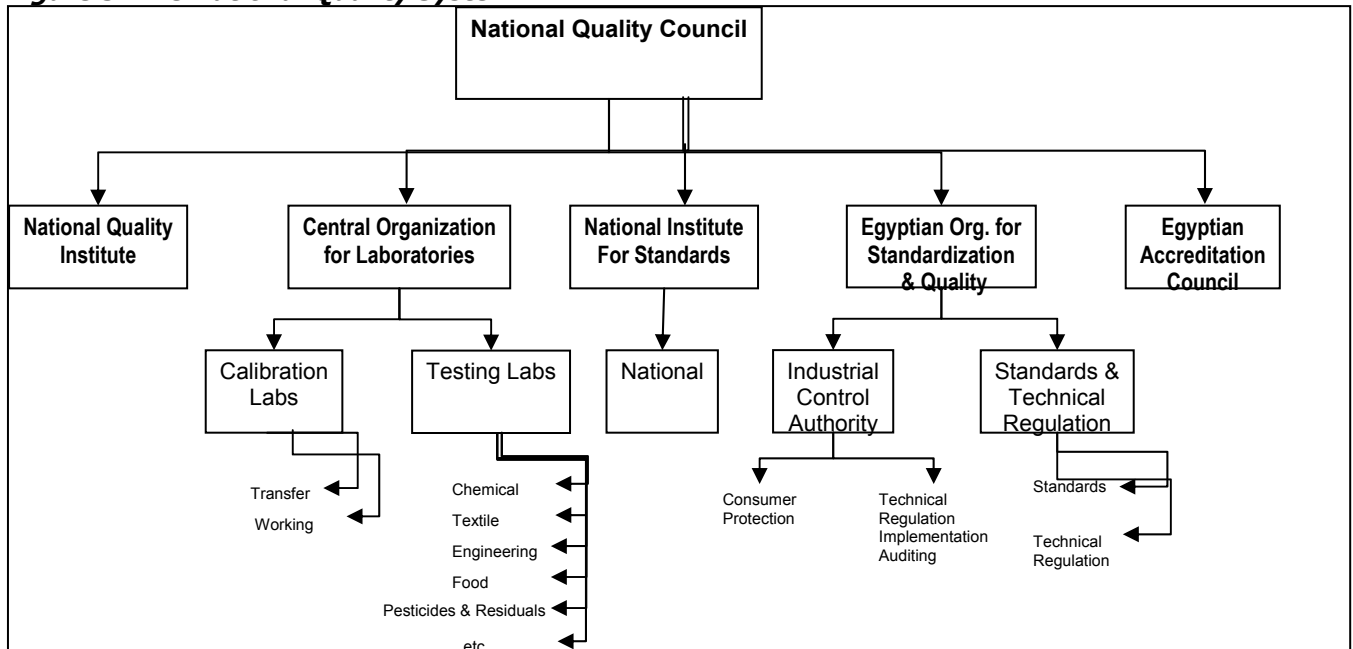
NQI, now being established as an independent body by the Egyptian Organization for Standardization and Quality Control, is in charge of providing a comprehensive package of services to the conformity assessment institutions. The flagship activity assigned to the NQI is the launching of the National Quality Awareness Campaign. The Campaign targets the enhancement of public understanding for the need and importance of conformity assessment. In particular, it will stress the significance of harmonization and adoption of standards, the role of the National Quality Institute, the laboratories and certification bodies, and the national accreditation activities.

The NQI also acts as a technology transfer agency, which works with leading national and international technology providers and universities with the aim to identify, transfer, import, adapt, disseminate, and implement best practices of quality and productivity improvements to Egyptian industries and institutions.

The scope of the NQI activities is not limited to quality in a narrow sense, but encompasses quality and productivity. In a modern society, quality does not only mean that the product is as specified; and consistency, speed, and safety in delivery are equally important quality parameters.

The role of the NQI will be one of constantly furthering progress and change. In its first several years, it will work mostly with time-limited project activities. After the quality campaign has been successfully completed, the NQI will identify the sustainable fields of its activity and competency. It will develop these into timely community services suitable for the demand of the Egyptian businesses and the conformity assessment society.

Figure 5: The National Quality System



3.1.4. Raising Capital

The issue of finance is of paramount importance to realize the growth targets of the strategy. In the past few years, the industrial sector relied mostly on banks to finance new investments and the expansion of existing projects. The role of non-bank financial institutions and the capital market, though of high importance, remains negligible.

There are a number of present concerns with respect to the performance and pace of development in the financial sector, which could become an obstacle in the phase of strategy implementation:

- **Alarming decline in growth in credit to the private sector** due to the slowdown in the economy, the deterioration of government finances, and a number of structural problems within the banking sector.
- **Increase in non-performing loans** which resulted in a tightening of credit regulations and which is partly responsible for the decline in credit extension to the private sector despite evidence of excess liquidity in the banking sector.
- **Banks operating with a collateral-based approach instead of adopting a cash-flow based approach**, where the latter approach is deemed more feasible for a dynamic economy in which the viability of financing projects is based on feasibility studies with sound cash-flow projections.

- **Bankruptcy regulations discouraging bank lending to risky projects** as they discriminate against creditors' rights, a typical characterization of the industrial sector that is marked by a high entry and exit rate.
- **Lack of venture capital schemes** to provide funds for risky investments in technological capabilities.
- **Small and medium enterprises (SMEs) facing difficulties in accessing finance** from the banking system due to lack of specialized mechanisms for SME financing.
- **Existence of shallow capital markets** due to the long practice of financial repression which resulted in a financial structure dominated by banking institutions, with a minor role for non-bank financial intermediaries and the capital market.

A number of serious reforms are already taking place to improve the functioning of the banking sector such as addressing the issue of NPLs without recourse to litigation, rationing the structure of the banking system through a number of mergers and acquisition which will facilitate the task and strengthen the scope of banking supervision, and streamlining credit regulations.

To complement these reforms, the following measures are needed:

- *improving the flow of industrial intelligence to the banking sector, especially sectoral information, to help credit officers make prudent decisions;*
- *adopting a cash-flow-based approach to lending on pilot-basis in selected banks through coordination with the Central Bank of Egypt;*
- *improving bankruptcy regulations through legislative reform to place creditors' rights in a superior position relative to tax and social security claims;*
- *establishing collective lines of credit on pilot-basis in selected banks to finance new projects in selected medium-technology industries; namely, engineering machinery and equipments, labour-intensive consumer electronics, and automotive components;*
- *establishing credit rating bureaus to spare banks the costs of processing loan applications for small and medium enterprises; and*
- *Providing appropriate incentives to establish venture capital funds.*

On another front, there is a need to further develop the capital market. The objective is two-fold: to create alternative sources of borrowing for the industrial sector; and to

diversify the sources of government borrowing to avoid crowding out the private sector in bank credit.

To achieve this, the following measures are needed:

- activating the bond market to offer investors alternative sources of financing;
- activating the secondary government debt market to allow the government to decrease reliance on the banking sector for financing the budget deficit; and
- introducing security tools to increase liquidity and undertake a gradual deepening of capital markets.

BOX 3: THE EQUIPMENT PURCHASE INCENTIVE SCHEME (EPIS)

The relatively higher costs of purchasing equipment and machinery were identified as greatly impeding the competitiveness of the Egyptian industry. Notably, direct and indirect extra burdens include transportation costs, costs of financing, hardly refundable sales taxes, and impossibility of edging foreign exchange currency risk over the medium term. In order to contribute to decreasing the costs of investing in productive assets, IMC decided to initiate a grant scheme, marginally contributing to improving the costs structure of equipment purchase, to facilitating access to medium to long term loans, representing an incentive to work with other components of the IMC.

On September 1st, 2005, the LE30 M Equipment Purchase Incentive Scheme (EPIS) was therefore launched to support IMC eligible enterprises purchasing equipment and machinery for modernizing their production facility. The support takes the form of a grant calculated on the basis of 10% of the CIF value of the equipment, without any conditions of origin. The subsidy is capped at LE100,000 in order to address the needs of the small and medium enterprises representing the core target group of the programme. The grant is disbursed to the partner bank as soon as the committee has approved the support, but the funds are released to the company, once the equipment is installed and operating on site.

The application can come directly for enterprises or through partner banks – who find a way to sweeten the financial conditions offered to their clients in a context of high interest rates. For being eligible, equipment must contribute to improve the competitiveness of the company by increasing the production capacity, improving the productivity, launching new products, enlarging an existing product range, or streamlining the distribution function. Out of the 10 criteria retained for assessing the improvement competitiveness, the project must score a minimum of 6 to be eligible. IMC also checks the procurement process that must be technically and financially transparent and professional. In any case, a feasibility study and certified financial statements and/or a bank credit proposal are requested. Companies falling short of producing these documents are oriented either to the Funding for development programme or through technical assistance components.

After 60 days of operations, 50 dossiers were submitted (16 through banks) and 10 dossiers were approved representing about LE1 million of support. The supported projects represent a global investment of LE60 millions, LE50 millions in medium to long term loans, the creation of 320 employments, and additional sales of LE640 M out of which 60% to export markets over three years.

3.1.5. Building Industrial Infrastructure

The importance of building sound infrastructure for creating and maintaining a competitive edge for the Egyptian industrial sector is unquestionable. Providing high quality infrastructure will be the gate for crowding in more private investments in the industrial sector. However, it is not just the physical availability of infrastructure that matters, but also its costs, quality, and accessibility.

Acknowledging these facts, industrial policy places the issue of upgrading the current industrial infrastructure in Egypt as one of its vital ingredients. Availability as well as affordability of high quality, physical, and digital infrastructure shall no longer hamper new investments in industry.

The General Industrial Development Authority (GIDA) has been recently established to end long-standing obstacles to new industrial investments. GIDA is responsible for facilitating the acquisition of land with necessary utilities at feasible prices for extensions and Greenfield investments.

GIDA will not only replace the former authority but will expand on its previous functions to assume an eminent role in:

- Designing policies and implementation schemes for developing industrial parks: It will be the sole entity responsible for regulating and licensing the establishment of new industrial parks and extensions of existing ones, be it public or private. It should also be responsible for the allocation and pricing of land to be used for industrial purposes in coordination with other respective governmental authorities.
- Facilitating all logistical procedures for the establishment and operation of industrial entities in the parks, and offering an adequate set of incentives for new investments in collaboration with GAFI (General Authority for Investment): Industrial parks can be wholly established, managed, and owned by the private sector or in collaboration with GIDA upon the approval of the Minister of Foreign Trade and Industry.
- Coordinating between all involved entities to insure alliance with all national regulation, e.g. environmental regulations, regulations for the use of land or energy, and so forth.
- Overseeing industrial entities outside parks, besides its basic role in managing industrial parks.

INDUSTRIAL PARKS

Over the last few decades, an increasing number of successful industrial parks designed and operated as *ecosystems* were established in a number of countries to promote the development of localised concentrations of industrial specialisation. By working together and collaborating in managing environmental and resource issues, the community of businesses seeks a collective benefit that is greater than the sum of individual benefits each company would realize by only optimizing its individual performance.

The development of Eco-Industrial Parks (EIP) is currently on the top of the agenda of the Ministry of Trade and Industry (MTI). MTI's strategy is based on involving the private sector in the formulation, establishment, and operation of EIP. This strategy is based on an action-oriented effort aiming at mobilizing economic actors through a

collaborative partnership approach that includes the government as well as the private sector.

The overall goal of developing EIP in Egypt is achieving an *Integrated Industrial Development Model* that enforces the business relations and networking linkages between firms operating within each and every industrial entity or region, connects potential clusters of companies producing related/complementary products, and engages different stakeholders and institutions in the development of these parks in order to achieve economies of scale, create more jobs, increase Egyptian exports, attract FDI, and contribute to the overall growth of the economy. The concept of industrial parks also promotes infrastructures, which, in turn, creates demand for different commodities, and consequently promotes economic growth.

Industrial parks will be the key for effecting a breakthrough in Egyptian industrialization. New industrial parks will be fully equipped with high quality infrastructure for enhancing the clustering of vertically and horizontally related activities. They provide integrated industrial services under one roof. Within each park, there will be a collective set of institutions responsible for providing full fledged industrial services for operating enterprises

Branded Industrial clusters strengthen localization economies, help marketing and building trust with clients, facilitate the diffusion and absorption of new technologies and knowledge, and promote networking among firms, thus, improving their competitiveness.

Industrial parks will be powerful tools for the diffusion of new technologies and for catalyzing the presence of a vibrant physical and ICT infrastructure that guarantees efficient and timely delivery of services. Together with competitiveness programs and sectoral development strategies, they will be the means for implementing the projected sectoral map, supporting existing industries, and introducing and leveraging new industrial niches.

For each industrial park, there will be a Local Industrial Development Committee that monitors the delivery of services to local entities. The board of the Committee will constitute representation of all stakeholders such as GIDA, MTI, other ministries involved, the private developer, export councils, local municipalities, and others.

The Committee will be in charge of the management and the implementation of:

- sector development strategies;
- business competitiveness programs;
- supplier development programs;
- export development and promotion strategies;
- financial support programs;
- FDI promotion plans;
- one-stop-shop facilities; and
- individual business development plans.

Planning and development of industrial parks will be fully delegated to private developers. The role of private developers includes selecting the location for industrial parks, assessing the needs for the cluster development, designing the infrastructure and utilities, securing finance, and designing promotion plans for the industrial park to attract foreign and domestic investment.

How Do Envisaged Industrial Parks Improve on the Existing Industrial Cities?

Parks are not a new concept in the Egyptian industrial sector. There exist several models of industrial clusters in Egypt, such as the 10th of Ramadan and October 6, that gave yield to several successes in the past two decades.

The new industrial parks are not to offer a diverse paradigm. Rather, they present an enhanced version that should help promote clustering of relevant industrial activities. Existing clusters do not necessarily comprise enterprises with related activities. Yet, new ones are set up to accentuate the integration of vertically and horizontally related industrial activities for boosting the efficiency of industrial units and facilitating the delivery of industrial services. For each park there will be a set of relevant service providers such as training centers, export promotion centers, technology transfer centers, and testing laboratories, all specialized with the typical activities of the cluster. Geographical proximity of all industrial units together with all required utilities and services should definitely add a new dimension to Egyptian industrial competitiveness. An example of the envisaged parks is the new Damietta Echo Industrial Park (Box 4)

BOX(4) :DAMIETTA INDUSTRIAL PARK

To speed up the process of physically setting up EIPs, the government has selected the region of Damietta as a pilot project to establish the Damietta Eco-Industrial Park (DEIP) for the furniture industries. Currently, different economic agents involved in the establishment of the Damietta Eco-Industrial Park (DEIP) are mobilizing their efforts to create a working group for the development of the concept of industrial parks in Egypt, its implementation and the required infrastructure and finance. The target of this working group is to design a road map and action plan for the establishment of DEIP.

Why Damietta?

There have been recent efforts directed by multiple donor funded agencies towards promoting the region of Damietta as a centre of excellence in furniture manufacturing. Today more than 80% of the population of Damietta Governorate derive their economic existence from the furniture industry, mainly manufacturing reproduction furniture. Damietta currently hosts around 35,000 furniture production facilities and workshops, of which around 9000 are legal entities (producers) and 2000 showrooms while the balance (around 24,000) lies within the informal sector.

In Damietta labor-intensive production techniques are common, where it has a competitive edge due to the availability of highly skilled craftsmen and its proven export track record in its “hand made” segment in furniture production. The available skill varies from woodworking, designing, carving, and marquetry and boule styles. The competitiveness of the Furniture Sector in Damietta is derived from the availability, diversity, low cost of highly skilled labour (compared to Europe), low overheads, flexibility to produce tailored customer designs and high added value products, and its proximity to port and maritime services.

Additional strengths in Damietta, as a potential hub to establish an EIP, lies in the presence of a well established NGO “The Association for the Upgrading of the Furniture Sector in Damietta” (AUFSD) which represents all segments of the furniture sector. The mandate of AUFSD is to improve quality and marketing of furniture products, build capacity, develop linkages, and conduct advocacy and outreach.

Other well established institutions are the Damietta Chamber of Commerce, a specialised vocational training school affiliated to MFTI in cooperation with école Boule in Paris, Mubarak-Khol initiative working on a (dual) technical education and vocational training system, a technology centre established in collaboration with Italian counterparts, and IMC Business Resource Centre. In addition H.E. the Prime Minister inaugurated the setting up of a technology park (an extension to smart village) and the Governorate donated 200,000 feddans as a contribution to the IP initiative.

Therefore, by capitalizing on the existing common strengths of the region, the establishment of a pilot IP in Damietta can be the nucleus for building development options that will enhance business linkages between companies as well as build trust among all stakeholders operating in the park.

3.1.6. Enhancing Enterprise Competitiveness

Industrial policy ingredients need to be collectively and effectively delivered at the enterprise level. The IMC is the chief agency providing direct support to industrial enterprises, rendering them fit to compete domestically and globally. Through a set of carefully designed enterprise competitiveness programs, the IMC will help deliver a comprehensive suite of industrial services. Competitiveness programs are carefully designed to cater for the various needs of the industrial enterprises, recognizing the different type of support needed for each size, activity, and readiness of an enterprise.

The IMC offers three core business development programs for competitiveness; namely, (i) the Local Competitiveness Program; (ii) the National Competitiveness Program; and (iii) the Global Competitiveness Program. Each successfully implemented program should entitle the benefiting enterprise to join the next, therefore, eventually succeeding in exporting and competing in international markets. In addition to the basic programs, there are two other special programs: the National Supplier Development Program (see box 6) and the Regional Cluster Development Program.

BOX 5 :ENHANCING INDUSTRIAL COMPETITIVENESS: THE IMC

The Industrial Modernization Centre (IMC) was successfully born out of the Industrial Modernization Program (IMP) as a sustainable industrial development agency, supporting ALL Egyptian industrial enterprises to competitively be placed in global markets. IMC embraces a new approach that establishes a solid partnership between all stakeholders to position the industrial sector as the chief engine for growth, employment creation, and export enhancement in the Egyptian economy.

IMC generally supports enterprises with ten workers or more, leaving room for the Social Fund for Development to realize its objective of supporting micro business enterprises. The beneficiary should be a private industrial entity (or one related to industrial services) that is at least two years in operation, employing more than 10 full-time registered workers, and does not operate within a free zone.

The core programs include comprehensive business development plans that address key areas of enterprise competitiveness such as management, production operations, quality management, financial management, ICT, and human resource development. The sophistication of the contents under each area advances as we move from one program to the higher. All participating companies should undergo full assessment prior to implementation and agree on a memorandum of understanding on the company's development plan and commitments to the implementation.

Competitiveness programs will go hand in hand with sectoral development strategies that should cater for cross-cutting issues within each sector. Competitiveness programs, sectoral development strategies, and industrial parks should constitute a set of

“efficiently” integrated tools that are directly targeted at leveraging the capabilities of Egyptian industrial enterprises.

THE BOX(6) : THE NATIONAL SUPPLIER DEVELOPMENT PROGRAMME (NSDP)

“On the surface, the NSDP does not appear to be fundamentally different from previous export-led initiatives, but a closer look reveals a pervasive effort to tackle the problem of the problems of Egyptian industry from their very root: the supply chain”

Business Today, October 2005

The National Supplier Development Program (NSDP) is one of the initiatives sponsored by IMC programs to serve the modernisation and upgrading of Egyptian industry. It focuses on leveraging their suppliers' technical capabilities to international levels and thus increases their global competitiveness. The programme aims at technically upgrading local suppliers of the top 100 manufacturing companies working in Egypt that show promising export potentials.

How dose it work?

Each top manufacturing company (mother company) selects 5 – 20 of its local suppliers to join the programme. Selected suppliers have to prove serious commitment to the programme and a desire to grow their companies through exports. They are required to contribute to the investment in upgrading systems / technologies. The IMC offers the needed technical and financial support for the selected suppliers.

***On the technical side* IMC:**

Provides for gap analysis to identify the upgrading needs of each supplier to meet the standards of the mother company; supplies the technical assistance to close the gaps and obtain accreditation of the mother company and its associates; and agrees with the mother company and all suppliers in the program on key performance indicators.

***On the financial side,* IMC:**

Provides the needed financial consultancy to group suppliers; conducts financial risk assessment; offers financial solutions for gap closure requirements; and supplies the needed credit for investment through participating banks.

NSDP in Action

On its first outset, the NSDP enrolled 20 suppliers of one of the largest automotive multinationals operating in Egypt. At the successful completion of the program, the local suppliers will be fit enough to admit to the global value chains of their suppliers. Egyptian manufactured auto-parts may be used for first-line assembly around the world, not just for back-up spares. Twenty more companies are joining the program, with an estimated 126 national suppliers to be upgraded.

3.2. Linking to Global Markets

In today's world, industrial development is inconceivable in isolation. The pace and scope of technological development imply that winners are those who engage competitively in the world market. Not only international markets are important as a base for manufactured exports growth, but they are also the place where learning about new technologies and possibilities for industrial alliances take place.

The experience of developing countries with a strong record of industrial competitiveness has consistently pointed to two interrelated elements: On the one hand, there has been a clear export-orientated drive with a strong performance in manufactured exports growth coupled with an increase in the technological sophistication of exports over time. On the other hand, reliance on FDI has been a core ingredient for success, where FDI has acted as a catalyst for technology transfer, skill enhancement, and fostering linkages with international markets.

3.2.1. Manufactured Export Drive

Given intense competition in international markets and revolutionizing developments in production technologies, increasing the visibility of Egyptian manufactured products in export markets is the real test for the Egyptian industry.

Relying on the domestic market may have been a viable strategy in the past and has helped in creating a large and rather diversified industrial base with a moderate level of vertical and horizontal integration. From now on, the objective is to rely on export markets for achieving the desired industrial growth rates. An additional upshot of focusing on export markets is the inevitable upgrading of quality and conformity with international products standards; both of which are important goals in their own right in the quest for a more competitive industrial sector in Egypt.

The challenge of increasing manufactured exports has both demand-side and supply-side dimensions. In recent years, government efforts have primarily focused on addressing demand-side constraints by enhancing export access via preferential trade agreements on bilateral, regional, and multilateral fronts. However, supply-side constraints remained at the heart of Egypt's export puzzle. Achieving the '*right*' price-quality mix remains an unrealized goal for Egyptian exporters. In addition, exporters operated in an environment where the incentive structure for businesses created an evident '*anti-export bias*'.

In envisaging a manufactured export development strategy for Egypt, a two-pronged approach is to be adopted. On the one hand, there is need for measures to enhance Egypt's price-quality mix, which does not preclude promoting entrance into higher-value market segments where there is latent potential. On the other hand, it is also imperative to enhance the sophistication of the technological structure of Egyptian manufactured exports which is currently dominated by resource-based and low-tech manufactured exports.

3.2.1.1. Enhancing the Price-Quality Mix

Egyptian manufactured exports are *not* cost-competitive for factors that appear during the production stage and/or during the exporting stage. During the production stage, businesses operating in Egypt tend to face high transaction costs compared to their peers in other countries. This is mainly a result of impediments in the overall business environment which render the cost of doing business in Egypt comparatively higher.

The nature of those costs applies to all businesses whether or not they engaged in export activity. If a company is engaged in export activities, then a host of other factors exert influence on cost competitiveness. These pertain primarily to distortions in the tariff structure in some tariff lines where the tariff on intermediate inputs is higher than the tariff on the final product, cumbersome customs regulations coupled with an unrestrained discretionary power of customs officials, high costs of shipping and handling due to state monopoly of seaport and airport services, high transportation costs, high cost of imported materials due to non-existence of consortium procurement bodies, and lack of consortium marketing bodies especially for exporting SMEs.

The recent batch of reforms introduced by the Cabinet has addressed various impediments in the business environment. However, to improve further the manufactured exports performance, the following measures will be taken:

- Modernizing the customs administration through new legislation that curtails the discretionary power of customs officials and increase the transparency of customs regulations.
- Lowering the cost of imported raw materials: there is need for a government-sponsored agency to be in charge of placing procurement orders for raw materials and intermediate goods on behalf of a large pool of exporting firms.
- Placing the Egypt Export Promotion Centre (EEPC) as a central agency to market/promote Egypt's manufactured exports in international markets, acting as a liaison between domestic exporters and international importers. More on EEPC in box 7.

In parallel to addressing the cost-competitiveness side of Egypt's manufactured exports, enhancing quality is not a less important endeavour. As discussed previously, measures proposed under the National Quality Plan are deemed sufficient to ensure an overall improvement in export quality.

3.2.1.2. Moving Up the Technology Ladder

The current technological structure of Egypt's manufactured exports poses a threat of gradual marginalization of Egypt from global trade activity. Egypt's manufactured exports are dominated by resource-based and low-technology exports, both of which are the slowest growing categories in world trade. Engaging in international trade dynamism necessitates increasing the visibility of Egypt's medium- and high-technology manufactured exports.

At a strategic level, it is important to identify new niches in the medium and high-technology groups in which Egypt can be globally competitive. Given the time span of this strategy, it is an unrealistic goal to target new niches in high-technology industries (which include office and telecom equipment, optical instruments, precision instruments...etc.). The nature of those industries is that they are intensely innovation-driven and also R&D activities are key inputs in the process. For Egypt to build a competitive edge in those industries there is need for time to build up first domestic capabilities in R&D and innovation.

Thus it is more prudent to identifying potential niches in the medium-technology group (which includes automotive products, process industry products such as synthetic fibres, chemicals and paints, fertilizers, plastics; and also engineering products such as engines and industrial machinery). Detailed analysis of trade data reveals that Egypt could be a leading regional exporter of automotive components, engineering products, and labour-intensive consumer electronics.

This focus on new export niches in the medium-technology group is viable given that they are skill and scale-intensive operations that do not require a sophisticated level of R&D and innovation. Production technologies in these products can be more or less diffused through 'reverse engineering' and successful partnerships with the relevant global value chains. In addition, identifying new niches in Egypt's export structure is in line with the sectoral focus of the strategy highlighted previously, and is bound to allow for deeper integration of the Egyptian economy into the global economy.

Effecting the foreseen transition is expected to come about from supporting activity in new industrial niches that are expected to increase Egypt's manufacturing value added in the medium-technology cluster and also contribute to export growth under this category. In the time span of this strategy, the focus is mainly on medium-technology activities. In the long term, the proposed programs and policies will also increase the strengths of Egypt's R&D base and the national innovation system which will stimulate a natural evolution into high-technology activities that are essentially innovation-intensive.

BOX (7) : EGYPTIAN EXPORT PROMOTION CENTER EEPC

EEPC is established with a vision of challenging the enormously growing trade dynamic environment, characterized by aggressive competition, sophisticated quality management processes, and massive number of regulations. Challenge depends on innovative and competitive solutions that are specifically tailored to the Egyptian exporter needs and business nature. EEPC believes that forecasting is the source of meaningful responses to change. It capitalizes on this human capacity to effectively envision the future. EEPC's vision is based on taking-off Egyptian companies through this challenging environment to reach their destinations smoothly and land successfully in the envisioned future.

EEPC's mission is focused on providing the Export Sector with the latest promotion techniques, trade facilitation, and export opportunities. Moving to the future, EEPC remains committed to provide technical assistance and services to maximize organizations' performance and optimize exports. It also extends to create an atmosphere of satisfaction to ensure long term success for EEPC and its employees through continuous capacity building and commitment to excellence, integrity, and teamwork. Thus its goal is to enhance the level of trade facilitation service, to pursue excellence, to grow profitability, and to maintain a high standard of professionalism.

EEPC Departments and Functions

Functions of EEPC highlight yet are not limited to the following:

1. EXPORT SERVICES

Market Intelligence Unit

- Providing analyzed data and information on the international markets to the technical support units at EEPC.
- Identifying foreign market demand and right opportunities to achieve competitiveness in the global market.

Export Support Unit

- Front help desk to coordinate export services and activities rendered to exporters.
- Awareness on EEPC departments and services
- Operational services to the exporters through the one Stop Shop for Exports OSSE.

Policy Advocacy

- Identify political, regulatory, and technical impediments to exports.
- Propose solutions to export impediments to the decision makers.
- Formulate export promotion/marketing strategy to benchmark with other export centers in leading markets in coordination with the Export Development Unit.
- Create linkage with other trade promotion organizations and business associations (NGOs).

3.2.2. Attracting FDI

Foreign direct investment is a key vehicle not only for providing sufficient finance for developing the industrial sector, but more essentially for the transfer of cutting-edge knowledge and know-how, in addition to fostering linkages with international export markets. FDI is also important for linking to global value chains and international production networks. Successful industrialization experience has proven that partnerships with multi-national corporations are key to success.

The type of FDI needed to achieve the objectives of the IDS is export-oriented FDI that serves to improve the extent of technology transfer to Egyptian manufacturing establishments and also gradually inserts them into global value chains. With the promotion of new industrial niches, FDI is important for an industrial takeoff. For existing industries, FDI would bring about the much-needed technological upgrading which leads to higher value added.

Modalities for targeting FDI will focus on approaching key players in international production networks within the framework of a clear sectoral strategy. During this phase, it is important to understand the perspective of global players and make use of their extensive sources of market intelligence to identify viable FDI targeting strategies and what those international production networks are expecting and also what they can offer for Egyptian enterprises.

A key objective is for the General Authority for Investment and Free Zones (GAFI) to adopt a sectoral FDI targeting strategy that is closely aligned with the sectoral focus of the IDS. The primary objective of FDI promotion should be the insertion of competent Egyptian producers into global value chains via suitable modalities. In Egypt's traditional sectors of comparative advantage, the global value chains are buyer-driven. For these sectors, FDI promotion policies should emphasize the natural resource endowments of the Egyptian economy and the existence of an adequate level of skills suitable for the low-technology nature of such industries.

An equally important axis is to seek to integrate Egyptian manufacturing enterprises in medium-technology global value chains which are essentially producer-driven. Being part of this type of chains requires high level of technological and skills attainment to meet the standards and quality required by the global producers. Joining this type of chains should be the target for new industrial niches in the medium-technology group.

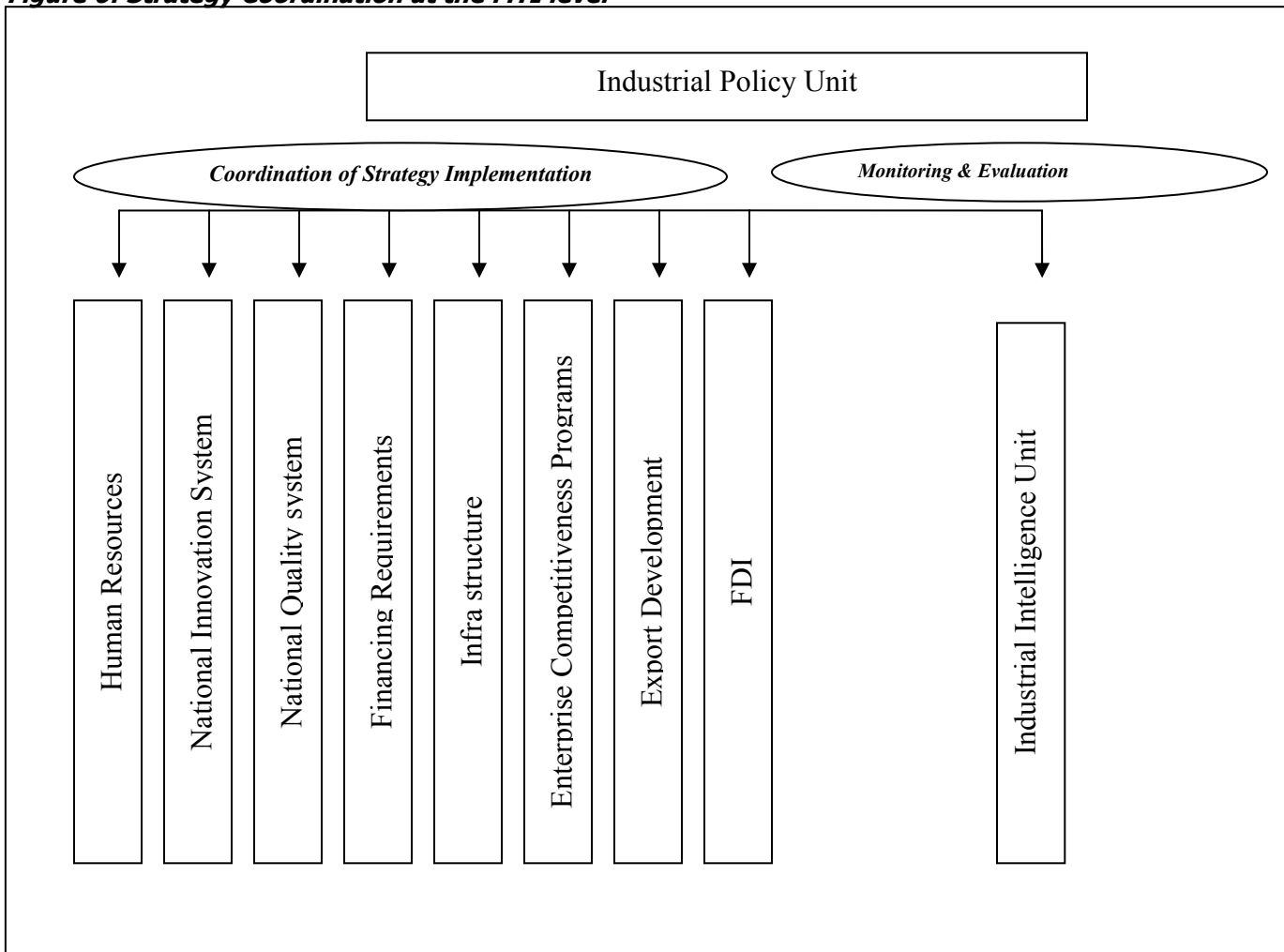
Unless indigenous capabilities of independent local suppliers are fortified, local industries will lose ground to other global competitors, and the chances of Egyptian industries to join global value chains will diminish. Building local capabilities, as well as developing a national innovation system for reaching systemic efficiency, is a must to succeed in joining global value chains.

4. TOWARDS IMPLEMENTATION

At the level of the Ministry of Trade and Industry (MTI), the industrial policy unit is to foresee the implementation of the IDS and act as the focal point in orchestrating all activities at the MTI serving this purpose.

As shown in the figure below (figure 6), an Industrial Intelligence Unit (IIU) will monitor progress on both the macro (whole industry) and micro (enterprise) levels. A parallel structure will represent the entities in charge of overseeing the coordination of strategy implementation with regard to building domestic capabilities (human resources, the national innovation system, the national quality system, financing requirements, infrastructure, and enterprise-based competitiveness programs). The role of the parallel structure is to ensure the delivery of outcomes according to the action plan. An IPU officer is to receive regular reports from the six respective entities on the status of implementation vis-à-vis the action plan.

Figure 6: Strategy Coordination at the MTI level



On the other hand, the IIU is to have two sub-divisions. The first will be concerned with performance evaluation of the whole industrial sector to monitor performance over time, and also through benchmarking with comparators. The second will focus on assessing performance at the enterprise level, through selecting samples of the enterprises benefiting from the IMC support to evaluate their development over time, especially with regard to technological attainment, value added measure, exports development, and R&D activities. Performance evaluation at both the micro and macro levels should be facilitated by the proposed approach to improve statistics on the industrial sector in Egypt.

The IIU officer is also to submit regular reports to the technical secretariat of the expanded Economic Ministerial Committee as a briefing of the status of performance upgrading over time. These reports are critical to ensure that the IDS is progressing along the foreseen path.

The implementation of industrial development strategies is by no means an easy endeavor. Commitment to creating an enabling environment for manufacturing enterprises is a core requirement for success. Therefore, the institutional setup for overseeing the strategy implementation and assessing the associated outcomes is of utmost importance to take this strategy from ideas into reality.

To conclude, this document presented the broad lines of the strategic dimensions of Egypt's industrial development strategy. The next phase is to develop a detailed policy and action package with the involvement of all relevant stakeholders; and, finally, comes the implementation phase which is to be paralleled by continuous monitoring and evaluation of performance.

Annex 1: **How where the targets defined?**

The strategy rests primarily on specifying targeted growth rates in real GDP and manufacturing value added, and then estimating the amount of investment needed according to estimates of the incremental-capital-output-ratio (ICOR). The following assumptions have been made:

- The ICOR estimate for the whole economy is 3.5 and is assumed constant throughout the time span of the strategy. The ICOR estimate for the industrial sector is 4 in the initial period till 2015 (reference is to Fiscal Years). Starting 2016, the ICOR is assumed to decline to 3.5 reflecting an improvement in the productivity of capital.
- The inflation rate is assumed to decline gradually from 8.9% in 2005 to 5.5% in 2006, 5% in 2007, 4.5% in 2008, 4% in 2009, and 3.5% in 2010, and stabilizes around 3% until 2025.
- Investments by public sector enterprises in the industrial sector are assumed to gradually decline from their current level of 32% to 20% during 2006-2008, 15% during 2009-2012, 10% during 2013-2017, and then stabilize at 5% during 2018-2025. This is in line with foreseen developments in the privatization program.
- Targets for foreign direct investment are arbitrarily set such that average for five-year sub-periods seems realistic with the Egyptian economy's historical FDI records.
- In specifying the targets for industrial investments by the domestic private sector, it is assumed that total liquidity will be growing at rates equal to nominal GDP growth under the assumption of constant income velocity of money throughout the time span of the strategy. It is also assumed that the ratio of credit to the private sector to total liquidity will increase incrementally from its current level of nearly 50% to 67% by 2025. Finally, it is assumed that the share of the industrial sector in the total annual flow of credit to the private sector will gradually increase from its current level of 36% to reach 45% by 2025. Accordingly, estimates are generated for the targeted annual increase in bank credit for the industrial sector; the remaining portion of industrial investments by the domestic private sector is to be covered through non-bank financial institutions, i.e. the capital market.
- In line with the overall objective of the strategy to increase manufactured exports, export targets are set by targeting an incremental increase in the export propensity of the industrial sector; i.e., the ratio of manufactured exports to manufacturing value added. It is targeted that this ratio will increase from its current level of 20% to 40% by 2025.
- In specifying employment targets, it is estimated that the average cost per job in the industrial sector is LE 100,000. Thus, the estimated employment-creation impact pertains only to direct employment creation.

Annex 2: Detailed Strategy Targets

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
MACRO TARGETS																					
GDP at Market Prices (LE Bn)	540	600	666	736	809	886	966	1,053	1,148	1,251	1,363	1,486	1,620	1,766	1,925	2,098	2,287	2,482	2,717	2,961	3,228
Inflation Rate (%)	8.9	5.5	5.0	4.5	4.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Real GDP Growth Rate (%)	5.0	5.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Nominal GDP Growth (%)	13.9	11.0	11.0	10.5	10.0	9.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Domestic Investment Needed (ICOR 3)	NA	99	120	132	146	159	174	189	207	225	245	267	292	318	346	378	412	449	489	533	581
Total Domestic Investment Needed (ICOR 3.5)	NA	115	140	154	170	186	203	221	241	263	286	312	340	371	404	441	480	523	570	622	678
Total Domestic Investment Needed (ICOR 4)	NA	132	160	177	194	213	232	253	275	300	327	357	389	424	462	503	549	598	652	711	775
INDUSTRY TARGETS																					
Projected Nominal Growth Rates in MVA (%)	12.2	9.5	10.0	10.0	10.0	9.5	10.0	10.0	10.0	11.0	11.0	11.0	11.0	11.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Projected Real Growth Rates in MVA (%)	3.3	4.0	5.0	5.5	6.0	6.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Industry ICOR (4.0-3.5) Real Growth Rate	13.2	16.0	20.0	22.0	24.0	24.0	28.0	28.0	28.0	32.0	32.0	28.0	28.0	28.0	31.5	31.5	31.5	31.5	31.5	31.5	31.5
Premium over GDP Growth (%)	-1.7	-1.5	-1.0	-0.5	0.0	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MVA (LE Bn)	92	101	111	122	134	147	162	178	195	217	241	267	297	329	369	413	463	518	580	650	728
Share of MVA in GDP (%)	17.1	16.8	16.6	16.6	16.6	16.6	16.7	16.9	17.0	17.3	17.7	18.0	18.3	18.7	19.2	19.7	20.2	20.8	21.4	22.0	22.6
New Nominal Investment Needed in Industry (LE B)	12.1	16.1	22.2	26.8	32.2	35.2	45.2	49.7	54.7	69.4	77.0	74.8	83.1	92.2	116.2	130.1	145.7	163.2	182.8	204.7	229.3
Industry Share in Total Investments (%)	NA	14.0	15.9	17.4	18.9	18.9	22.3	22.5	22.7	26.4	26.9	24.0	24.4	24.9	28.7	29.5	30.3	31.2	32.0	32.9	33.8
FINANCING INDUSTRIAL INVESTMENT																					
New Nominal Investment Needed in Industry (LE B)	12.1	16.1	22.2	26.8	32.2	35.2	45.2	49.7	54.7	69.4	77.0	74.8	83.1	92.2	116.2	130.1	145.7	163.2	182.8	204.7	229.3
Public Business Sector Investment (LE Bn)	NA	3.2	4.4	5.4	4.8	5.3	6.8	7.5	5.5	6.9	7.7	7.5	8.3	4.6	5.8	6.5	7.3	8.2	9.1	10.2	11.5
FDI (LE Bn)	NA	6.5	8.0	9.0	10.7	13.1	14.1	14.6	15.5	15.8	16.2	18.3	18.4	18.8	19.2	20.1	21.7	23.3	23.4	25.1	26.9
Domestic Private Sector (LE Bn)	NA	6.4	9.8	12.4	16.6	16.8	24.3	27.6	33.8	46.7	53.2	49.1	56.3	68.8	91.2	103.5	116.8	131.7	150.3	169.4	190.9
Financing Through Bank Credit (LE Bn)	3.6	7.3	11.4	12.6	16.7	13.6	17.5	19.4	25.8	24.4	27.0	35.2	37.4	39.2	48.1	50.0	55.9	61.7	64.3	70.6	85.9
Financing Through the Capital Market (LE Bn)	NA	-1.0	-1.7	-0.2	-0.1	3.3	6.9	8.3	7.9	22.3	26.2	13.9	19.0	29.6	43.1	53.5	60.9	70.0	86.0	98.8	105.1
EXPORT TARGETS																					
Manufactured Exports (LE Bn)	18	20	24	27	32	35	42	46	55	61	72	80	95	105	125	140	167	187	221	247	281
MVA (LE Bn)	92	101	111	122	134	147	162	178	195	217	241	267	297	329	369	413	463	518	580	650	728
Export Prosperity (Mean. Exports % of MVA)	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36	36	38	38	40
EMPLOYMENT TARGETS																					
New nominal investment needed in industry (LE Br)	12.1	16.1	22.2	26.8	32.2	35.2	45.2	49.7	54.7	69.4	77.0	74.8	83.1	92.2	116.2	130.1	145.7	163.2	182.8	204.7	229.3
Direct jobs created (av. cost of job = LE 100,000)	101200	134320	184680	223475	268170	293646	376846	414530	455983	578447	642077	623617	692215	769358	969132	1084307	1214424	1369155	1523374	1706179	1910920
Direct jobs created (in thousand)	101	134	185	223	268	294	377	415	455	578	642	624	692	768	968	1084	1214	1360	1523	1706	1911

Notes:

- 1) Reference is to fiscal years, i.e. 2005 refers to FY 2004-2005.
- 2) Figures for 2005 are actual figures and not strategy targets.