Strategic Guidelines for Industrialization in Saudi Arabia in the New Global Setting

by
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Objectives

• To help the government of Saudi Arabia, the private sector and support institutions in monitoring and benchmarking national competitive industrial performance and structural drivers

• To understand the process of innovation and learning in the industrial sector

• To formulate and implement strategies, policies and programmes to promote a sustainable industrial development and to support a process of catching-up and innovation.
Industry as Engine of Growth and Sustainable Development

- Applying technological progress to production
- Driving and diffusing innovation
- Developing new skills and attitudes
- Leading institutional development
- Producing beneficial externalities
- Stimulating modern services
- Generating dynamic comparative advantage
- Internationalizing economies
- Modernizing enterprises
- Manufacturing grows faster than primary sector, and therefore has greater growth potentials
- Manufacturing industries make better use of new industrial organisations (flexible specialisation & clustering) and therefore can easily realise economies of scale and scope.
The New Global Setting

• Rapid and accelerating technological progress (ICTs, biotechnology, etc.)

• New management and organizational systems

• Globalization of the value chains of industries and increased importance of multinationals

• New rules and regulations: trade, quality, environment, intellectual property rights
The High Road to Compete: Innovate and Learn

• The high road to a sustainable industrial development is to compete through innovation and learning. The alternative is lower wages and standards, or marginalization.

• To innovate means to improve products and process in existing industries and to enter into higher technology industries.

• To innovate requires to upgrade and develop technological and managerial capabilities,

To develop new capabilities is a difficult, long and costly learning process undertaken by firms and industries and supported by favorable policies and institutions.

• However, the 'new global setting' is however opening up new alternatives for firms to leapfrog stages of industrial development by linking, leveraging and learning (3L approach) from global value chains
The Industrial Innovation and Learning System

Global industries

Local industries

Support institutions

Industrial strategies, policies and programmes

Framework conditions
Technological Classification of Industries

• Why a technological classification?
  • Evidence shows that within industry some sectors grow faster than others
  • We can then trace technological upgrading from simple to complex industries

• IDR Technological Classification:
  • Resource-based industries (prepared food, wood products, petroleum & rubber products…)
  • Low technology industries (textiles, clothing, leather, toys…)
  • Medium technology industries (automotive parts, chemicals, metal products and machinery,…)
  • High technology industries (electronics, pharmaceuticals, aerospace, precision engineering,…)

Changing Technological Patterns of World Trade
(% growth rates, 1985-98)

- High tech
- Medium tech
- Low tech
- Resource based
- Primary

1995-98
1990-95
1985-90
Why Benchmark?

• Valuable aid to policy analysis and design by locating each country in global, regional and competitive scene

• Useful supplement to broad competitiveness analysis by focusing on industry

• Most developing countries lack comparative information (even published data)

• Analytical framework helps focus on some critical variables
Industrial Development Scoreboard

COMPETITIVE INDUSTRIAL PERFORMANCE INDEX

- MANUFACTURING VALUE ADDED (MVA) PER CAPITA
- SHARE OF MEDIUM-AND HIGH-TECH INDUSTRIES (MHT) IN MVA
- MANUFACTURED EXPORTS PER CAPITA
- SHARE OF MHT IN MANUFACTURED EXPORTS
- FOREIGN DIRECT INVESTMENT
- INDUSTRIAL CAPABILITIES
- TECHNOLOGY LICENSING
- INFRASTRUCTURE
- SKILLS
- RESEARCH AND DEVELOPMENT
## Ranking of Economies by the CIP Index, 1985 and 1998

*(Part 1 of 2)*

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Winners and Losers in Competitive Industrial Performance Rankings (jumps of more than ten ranks) between 1985 and 1998

- China
- Philippines
- Indonesia
- Thailand
- Ireland
- Egypt
- Tanzania
- Peru
- Ghana
- Venezuela
- Hong Kong
- Zimbabwe
- Saudi Arabia
- Jamaica
- Panama
- Senegal
- Oman
- Algeria

Source: UNIDO Scoreboard database
Change in ranking by selected indicators of Saudia Arabia, 1985 and 1998
Change in the Industrial Performance Index Value

- Saudi Arabia
- MENA
- Industrial
- Developing
- Transition economies
- East Asia
- Latin America
- South Asia
- Africa

1985
1998

UNIDO
Change in the Industrial Performance Ranking

85 ranking
98 ranking

Saudi Arabia
Bahrain
Oman
Egypt
Turkey
Indonesia
Chile
Mexico
Korea, Republic of
Change in the Industrial Performance Index Value

1985 vs 1998
MVA per capita (US$)

- Saudi Arabia
- MENA
- Bahrain
- Oman
- Egypt
- Turkey
- Indonesia
- Chile
- Mexico
- Korea, Republic of

Legend:
- 1985
- 1998
Manufactured Exports per capita (US$)
MHT Share in MVA (%)
MHT Share in Manufactured Exports (%)
Enterprise Productive R&D per capita (US$)

Note: The Republic of Korea is an outlier with R&D of US$ 210 per capita
Telephone Mainlines per 1000 People

Saudi Arabia  MENA  Bahrain  Oman  Egypt  Turkey  Indonesia  Chile  Mexico  Korea, Republic of

1985  1998

[Graph showing the number of telephone mainlines per 1000 people for various countries, comparing 1985 and 1998.]
Industrial performance: key findings

- Manufacturing activity remains heavily concentrated in industrialized countries though developing countries are increasing their share.
- Wide divergence in levels of industrial performance of developing countries.
- The top 10 developing countries account for 80% of developing countries industrial production and 82% of manufactured exports.
- The bottom 30 countries account for 2% and 1% and their shares have declined between 1985 and 1998.
- LDCs have not moved up the technology ladder. The gap with other developing countries is widened.
- Only 16 of 58 developing countries have increased their share of Medium and High Technology Industries.
- Notable improvements in industrial performance experienced by middle income developing countries: China, Costa Rica, Malaysia, Mexico, The Philippines and Thailand.
Drivers: Highlights

• Drivers of industrial capabilities are strongly associated with industrial performance

• Technology in the generic sense (domestic R and D efforts, FDI, royalty payments) combined with skills has a powerful influence on industrial performance

• Access to foreign technology through FDI has grown in significance during the period whereas technology licensing appears to be diminishing

• Over performers have undergone rapid export growth and technological up-grading by entering global production systems and networks

• The drivers are unevenly distributed in the developing world, and the distribution is growing more uneven. East Asia dominates in almost every variable, while Sub-Saharan Africa is consistently the weakest.
Drivers: Highlights (Contd.)

- Successful countries have used varying strategies of combining external sources of technology with the development of domestic resources (skills and technological efforts).
- The bottom 30 countries account for only 2% developing country FDI inflows in 1998 and their Royalty payments are negligible.
- The leading industrialized countries rely heavily on domestic R and D efforts but their reliance on FDI has increased.
Highlights of the Scoreboard Analysis of Saudi Arabia

- Among the 87 countries covered by the competitive industrial performance index, Saudi Arabia’s ranking fell from 41 in 1985 to 54 in 1998, with index value falling from 0.063 to 0.047
- Saudi Arabia remained ahead of Egypt, Oman, Jordan, Algeria, Yemen in the IDR 1998 ranking
- Share of medium and high tech products in MVA stood at 54 per cent in 1998, due largely to the huge share of petrochemicals in industrial production
- At the export front, medium and high tech products accounted for 5.2 per cent in 1998, against a world average of 63.8 per cent
Highlights of the Scoreboard Analysis of Saudi Arabia (Contd.)

• It is evident that the structure of industrial production and export is not akin to the global reality
• In terms of tertiary enrolments in technical subjects Saudi Arabia ranked 60th in 1998
• Per capita productive enterprise-financed R & D stood at $0.1 in 1998
• FDI per capita increased from $7.8 in 1981-1985 to $13.8 in 1993-1997. However, most of the FDI does not go into manufacturing
• The Scoreboard analysis points to the need for industrial diversification into non-oil sectors
Industrial Innovation and Learning Process for Catching-up

Successful latecomer firms and industries catch up through a strategy of innovation and learning which includes a cycle of:

• LINKING with international partners and sources of technology and knowledge
• LEVERAGING existing foreign technology and knowledge with scarce domestic resources
• LEARNING to upgrade capabilities by adapting, using and improving acquired technology
• Continuously repeating the LLL cycle
## Global Value Chains

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<td>R&amp;D; manufacturing</td>
<td>Design; marketing</td>
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<td>Governor</td>
<td>Commands a core technology, outsourcing much of</td>
<td>Few global buyers with a high degree</td>
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<td>Automobiles, computers, aircraft</td>
<td>Apparel, footwear, toys</td>
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<td>Main network links</td>
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<td>Trade based</td>
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*Source: Gereffi 1999b*
Pathways of Leveraging in Global Value Chains

- Original Equipment Manufacturing (OEM) – producing entirely according to the specifications of contracting firms;

- Own Design and Manufacture (ODM) – the buyer firm simply gives broad specifications and allows the contractor to fill in the details;

- Own Brand Manufacturing (OBM) – where the firm is fully fledged and produces its own line of branded products.
Role of Support Institutions

Support institutions play a key role in the process of innovation and learning and, in particular, in helping firms and SME clusters:

• to link with foreign markets and partners,

• to leverage foreign investment, technology, knowledge and skills,

• to learn to upgrade technological and managerial capabilities
Main Types of Support Institutions

- Technology centers
- Investment promotion agencies
- Industrial parks
- Information services
- Standards and metrology institutions
- Productivity centers
- National Cleaner Production Centers
- Business Development Services for SMEs and SME clusters
The Way Forward: Industrial Strategies and Policies

• Need for an industrial strategy to promote and support innovation and learning

• The strategy development process requires involvement and coordination of government and private sector

• Framework imperatives: political and macro-economic stability; adequate education and financial institutions; a well functioning legal infrastructure
Developing Industrial Strategies and Policies

- The starting point is to analyze and benchmark the national industrial performances and capabilities
- Formulation of a shared vision of the industrial development path and selection of technologies and industries to be developed
- The strategy specifies how to achieve the vision: which drivers; role of foreign and national firms; scope of government intervention
- Policies define the role of government in enhancing the drivers of industrial capabilities
- Programmes should contribute to improve the industrial innovation and learning system and the development of support institutions
A New International Agenda

The international community should support developing countries by:

• ensuring appropriate global rules on trade, investment and technology

• Addressing the structural gaps in industrial capabilities to access and compete global markets

• Promoting global linkages with business partners and sources of technology, skills and knowledge
The Way Forward: New Forms of Industrial Governance

- Industrial strategy focuses on enhancing competitiveness through productivity growth and innovation. It should contribute to a broader agenda of sustainable development.

- Framework imperatives include political and macro-economic stability; adequate education and financial institutions; a well functioning regulatory and legal infrastructure.

- A natural starting point is to analyze and benchmark the national industrial performances and capabilities.

- The strategy-making process requires the involvement and coordination of government agencies and private sector associations.
The strategy includes a shared vision of the development path and a selection of technologies and industries which would improve productivity growth and enhance global competitiveness (technology foresight).

Government policies and support programmes should aim at helping firms and industries (in particular SMEs) to upgrade their competitiveness and capabilities to innovate and compete in global markets; and to develop a strategy of linking, leveraging and learning in global value chains.

Policies and programmes should contribute to improve the business environment and support the organization and development of institutions to promote global linkages and partnerships, to build domestic capabilities and skills; and to support cleaner production.
UNIDO Integrated Programme

Component 1
Industrial Governance Capacities

Component 2
Industrial Policy Framework

Component 3
Organization of Support Services

Critical problem addressed

Capabilities of Government and private sector to cooperate in the formulation and implementation of an industrial policy

Competitiveness and diversification in non-oil related sectors

Capabilities of firms to improve their competitiveness performance
Industrial Governance Capacities

UNIDO assistance includes:

– New industrial governance framework
– An industrial policy unit
– A governance support network
– Improvements in industrial statistics
UNIDO diagnosis will include an analysis of:

• The performance, structure and dynamics of subsectoral growth
• The competitive advantages of the country and industries
• The effectiveness of the policy and institutional environment

The diagnosis will facilitate:

– The conceptualization of an industrial development vision
– Identification of industries that the Kingdom could develop on the basis of competitive advantage
– The role of the Government, private sector and the foreign partners
– Technological, managerial, marketing and information capabilities
Organization of Support Services

- Investment and technology promotion
- Business development services for SMEs
- Standardization, accreditation and conformity assessment
- Quality management and continuous improvement
- Human resource development
- Business information network