



TECHNOLOGY AND INNOVATION REPORT **2018**

Harnessing Frontier Technologies for Sustainable Development





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FOREWORD

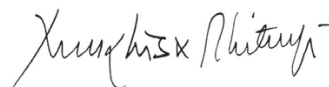
We live at a time of technological change that is unprecedented in its pace, scope and depth of impact. Harnessing that progress is the surest path for the international community to deliver on the 2030 agenda for people, peace and prosperity. Frontier technologies hold the promise to revive productivity and make plentiful resources available to end poverty for good, enable more sustainable patterns of growth and mitigate or even reverse decades of environmental degradation. But technological change and innovation need to be directed towards inclusive and sustainable outcomes through a purposeful effort by governments, in collaboration with civil society, business and academia. If policy-makers are not proactive technological disruption can entrench inequality, further marginalize the poorest, and fuel reactionary movements against open societies and economies.

The *Technology and Innovation Report 2018: Harnessing Frontier Technologies for Sustainable Development* notes that change is becoming exponential thanks to the power of digital platforms and innovative combinations of different technologies that become possible every day. This opens exciting possibilities for the democratization of frontier technologies to materialize in development solutions. The Report proposes strategies and actions, some of them based on existing experiences in STI policy for development, and some more innovative ones to make technology an effective means of implementation of our common development agenda – nationally and globally.

The Report also suggests that countries develop policies to help people navigate the transition period that lies ahead. This may require that stakeholders adapt the social contract to the new world that frontier technologies are forming. Education will become an even more indispensable lever for development and social justice. Since digital technologies as enablers and multipliers of other frontier technologies we should ensure that all – and specially women and girls – are given a real chance to build digital capabilities. Lifelong learning will need to be supported. For those who may struggle to keep up with the transformation, countries will have to be innovative in providing effective social protection mechanisms.

Most crucially, there is an urgent need for a sustained effort by the international community to ensure that the multiple gaps in technological capabilities that separate developed and developing countries are closed. Investment in hard and soft infrastructure and human capital, complemented by a scaled up, coherent and accelerated effort to enhance innovation systems for sustainable development are necessary to spread the economic, social and environmental benefits of frontier technologies.

By providing a platform for policy dialogue and experience-sharing, and through our capacity-building programmes, UNCTAD and the UN Commission for Science and Technology for Development, which we service, have an international policy role to fulfil in the development of the global response to those challenges. Our intention is that the *Technology and Innovation Report 2018* will help launch a dialogue about how to harness technology for the achievement of the SDGs and in larger and more profound sense, the shared future of the people of the world.



Mukhisa Kituyi

Secretary-General of UNCTAD

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ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
BDA	Big Data Analysis Initiative (Malaysia)
CERN	European Organization for Nuclear Research
CRISPR	clustered regularly interspaced short palindromic repeats
FDI	foreign direct investment
GDP	gross domestic product
GIF	Global Innovation Fund
GPS	global positioning system
HAPS	high-altitude platform station
ICT	information and communication technology
IDC	International Data Corporation
ILO	International Labour Organization
IoT	Internet of Things
IP	intellectual property
IPR	intellectual property right
kWh	kilowatt-hour
LDC	least developed country
M&E	monitoring and evaluation
MOOC	massive open online course
OECD	Organization for Economic Cooperation and Development
PED	platform for economic discovery
PV	photovoltaic
R&D	research and development
S3	smart specialization strategy
SME	small and medium-sized enterprise
STEM	science, technology, engineering and mathematics
STI	science, technology and innovation
TRIPS	trade-related intellectual property rights
TRIPS Agreement	Agreement on Trade-Related Intellectual Property Rights (WTO)
TVET	technical and vocational education and training
UBI	universal basic income
UIS	UNESCO Institute for Statistics
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
UNESCO	United Nations Educational, Scientific and Cultural Organization
WEF	World Economic Forum
WFP	United Nations World Food Programme
WTO	World Trade Organization

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