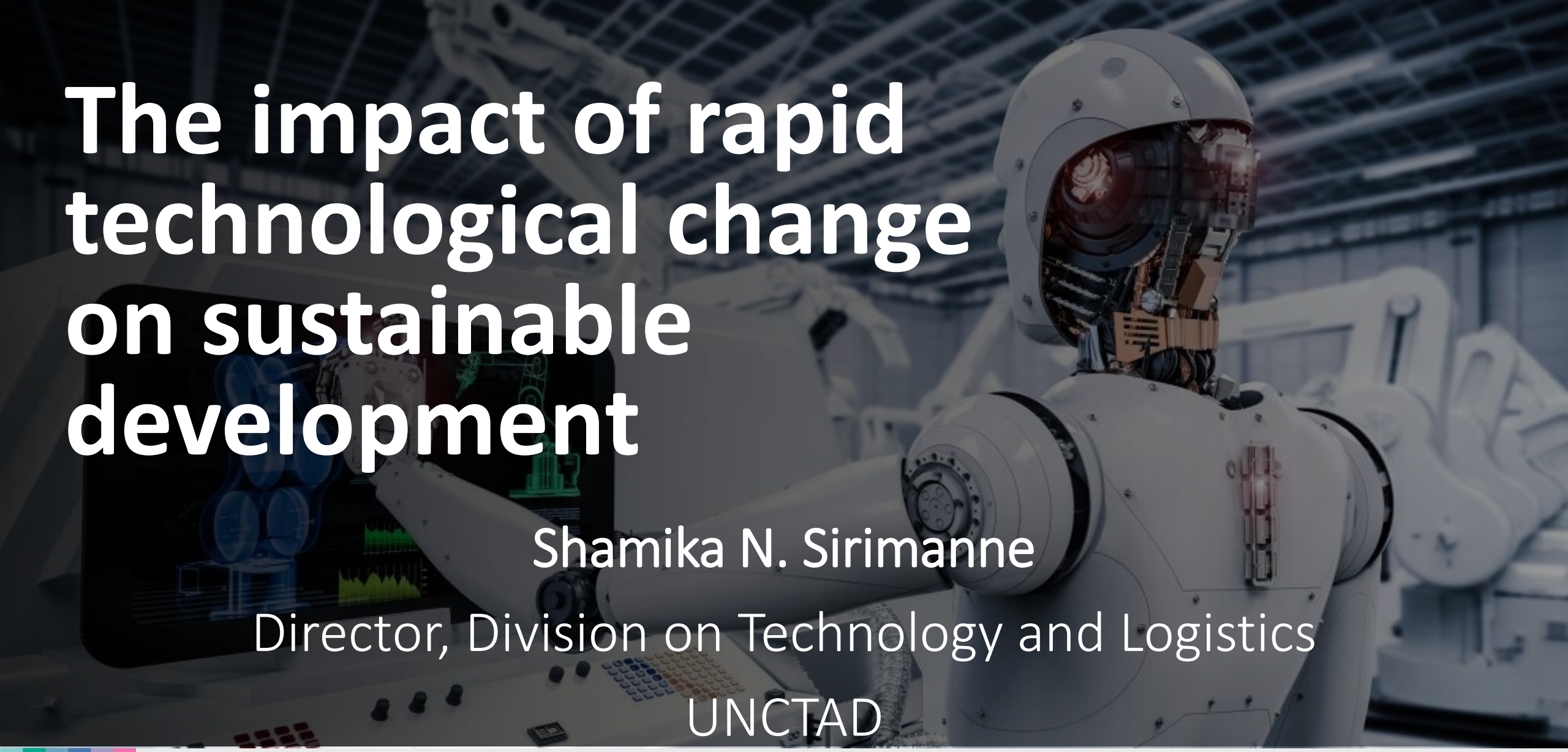


The impact of rapid technological change on sustainable development

Shamika N. Sirimanne

Director, Division on Technology and Logistics

UNCTAD

22nd Session of the UN CSTD

13-17 May 2019, Geneva

CSTD COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

UNITED NATIONS UNCTAD

AGENDA

1. Context
2. Rapid technological change and SDGs
3. Transformative and disruptive potential
4. National strategies and policies
5. International Cooperation and Multistakeholder Partnerships
6. Directing rapid technological change to support sustainable development
7. Conclusion

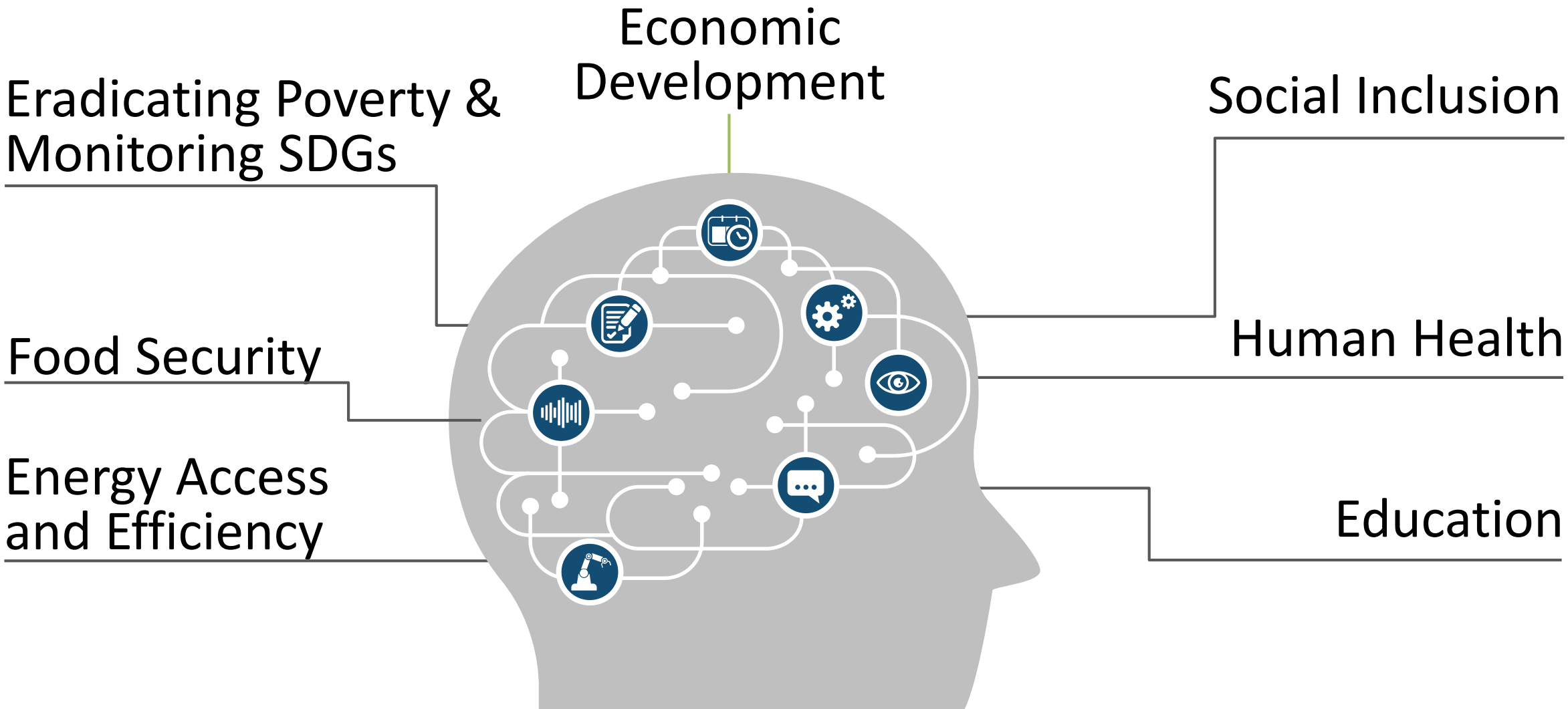
CONTEXT

> Requests… the **Commission on Science and Technology for Development**, through the Economic and Social Council, to give due consideration to the impact of key rapid technological changes on the achievement of the Sustainable Development Goals…

UN General Assembly Resolution 72/242

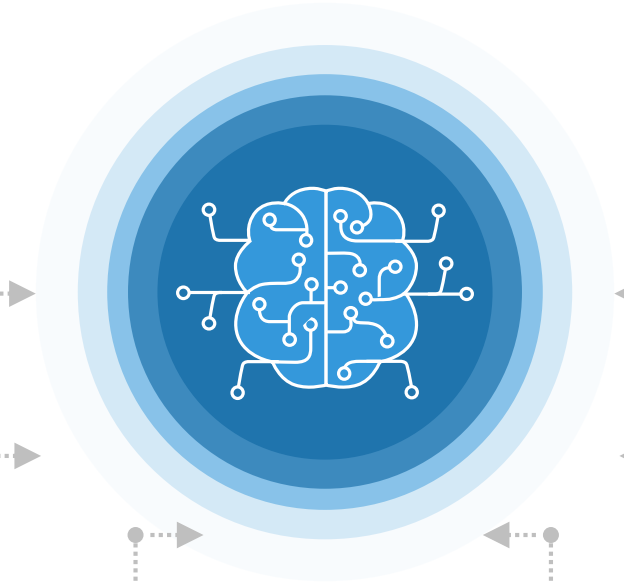
And UN General Assembly Resolution 73/17

Opportunities of Rapid Technological Change for the SDGs



Food Security

New tools for fighting hunger



Genetic sequencing to detect soil quality

Nanotechnology for improving crop preservation

Detailed weather models with machine learning

Precision agriculture using IoT and machine learning

Early warning systems to predict food disruptions

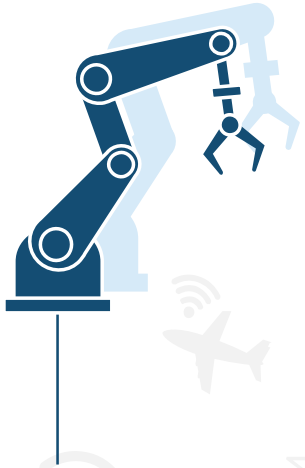
Genetic modification techniques for agricultural productivity

Healthcare

New waves of innovations to improve human and animal health

AI-enabled Personalized medicine

Digitization and manipulation of biological processes

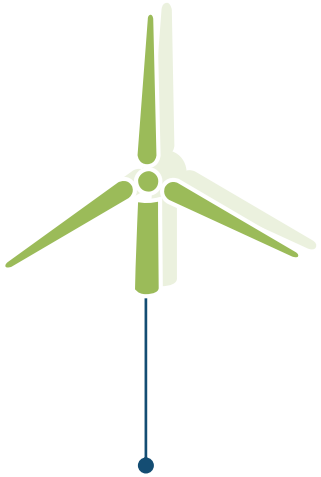


Blockchain for public health crisis response

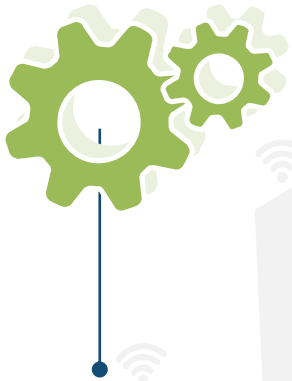
CRISPR/Cas9 and related genome editing techniques

Renewable Energy

New technologies to address energy access and efficiency

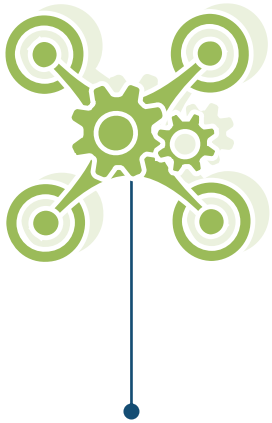


Smart renewable energy generation



Maximizing use of renewables

Optimizing real-time power supply



Systems predictive monitoring

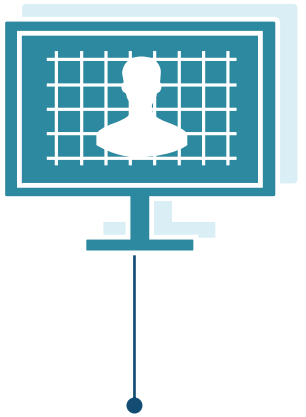
Other Sustainable Development Applications

Innovation, Social Inclusion, and Access to Education

Industry 4.0 and smart manufacturing for higher-wage industrial activities

Mobile and blockchain technologies for social inclusion

New digital learning platforms primary, secondary, and continuing education



Remote sensing and AI disaster risk reduction and environmental efforts

Transformative and Disruptive Potential

Rapid technological change also poses new challenges for policy makers and society:

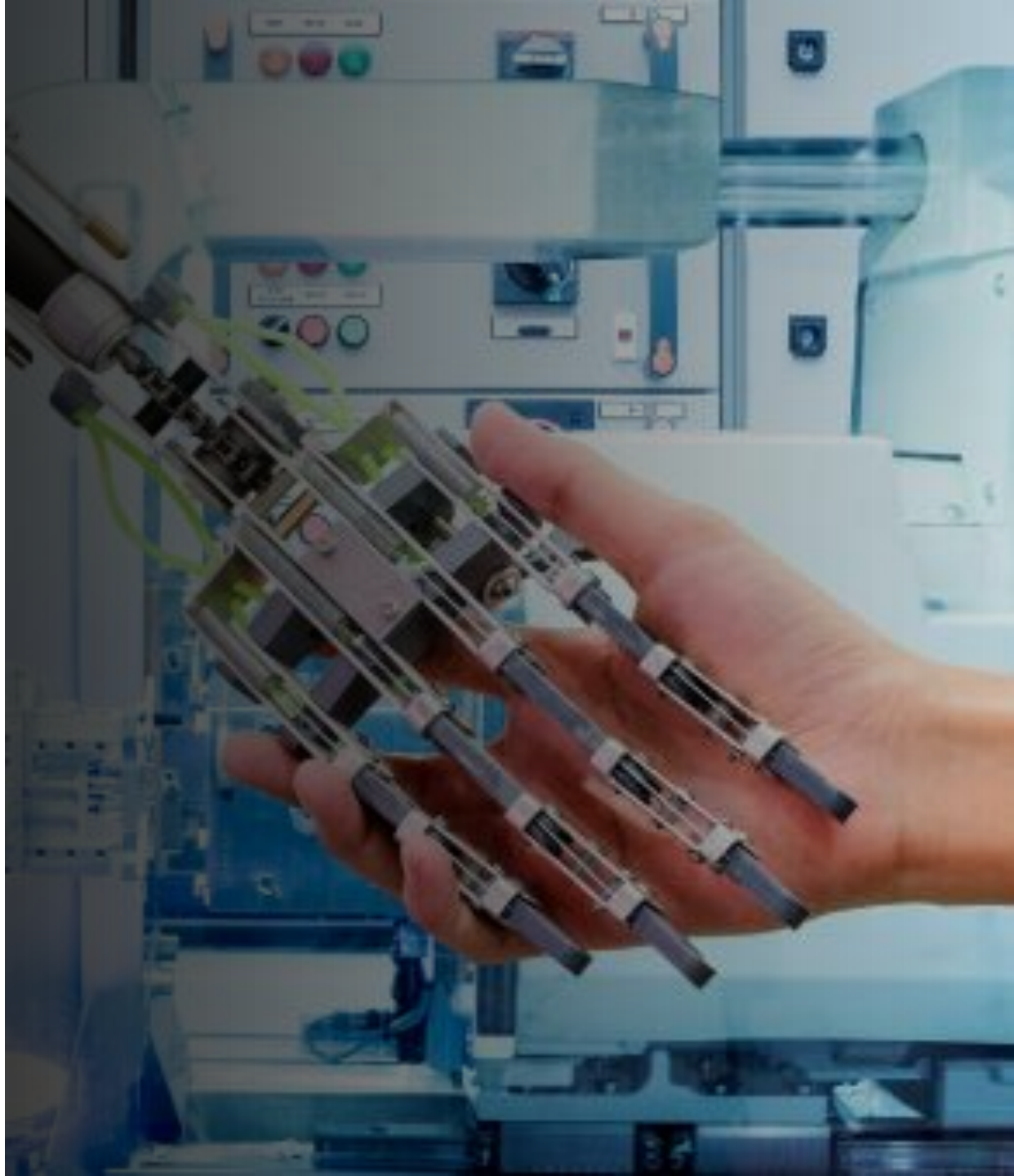
Ambiguous impact on employment

Potentially increasing divides

Bioethical concerns

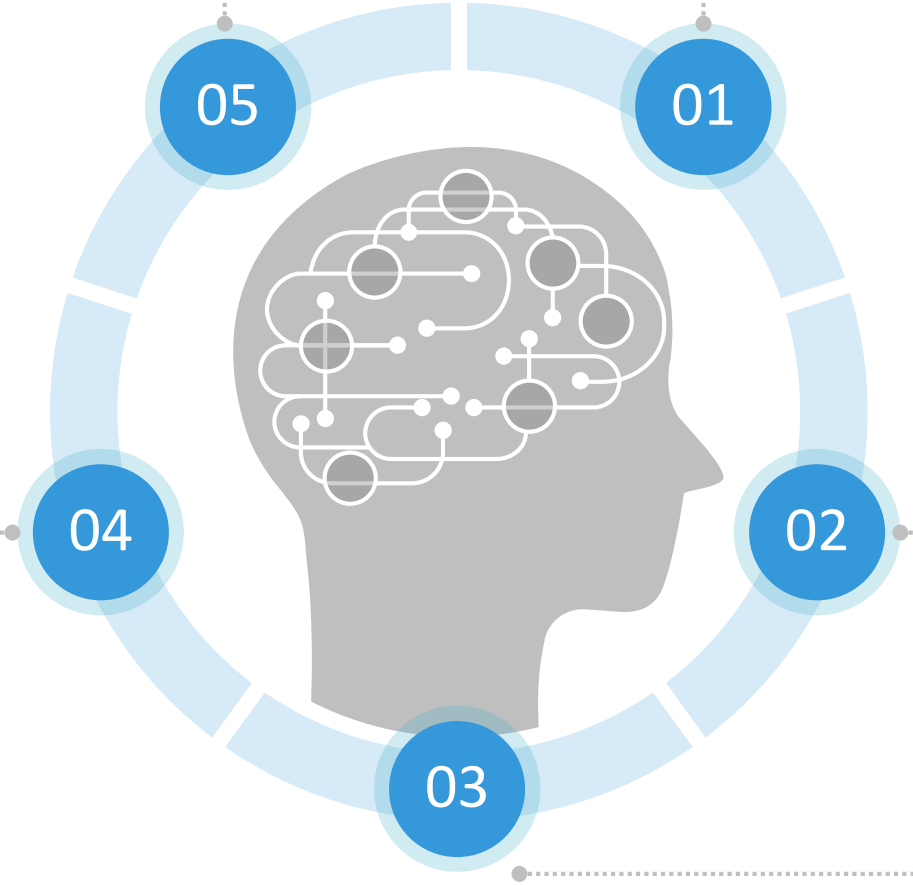
Privacy, safety and security challenges

Potentially biased and non-transparent algorithms



National Policies and Strategies

Building and Managing Effective Innovation Systems



Closing Digital Divides

Investing in soft and hard infrastructure for the digital economy and information society.

Strengthening National Innovation Systems

Cultivating capabilities, connections, and the enabling environment

Aligning with National Development Priorities and SDGs

STI policies are aligned with national development agenda and address society and environment.

Managing Disruptive Effects of Rapid Technological Change

Lifelong learning, strengthened social protection, and skills updating and upgrading initiatives.

Developing Technology-Specific Strategies

Industry 4.0, AI, Big Data, and related plans and strategies by national governments

International and Multi-stakeholder Cooperation

Leveraging international networks and partnerships to advance the SDGs

Global research collaboration can advance S&T for the SDGs

Combining advanced S&T capabilities with detailed local knowledge

Influencing global research networks to work on SDG-relevant areas

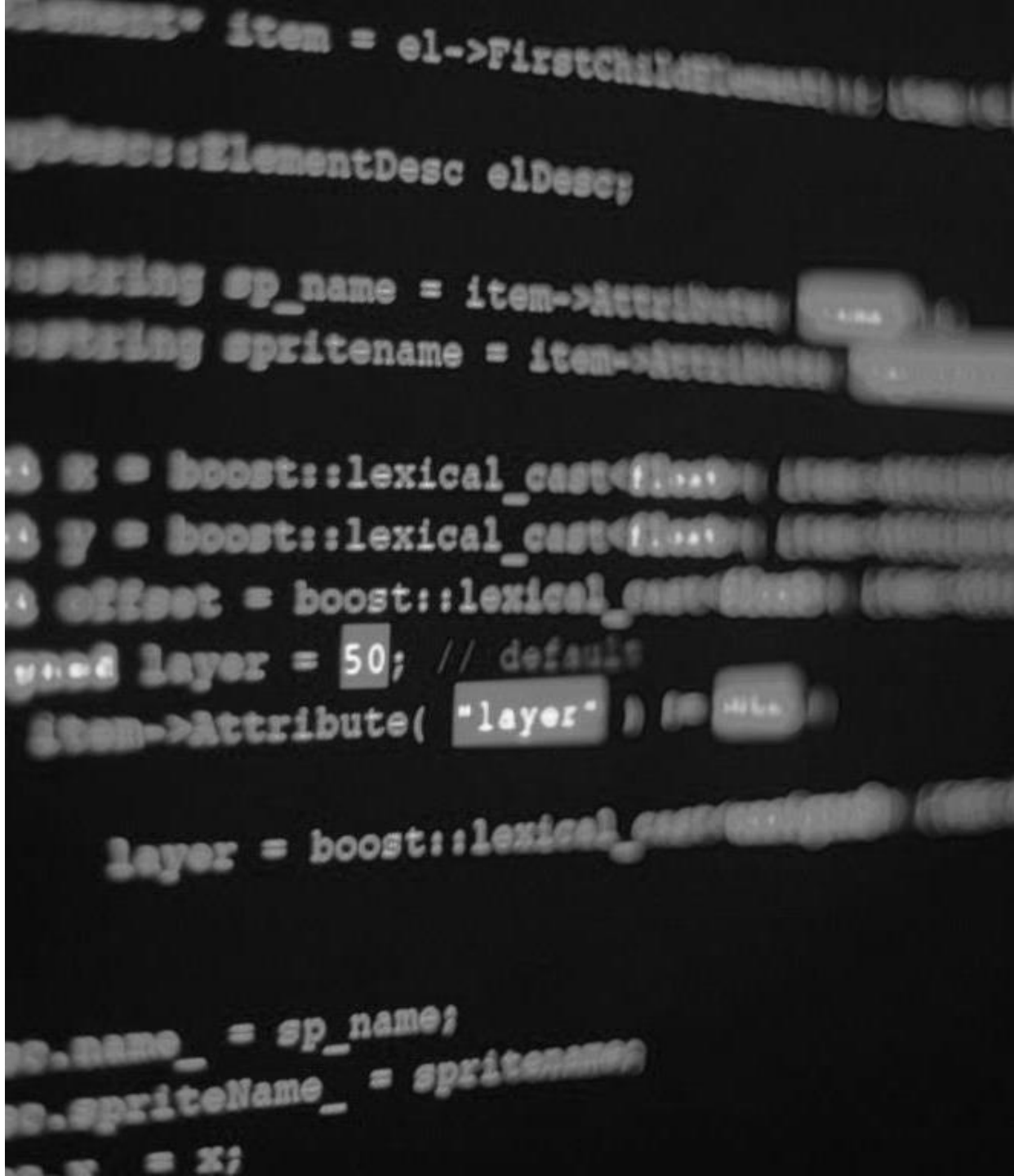
Multi-stakeholder initiatives for advocacy and collaborative R&D

Raising awareness about gender digital divides

Collaborative R&D with leading tech companies and domestic S&T talent

Directing rapid technological change to support the SDGs

- Facilitate **global technology assessment and foresight** exercises on technological trends of broad interest
- Develop an **inclusive discourse on the normative dimension of rapid technological change**



Thank you!

http://unctad.org/cstd

stdev@unctad.org

CSTD
COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

UNITED NATIONS
UNCTAD