

**United Nations Commission on Science and Technology for Development (CSTD)
Twenty-fifth annual session**

High-level panel on Industry 4.0 for inclusive development

**29 March 2022, 14.30-16.30 (Geneva time)
Geneva and online**

Concept note

Background

We live at the beginning of a new technological revolution around Industry 4.0 technologies such as artificial intelligence (AI), robotics, and the Internet of Things (IoT). The impact and response to the COVID-19 pandemic have accelerated the dissemination of these digital technologies. Against this backdrop, at the twenty-fourth annual session of the United Nations Commission on Science and Technology for Development (CSTD) selected “Industry 4.0 for inclusive development” as one of its two priority themes for the 2021–2022 inter-sessional period.

Industry 4.0 is expected to intensify automation and data-driven changes in manufacturing with trends towards smart factories, predictive maintenance, 3-D printing, smart sensors in production processes, and software to monitor, control and surveil workers. Its application in manufacturing can increase productivity and reduce the environmental impact of industrialization.

At the same time, the deployment of Industry 4.0 affects the differences in the relative productivity of firms of different sectors and economies and impact the prospects for industrialization and structural transformation of developing countries, which are critical for inclusive development and reducing disparities within and across countries. This change in manufacturing also affects wages and employment opportunities due to differences in skills and prevailing disparities in education choices and options resulting from the social context and personal characteristics such as age, gender, and ethnicity.

Despite its potential benefits in terms of productivity, most firms in developing countries are way far from using Industry 4.0; most are still using analog technologies in their production processes. These countries need to industrialize first before they can broadly benefit from Industry 4.0. The risk is that the slow industrialization and dissemination of Industry 4.0 in the manufacturing sector in developing countries would further increase inequalities between countries, replicating the pattern seen in previous technological revolutions.

Developing countries cannot afford to miss this new wave of technological change. Much will depend on national policy responses. Developing countries need to design and implement policies to take advantage of Industry 4.0 while minimizing potential adverse effects. Each country will need science, technology and innovation policies appropriate to its stage of development to prepare people and firms for a period of rapid change. This will require a balanced approach – building a robust and diversified industrial base while disseminating Industry 4.0 technologies in manufacturing. It will also require forging and strengthening partnerships and international

collaboration to facilitate economic diversification and technology dissemination and adoption by manufacturing firms in developing countries.

Objective

The objective of the high-level panel is to discuss national and international experiences in promoting the deployment of Industry 4.0 for inclusive development, and draw relevant policy conclusions.

Guiding questions for discussion

The panel will seek to address the following questions:

- How can developing countries take advantage of the window of opportunity presented by Industry 4.0 for technological upgrading and economic catch-up?
- What can governments do to ensure that Industry 4.0 does not increase inequality?
- What is the role of international cooperation in facilitating this process?

Format of the high-level roundtable

The panel will begin with the introduction of the Report of the Secretary-General by the CSTD Secretariat. Then panelists will make their presentations (5-7 minutes). After this, the chair will initiate an interactive discussion among the participants, including those from the floor, starting from high-level participants.

Background documents

- Report of the Secretary-General on Industry 4.0 for Inclusive Development. (E/CN.16/2022/2)
- Issues Paper of the CSTD on Industry 4.0 for Inclusive Development. https://unctad.org/system/files/information-document/CSTD2021-2022_Issues01_Industry4.0_en_1.pdf
- Other documents available on the website of the CSTD: <https://unctad.org/meeting/commission-science-and-technology-development-twenty-fifth-session>