



## Industry 4.0 in Egypt: Enhancing the Readiness for the Adoption of Industry 4.0

JUNE 8, 2021- 10:00 – 16:30 (Cairo Time)

Registration link: [https://us02web.zoom.us/webinar/register/WN\\_0KhGJ\\_P\\_RVK7YNmBMRthNQ](https://us02web.zoom.us/webinar/register/WN_0KhGJ_P_RVK7YNmBMRthNQ)

The accelerated and rapid development of digital technologies coupled with the technological progress in fields such as bio- and nanotechnology and robotics has resulted in the emergence of Industry 4.0 (I4.0). It describes a technologically driven paradigm shift that will affect all spheres of life. I4.0 promises to have a profound positive impact on economic performance, with great prospects for enhanced resource efficiency and environment. With strong support from the government and the international community, Egypt's dynamic private sector is gearing up to the adoption of I4.0 technologies.

At the macro level, we may expect to see faster GDP growth, structural transformation and enhanced productivity. Moreover, the labour market will be affected, sectoral division of labour will change, and the distribution of national income will be altered. Environmental gains should be expected, as production increasingly takes place with more efficient use of resources and less waste. Current production systems and global value chains are becoming more dynamic, flexible, efficient and sustainable, with high possibilities for customization and personalization.

At the micro level, the adoption of I4.0 technologies may have severe implications, if firms begin to introduce job-replacing (e.g., robots) and job-complementing technologies (e.g., cobots); large factories without or with very few workers is already a realization. While the net impact on the economic performance is expected to be positive, as well as that on the environment, the impact on the social side remains unclear. Industrial policies need to be designed with all these aspects in mind.

In Egypt, the vast majority of firms are still transitioning, or still need to transition, from Industry 2.0 to Industry 3.0, and few firms appear to be ready to adopt I4.0 technologies. Not only firms need to prepare for I4.0. Embarking on a journey of I4.0 also requires that *all* actors of the ecosystem—for example, government, academia, private sector and civil society—start preparing for their respective roles in the new economy. For example, government has a role in ensuring an adequate digital infrastructure and a stable supply of electricity, since investment in digital management systems without these preconditions seems hazardous. Moreover, academia may need to adjust the educations they offer, possibly with a stronger emphasis on STEM. The private sector may need to look into the skill set of their workforce and look for ways to adapt it to the new technological realities implied by I4.0. To be sure, as in all countries, the shift to I4.0 in Egypt will be abound with challenges—some of which are country-specific—and policymakers have a crucial role to play in steering the ship through the treacherous waters of I4.0.



The fact that I4.0 comes with both opportunities and challenges gives rise to important policy trade-offs and calls for careful policy sequencing and priority-setting. Importantly, the trick [for policymakers] will be to ensure that I4.0 brings about ample economic, environmental and social gains for Egypt and safeguard that these gains are equitably allocated throughout society. It is not a minor task and amounts to a balancing act where handling of delicate trade-offs will take the centerpiece. Preparing for the Fourth Industrial Revolution in Egypt very much involves deliberating on these issues now, not tomorrow, as economic forces will soon take on their own dynamics. Crucially, embarking on the journey of I4.0 requires that all actors of the ecosystem start preparing for their respective roles in the new economy.

In this context, the United Nations Industrial Development Organization (UNIDO) is organizing an Expert Group Meeting entitled **“Industry 4.0 in Egypt: enhancing the readiness for the adoption of Industry 4.0”**. The event consists of 1 Plenary Session and 2 Panel Sessions:

#### **Plenary Session: Opportunities and Challenges of Industry 4.0: is Egypt ready?**

- An introduction to I4.0: economic, environmental and social implications.
- Debate: how well prepared is Egypt for the adoption of I4.0 technologies?
- Policy discussion: what should be Government’s policy prioritization to support the transition to I4.0?

The session, moderated by Dr. Anders Isaksson and Ahmed Rezk, UNIDO, starts with a presentation by Dr. Raymond Tavares, who will set the scene for the subsequent panel discussion.

In the afternoon, there will be a sector-focused discussion on Industry 4.0 in Egypt. To this end, we have singled out two sectors that are important for Egypt’s exports and productivity, namely, agroindustry and textiles. Each session will be 1 hour long and will be moderated by the respective theme leaders. Thereafter, we will convene to discuss the learnings from the two discussions, which we will do with short, succinct presentations by each theme leader and thereafter in an organized Q&A format to give the audience a chance to interact. The concluding session will be moderated by Dr. Anders Isaksson and Ahmed Rezk, UNIDO.

#### **Panel sessions: Mainstreaming Industry 4.0 in Egypt.**

Two panel sessions are organized to discuss how Egypt could mainstream I4.0 in Agroindustry and Textiles. Each of them is expected to last about one hour.

#### **Session 1. Agroindustry**

The panel discussion will be led by Dr. Frank Hartwich, who will start by introducing the topic with a short presentation.



Session 1 discusses industry 4.0 applications in the area of agriculture/agroindustry. In a keynote presentation, Frank Hartwich from UNIDO Policy Research and Statistics Department will highlight general trends in the use of agroindustry 4.0 worldwide and how they can be SDG-relevant, provide a synopsis of agroindustry 4.0 applications available, and see examples of its use in Egypt. He will then discuss potentials for accelerating application of agroindustry 4.0 technologies in Egypt in the more modern segment of the sector, as well as in the “traditional” strata of the sector.

A panel discussion will then ensue to deepen the understanding of the need and the potential for agroindustry 4.0 application in Egypt. The panelists will discuss the potentials and limitations of Agroindustry 4.0 applications against a background of concrete examples. One of the panelists will represent the private sector in food industry, while another one should represent an agribusiness company. A third panelist will represent the public sector role. Panelists will be given the floor to present, in their opening statements, concrete cases of agroindustry 4.0 application in Egypt.

Question round 1: What are major constraints to agroindustry 4.0 technology application in Egypt?

Question round 2: How can agroindustry 4.0 technology application be accelerated in Egypt? What can the private sector do? What policies should Government design?

## **Session 2. Textiles Sector**

Session 2 is concerned with the Egyptian textile sector seen through two lenses: first, the opportunities and challenges implied by the emergence of I4.0 and, secondly, the recovery from the COVID-19 pandemic. In particular, Session 2 discusses what textiles industry 4.0 technologies that could help Egypt increase productivity, resource efficiency and environmental sustainability in the sector

The textile sector is characterized by oversupply, trends in sustainability, and digitization/I4.0. These trends will continue to change customer behavior and disrupt traditional business models. On top of that, the sector has been severely affected by the COVID-19 pandemic, which has exposed a shocking lack of resilience across global supply chains and has also made brands realize their dependence on components besides exposing their inability to identify inventories of urgently needed emergency goods.

The textile and apparel industry had to deal with a tough 2020 and 2021 has so far not been much easier, as the sector continues to deal with the repercussions of the COVID-19 crisis on the global apparel supply chain. Many brands and retailers are fighting for survival while suppliers in sourcing countries are fighting for theirs—with potentially devastating consequences for millions of workers. While the immediate priority is to navigate through this crisis with as few losses as



possible, textile manufacturers and brands alike should not lose sight of the imperative to reshape sourcing practices for the long term to adapt to the new normal.

Companies that have been slow to embark on a transformation journey may now have little choice but to embrace the changes needed to succeed in the next normal, beyond COVID-19. Innovation brought about by Industry 4.0 such as the digitalization of manufacturing processes, the optimization of production efficiency, and the employment of intelligent interconnected systems, as well as the emergence of new business models could have a tremendous future potential. That potential lies in evolving the industry's entire approach starting from the use of IoT-based data platforms for process optimization. Data is now the new raw material. The added value coming from collected data can take the form of machine monitoring and predictive maintenance to ensure the optimization of critical parameters and the possibility to make intelligent and informed business decisions based on constantly updated information. Data analysis allows companies to increase their flexibility and customization offering and reach higher levels of efficiency.

Conceived in this way, digitization can help foster new business models for sourcing – something urgently needed in the apparel industry as it moves from a focus on supply to a focus on consumers. Companies need to adopt an end-to-end perspective and foster collaboration across functions and through strategic partnerships with suppliers. Greater agility and flexibility are critical in the manufacturing processes to achieve small batch sizes to match more and more personalized requests from brands. This is only possible with digitized supply chains and reliable robotic technologies if companies are to give savvy customers what they want, when they want it, where they want it, and at the right quality.

The session will be introduced by a short presentation from Sara Berlese, Programme officer of UNIDO regional Hub in Cairo, highlighting the main trends related to I4.0 in the textile sector.

The panelists will then give examples of applications of I4.0 in their respective areas of competence, from the academic perspective, to the technology manufacturer all the way up to brand.

The panel discussion will give the audience a broad overview of the potential and opportunities behind the application of I4.0 in the textile sector and to Egypt.

The guiding questions will be:

Question round 1: What are the main opportunities for applying I4.0 technologies in your company/areas of work?

Question round 2: Has COVID 19 accelerated the adoption of I4.0 technologies? If yes, how? How can industrial policy help accelerate I4.0 adoption?



## Agenda

TIME (Cairo time, GMT+2)	Description
10:00 – 10:15	<p><b>Opening Remarks</b></p> <p><b>Moderator:</b></p> <p>Dr. Bassel El KHATIB, Director and UNIDO Representative, Regional Hub Office in Egypt, UNIDO</p> <p><b>Distinguished Speakers</b></p> <ul style="list-style-type: none"><li>- H.E Dr. Rania A. AL-MASHAT, Minister of International Cooperation</li><li>- H.E Dr. Nevin GAMEA, Minister of Trade and Industry</li><li>- Eng. Amr MAHFOUZ, CEO, Information Technology Industry Development Agency (ITIDA) and Assistant Minister of Communications and Information Technology</li><li>- Dr. Hiroshi KUNIYOSHI, Deputy to the Director General, UNIDO</li></ul>
10:15 – 11:45	<p><b>Plenary Session: Opportunities and Challenges of Industry 4.0: is Egypt ready?</b></p> <p><b>Moderator:</b></p> <p>Dr. Anders ISAKSSON, Senior Research &amp; Industrial Policy Officer, UNIDO</p> <p><b>Keynote Presentation:</b></p> <p>Dr. Raymond TAVARES, UNIDO Representative of the Country Office in Cameroon</p> <p><b>Panel Discussion:</b></p> <ul style="list-style-type: none"><li>- Mr. Medhat MAHMOUD, Chief Digital Transformation Officer, Huawei Technologies Egypt</li><li>- Eng. Mohamed ABDELKARIM, Executive Director, Industrial Modernization Center</li><li>- Dr. Sherifa SHERIF, Executive Director, National Institute for Governance and Sustainable Development</li><li>- Dr. Smeeta FOKER, Research and Industrial Policy Officer – UNIDO</li><li>- Mr. Tarek TAWFIK, Vice Chairman, Federation of Egyptian Industries</li></ul>



	<ul style="list-style-type: none"> <li>- Mr. Yasser ABDELBARY, Program Manager of Electronics Industry, Information Technology Industry Development Agency (ITIDA)</li> </ul> <p><b>Q&amp;A facilitated by:</b> Mr. Ahmed REZK, Deputy UNIDO Representative, Regional Hub Office in Egypt, UNIDO</p>
<b>11:45 – 13:00</b>	<b>Break</b>
<b>13:00 14:15</b>	<p><b>Session 1. Agroindustry</b></p> <p><b>Keynote Presentation and Moderation:</b></p> <p>Dr. Frank HARTWICH, Research and Industrial Policy Officer, UNIDO</p> <p><b>Panel Discussion:</b></p> <ul style="list-style-type: none"> <li>- Mr. Ashraf El GAZAYERLI, Chairman of the Egyptian Chamber of Food Industries</li> <li>- Mr. Hanny El MESSIRY, Managing Director, Kraft Heinz Company</li> <li>- Dr. Alaa FAHMY, CEO of Enroot Development</li> <li>- Mr. Ahmed MANDOUR, Scientific and Regulatory Affairs Regional Section Manager, Mandolez International</li> <li>- Ms. Ghada HAMDY, Partnerships Specialist, United Nations Technology Innovation Labs</li> </ul> <p><b>Q&amp;A</b></p>
<b>14:30- 15:45</b>	<p><b>Session 2. Textiles Sector</b></p> <p><b>Moderator:</b></p> <p>Ms. Sara BERLESE – UNIDO Programme Officer - UNIDO Regional Hub Office in Egypt</p> <p><b>Panel Discussion:</b></p> <ul style="list-style-type: none"> <li>- Dr. Lorenzo CANTONI, Professor of digital fashion communication, USI</li> <li>- Mr. Cristian LOCATELLI, General Manager, Marzoli Textile Engineering Camozzi Digital</li> <li>- Mr. Heinz ZELLER, Head of Sustainability &amp; Logistics, HUGO BOSS</li> <li>- Mr. Khaled RAAFAT, Chief Commercial Officer, Cotton and Textile Holding company</li> <li>- Ms. Piera Francesca SOLINAS, CSR and Sustainability Manager, Filmar group</li> </ul> <p><b>Q&amp;A</b></p>



16:00– 16:30	<p><b><i>Concluding Session</i></b></p> <p><b>Moderator:</b></p> <ul style="list-style-type: none"><li>- Dr. Anders ISAKSSON, Senior Research &amp; Industrial Policy Officer, UNIDO</li></ul> <p><b>Summary of the Panel Sessions:</b></p> <ul style="list-style-type: none"><li>- Mr. Ahmed REZK, Deputy UNIDO Representative, Regional Hub Office in Egypt</li><li>- Dr. Frank HARTWICH, Research and Industrial Policy Officer, UNIDO</li><li>- Ms. Sara BERLESE – UNIDO Programme Officer- UNIDO Regional Hub Office in Egypt</li></ul>
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