

and creating a virtual community that simulate class rooms. While, the Egyptian Knowledge Bank provides -in addition to the higher and pre-university education- a community for researchers and university students that including several scientific resources such as; universal journals and books.

Furthermore, within the public-private partnership role in supporting the overall education reform efforts in Egypt, the World Economic Forum's IT members community launched the Egyptian Education Initiative (EEI) in cooperation with the Egyptian government. This project is an inclusive model as it is centered around four key work tracks; namely, Higher Education, Pre-university Education, ICT Industry Development and Lifelong Learning as well as, brings parents, students, teachers, community leaders, business, international organizations and government together.

All of these projects enhance the e-education process as they provide virtual classes and labs, thinking in 3D, drama based learning and interactive e-book ^[48].

Moreover, concerning to training process, there are many programs and initiatives are launching by MCIT in collaboration with other Ministries in this purpose. These programs are provided to citizens to raise Egyptian calibers' competitiveness and improve their skills and knowledge, thereby empowering youth to overcome workforce shortages, find job opportunities and meet the labor market demands locally and internationally, in addition to achieve gender equality ^[42, 54, 55]. These programs are as follows:

- **Gender equality:**

Various programs are launched by both MCIT and the private sector - Google and Microsoft - to support, qualify and empower Egyptian women using the various tools of ICT in all life aspects to bridge the growing gap between the workforce and the required skills in the labor market. Such as; Qodwa-Tech initiative, Maharat training program, Hack4Girls initiative and Aspire Woman that has since reached almost 60,000 young Egyptian women and provided economic opportunities for over 2,000 women through job placement opportunities, freelance work and micro-entrepreneurship ^[42, 54].

- **Decent work and economic growth:**

MCIT launched several training programs in collaboration with ITIDA, Information Technology

Institute (ITI), Palo Alto and other partners to build on human capacity, qualify youth on the future skills and jobs and , create a wide range of job opportunities for young Egyptians. These training programs are provided through several platforms including ^[54]: Future work is digital, Freelancing and Remote Work Initiative, Next Technology Leader (NTL), Mahara-Tech, Wazeefa-Tech, African App Launchpad

In addition, there are six technology innovation clusters inside a number of regional universities including, Mansoura, Aswan, Sohag, Minya, Menoufia and South Valley. Each cluster contains specialized technology labs in electronic design, software, business incubators, integrated systems and shared workspaces for startups. As well as, halls for specialized training in various fields, such as, artificial intelligence (AI), data security, and data science.

- **3.1.2. FinTech:**

Financial technology (FinTech) plays an essential role in achieving digital economy ^[42]. Digital financial services are faster, cheaper, and more efficient than the traditional financial services, as well as, they are associated with the higher GDP growth ^[56]. Consequently, Egypt's government seeks to extend the use of financial technology (fintech) to facilitate the services obtaining process as it lead to ^[57]:

1. Promote and achieve the financial inclusion and thus, the inclusive growth through reaching small- and medium-sized enterprises (SMEs) and the lower-income households.
2. Improve the financial services' convenience, speed and efficiency.
3. Provide affordable financial services for unbanked populations and underserved small and medium enterprises (SMEs).
4. Reduce corruption and enhance the transparency and efficiency of government operations that facilitate humanitarian and social transfers.
5. Reduce costs and delays in the cross-border remittances.
6. Provide solutions for many challenges such as; corruption, unbanked people, informal transfers and large remittance markets, undiversified economies, vulnerabilities to terrorism, large income disparities and large displaced populations.

7. Enable existing banks to develop new business models.
8. Enable non-financial corporations such as; e-commerce companies (Amazon, Apple, Alibaba), large retail networks, mobile network operators (MNOs) and mobile transfer companies (MTOs) to offer digital financial services, such as; online payment and online lending solutions

Therefore, in the last two years, several government and startups initiatives, as well as, applications for different financial transactions were launched to solve different financial challenges that face businesses and individuals in Egypt ^[58].

Furthermore, startups play an important role in this field as they target the low-income segments as their primary customers and provide several applications for payment and different lending modes such as; Kashat, ValU and Qasatly, Raseedi, Capiter, and Creditgo. Additionally, they transform the HR and payroll space through several platforms that provide lending options and payment systems for employees such as; Dopay, Paynas, NowPay. and Khazna ^[59].

According to CBE, number of banks that offer online banking services has increased in 2018 to reach 32 banks out of 38 banks ^[60]. As well as, the number of fintech tools has witnessed a great leap between 2016 and 2019 as shown in table 3: ^[61]

Table 3. Number of fintech tools

Fintech Tools	2019	2016
No. of Debit Cards	17,323,753	12,082,513
No. of Prepaid Cards	16,266,169	8,648,033
No. of Credit Cards	3,375,117	3,859,554
No. of ATM machines	13,331	9,832
No. of POS	88,380	62,764

Source: CBE, 2019

In addition, CBE has given a priority to payment solutions including ATMs, online banking services, POS, and mobile banking services such as mobile

wallets which witnessed a growth rate of 32% by 2018 as its subscribers reached 11 million with more than 2 million transactions monthly ^[60].

MCIT seeks to offer a new set of training, workshops and camps, in all financial value chain aspects, to empower the potentials of entrepreneurs and banking human resources in this field. Therefore, ITI started several programs in cooperation with Egyptian Banking Institute (EBI) including “Computer Networks Administration and Security” to qualify the banking sector staff in the latest technologies in that field such as Artificial intelligence (AI), Data Analysis, Information Security, Data Science and Data Visualization. These programs targeting the graduates of ICT specializations faculties. As well as, collaborate in holding specialized competition and conferences to exchange knowledge and innovation experiences ^[62].

3.1.3. Health:

MCIT is collaborating with the Ministry of Health to advance the sector by automating procedures, building capacities for both administrative and medical staff, and creating developed networks to improve and transfer communication, data collection. In addition to bridging the health gap in remote areas as it contributes to deliver better healthcare to remote regions, raises physicians' expertise and knowledge, harnesses ICT infrastructure in medical services provision, creates multi-partnership business model and spreads e-Health culture. Hence, the health sector adopting an integrated approach targeting the whole community, that is, Tele awareness for community, Telemedicine for patients and Tele education for doctors. Several digital projects is implementing in the health sector with the aim of ensuring the citizens' accessibility to the healthcare services, improving its scope, scale and quality, saving the patients' time and money and the financial sustainability for health coverage services. These projects including Universal Health Insurance program, National Network for Public Health Treatment, Clinical Laboratory Information Systems project and many Mobile Applications in Health that help in spreading health awareness by sending patients short messages, as well as, controlling and reducing the non-communicable diseases spread, such as, hepatitis, blood pressure, diabetes and so on ^[42, 55].

3.1.4. Energy:

Egypt has an abundance of renewable energy resources; (hydro, wind, solar and biomass) with high deployment potential ^[63]. The Ministry of Electricity and Renewable Energy has adopted a new plan in collaboration with some Chinese companies to develop a smart energy grid based on innovative solutions in the fields of communications and information technology that lead to build a flexible, strong and safe electricity grid. In addition to, several hydropower stations, which are under construction from 2015 across Egypt. As well as, the ministry adopted, upon the National Council for Payments recommendation, a unified digital system to collect electricity bills, and digitalize all public services. Consequently, it has automated about 415 payment collection centers, which are affiliated to the Egyptian Electricity Holding Company (EEHC). In addition, the electricity bills payment will be available in all banking outlets, whether ATMs, branches and Internet banking.

Furthermore, the Egyptian Electricity Transmission Company (EETC) made a contract with Siemens company to supply the Egyptian market with the first digital power transformer. As well as, new reform policies are implemented by the electricity sector to launch the digital transformation process of energy, increase energy efficiency, and achieve sustainability and security of electricity. These policies pave the way for the private sector to invest in the fields of smart networks and renewable energy, and enhance the governance and transparency of the sector. For example, KarmSolar is a solar integration and technology company that benefits from the Egypt's abundance of solar power. It delivers innovative solutions to various sectors including tourism, business, agricultural and industrial sectors ^[7, 64].

3.1.5. Industry, Innovation and Infrastructure:

Egypt has made significant progress in infrastructure in many fields, including roads, bridges, ports, and renewable energy, among many others. Drinking water and wastewater projects are also being increased, to cater to the population increase ^[7].

ICT infrastructure is a key factor that promote economic activity in each sector across the nation, therefore, MCIT seeks to foster a cutting-edge infrastructure that meet the growing needs of the individuals, business and government in the fast pace

global communications era. As well as, MCIT continues to promote the new and cutting-edge technologies that assist the overall socioeconomic development and endeavor to improve and upgrade its telecommunications infrastructure as traffic grows, technology evolves, and usage changes and increases ^[42].

Furthermore, digital transformation has a strong impact on the Egyptian industry sector, by implementing the suitable digital technologies to improve and transform business processes, thereby, enhancing the companies' overall performance and increasing their competitiveness by creating new business models, digital services, products and solutions; achieving additional revenue and accomplishing the real-time quality control. Also, the existence of technological systems and data enable companies to better know their production distribution, clients, consumption, solutions and determine its target clients and markets.

In this context, the Egyptian ministry of trade and industry started to digitalize the industry sector, three years ago. It has Launched the "Digital Transformation and Technology Support Program Action Plan 2019-2020" through the Industrial Modernization Centre (IMC), to develop fintech and digital transformation in companies. In addition to, "Egypt Exports through Product Innovation (EEPI)" project that is implemented by The Engineering Export Council of Egypt (EEC) and funded by the European Union ^[64, 65].

3.1.6. Peace, justice and strong institutions

Both E-government and big data highlight the five key dimension of Peace, justice and strong institutions (SDG 16); inclusion, effectiveness, openness, accountability and trustworthiness^[2].

Therefore, MCIT tends to launch several projects to automate the legislative entities services involved in the system, with the aim of developing an integrated system to facilitate procedures, improve and accelerate services for citizens, ensure justice and speed up the implementation of judgments. These projects including Citizen Security and Law Enforcement, Prompt Justice Initiative, Law Enforcement, Developing Notarization offices, Developing Supreme Constitutional Court, Africa Constitutional Court Digital Portal, Achieving Personal Status Documents, Administrative Prosecution Authority Lawsuits Electronic

Management, Automation of Legal Departments at Ministry of Justice, Automation of Family Courts [42].

3.1.7. Responsible consumption and production:

Many new technologies have the potential to mitigate trade-offs between the production and environment [1]. The Enhancing productivity initiative, which is implemented by using cloud-computing technologies, provides brilliant and cost-effective services and release financial burden for the maintenance and operation of data centers, as well as reducing the need for specialized human resources. Since the launch of the project a number of services were provided to more than 125 government entities including the provision of 18,250 e-mails and 1500 accounts of the internet portal. This is in addition to providing 600 accounts in the system of unified communication, which facilitate video conferencing services [42].

3.1.8. Clean water:

Egyptian Government has made significant achievements in transforming the traditional techniques of monitoring water pollution on the Nile to the most advanced technological solutions. Whereas, until now Twenty-one stations was installed to monitor both the quality of direct industrial wastewater that is released into the Nile River and the quality of the Nile River itself. The monitoring stations' number is expected to reach 95 by 2030 [7].

4. Discussion and Conclusion:

Digital transformation is undoubtedly affecting the overall society, rendering new technologies more accessible, knowledgeable, agile and competitive, and help in making the better decision, so it plays a role as a catalyst for development and achieving the sustainable development goals (SDGs). As it helps in using resources effectively, decreasing costs, saving time, and so on. Therefore, Egypt is utilizing ICT for achieving sustainable development. As well as, the public- private partnership (PPP), plays a main role in achieving SDGs as it considered the most important actor in implementing the digital projects and initiatives for development.

Therefore, Egypt's government has created partnerships with different entities; whether government or private sector for launching digital initiatives and projects to enhance the social, economic, and environment sectors. These initiatives

are to develop human resources by providing them with the required digital skillsets and creating jobs opportunities, as human resources are the main actor in all sectors and have the main responsibility of the business success. In addition, these initiatives cover all sectors such as; education, health, energy, business, legislative, infrastructures, among others. As well as, the advancing in each sector can cause advancement in other sectors.

However, all the Egypt's achievements in digital transformation field, Egypt is still in the early stages and has lower levels of investments of ICT that focused SDGs. As well as, the internet speed and using rate is still lower than the global rate.

5. Recommendations:

- Egypt's government have to give more attention to the ICT industry, innovation, research and development.
- Egypt's government must improve the digital infrastructure and infostructure to enhance the internet speed.
- The Internet illiteracy need more attention in an effort to increase the internet users rate and enhance the digital awareness
- Providing data bases for all sectors that helping them in the development strategy.
- Activating the use of information technology and artificial intelligence in all sectors, to utilize them in data analyses and decrease costs.
- Encouraging investments in information technology sector particularly in the SDGs related-areas

Limitations and Future Research

Recommendation:

This research is limited on Egypt country in order to presents a comprehensive narrative of the Egypt's achievements towards SDG through digital transformation, so any other country can utilize from Egypt's experience in SDG. This paper collect data from various sources including researches, reports, and websites, and focused on determine the role of information technology in achieving SDG in various studies.

Future studies could examine the challenges and opportunities that encounter the implementation of information technology in such study. Also the future studies could examine the successful elements of information technology.

References:

- [1] United Nations, *Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development*. **2019**, Independent Group of Scientists appointed by the Secretary-General, United Nations, New York.
- [2] S. ElMassaha, M. Mohieldin, *Digital transformation and localizing the Sustainable Development Goals (SDGs)*. *Ecological Economics*. **2020**, 169, 1:10.
- [3] Teri - The energy and resources institute, *Digital transformation for SDGs*. November 6-8, **2019**, New Delhi
- [4] UNFPA Egypt, CAPMAS, M. M. Khashaba, *Data Ecosystem Report to Enhance Sustainable Development in Egypt*. **2018**, <https://egypt.unfpa.org/en/publications/data-ecosystem-report-enhance-sustainable-development-egypt>
- [5] UNCTAD, *Issues paper on harnessing rapid technological change for inclusive and sustainable development*. **2019**, Geneva, Switzerland
- [6] N. A. Siddiquee, *E-government and transformation of service ^{delivery} in developing countries: The Bangladesh experience and lessons*. *Transforming Government: People, Process and Policy*. **2016**, 10(3), 368-390.
- [7] Ministry of Planning, Monitoring, and Administrative Reform, *Egypt's voluntary national review 2018*. **2018**
- [8] S. Bondar, J. C. Hsu, A. Pfouga, J. Stjepandi, *Agile digital transformation of System-of-Systems architecture models using Zachman framework*. *Journal of Industrial Information Integration*. **2017**, 7, 33–43
- [9] S. J. Berman, *Digital transformation: Opportunities to create new business models*. *Strategy & Leadership*. **2012**, 40(2), 16–24. doi:10.1108/10878571211209314.
- [10] European Commission, *Powering European public sector innovation: Towards a new architecture*, <https://ec.europa.eu/digital-single-market/en/news/powering-european-public-sector-innovation-towards-new-architecture>, accessed: September, **2020**.
- [11] i-SCOOP.eu, *Digital Transformation: Online Guide to Digital Business Transformation*. <https://www.i-scoop.eu/digitaltransformation/>, accessed: September: **2020**
- [12] TWI2050 - The World in 2050, *The Digital Revolution and Sustainable Development: Opportunities and Challenges*. Report prepared by The World in 2050 initiative. International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria. **2019**. www.twi2050.org International Institute for Applied Systems Analysis
- [13] I. Mergel, N. Edelmann, N. Haug, *Defining digital transformation: Results from expert interviews*. *Government Information Quarterly*, **2019**, <https://doi.org/10.1016/j.giq.2019.06.002>
- [14] J. D. Sachs, G. Schmidt-Traub, M. Mazzucato, D. Messner, N. Nakicenovic, J. Rockstrom, *Six Transformations to achieve the Sustainable Development Goals*. *Nature Sustainability*. **2019**, 2, 805-814.
- [15] DiPLo, *Mapping the challenges and opportunities of artificial intelligence for the conduct of diplomacy*. **2019**, Geneva, Switzerland: Diplo Foundation.
- [16] C. Villani, *For a Meaningful Artificial Intelligence. Towards a French and European Strategy*. **2018**. Paris, France.
- [17] P. Domingos *The Master Algorithm*. **2015**, New York: Basic Books.
- [18] M. Craglia, A. Annoni, P. Benczur, P. Bertoldi, P. Delipetrev, G. De Prato, L. Vesnic, *Artificial Intelligence: A European Perspective* (EUR 29425 EN). **2018**, Luxembourg: Publications Office of the European Union.
- [19] United Nations Conference on Trade and Development (UNCTAD), *Technology and Innovation Report 2018: Harnessing Frontier Technologies for Sustainable Development*. **2018**.
- [20] WBGU- German Advisory Council on Global Change, *Digitalization: What we need to talk about*. **2018**, Berlin: WBGU.
- [21] WCED - World Commission on Environment and Development, *Our Common Future*. 1987, Oxford University Press, Oxford.
- [22] N.A. Awad, M.A. Elnady, *The impact of Artificial intelligence and big data on sustainable development*. *Journal Management System (JCES)*. **2020**, 11(1), 376-400.

- [23] M. Adamczyk, A. Betlej, J. Gondek, A. Ohotina, Technology and sustainable development: towards the future?, *Entrepreneurship and Sustainability Issues*. **2019**, 6(4), 2003-2016. doi:10.9770/jesi.2019.6.4(32).
- [24] B.S. Silvestre, D.M. Tırca, *Innovations for sustainable development: Moving toward a sustainable future*. *Journal of Cleaner Production*. **2019**, 208, 325-332
- [25] R. Heeks, M. Amalia, R. Kintu, N. Shah, *Inclusive innovation: Definition, conceptualisation and future research priorities*. *IDPM Development Informatics Working Papers*. Manchester Centre for Development Informatics, Institute for Development Policy and Management, SEED. **2013**
- [26] United Nations Conference on Trade and Development (UNCTAD). *World Investment Report 2014. Investing in the SDGs: An Action Plan*. **2014**, Geneva.
- [27] Ministry of Planning, Monitoring and Administrative Reform, *Sustainable Development Strategy: Egypt's Vision 2030*. **2016**, Cairo, Egypt.
- [28] WBGU - German Advisory Council on Global Change. *Towards our Common Digital Future*. Flagship Report. **2019**, Berlin: WBGU.
- [29] Huawei, *ICT Sustainable Development Goals Benchmark*. **2019**.
- [30] International Telecommunication Union (ITU), ITU's approach to using ICTs to achieve the United Nations Sustainable Development Goals <https://news.itu.int/icts-united-nations-sustainable-development-goals/>. accessed : June, **2020**.
- [31] V. Gaspar, D. Amaglobeli, M. Garcia-Escribano, D. Prady, M. Soto, *Fiscal policy and development: human, social, and physical investments for the SDGs*. *Staff Discussion Notes*. Washington, D.C., *International Monetary Fund*. **2019**.
- [32] L.V. Hove, A. Dubus, *M-PESA and Financial Inclusion in Kenya: Of Paying Comes Saving?*. *Sustainability*. **2019**, 11(3), 1-27.
- [33] E. Mohamed, M. Abu-hashim, M. AbdelRahman, B. Schütt, R. Lasaponara, *Evaluating the Effects of Human Activity over the Last Decades on the Soil Organic Carbon Pool Using Satellite Imagery and GIS Techniques in the Nile Delta Area, Egypt*. *Sustainability*, **2019**. 11(9), 1-16.
- [34] R. K. Kumar, *Technology and healthcare costs*. *Annals of Pediatric Cardiology*. **2011**, 4(1), 84:86.
- [35] M. Hoek, *The Trillion Dollar Shift*. **2018**, London: Routledge.
- [36] E. Elgohary, *The Impact of the Emerging Coronavirus on the IT Industry in Egypt: Opportunities and Threats*. *Policy Paper Series, Industrial planning and development center, Institute of national planning*. **2020**, 12
- [37] Organization for Economic Cooperation and Development (OECD), *Innovation Policies for Inclusive Growth*. *OECD Publishing*. **2015**, Paris.
DOI:<https://dx.doi.org/10.1787/9789264229488-en>
- [38] S. Helbing, *Suggestions for the conception of barrier-free disaster prevention in Germany*. *The Centre for Culture and Visual Communication of the Deaf in Berlin/Brandenburg*. **2016**.
- [39] I. Gehrke, A. Geiser, A. Somborn-Schulz. *Innovations in Nanotechnology for Water Treatment*. *Nanotechnology, Science and Applications*. 2015, 8(1), 1-17.
- [40] United Nations Conference on Trade and Development (UNCTAD). *Information Economy Report 2017: Digitalization, Trade and Development*. **2017**.
- [41] International Telecommunications Union (ITU). *Measuring the Information Society Report: Volume 1*. ITU Publications. **2018**.
- [42] Ministry of Communication and Information Technology (MCIT). *MCIT Year Book, 2019*. **(2019a)**.
- [43] Ministry of Communication and Information Technology (MCIT). *Egypt's ICT 2030 Strategy*. http://www.mcit.gov.eg/ict_strategy. accessed: August, **2020**
- [44] N. Rizk, S. Kamel, *ICT and building a knowledge society in Egypt*. *International Journal of Knowledge Management*. **2013**. 9(1), 1–20. doi:10.4018/jkm.2013010101

- [45] Daily News, Egypt starts digitalisation of energy grid: Electricity minister. <https://www.dailynewssegypt.com/2019/09/09/egypt-starts-digitalisation-of-energy-grid-electricity-minister/>. accessed: August, **2020**
- [46] Internet World Stats. Internet Users Statistics for Africa 2020. <https://www.internetworldstats.com/stats1.htm>. accessed: August, **2020**
- [47] Ministry of Communication and Information Technology (MCIT). *ICT Indicators in Brief February 2020 Monthly Issue. (2020a)*.
- [48] Ministry of Communication and Information Technology (MCIT). Education Development Using ICT. http://www.mcit.gov.eg/Project_Updates/2/Digital_Government/ICT_For_Learning. accessed: August, **2020**
- [49] E. Elgohary, *Ways to Develop Software and Services Outsourcing Industry in Egypt as Part of Egypt' Strategy: 2030. Institute of national planning. 2018*, 1660
- [50] A. Hussein, E. Environ, *Sustainable Development approaches in Egypt. IOP Conference Series: Earth and Environmental Science. 2019*, 297(1) 1:12
- [51] N. El-Megharbel, *Sustainable development strategy: Egypt's vision 2030 and planning reform. Unpublished dissertation Integrated Approaches to Sustainable Development Planning and Implementation: New York. May, 2015*
- [52] Ministry of Communications and Information Technology (MCIT). ICT Indicators in Brief December Issue. <http://www.mcit.gov.eg/Publications>. accessed: August, **2020**
- [53] S. Kamel, N. Rizk, *The Role of Innovative and Digital Technologies in Transforming Egypt Into a Knowledge-Based Economy. In book: Handbook of Research on the Evolution of IT and the Rise of E-Society, Publisher: IGI Global, pp.386-400. 2019*
- [54] Ministry of Communication and Information Technology (MCIT). *Report on MCIT Initiatives for Building Egyptian Citizen and Achieving Digital. 2020b*
- [55] H. Dahroug, *Digital transformation role in realizing the sustainable development in Egypt, CSTD Inter-Sessional Panel Meeting The impact of rapid technological change on sustainable development, Vienna , 15-19 January, 2019.*
- [56] R. Sahay, U.E. Allmen, A. Lahreche, P. Khera, S. Ogawa, M. Bazarbash, K. Beaton, *The promise of fintech : financial inclusion in the post COVID-19 era. International Monetary Fund. 2020*
- [57] E. Elgohary, *The Impact of Financial Technology on Facilitating E-Government Services: An Empirical Study on Egypt. Journal of Distribution Science. 2019.* 17(5), 51-59
- [58] Menabytes. Egyptian Fintech Landscape in 2020: A quick guide. <https://www.menabytes.com/egypt-fintech-landscape-2020/>. accessed: Jun, **2020**.
- [59] F. Ghebrial, *Financial inclusion in egypt: challenges and opportunities.* (Unpublished Thesis) in Public Administration. School of Global Affairs and Public Policy, The American University, Cairo. Spring, **2019**.
- [60] Central Bank of Egypt, Financial stability report 2018, <https://www.cbe.org.eg/en/Pages/HighlightsPages/Financial-Stability-Report-2018.aspx>. Accessed: Jun, **2020**.
- [61] Central Bank of Egypt, Number of Debit-Credit Cards and ATM POS Machines, Banking supervision sector -Off-site Supervision, <https://www.cbe.org.eg/en/BankingSupervision/Pages/Reports.aspx>. accessed: August, **2020**
- [62] ITI. EBI-ITI FinTech School. <http://fintech.iti.gov.eg/>. accessed: August, **2020**.
- [63] IRENA, *Renewable Energy Outlook: Egypt*, International Renewable Energy Agency, Abu Dhabi. **2018**.
- [64] Daily News, Egypt eyes digitalisation of industry, but faces challenges. <file:///E:/Researches/Digital%20transformation/Sustainable%20development/Egypt%20eyes%20digitalisation%20of%20industry,%20but%20faces%20challenges%20-%20Daily%20News%20Egypt.html>. accessed: Jun, **2020**

- [65] RSM, How Digital Transformation is Affecting Businesses in Egypt. <https://www.rsm.global/egypt/insights/rsm-egypt-blog/how-digital-transformation-affecting-businesses-egypt>. accessed: Jun, **2020**