

WSIS Forum 2022
Special track on ICTs for Industry 4.0 and Emerging Technologies

Webinar on “Measuring the firm-level deployment of Industry 4.0 technologies in developing countries”

13 April 2022, 15:00-16:15 ([CEST](#))
Online

Concept note

Background

Waves of technological change offer opportunities and challenges for developing countries to diversify their economies and catch up with developed countries. As highlighted in UNCTAD’s Technology and Innovation Report 2021,¹ governments in developing countries should promote the use, adoption and adaptation of frontier technologies while also mastering existing technologies.

However, due to existing data limitations, there is a lack of information on the patterns of adoption and use of frontier technologies in productive sectors in developing countries, which may be very uneven and partial even in the most advanced countries. To assist developing countries in building their technological and productive capacities, more information is needed in terms of what sectors are adopting frontier technologies, which parts of different value chains, and what kinds of firms are adopting them and how extensively they are diffused in the economy. Information is also needed about the firms using frontier technologies in terms of such characteristics as their batch size and the standardization of their products. That information is critical to inform Science, Technology and Innovation (STI) policies aiming to promote the use, adoption and adaptation of frontier technologies in developing countries.

To address this gap, a joint research project carried out by researchers from UNCTAD, the University of Johannesburg, the Science and Technology Policy Research Institute of the Council for Scientific and Industrial Research of Ghana, and the University of Nice Sophia-Antipolis has conducted firm-level innovation surveys in Ghana, South Africa, and Tunisia concerning the deployment and use of new technologies. This project aims at proposing a framework for such type of firm-level surveys that could be applied in other developing countries worldwide.

Objective and guiding questions

The objective of the webinar is to discuss challenges and prospects for the deployment of Industry 4.0 technologies in developing countries based on the initial results of the firm level survey applied by the research team in Ghana, South Africa, and Tunisia.

¹ https://unctad.org/system/files/official-document/tir2020_en.pdf

The webinar will seek to address the following questions:

- To what extent Industry 4.0 technologies are deployed in firms in developing countries?
- How the characteristics of these firms (e.g. size, time of operation, sector) affect the deployment of these technologies?
- What are the main drivers of the deployment of these technologies at the firm level?
- What are the main challenges?
- Which policy instruments could be used to facilitate the deployment of these technologies in developing countries?
- What is the role of international cooperation in facilitating this process?

Background document

- Frontier technology adoption in developing countries: A measurement framework and proposed questionnaire (UNCTAD/DTL/STICT/2021/5).
<https://unctad.org/webflyer/frontier-technology-adoption-developing-countries-measurement-framework-and-proposed>

Format of the event

The side event will be organized online as a moderated discussion with three panelists, and Q&A at the end. After a short opening and an initial presentation, the moderator will pose two rounds of questions for each panelist. It is expected that each panelist will take around 5-7 min to answer each question. The duration of the webinar will be 1h and 15min.

Tentative Programme

Side event: Measuring the firm-level deployment of Industry 4.0 technologies in developing countries

Opening: Ms. Shamika N. Sirimanne, DTL, UNCTAD

Presentation: Frontier technology adoption in developing countries: A measurement framework and proposed questionnaire

Moderator: Mr. Clovis Freire, Economist, Science, Technology and ICT Branch, DTL, UNCTAD

Panel:

- Dr. George Owusu Essegbey, Science and Technology Policy Research Institute (STEPRI) of the Council of Science and Industrial Research (CSIR), Ghana
- Prof. Erika Kraemer-Mbula, Professor of Economics at the University of Johannesburg, South Africa
- Prof. Adel Ben Youssef, Professor of Economics, University of Nice Sophia-Antipolis

Q&A