

Arab Republic of Egypt  
Institute of National Planning



2022

**Planning and Development Issues Series No: (331)**

**Executive  
Summary**

**Developing Knowledge-Intensive Industries By  
Focusing On Tablets**

## Table of Contents

| No | Topic                | Page No |
|----|----------------------|---------|
| 1  | Research Team        | 1       |
| 2  | Introduction         | 2       |
| 3  | Objectives           | 2       |
| 4  | Methodology          | 2       |
| 5  | Findings             | 3       |
| 6  | Recommended Policies | 6       |

## Research Team

| No. | Research Team           | Name                    | Degree             | Specialization       |
|-----|-------------------------|-------------------------|--------------------|----------------------|
| 1   | Key Researcher          | Prof. Fadia Abd Elsalam | Prof.              | International        |
| 2   | Researchers from<br>INP | Prof. Hussein Saleh     | Prof.              | International        |
| 3   |                         | Ahmed Rashad            | Associate Prof.    | International        |
| 4   |                         | Mariam Raaouf           | Lecturer           | International        |
| 5   |                         | Heba Ezz                | Lecturer           | Education            |
| 6   |                         | Marwa Nabil             | Assistant Lecturer | International        |
| 7   |                         | Mayar Yehia             | Assistant Lecturer | Political Economics  |
| 8   |                         | Nesma Abo Kamar         | Assistant Lecturer | Industrial Economics |

## Introduction

In 2016, Information Technology Industry Development Agency (ITIDA) launched, under the auspices of the Egyptian Presidency and the supervision of the Ministry of Communications and Information Technology, a program specialized in designing and manufacturing electronic circuits and high-value-added systems. This is a part of the initiative "Egypt Makes Electronics", so Egypt would become a regional and global electronic hub for the African, Arab and European markets in designing and manufacturing advanced electronics before 2030. These efforts aim at deepening the electronic industries in Egypt.

There are promising electronic products that are supposed to localize their manufacturing by this initiative, including mobile devices, tablets, and navigation devices. Also their feeding industries such as lithium batteries, electric chargers, LED light bulbs, televisions, and screens with liquid crystal display (LED) units, smart meters, and solar energy systems such as solar cells, power inverters, control units, and energy storage batteries.

The Tablet industry is considered one of the most promising industries in Egypt, as it is a capital and technology-intensive manufacturer that requires more spending on research and development. Hence, investing in this industry would make the final products available in the local market, create job opportunities and reduce the trade deficit by import substitution, especially regarding production inputs, and even the possibility of increasing its export percentages.

## Objectives

- Determine the possibility of raising the local component in the tablet industry.
- Study the capabilities of manufacturing tablet components in Egypt, and analyze value chains and progression prospects to raise the proportion of the local component of this industry.
- Determine the constraints and obstacles hindering localizing this industry, and explore the possible opportunities for localization.
- Suggest some recommendations that stimulate the industry's local production, in the light of reviewing international experiences and evaluating current performance.

## Methodology

There is a difficulty in providing detailed data and few previous studies focused on the most critical problems and challenges facing the localization of the tablet industry and raising the proportion of the local component. Thus, the collective study adopted an integrated approach that included benefiting from desk studies that review international

experiences in the electronics field by focusing on specific countries such as Mexico, Vietnam, India, and China. In addition to having expert opinions and manufacturers in this field through the following:

- On November 9, 2021: Held Experts meeting, the second episode, entitled "Requirements for localizing tablet industry in Egypt".
- On January 7, 2022: Held a workshop for the research team with the competent stakeholders in the tablet industry, entitled "Development of knowledge-intensive industries, by focusing on the tablets" in the presence of several stakeholders from the public and private sectors, government officials, executives, and industry experts.
- On January 31, 2022: Conducted a field visit by the research team to the electronics factory of the Arab Organization for Industrialization.
- On Tuesday, February 15, 2022: Held a seminar entitled "Egypt on the road to sustainable development 2030: electronic industries". Leverage the discussions, audience comments, and guests' presentations that took place during the seminar held.

The current collective study builds on discussions, and questions that took place in the framework of these meetings. It brought together many executive officials and owners of small and medium enterprises to identify the most important problems, difficulties, and challenges that stand in the way of localizing this industry and raising the proportion of the local component.

## Findings

- 1- The Organization for Economic Cooperation and Development (OECD) defines knowledge-intensive industries as "Industries that are relatively intensive in their technological inputs and human capital. These industries include biotechnology/chemicals, information and communication technology, services equipment, consumer electronics, etc.
- 2- Egypt's status has shown a decline in manufacturing knowledge-intensive industries, which is manifested in its added value share of medium and high-tech industry (MHT), which decreased from 36% in 2000 to 20.9% in 2018.
- 3- Egypt is ranked 115th out of 173 countries in 2020 according to the human capital index issued by the World Bank, and there was also a decline in the skilled workers' share in the total workforce from 34% in 2012 to 31.8% in 2018.
- 4- Egypt is considered a net importer of all tablet-manufacturing components. It only contributes to the value chain in its final stages through assembling the imported components (without relying on local capabilities to manufacture some of these components) because labor-intensive is the final stage, unlike the initial stages of the industry which depend more on capital and technological components.
- 5- Seven major companies control the majority of the tablet market share in the world (the key players): Apple, Lenovo, Samsung, Huawei, AsusTeK, LG, and HP).

- 6- There are a limited number of industrial firms in Egypt (the main players) in this industry. At the top comes the electronics factory affiliated with the Arab Organization for Industrialization, and Benha Factory for Electronic Industries which is one of the entities affiliated with the Ministry of Military Production, as these two firms possess the largest production capacities; In addition, the Egyptian Company for Silicon Industries (Sico), is a private company with lower production capacities. In March 2021, the Egyptian government agreed with the Korean company Samsung to start manufacturing educational tablets in Egypt.
- 7- Despite the weakness of the current local manufacturing capabilities of tablets in Egypt, there is still a possibility to raise the tablet-manufacturing components by 60%. The most important of these components are semiconductors, especially multi-layer Printed Circuit Board (PCB'S) and batteries: cables, chargers, the outer body (plastic), and other accessories. There are also possibilities for Egypt to participate in producing software soon, especially after cooperation with Si Vision Company to establish its research and development center in Egypt.
- 8- Determining the percentage of the local component is carried out by the Industrial Development Authority. It is done by estimating the cost of each part of the product and reviewing all stages and components of production, including wages, packaging, and tests, and no percentage is set for the design or software.
- 9- The technological infrastructure of this industry in Egypt suffers from a lack of funding that is needed to support scientific research and technological activities. There is also a lack of variety and coordination, challenges in linking industrial firms and scientific research institutions, and problems related to training and workforce skills qualification.
- 10- Mexico has merged with the Global value chains GVC as a major source of ICT goods, in the low value-added chains and has targeted more than one industry policy in the ICT goods sector. Efforts have focused on attracting FDI by considering the cost advantages of the state and proximity to the United States and signing the NAFTA Convention, where many manufacturers of the original OEM or manufactures by contracts (CMS) have been able to establish processes in Mexico.
- 11- Analysis at the macro level has shown that the industrial policies implemented in Mexico to promote the ICT sector have had positive results, reflected in the emergence of the cluster produced in Mexico, Jalisco which is the largest in the electronics industry and specializes in computer hardware manufacturing. OEMs are contracted by electronic manufacturers and service providers and include a large number of design centers and hundreds of specialized suppliers, as well as more than 150 software enterprises.
- 12- Vietnam has been less successful in rear-linking international companies with the domestic production system, and has tried to overcome this challenge using FDI, and EPZ systems. Policies have targeted certain sectors and regions as part of regional industrial policy.
- 13- Concerning FDI attraction, in Vietnam, the payments for the lease of land and water bodies have been exempted for 11 years if the investment project is located in areas

not included in the geographical areas eligible for investment incentives, or 15 years if the investment is carried out in localities facing economic and social difficulties consistent with the Investment Act, the tax rate is also 10% for 15 years for certain projects.

- 14-**The Vietnamese authorities have repeatedly used regular informal meetings with Samsung and other foreign enterprises to persuade them to cooperate to achieve policy objectives without resorting to ways to discourage future FDI flows. This method has succeeded with foreign investors having an increasing role in raising the contribution of domestic enterprises to value chains.
- 15-**A set of policy interventions in India has been necessary for the careful planning of a strategy to reduce dependence on China. The success of industrial policy depended on the free market and free trade support. India must benefit from international actors in the global value chain and free trade agreements, explore new trading partners and expand assembly activities in smartphones.
- 16-**In 1978, China began to use a series of new policy instruments in the form of export manufacturing zones (EPZs) to link with global value chains and access foreign technologies, with the government relying on a list of pilot lines to encourage FDI entry into high-tech sectors.
- 17-**China industries such as automobiles and semiconductors received incentives and market protection in exchange for technology transfer. Investors benefited from tax exemptions and subsidized land. However, local component rules have been applied and the companies have been governed by JV rules (ceiling of 50%).
- 18-**It is evident, according to a SWOT analysis of the localizing tablet industry in Egypt, that one of the most important strengths is the availability of demand in the local market. This is due to the existence of an effective partnership between the Ministry of Education, the Ministry of Higher Education, and Scientific Research to allow the use of the Internet for learning purposes, in addition to a relative decrease in production costs.
- 19-**The weakness of the legislative and institutional framework, as well as the administrative overlapping between the authorities responsible for the computer industry, are among the most important weaknesses related to the localization of the tablet industry in Egypt, in addition to the international Companies monopoly on advanced technology and their compliance to intellectual property rights, as well as high investment costs needed to establish the electronics and computer industry.
- 20-**There has been a weak integration of the Egyptian economy in general into global production chains, compared to other countries. International trade data also shows that exports of both final products of tablets and intermediate components are extremely minimal. The lack of integration in global value chains, whether in the form of exports or imports within this type of high-tech industry, can be attributed to low knowledge-intensive exports in general, as Egypt's exports are largely concentrated in low-complexity products such as minerals and agriculture.
- 21-**Concerning foreign trade policy, the average MFN tariff has tended to rise during the last decade, reaching about 19.1% in 2019, compared to 17.5% in 2015 and 16.8% in

2010. The average MFN tariff has also increased for the electrical equipment group, from 7.5% in 2010 to 11.5% in 2019.

**22-**The use of Non- Tariff Measures (NTMs) has increased dramatically. Nearly 60 percent of products are covered by two or more NTMs and about 51 percent of importers of engineering products suffer from these NTMs.

**23-**Foreign direct investment in Egypt did not achieve the desired development outcome, compared to other countries such as Southeast Asia. Most of the new FDI took the form of mergers and acquisitions or investments in the petroleum sector, while the share of manufacturing industries did not exceed 10% of these investment flows, and most of them are concentrated in light industries (such as the textile industry).

## **Recommended Policies**

### **Suggested Policies and Implementation Mechanisms to Localize Tablet Industry in Egypt**

#### **1- Policies Related to Strengthening Integration in Global Value Chains**

Attracting foreign investment can use incentives, specialized infrastructure, and workforce training in specialized skills. It can create linkages by encouraging local content and insisting on an entry pattern that is joint venture ownership, these policies are based on three main axes:

##### **First: Attracting Foreign Direct Investment**

- a. Encouraging more foreign direct investment in the fields of machinery, mechanical equipment, and computers, would stimulate the participation in global value chains to upgrade Egypt's production capabilities and strive to manufacture more complex products.
- b. Policy tools can be used to create vertical linkages between domestic enterprises and foreign affiliates to overcome difficulties and constraints.
- c. In the 1980s and 1990s joint ventures were a major milestone in China's transition from a closed economy to a global economy. Because one of the attractions for the foreign investor is recognizing that its joint venture partner is familiar with local regulations and employment practices and local content policies provide a guarantee that the foreign investor will use the local currency or accept local input, **but two issues arise:**
  - i. It is not enough to possess the technical capacity to manufacture components and parts.
  - ii. The required volume of investment, mass production, competitive prices, quality assurance, and the optimal number of suppliers are the most important aspects.
- d. It is important to target second-tier suppliers from domestic companies rather than enterprises dealing directly with internationally active companies.

- e. Attract more major international companies working in manufacturing tablets process (other than Samsung) to set up branches in Egypt, especially in the four technological areas that were established in: Beni Suef, New Assiut, New Borg El Arab, and Sadat, as well as in the Suez Canal Industrial Zone. The domestic manufacturing percentage should not be less than 40%, to localize the technology of manufacturing tablet components. Among the most significant companies in this field are American companies such as Intel, Apple, Google, Western Digital, and Xbox. And Korean companies such as LG, along with Chinese companies such as Oppo, Xiaomi, Realme, and Vivo, as well as Taiwanese companies such as Fox Cone, Pegatron, Compal, ICS, and Quanta.
- f. FDI attraction efforts should not be limited to major international MNEs but should target large supplier companies in upstream industries (first-tier suppliers) across international firms' value chains.
- g. It is essential to invest in high-tech upstream stages of production, such as semiconductors. It is considered the cornerstone of the electronic industry. The government should provide direct support to this kind of industry. For example, India had allocated 10 billion dollars to develop this industry locally. It is suggested to encourage multinational companies to locate their production activities in Egypt. This would lead to knowledge and technology transfer. It is possible to stimulate the partnership between foreign companies and national companies. For instance, Seiko owns production lines for assembly used and adapted to support the electronic industries.
- h. It is recommended to foster the linkage between FDI and domestic industrial suppliers, as well as design innovation policies that enhance the absorptive capacity of the host economy. Experts suggested a supportive and binding ministerial decree through which the local content should be at least 40%. This would enhance the localization of the tablet industry in Egypt. "Siko Factory" is one of the successful production plants that can collaborate with Samsung and provide local content. Moreover, foreign companies should be asked for localization plans to transfer technology and create jobs.

## **Second: Innovation and Technology System**

- a. Lay the foundations for a national innovation system that must be based on building institutions that facilitate the transfer and adaptation of technology.
- b. Promote research, development, creativity, and strengthening of the coalition between industrial companies and research institutions. At the same time give an effective role to the Electronics Research Institute, especially in the field of integrated conglomerates in microelectronic industries. As a result, strong clusters combining scientific research centers, universities, and industrial entities will be established.



- c. Attention will be given to financing scientific research that is concerned with designing and manufacturing electronic devices (most importantly tablets and smartphones) and supporting research projects. This will help in developing and designing integrated circuits that make up the main electronic circuits used in all microelectronic industries.
- d. Promote Egypt as an innovative design hub and a microelectronics center in the region, improve the incentives for industry, and stimulate local and governmental demand for locally produced tablet computers, taking into consideration that the dominant American companies are looking for subsidiaries not affiliated with China. The four technological zones can be used to establish various factories in microelectronics, including tablet computers.
- e. Expand the technological universities and utilize the available resources, and attract distinguished students to it by providing job opportunities for its graduates in companies and electronic factories like factories specialized in producing tablets and smartphones.

### **Third: Suppliers' Support**

- a. Supporting suppliers to meet the required standards in their industries is an important dimension of policy to move towards advanced production stages.
- b. Many policies can be used for States seeking to achieve FDI linkages. Governments need to understand and address the needs and concerns of MNES. The goal is to increase backward linkages sustainably by establishing low-cost suppliers and a performance improvement strategy. This means targeting domestic second-tier suppliers rather than enterprises that directly supply international companies with foreign activity.
- c. We can focus precisely in the short-term, on producing some parts and components that Egypt has considerable potential in, for manufacturing tablets within the Egyptian factories. For example, printed electronic circuits, plastic frames, front and back covers, batteries, chargers, headphones, and accessories.

## **2. Commercial Policies Related to Localizing the Tablet Industry**

- a. Implementing protection policies for the local industry by exempting the imported components needed for manufacturing tablets from the currently-imposed customs duties. In addition, imposing the same duties on the final goods to protect its local industry, just as Turkey, which imposed tariff protection (40%) fees and taxes on finished electronic products. India has imposed General Service Taxes (GST), mainly on the importer to spend on developing infrastructure for the sake of promoting the

local industry. India exempted local companies from GTS and even provided percentages of the amounts collected from GST to local companies. Then it linked it to industry promotion by increasing the proportion of the local component and enhancing the level of research and development. Moreover, exempted the locally manufactured final products from value-added taxes, as one of the axes through which a competitive advantage can be achieved for the local product.

- b. It is also recommended to continue the implementation of the drawback system of tariff customs on imported intermediate inputs and components that are used for final product manufacturing. These procedures aim to provide the necessary inputs for manufacturing tablets at competitive prices. This would also foster the development of the local supply base to increase the locally produced added value from the tablet industry.
- c. Considering the Indian experience, import tax can be applied on mobile phones and tablets at a rate of 10%, then increase to 13% and 23% (on the final imported product).
- d. Activating trade agreements between Egypt, African countries, Arab countries, and Europe to encourage exports. Activating the Egyptian commercial representation offices to study the needs of these countries, and know the appropriate specifications, international quality standards, price, and transportation costs.
- e. Create a special customs track in Egypt for registered factories to facilitate and speed up the entry and availability of electronic components, parts, and important supplies used in manufacturing tablets. Also, to have a permanent customs committee located in the technology zones to facilitate customs clearance processes.

### **3. The Financial Policies**

- a. The experiences of modern manufacturers reveal selectivity in the financing, along with the establishment of the set of binding requirements to reduce the risk of rent-seeking. For example, China and Malaysia have adopted financing models with different financing tools to support technological innovation,
- b. In China, in the light of the Inno Fund framework, eligibility criteria have been adopted to finance innovation. There are different types of financial aid provided for companies at different growth stages in the form of supporting loans with preferential interest rates or investing in stocks.
- c. Given the high costs of computer and tablet factories due to the complex infrastructure and the control of intellectual property, it is suggested to focus on factories that have human resources, qualified cadres, and financing facilities. For

instance, in the Arab Organization for Industrialization in Cairo and the Beni Suef factory in Upper Egypt. Economies of scale, reduction of costs, competition in price, quality, after-sales services, and international outsourcing are all sources of benefit.

- d. Provide the necessary funds for the electronic incubator "Tariq". It is supervised by the Electronics Research Institute, the first national technological incubator specializing in the electronics industry. This will support the innovators and strategically-important projects that have direct economic returns on the national economy. In addition, it will offer domestic alternatives to imported industries such as tablets. Optimizing the use of the "Center for innovation in technology and Engineering" -a small manufacturing center owned and operated by the Information Technology Industry Development Agency (ITIDA), as part of the initiative- that uses equipment to produce printed circuit boards in addition to mechanical parts.

#### **4- Infrastructure Development Policies**

Transport and logistics infrastructure can reduce inventory and trading costs as well as delivery times. Therefore, policy efforts must focus on the establishment and modernization of infrastructure. Improving the infrastructure of the State as a whole is a difficult task, but as part of the establishment of zones near infrastructure such as ports and airports, it is easier to connect with a good road and railway infrastructure. An example in China is the Suzhou-Industrial paper parks, one of the best areas of state infrastructure.

#### **5- Policies Related to Raising and Developing Educational and Vocational Training**

- a. The need for education and vocational training can be improved within a specific zone or a large cluster. This could be achieved through the state or by the partnership between the public and private sectors.
- b. Adopting a national program to train the cadres of companies working in the field of assembling tablet components "manpower and engineers", with a focus on research and development centers and linking universities/research centers with factories through their R&D department, and gradually shifting to developing design and manufacturing skills.

#### **6- Policies Related to Incentives**

- a. Special economic zones may involve policy incentives beyond the establishment of infrastructure, new ones, and the elimination of import tariffs, other taxes, and regulations. The other solution is to provide these incentives regardless of location. In Vietnam, the basket of incentives for local producers participating in GVCs has

improved since 2005 with the decree (2017) of the Supportive Industries Development Programs to serve local producers participating in GVCs.

- b. Considering the tablet industry as one of the strategic industries, by applying tax incentives according to the executive regulations of the investment law. Implementing a 50% tax incentive for 7 years to designing and manufacturing companies in any geographical area even not in the defined Zones (A, B) mentioned in the executive regulations of the investment law. Reducing taxable income on employees working in companies specialized in designing and manufacturing electronics and embedded systems from 22.5% to 10% for 10 years.
- c. It is also possible to provide financial support of 75% for the construction costs of factories within the specialized industrial zones that are allocated to electronics and their feeding industries, and financial support of 50% for project expansions. It is also proposed to establish an investment fund of \$ 10 billion to support the semiconductor industries. The government can also provide subsidies for electricity costs for a period of 5 years. Exemption from income tax can be considered completely and partially for a period of 5 to 10 years.
- d. Tablet Industry requires providing incentives to support local/foreign producers, such as offering production subsidies of 5% to foreign investors and 10% support to local investors.
- e. Therefore, it is suggested to provide tax incentives to the tablet industry, especially since the government has already listed the electronic industry as a key priority sector in the industrial localization plan. The government can also provide a significant reduction in tax rates for this type of investment. However, it is important to consider the balance in public finance management, so that the budget deficit is not worsened by more tax exemptions. Hence, a deeper and broader assessment of tax incentives should be taken into consideration.
- f. Export subsidies can play an important role in encouraging national and foreign investments in developing local manufacturing. The provision of export subsidies helped stimulate exports to African markets (COMESA), by national companies such as (Fresh - Elaraby - Universal), in addition to providing some facilities for shipping operations.

## **7- Institutional Aspects Policies**

- a. Developing the legislative and institutional framework, simplifying procedures, and cooperation between producers and users of electronic computers, including tablets, help to increase local production and export.

- b. Activating the role of the Ministerial Economic Committee headed by the former Prime Minister, Eng. Sharif Ismail to deepen and localize the tablet industry. In addition to the exploitation of the large volume of needs for electronics in education and dependence on the latest technologies, benefiting from the current investments, and the possibility of the participation of the concerned government agencies in the investment.
- c. Giving special attention to applying and monitoring the implementation of the "Egypt manufactures electronics" initiative and guaranteeing the government's institutions' support. For instance, the Ministry of Trade and Industry, the Ministry of Planning and Economic Development, the Ministry of Higher Education and Scientific Research, the Ministry of Finance, the General Authority for Investment and Free Zones, and the Administrative Control Authority.
- d. Serious activation, cooperation, and coordination between the faculties concerned with engineering and computers of all kinds. The Ministry of Communications and Information Technology, the Information Technology Development Authority, the private sector, the representatives of computer and tablet companies in college, and department councils and committees can develop science curricula to link scientific and practical reality.
- e. Encouraging the Academy of Scientific Research to launch more applied programs to support industry and linking research institutes with industrial bodies such as the Science and Technology Financing Authority, the Innovators Care Fund, and the Technology Incubators Program to ensure that research is effectively applied in the form of a final product. These initiatives and efforts can be utilized and employed in deepening the tablet computer industry and its components.
- f. Benefiting from the presidential initiative "Ebda Initiative ", it also includes the manufacturing of essential intermediate inputs that are used in the production of electronic industries. This could enhance the feeding industries and contribute more to deepening the tablet industry in Egypt.
- g. Create an industry development program, similar to the Industry Development Support Program (SIDP) that was officially introduced in 2017 in Vietnam and included several ministries. The program has set specific targets for supporting industries such as metals, plastics, rubber, electronics, and electrical parts, so local enterprises meet 35% of local demand in 2020 and the proportion must increase to 65% in 2025.

**As illustrated above, it is possible to formulate a gradual plan for developing the tablet industry**, or a phased program to produce a complete finished product in Egypt. It is

significant to differentiate between the tablet industry's short, medium, and long-term development policies.

**First: The Short-term Plan:** It is proposed to focus on assembly industries, as it is the way to gradually build a local value chain, and establish partnerships with foreign and local suppliers. The government can support the assembly process in manufacturing, not only to supply the domestic market but also for export to regional markets. This requires a special focus on addressing operational obstacles and bottlenecks facing the industry. It also includes infrastructure and logistical barriers, as well as regulations and customs problems that should be addressed within a short period, and this stage can extend over two years.

**Second: The medium-term Plan:** It suggests the shifting from assembly industry assembly, to focusing on prioritized fields such as local supplier base development. This includes formulating a set of integrated policies, which include: infrastructure, developing required skills, technology transfer mechanisms, and industrial relevant-clusters development. It is expected that this stage will take 2-4 years, assuming success in localizing the aggregate industry in the first phase.

**Third, the long-run plan:** It suggests expanding the industry and upgrading into manufacturing stages of higher value-added and knowledge-intensive products, i.e. improving the component and parts industry. This stage is expected to extend for at least five years.

## **8- Requirements for Putting Localizing Electronics Industry Policies into Action, Including Tablets (implementation mechanisms)**

- Availability of a detailed database, resolving data and information conflict, and the diversity of the institutions responsible for statistical releases.
- Continuity and integration of various efforts in deepening and localizing industrialization through coordination between the Federation of Egyptian Industries, the Ministry of Trade and Industry, the Industrial Modernization Center, ITIDA, and the Ministry of Communications and Information Technology.
- Establishing a Higher Council to monitor the implementation of policies, and data updates:
  - Complete delegation of power with the ability to direct all the different government agencies.
  - Delegation of responsibilities.
  - Assigning experts to develop detailed strategic plans and put them into action.
  - Effective budgeting appropriate for initiatives, programs, and policies.
  - Quarterly reports are submitted to the President.

## **9- Other Implementation Mechanisms Necessary to Localize the Electronics Industry, Including Tablets**

- Reviewing the accreditation criteria of standard ratios on computer components, according to the international best practice.
- Energy and utility subsidies (reductions in electricity, gas, and water prices).
- Manufacturing equipment finance.
- Establishing design centers partnering with the government, and local and foreign investors.
- Establishing logistic infrastructure facilities in regions such as Ain Sukhna and Suez Gulf.
- Provision of funding mechanisms and delegate R&D activities for ASIC, product development (application-on specific integrated circuit chips), and microelectronic systems, for the following reasons:
  - The emergence and growth of a new domestic semiconductor industry with IC design, development, and embedded systems.
  - Companies developing MEMS technology and its products have emerged.
  - The emergence of new companies that focus on design and development systems and their products
  - The presence of a young generation full of hope and confidence. Technological services support, and specialized engineers and technicians are to be ready upon request.
  - The significance of attracting foreign direct investment in the fields of electronics manufacturing services (EMS, OSAT) and all semiconductor examination (labor-intensive industries).
  - Attracting multinational companies to open development centers for Fabless systems, semiconductor design, and IC and system development.
  - Keep pace with MEMS the technological applications in multiple fields such as industry, security, health, agriculture, environment, and transportation. It is considered a fertile ground for innovation, taking into consideration the growth of the size of its market (as 70% of sensors in the world depend on MEMS as well as its low-cost infrastructure, AMEMS clean room is a necessity for R&D and prototyping activities.
  - Support the companies' activities operating with the existing ASIS integrated circuit chip applications and enhancing the business and operational environment.
  - Launching a capacity-building program to enhance the workforce skill level.
  - Designing incentive mechanisms to attract Egyptian immigrants and retain the country's human capital.
  - Effective establishment of outsourcing activities, through improving broad-band volume.
  - Motivate the attraction of stakeholders through campaigns, in the fields of Fables systems to establish joint ventures in Egypt (JV).

- Establishment of an innovation complex for fabless systems to host research and development centers, and prototypes based on MEMS.