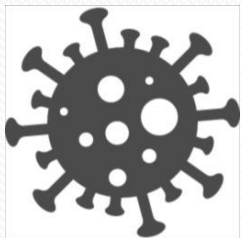
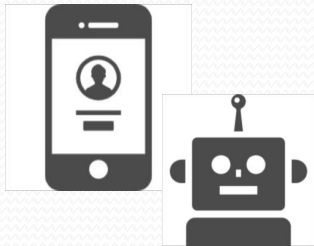


The Ethiopia FDI Policy Report Launch Workshop

Chapter 8

Ethiopia in the Industry 4.0 and Post-Pandemic Age



https://www.grips.ac.jp/forum/pdf22/EthiopiaFDIReport_final2.pdf

27 January 2022

Toru Homma

Senior Advisor (Private Sector Development)

Japan International Cooperation Agency (JICA)

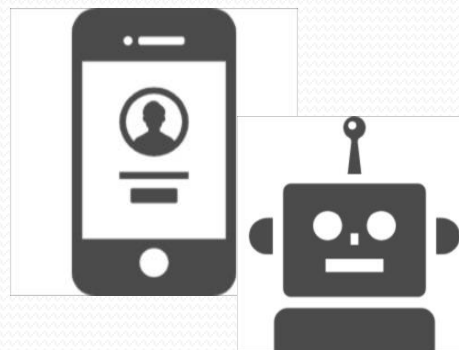
Major Contemporary Mega-Trends around Industry in Developing Countries



< 1 >

Global Value Chain
(GVC)

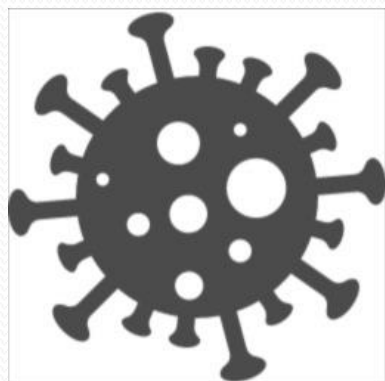
- ✓ Globalization,
FDI, FTA/EPA



< 2 >

Industry 4.0 / 4th
Industrial Revolution

- IoT/AI, Digitalization/DX



< 3 >

COVID-19 /
External Shock

- ✓ Pandemic, Disaster,
Economic Crisis

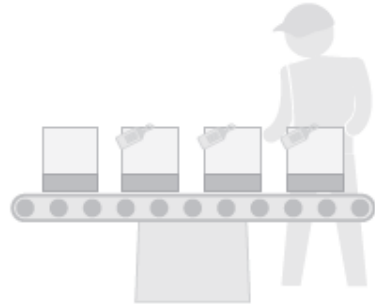
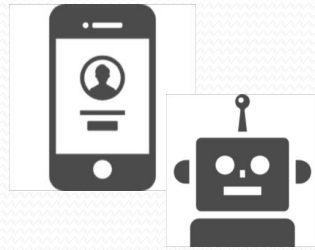


< 4 >

Environmental and
Social Response

- ✓ Decarbonization, Green
Economy, ESG, Impact
Investment

4th Industrial Revolution / Industry 4.0 ?



1st Industrial Revolution

1760-1900
Use of steam and mechanically driven production facilities

2nd Industrial Revolution

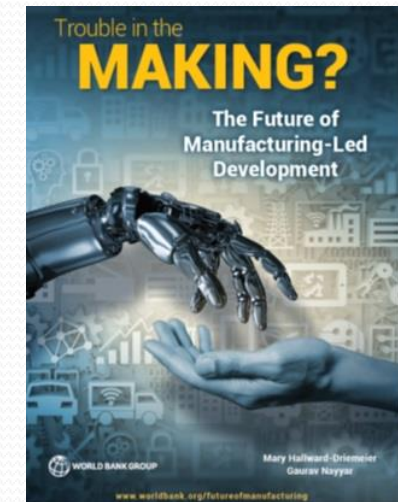
1900-1970
Mass production driven by electricity and based on division of labor

3rd Industrial Revolution

1970-present
Extensive use of controls, information technology, and electronics for an automated and high-productivity environment

4th Industrial Revolution

Future
Smart applications that integrate virtual and physical production systems



Source: ADB based on Schwab (2017).



IOT Big data Analytics 3D Printing Robotics Smart Sensors Augmented Reality Cloud Computing Energy Storage AI/ Machine Learning Nano-technology

Top 10 Technology associated with Industry 4.0

Demand for skills will shift due to automation and AI

Less physical/manual skills but increase of social/technological skills

Based on McKinsey Global Institute workforce skills model

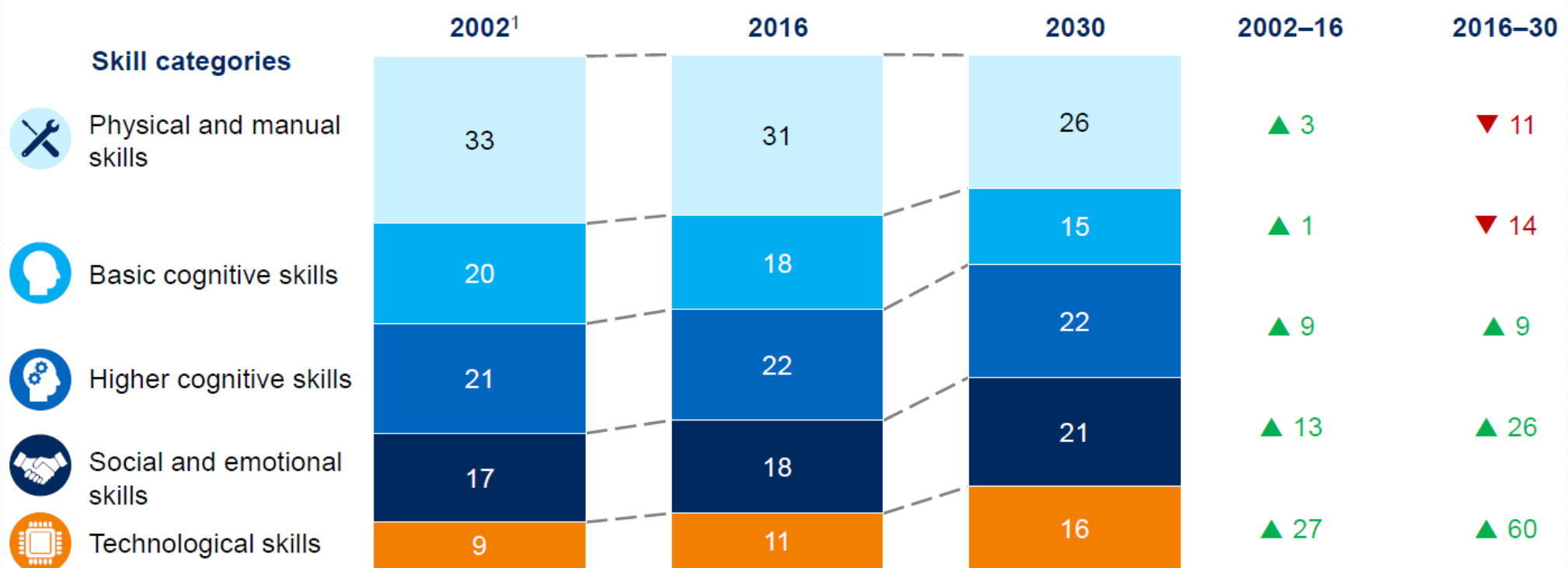
United States, all sectors, 2002–30

Evolution in skill categories

% of time

Change in hours worked

% difference



¹ Calculated using the 2004 to 2016 CAGR extrapolated to a 14-year period.

NOTE: Based on difference between hours worked per skill in 2016 and modeled hours worked in 2030. Numbers may not sum due to rounding.

SOURCE: U.S. Bureau of Labor statistics; McKinsey Global Institute workforce skills model; McKinsey Global Institute analysis

McKinsey & Company 22

National Industrial Policies Inspired by Industry 4.0 in Southeast Asia

Thailand 4.0

Making Indonesia 4.0

Industry 4WRD (Malaysia)



Industry 4.0 has not been discussed yet in policy documents in relation to industry in Ethiopia

Figure 8-5. Manufacturing Sub Sector Prioritization for the Coming 10 years



1st 5 Years (2020/21-2025/26)



- Agro-processing
- Leather and Leather Products
- Textile and Garment
- Construction inputs (Cement and metal)
- Basic chemical and chemical products
- Pharmaceuticals and Medical Supplies
- Paper Products including the production of pulp and printing
- Furniture
- Agricultural Inputs (Pesticide and fertilizer)
- Plastic/PVC
- ICT
- Electronics assembly

Focus is on utilizing existing capacity for export and import substitution of imported goods

2nd Five Years (2026/27-2031/32)



- Chemical and Chemical Products
- Metal and Engineering (Transportation Machineries, Automotive, different Machineries for the manufacturing sectors)
- Plastic/Polymer
- Medical supplies
- ICT
- Electronics spare parts

Focus is on sophisticated manufacturing sub sectors that require skill, capital and infrastructures

But certain Industry 4.0 technologies such as AI are partially utilized well by the private sector in Ethiopia

Example: iCog Labs - Ethiopia's first AI and robotics lab



Positive development of ICT infrastructure in Ethiopia

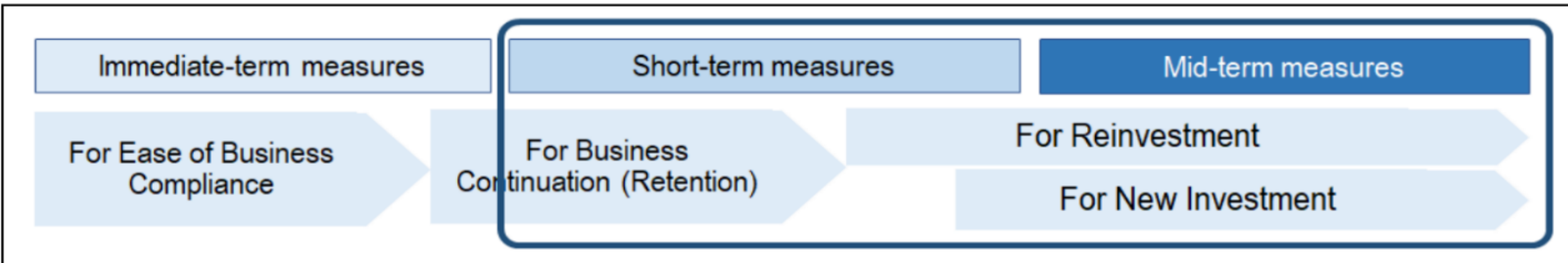
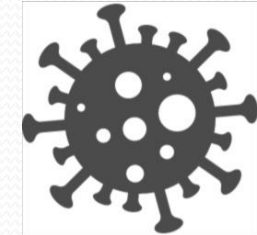
- ❑ First private telecom operator license given to an international consortium: formed by Vodafone, Safaricom & Sumitomo Corp. to meet international standard telecom network
- ❑ Ethio ICT Park: “four new data center companies have secured land to make their home at Ethio ICT Park, which is called Ethiopia’s Silicon Valley” (Misikir 2020); Attracting multinational companies’ interest; Implications of potentials of data centers or other forms of ICT platforms for attracting FDI



Some more potentials of I4.0 in Ethiopia

- “Industry 4.0 can be used for sustainable changes in country for solving many problems” (Pathak and Zewdie 2019): further suggest the importance of infrastructure and effective policies to create a favorable environment for the development of Industry 4.0 in Ethiopia
- “Dissemination of Kaizen could also work advantageously for Ethiopia to contribute to digitalized industrial development and readiness for Industry 4.0. This is because Kaizen is a digital-friendly approach as it originates from statistical quality control (SQC) and has strong features of data-drivenness and visualization” (Cirera and Maloney (2017); JICA/JDS/Abeam (2022 forthcoming); Homma (2022 forthcoming))

Mode of Measures for Targets for Investment Promotion during and after COVID-19



Retention → Reinvestment → New Investment

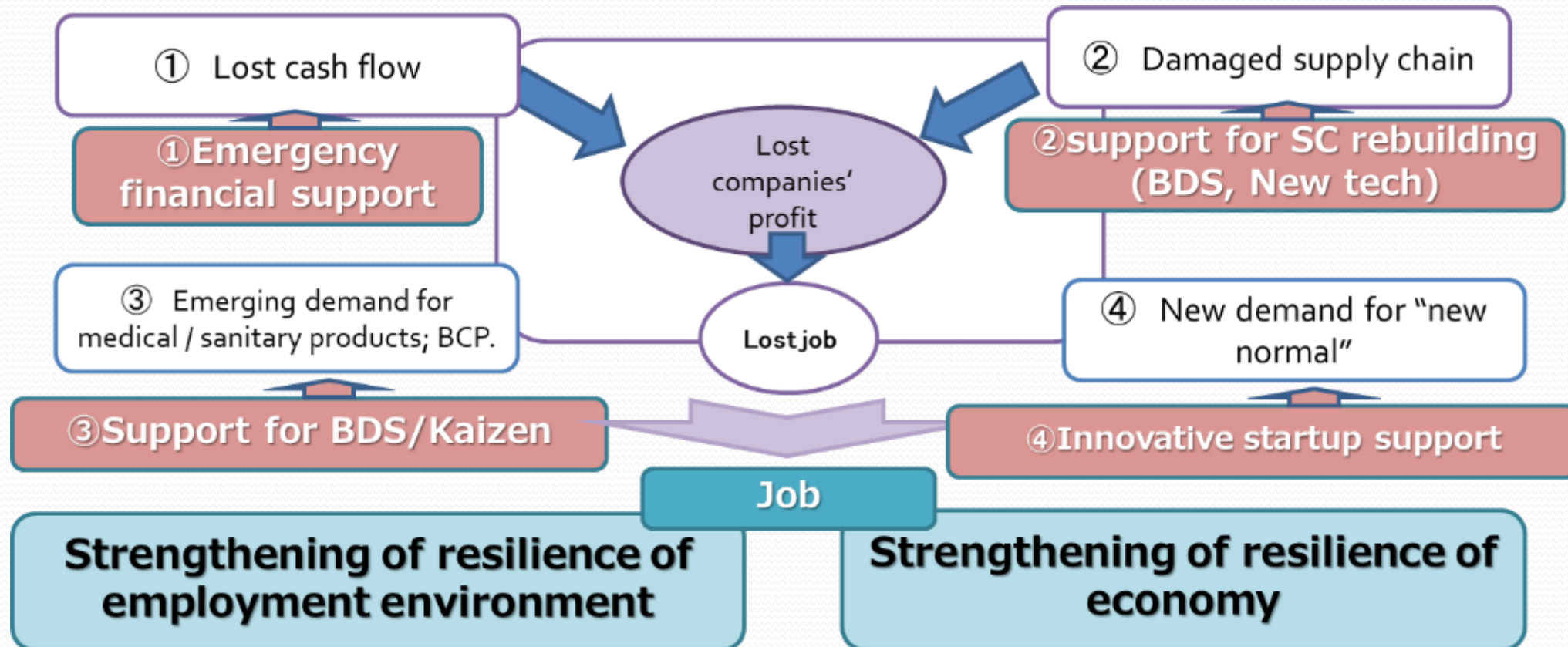
Ethiopia's Efforts on FDI in immediate response to COVID-19

According to the World Bank Group (2021) which reported good efforts of IPAs in the world to retain existing foreign investors

- ❑ Using social media to communicate closely with investors to gather feedbacks, share the latest initiatives and best practices; and
- ❑ Facilitating the expansion of companies that receive FDI into new production lines in light of COVID-19 by supporting local suppliers' business continuity and strategic reorientation to products and services most in demand

Not only negative impacts but also positive consequences by COVID-19

JICA's Support in Private Sector Development in Response to COVID-19



Innovative startup support

Solutions to COVID-19 challenges by Corona Tech etc.

JICA's Project NINJA

Business Plan Competition in response to COVID-19

2,713 applicants from 19 African countries



JAPAN × AFRICA
Join us on 26 Feb
Online Pitch Event
Organized by Nikkei and JICA



Implications and the way forward

1. **Potential Impacts:** Beyond labor-intensive FDI promotion, Industry 4.0 may be one of the potentials, but positive and negative impacts of Industry 4.0 on FDI attraction in Ethiopia needs to be further examined, including how the Ethiopian garment industry can be associated with or benefit from Industry 4.0.

(incl, shift of demand for skills and smooth job shift)
1. **Resilience:** FDI strategy, national industrial policy and their action plans need to aim at strengthening the fundamental capacity to be ready for unexpected negative shocks;

Acceleration of digitalization as the “New Normal”

Implications and the way forward

3. **Learning:** Attracting FDI is expected to facilitate the transfer of technology that does not exist in a host country. Kaizen is another approach to learning/applying the new concept.
4. **Further studies:** only preliminary thoughts; nexus among Industry 4.0, post-COVID-19 and FDI strategy to secure these trends as advantages of the industrial sector of Ethiopia.