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**The Role of Digital Economy in Promoting  
Services Trade and Industry in Egypt**



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## Introduction

The information and communication technology (ICT) sector has become one of the most important dynamic sources of growth in the recent period, moreover, it is the main determinant of the level of progress of countries and the development of their economies. ICT sector provides the ease of electronic commerce, and boosting of the interdependence between markets, as it provides all basic and productive services for individuals, companies and countries. In addition, it opens new national, regional and global prospects for cooperation and integration between societies in the digital economy. Consequently, Egypt realized the importance of the transition to the digital economy by creating important and necessary platforms at the local, regional and global levels, which led to improving their ranking in a number of digital transformation reports. Despite the Egyptian efforts that have been made, it is still living in the early stages of the digital transformation era and has not reached the required level of achieving development and improvement, because of many local and global challenges and risks.

## Objectives

Therefore, in order to face the challenges in Egypt, in light of the contemporary global competitiveness, it is necessary to maximize the benefit of the sector and its digital technologies, which are related to development locally as well as internationally, by addressing the following main axes and dimensions of the study:

1. The role of the digital economy in developing the production and trade of services at the global level and its implications for Egypt (challenges and prospects for development “focusing on investments”).
2. Legal, marketing and technical constraints in the service industry, trade and the prospects for facing them.
3. Expanding Egypt's trade services with the world by turning it into a regional gas logistics center.
4. Developing and supporting the service industry in the pre-production stage (applying on semiconductors and digitalization of the logistics sector).
5. Pioneering technologies to enhance economic, political and environmental security in Egypt.

## Methodology

- 1- The study uses an analytical descriptive methodology based on research and specialized studies in Digital Economy focusing on services trade and industry in Egypt.

- 2- It is also based on an analytical vision of Digital Economy in light of literature review and accumulated learned experience, knowledge and understanding of some researchers of the study specialized in the field of Digital trade and industrial services, in spite of problems and challenges of getting enough, accurate, timely and reliable data to study and analyze it.

## **Findings**

- 1- Service and digitization play a mutual effect on the transformation process of business models, and facilitate the emergence of digital business models.
- 2- Education in Egypt has begun to enter the stage of e-learning, although digital technologies have not yet been applied in an accurate and integrated manner. The same situation in the health sector.
- 3- According to the estimates of the medium-term plan (2018-2019-2021/2022), the sectors of extractive and manufacturing industries, construction and building, wholesale and retail trade come at the forefront of activities with a high positive contribution to growth, as their contribution is about 67% of the targeted economic growth in 2018 and 2019 (excluding oil and gas).
- 4- The economies of most low- and middle-income countries, including Egypt, are characterized by the phenomenon that is usually called (the Missing Middle): they have many micro and small enterprises, but with few medium-sized enterprises. Hardly any of the small businesses are related to the larger companies.
- 5- The services trade and industry play many positive roles on the social and economic levels, such as:
  - Some sectors have almost non-existent environmental impacts, and therefore they play an important role in supporting the achievement of sustainable development.
  - Creating job opportunities and generating new incomes, which are necessary for the expansion of the market in the commodity and production sector.
  - Meet basic needs directly, as in the case of education and health care. Making the correct policies needed for fulfilling the effects of investment, both spin-off and spill –over effects in addition to the forward and backward linkages.
- 6- Egyptian legislation has suffered for many years from the lack of a unified legal framework regulating the imposition of taxes on commercial transactions. This is because the major commercial institutions in the world deliberately abandoned some of their branches in order to sell to their customers directly via the Internet, without contributing their fair share in Egypt's tax revenue.
- 7- Legalizing e-commerce conditions and forcing companies working in this field to register their data so that they can display their products or services through e-

- marketing sites helps in integrating the informal economy within the formal economy. This is reflected in the size increase of the country's gross domestic production.
- 8- There is an urgent need to train judges and lawyers to deal with e-commerce issues, whether for the public or private sectors.
  - 9- The multiplicity of authorities responsible for regulating, supervising and controlling the service sectors, the inability to keep pace with technological progress and the development of research fields place an additional burden on the development of this sector.
  - 10- Lack of awareness by individuals and institutions of the time and money that e-commerce provides, with the low confidence of most consumers in cash transactions. The lack of awareness of the security rules on the Internet represent a major obstacle.
  - 11- The lack of convenient online payment methods is the reason for the success of the sites that use cash on delivery.
  - 12- Language and culture problems hinder interaction between customers and websites.
  - 13- Legislative reforms in 2017 allowed private sector companies to import natural gas from anywhere in the world, which helped in attracting foreign investments to the sector.
  - 14- The trade relations between the UAE, Turkey and Iran represents an economic challenge for Egypt.
  - 15- The Gas Market Regulatory Authority had a role in:
    - A- Reducing the gas subsidy bill on the government, as it is no longer obligated to supply gas to producers.
    - B- Attracting new forms of energy market in Egypt.
    - C- Increasing the percentage of investments in the gas sector by 20.3% of the total private investments in 2019, which is one of the highest investing sectors.
  - 16- Egypt owns two gas liquefaction plants, which have supported its competition in the Middle East, and have strengthened its transformation into a regional and global logistical center.
  - 17- Egypt's natural gas reserves are at about 1% of the world's reserves, and 48% of annual production increase.
  - 18- Natural gas is the safest source of energy for the environment, in the light of climate changes.
  - 19- The Market Liberalization Law and the new Gas Law, helped liberalize the market and ensure its competitiveness.
  - 20- The gas-fuel substitution program preserves the environment and reduces carbon emissions, compared to electric cars.
  - 21- The strategic importance of natural gas in power generation is 62% of the total different sources.

- 22-Low spending on scientific research and development is the biggest obstacle in the semiconductor industry.
- 23-Egypt did not adopt a clear vision in the manufacture of technological chips, as Egypt's vision in the electronics industry was limited to final devices without paying attention to manufacturing technological chips.
- 24-The world is facing a major crisis and a cold war between the superpowers over the ownership of semiconductors.
- 25-The existence of constraints on supply chains and logistics services, accompanied by difficulties resulting from efficient transportation hinder the manufacturing capabilities of the electronics sector in Egypt.
- 26-The growth of digital exports in Egypt during 2021 and among the 10 largest growth countries for digital inclusion helps in facilitating digital transformation in the logistics sector.
- 27-Increasing the number of 3,100 professional trainees on the techniques of the Fourth Industrial Revolution in innovation centers and specialized laboratories contribute to the existence of an infrastructure to manufacture the technological chips.
- 28-There is still no clear vision regarding digital transformation in the logistics sector, as most of the technological agreements that Egypt has made with foreign countries and companies focus on the final product and not on its inputs.
- 29-Egypt faces challenges that threaten its economic security at the global, regional and local levels, the most important of which are terrorism, biological attacks, the climate crisis, armed conflicts and the threat of cyber-attacks.
- 30-The digital economy provides a set of pioneering technologies that enhance the stability of the Egyptian economy in the future, the most important of which are artificial intelligence, 5G communication systems and smart energy production.
- 31-The USA targets 35% of global output of leading technologies by 2025.
- 32-Electronic attacks are increasing at a rapid pace and represent a serious threat to global security.
- 33-Egypt faces electronic attacks on sectors, the most important of which are (energy - media broadcasting - communications and information technology - air and sea transport - rapid ambulance - banks and stock exchange - governmental services portals).
- 34-There are shortcomings in the Egyptian cyber-security strategy with regard to overcoming the electronic attacks that target domination and falsifying of awareness and identity, which is one of the most dangerous types of attacks.
- 35-There are no binding requirements for companies to follow cyber-security protocols similar to those followed in other countries such as the United Arab Emirates and United States of America. This requires virus protection programs and specific firewalls that are updated successively according to the latest developments.

## Recommendations

1. Egypt seems to be in dire need of achieving real digital transformation, i.e. moving from traditional and electronic models to digital business models, as electronic business models focus on the use of information technology, i.e., the Internet, while digital models focus on the use of communication technology.
2. It is necessary to conduct empirical surveys on establishments producing goods and especially services.
3. Emerging companies, which appear to be an important way to find high-productivity investment opportunities, are more likely to penetrate foreign markets, and open up to more advanced economies.
4. The necessity of building a business ecosystem based on advanced digital information and communications technology whenever possible and whenever necessary, based on investing in talented youth.
5. There are some technological gaps that must be addressed by developing and implementing strategies to optimize the use of scarce critical resources, such as spectrum and IP address management, including the transition to Internet Protocol Version 6 (IPv6).
6. The development and implementation of digital transformation strategies must be supported at the national and regional levels to create demand and expand digital initiatives.
7. Special attention must be given to women and their role in new transformations, people living in remote areas, people with disabilities, and disadvantaged and marginalized communities, through the creation of a platform for dialogue and social cohesion.
8. The state must also boost its spending on the education sector, the backbone of high-productivity services, which has gradually declined as a percentage of GDP over the past years.
9. Strengthening the powers of the National Telecommunications Regulatory Authority, which is currently affiliated with the Ministry of Communications and Information Technology, by amending Article 3 of the Egypt Telecommunication Regulation Law.
10. More fiber optic cables should be deployed by providing open access to Telecom Egypt's fiber network at cost-based rates.
11. The deployment of mobile phone towers should be facilitated. Policies should allow entry into the telecom tower building market by new private companies that have demonstrated clear financial capabilities.
12. The gas sector still needs investments in infrastructure, in order to ensure the continuation of the efficiency of Egyptian competition in the global market.

13. It is necessary to develop the logistics sector in Egypt and support the digital transformation of logistics services, to ensure sovereignty territorial.
14. Working on developing the logistical areas in the Suez Canal region in order to create a competitive advantage that stands in the way of the challenge of the trade relation between Turkey and the UAE.
15. Benefiting from the gas sector in value-added industries that increase the return achieved from the use of natural gas, such as the petrochemical and fertilizer industries.
16. Linking the learning process of software and electronic engineering to the semiconductor industry, in order to build qualified human resources for the industry.
17. The necessity of linking Egypt's electronic vision to the semiconductor industry.
18. Working to raise the percentage of spending on scientific research and development in line with the global percentage, which ranges from (2%-4%) of the volume of GDP.
19. Cooperation between universities, institutes, and research centers with industry leaders and the private sector in developing educational programs and curricula for programming and design for the semiconductor industry.
20. It is possible to benefit from the Emirati experience by investing in companies that contribute to the semiconductor industry through the development of sovereign investment plans aimed at scientific research and development in semiconductors and technologies related to digital programming.
21. Correcting the course of foreign relations with the great powers to be based on partnership and mutual benefit by strengthening Egypt's strategic relations with America through the Arab-American National Dialogue, with China through the Belt and Road Initiative, and with European countries, especially France and Germany, through the Global Gateway initiative to transfer pioneering technologies to Egypt.
22. The necessity for the National Media Authority to assume the responsibility of supervising and coordinating between all parties for a distinguished and advanced production that preserves the identity and traditions of the state, through partnership contracts with the private sector.
23. The need for media centers in ministries and government agencies, according to their competence, to respond to rumors of all kinds as soon as they are published in order to waste the opportunity for hostile parties to spread false information.
24. Focusing on expanding the establishment of new universities and working on attracting universities of international repute to establish branches in Egypt, with a focus on linking to the labor market.
25. The Supreme Council for Cyber Security must identify research topics to be worked on in the areas of artificial intelligence, firewalls, and anti-virus. It also has to follow



up and supervise their experience and the extent to which they achieve the required goals.

26. The Supreme Council for Cyber Security must prepare a draft law that obliges companies and private sector institutions to fulfill the requirements of cyber security

27. Training computer users, especially those dealing with the Internet, networks and databases, on information security systems through data and Internet security courses that enable them to secure their daily transactions and discover any electronic attacks.

## **Policy Impacts**

The study showed that the efforts made to transform the Egyptian economy into a digital economy, and the contribution of the communications and information technology sector to the development of the trade and service industry, were not at the desired level.

The sector's contribution to the trade and service industry depends on the development and implementation of strategies at the local, regional and global levels. The failure to develop the currently applied policies would affect the strength of the performance of the communications and information technology sector and its role in economic and social development in Egypt. It deprives them from benefiting from the desired fruits of the communications and information revolution.

Therefore, it is necessary to develop the applied policies and move towards policies based on a holistic approach that focuses on the human being and takes into account the local context and cross-cutting issues related to all stages of policy design and implementation, as well as the periodic review of all legislation related to e-commerce, given the rapid changes in the e-commerce environment and practices that appear in an accelerated manner, in order to absorb these practices and put them in their proper legal framework.

These policies and legislation must be accompanied by investment and financial policies aimed at financing the state for investments in the infrastructure of the sector and allowing the private sector to participate as well. Thus, there will be a rise in the quality and coverage of the telecommunications infrastructure in Egypt, which is an obstacle to the development of high productivity services locally. Also, it is necessary to formulate public policies that support the market, directed at stimulating high-tech service sectors, especially the information and communications sector. This happens through packages similar to what has been taken with international experiences, such as tax exemptions, grants, funding for research and development activities, and assistance in establishing start-up companies.

In addition, there is an urgent need to pay attention to privacy and cyber-security issues, and make efforts to confront the challenges and risks of electronic attacks. This is done by raising awareness among users by enforcing artificial intelligence applications that provide

the transition from interactive awareness to proactive awareness - such as Security Operations Center (SOC) applications that prevent attacks before they occur. Moreover, arranging the necessary funding to provide the latest systems, software, equipment and devices required to improve the technical measures index; conclude partnerships and agreements, and attend forums and conferences to see the latest developments in the world in the fields of cyber-security and its application in Egypt.

In the end, we should emphasize that for Egypt, it is not just a strategy to invest in emerging industries, but an implementation plan that can be monitored and accounted for, especially since the matter does not lack political support from the highest leadership level in the country. Therefore, the role of emerging companies may be the most important in the coming period, especially by focusing on providing these companies with the results of "R&D" and the outputs of the business of "centers of excellence".