



FORESIGHT FOR DIGITAL DEVELOPMENT

Introduction of the Report of the Secretary-
General

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TECHNOLOGY FORESIGHT



TECHNOLOGY FORESIGHT

POLICY TOOL TO ASSESS IMPACT OF FUTURE TECHNOLOGIES

DEFINITION

Technology foresight is the process of forecasting the evolution of technologies and their impact on society

HISTORY

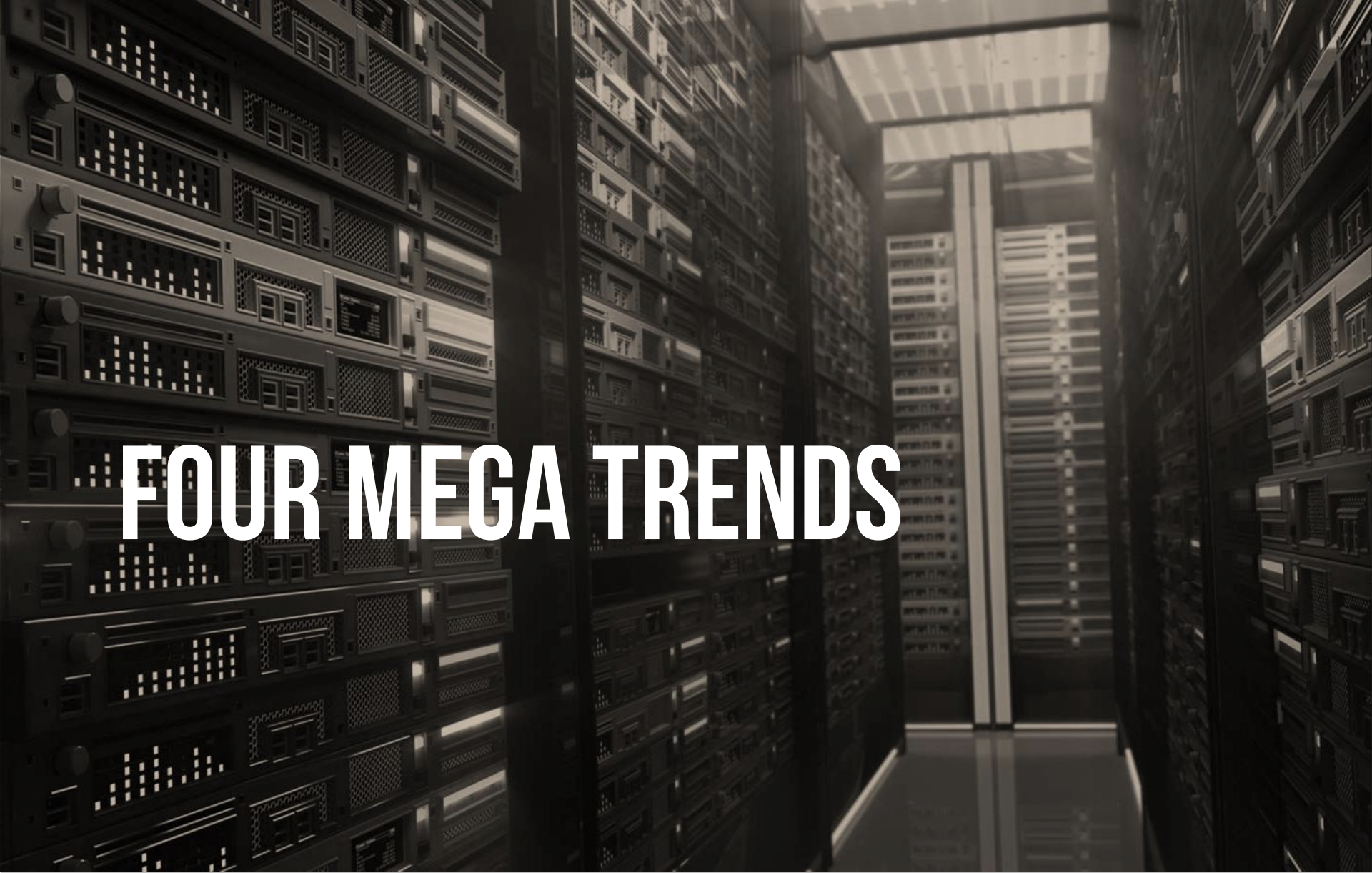
Japan's foresight exercises going back to the 1970's were instrumental in the development of their electronics sector.

METHODS

Different approaches to technology foresight, including focus groups, the Delphi method, simulations, scenario-building and interviews and can include a wide range of stakeholders.

POLICY IMPACT

Foresight exercises can potentially feed into national development strategies, including industrial development.



FOUR MEGA TRENDS

FOUR MEGA-TRENDS

Digital Technologies and the 2030 Agenda



Big Data and the Internet of Things (IoT) consist of massive datasets and Internet-connected sensors.



3D Printing as a technology is "the ability to turn data into things and things into data."



Digital Automation allows computers to increasingly take over tasks related to cognitive and not just physical work.



Massive Open Online Courses (MOOCs) potentially extend access to high-quality educational content to anyone, anywhere.



BIG DATA AND the INTERNET OF THINGS (IOT)

Big Data and IoT at a glance

DEFINITION

HUGE DATA SETS AND INTERNET-CONNECTED SENSORS

Huge datasets and Internet-connected sensors potentially add to the existing toolkit for development.

WIDE-RANGING APPLICATIONS

Domains include enterprise development, healthcare, agriculture, energy, water and sanitation, international development indicators, and research and development.

APPLICATION DOMAINS

PRECONDITIONS

DATA INFRASTRUCTURE

Not only physical infrastructure and internet access but STEM skills are required to harness its developmental potential.

DATA STEWARDSHIP CONCERNS

Privacy, security, and consumer rights are critical issues to understand in a Big Data world.

RISKS

BIG DATA & IOT

3D Printing

The ability to turn data into things and things into data.

**PHYSICAL PRODUCTS
CREATED BY ITERATIVELY
LAYERING MATERIAL INTO
3D STRUCTURE**

TECHNOLOGY

**ENTERPRISE
DEVELOPMENT,
ENVIRONMENTAL
SUSTAINABILITY, HOUSING
AND CONSTRUCTION, AND
EDUCATION**

APPLICATIONS

LABOUR MARKETS

**COULD DISRUPT
MANUFACTURING, SUPPLY
CHAIN, AND LOGISTICS**

DATA CONCERNS

**INTELLECTUAL PROPERTY, DATA
PRIVACY AND PROTECTION,
AND CYBERCRIME**

DIGITAL AUTOMATION

Key aspects of Automation and its Implications for Work



DEFINITION

Automation can be characterized as the ability of computers to increasingly take over tasks related to cognitive and not just physical work.

FORECAST

Recent research from the USA shows that 47 per cent of work tasks are at risk of being computerized, with workers in transportation, logistics, and office and administrative support most at risk.

GLOBAL SOUTH

Recent report estimates that two thirds of all jobs could be susceptible to automation in developing countries in coming decades. However, large-scale net job destruction due to automation should not be a concern for most developing countries in the short term.

ANALYSIS

Effects like job polarization as well as differential gendered effects could also impact labour markets.

FORESIGHT

It is important that countries consider how education and training respond to their labour markets through foresight activities embedded within public policy processes.

MASSIVE OPEN ONLINE COURSES

Making high-quality education accessible and affordable

WHAT ARE THEY?

Massive Open Online Courses (MOOCs) potentially provide resource-poor regions and individuals more equitable access to world-class education content.

CONTRIBUTION TO SDG'S

It has the potential to contribute to achieving Goal 4 - "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all."

CHALLENGES

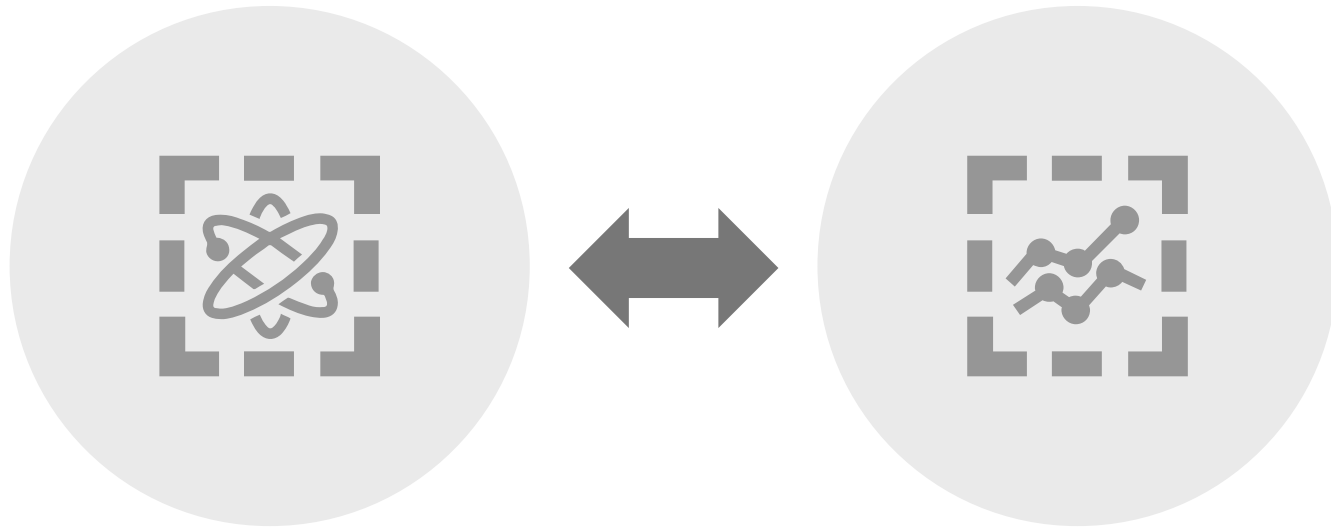
Inadequate internet and electricity access, lack of content relevance, and language of instruction (e.g., English) may pose barriers to its adoption and effectiveness.



POLICY LESSONS AND CONSIDERATIONS

FOCUS ON DEVELOPMENT

Put digital technologies at the service of sustainable development



NEWER AND OLDER TECHNOLOGIES SHARE MUCH IN COMMON

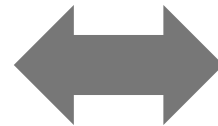
Newer and older technologies can both facilitate socio-economic inclusion or widen social and economic disparities.

DEVELOPMENT AGENDA WILL CONTINUE TO SHAPE TECHNOLOGY USE

STI policy should focus on developmental challenges and engage with technology in ways that further developmental goals.

FOCUS ON LOCAL CONTEXT AND SKILLS

Making technology responsive to local needs



PRO-POOR, INCLUSIVE AND PEOPLE-CENTRED INNOVATION

Technologies contribute to sustainable development when they serve the poor and are responsive to local context.

LOCAL TECHNOLOGICAL CAPABILITY-BUILDING

It is important to build local skills and talent to understand and apply technology to local context and challenges.

DEVELOP REGULATORY FRAMEWORKS

Ensuring Data Risks are Minimized

DATA PROTECTION

All personal data regulations must be respected and implemented.



DATA SHARING AND STEWARDSHIP

Citizen rights, consumer protection, competition concerns .



INTERNATIONAL DIMENSIONS

As data is increasingly collected or transmitted beyond national borders, data protection standards become a crucial issue.



SOCIAL RISK

Moral and ethical principles for the use and limitations of big data must be set.



INSTITUTIONALIZE TECHNOLOGY FORESIGHT

Shape – as well as predict – the future

FORESIGHT FOR PUBLIC POLICY

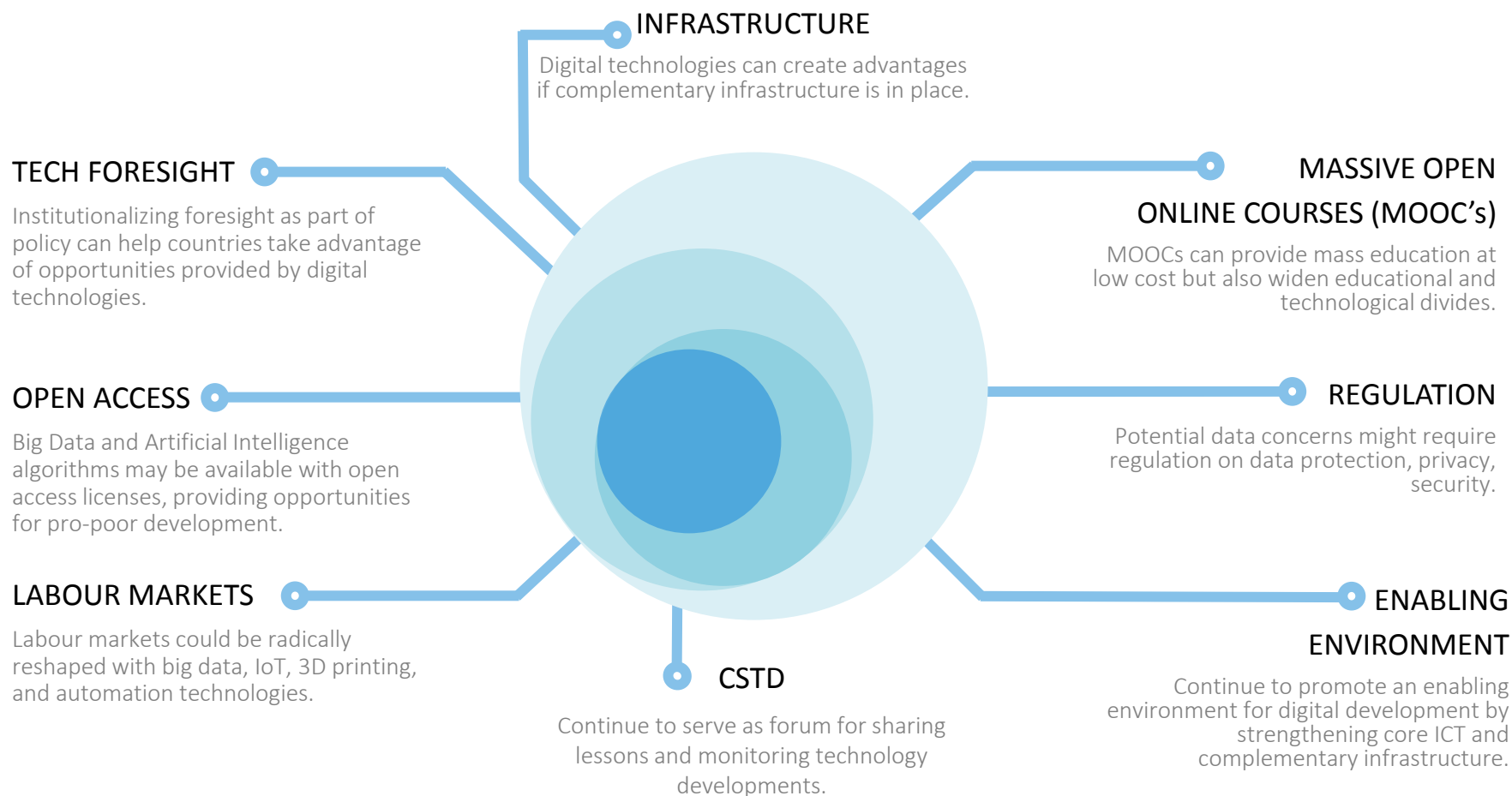
Foresight could be powerfully integrated as an institutional fixture within public policy processes to shape national development strategies.

IMPORTANCE OF FORESIGHT PROCESS

The key challenge is to institutionalize the foresight process in a such way that it contributes to national development strategies and addressing local demands

KEY FINDINGS AND SUGGESTIONS

For consideration by CSTD





THANK YOU

CSTD secretariat