UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

Emerging Technology: Policy Approaches for the SDGS

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United Nations ESCAP
Technology and Innovation

- **Tech and innovation policy think tank:** Publications, reports, policy papers on a diverse range of topics.
- **Policy development:** We advice governments on tech and innovation policy for sustainable development.
- A platform to facilitate **inter-governmental tech and innovation cooperation.**

Context
Fourth Industrial Revolution

Opportunities

- Digital trade and finance are opening **economic** opportunities.
- From a **social** perspective, digital healthcare and education are providing cost effective solutions at scale.
- Smart cities, energy and transport are offering alternative models for protecting the **environment**.

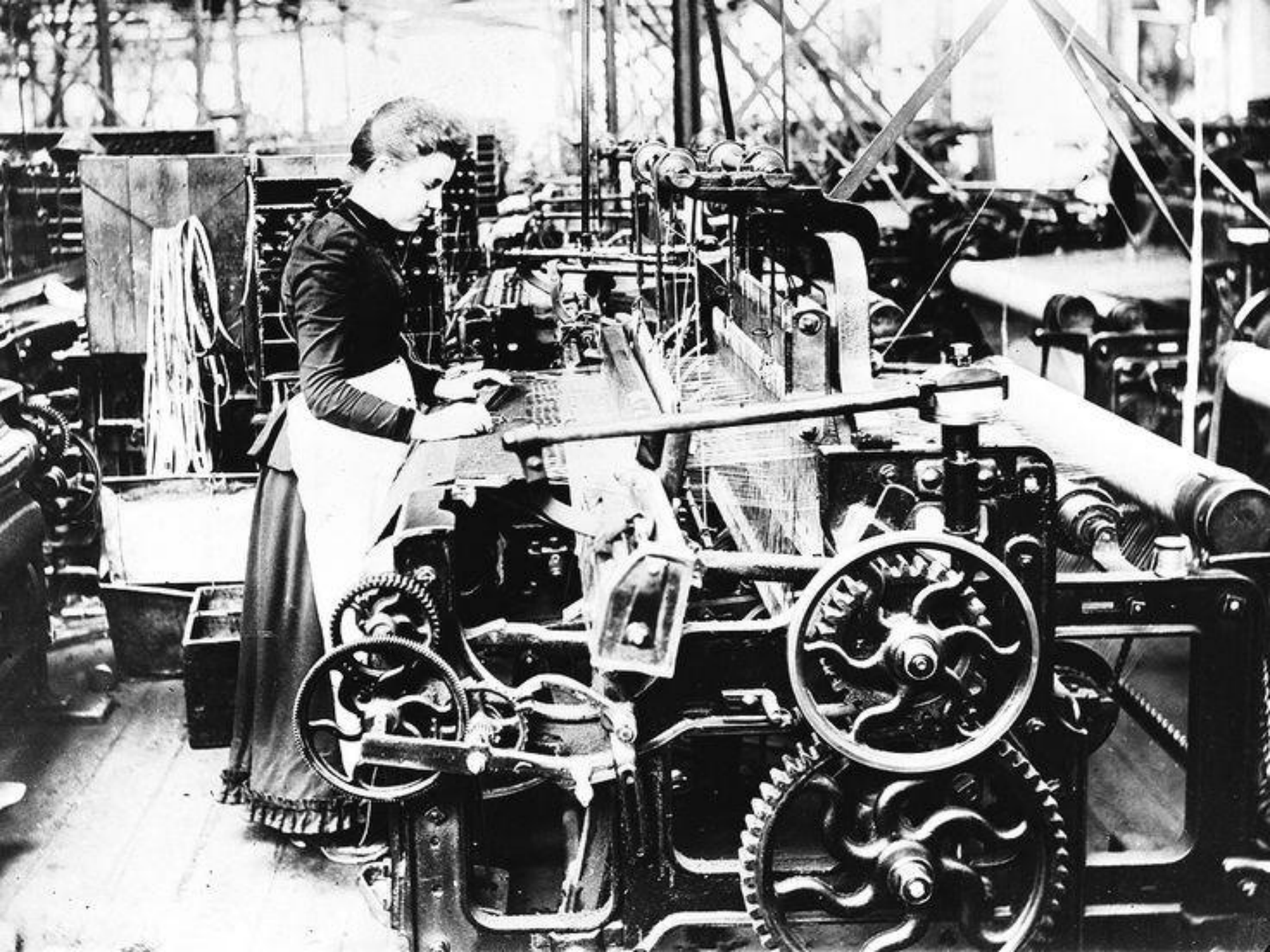
Context
Fourth Industrial Revolution

Challenges

- Uncertainties about the **future of work**.
- A **new frontier technology divide**, compounding an already existing digital divide.
- **Ethical issues**.

SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

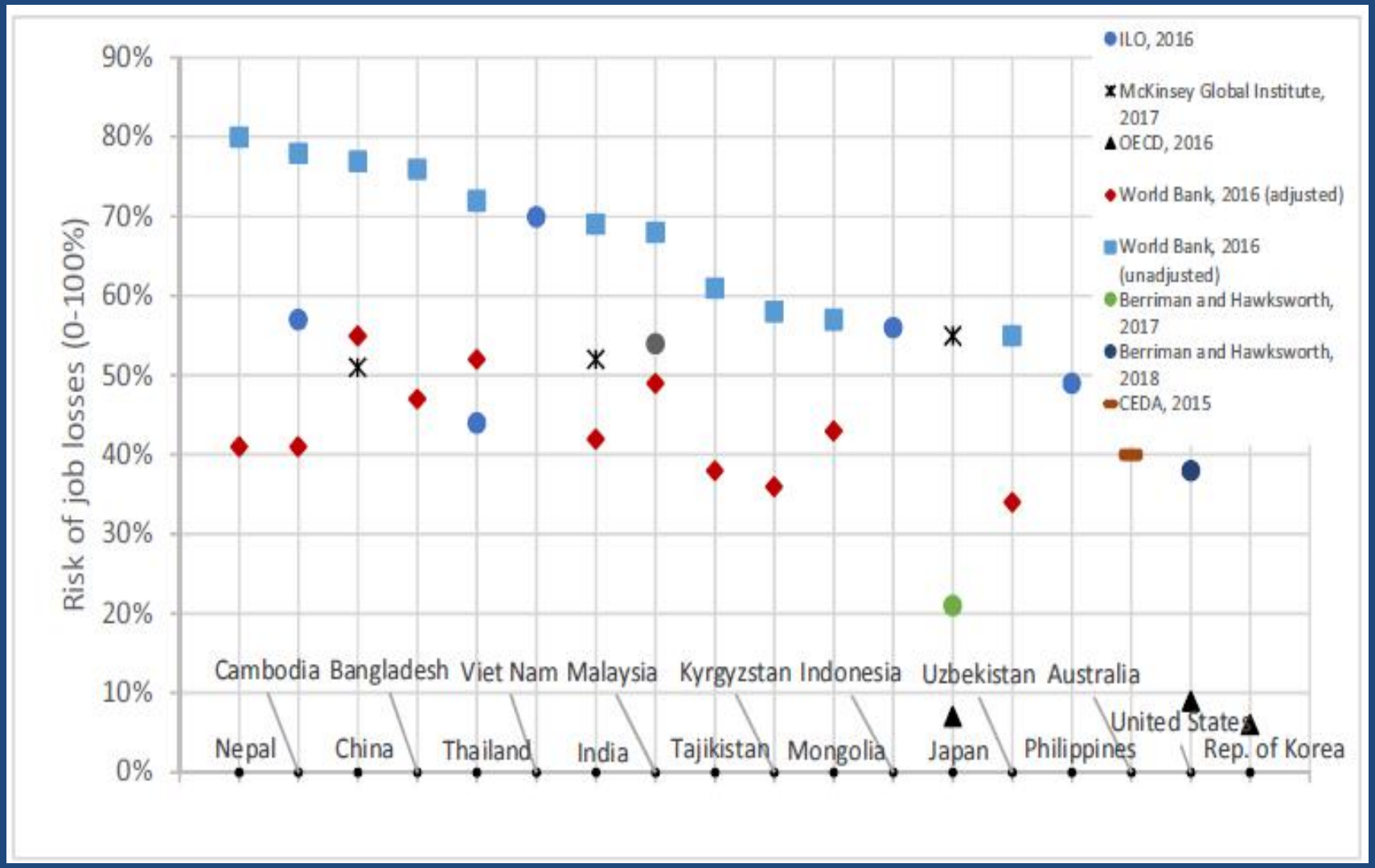
While the level of disruption, scale and pace of 4IR is unknown, it will happen



SHENZHEN THEN...
...AND NOW

Impact of frontier technologies on jobs

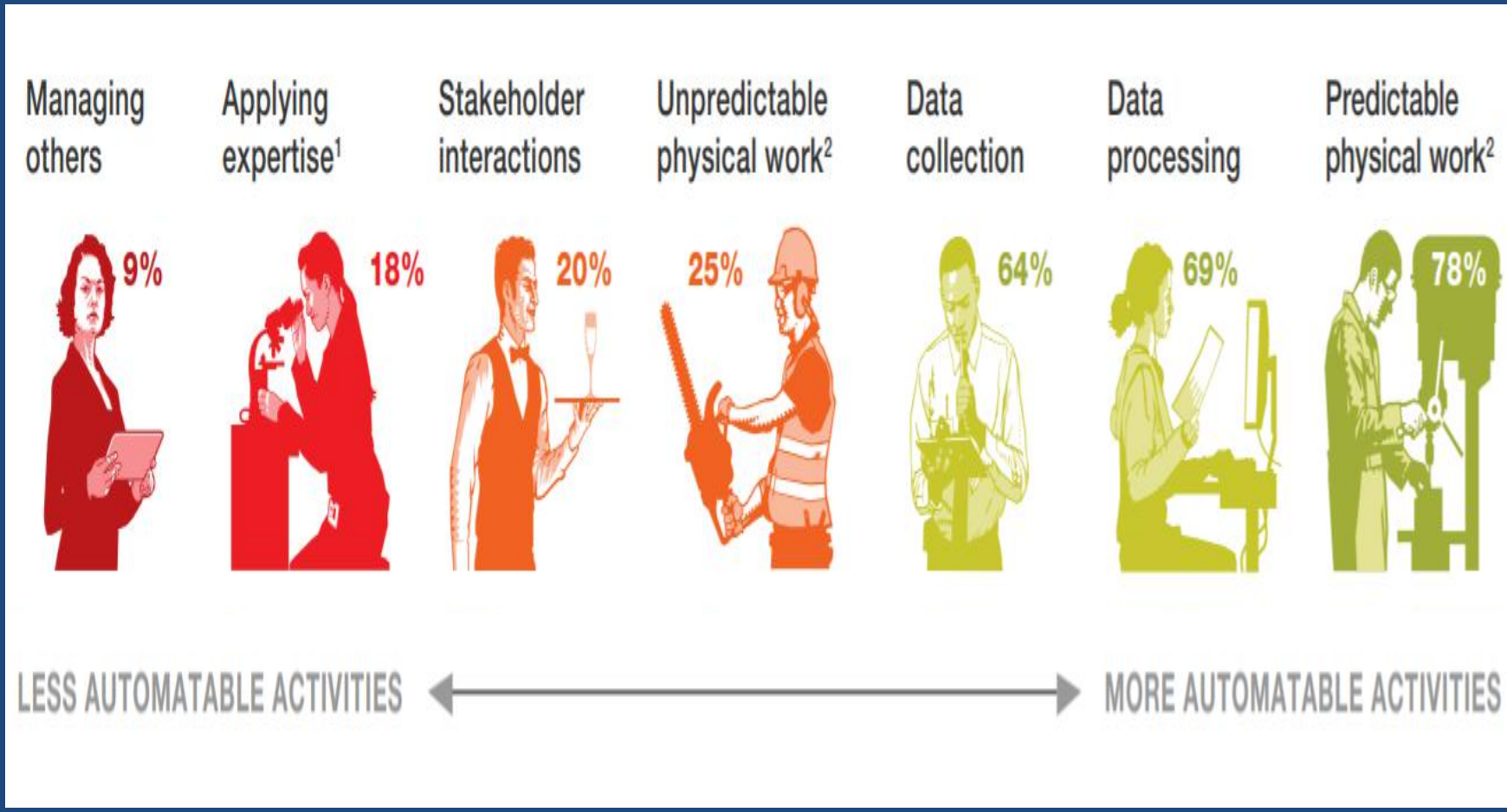
Range of estimates of the share of jobs at risk of being lost to automation



Source: *compiled by ESCAP*

Where could job automation happen?

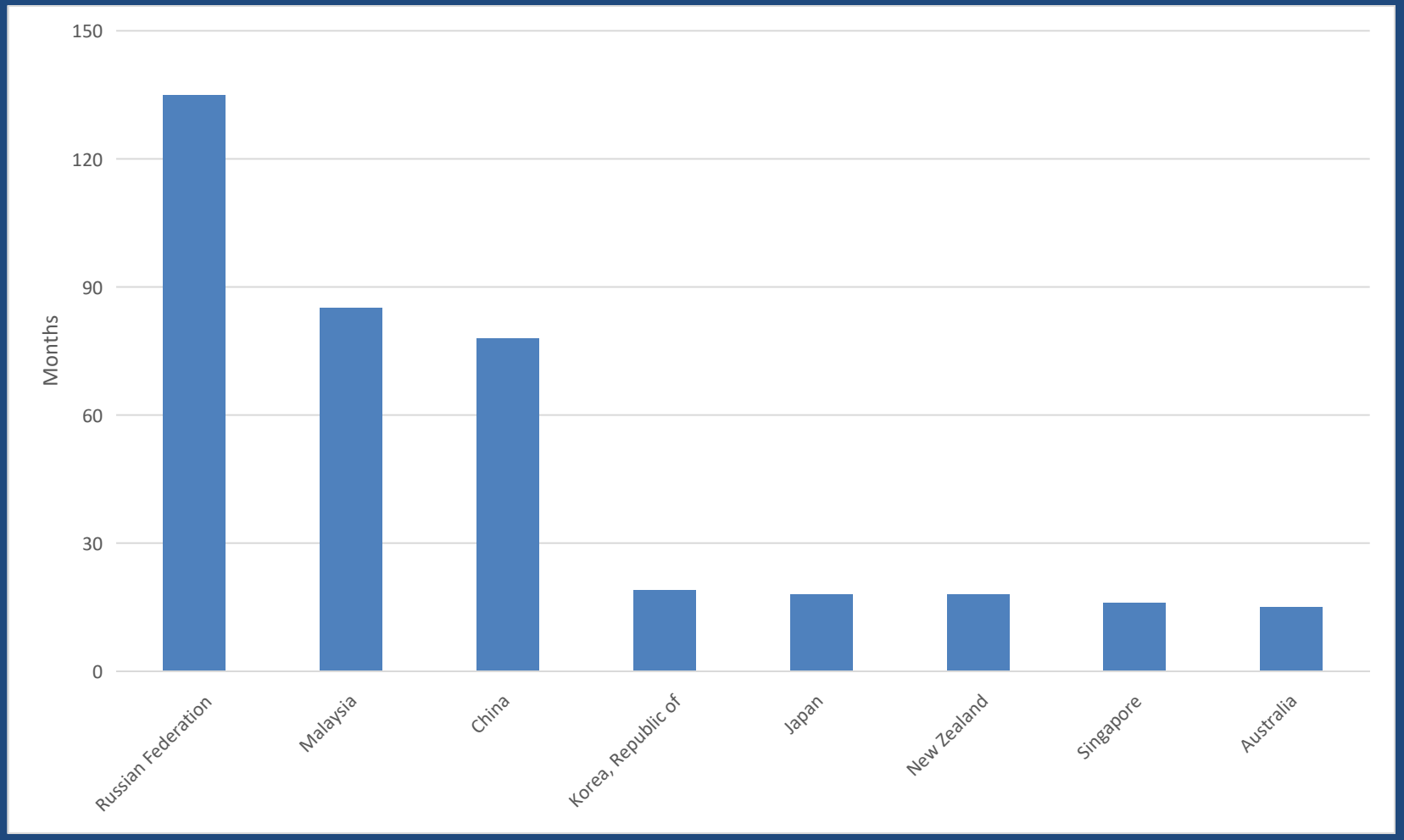
Technical potential for automation



Source: *McKinsey*

What is technically feasible is not always economically viable

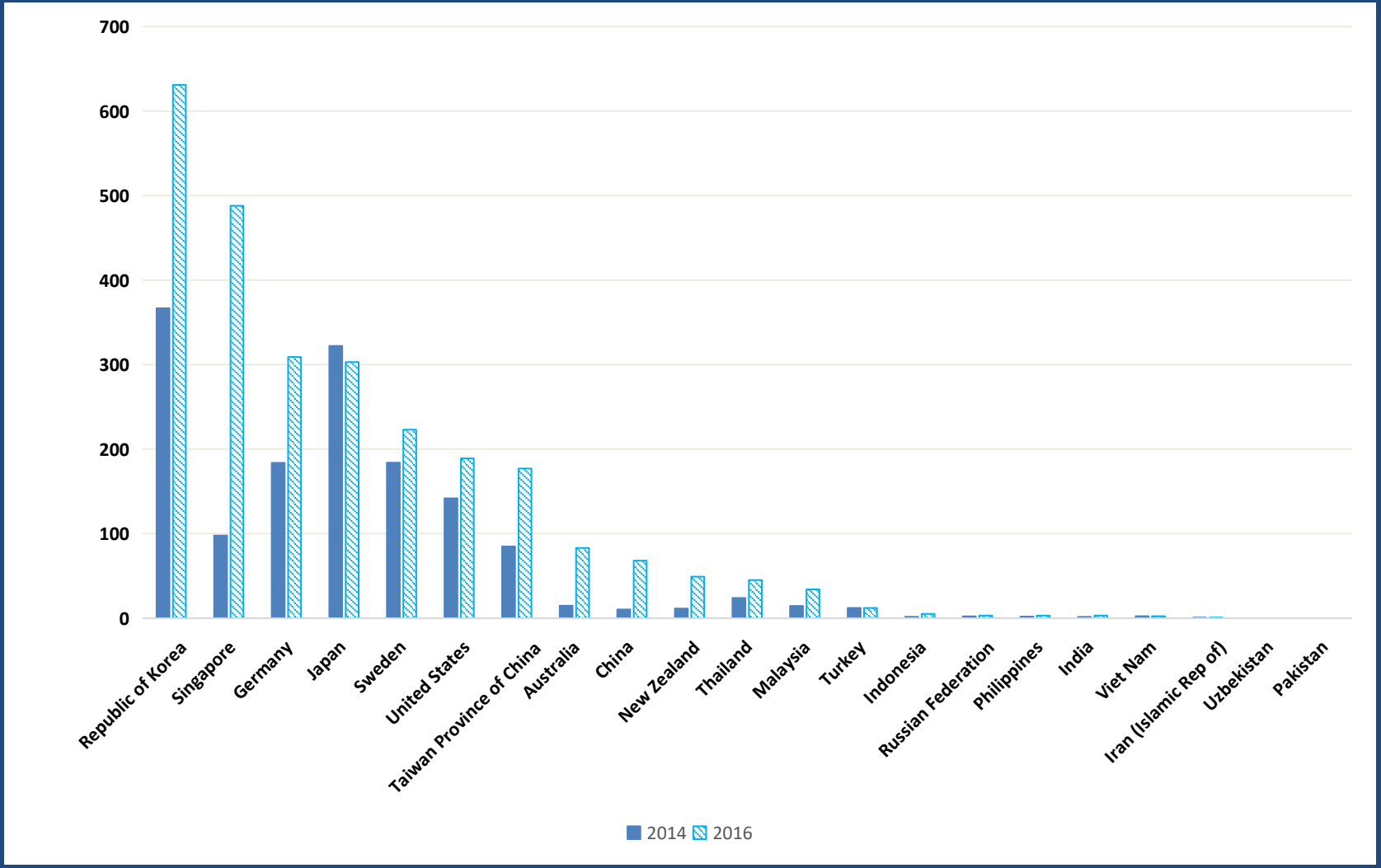
Dynamics between wages and machine costs: Scenario analysis



Source: *ESCAP*

Wages vs. machine costs

Estimated robot units in manufacturing per 10k employees, 2014 and 2016



Source: prepared by ESCAP based on UNCTAD, 2017

The policy response?
Next generation digital ecosystems

Prerequisites:

- Inclusive ICT infrastructure.
- A workforce fit for the future: Skills for a digital age rather than digital skills?
- A responsive and adaptive regulatory framework that doesn't stifle innovation.
- A private sector that pursues responsible technology development.
- A catalysing role of government in technology evolution.

Inclusive ICT infrastructure

"Last mile" connectivity should be a policy priority so as not to fuel a new frontier technology divide.

Skills for a digital age

- Digital skills
- Moral philosophy
- Responsible business
- Design-thinking

A workforce fit for the emerging scale and speed of the technological revolution

- **Life-long learning, and reskilling** to deal with current and future technological transitions.

  e.g. Singapore offers adults personal accounts which they can use to buy training, and another uses tax incentives to encourage firms to invest more in their lower paid workers.

- Strengthen **social protection systems** to protect the workers that are vulnerable to losing their jobs.

  e.g. UBS pilots around the world.

- Think deeply about what a **next generation civil servant** will look like and who we should be hiring.

  e.g. A2I Bangladesh.

A responsive and adaptive regulatory framework that doesn't stifle innovation

- **Responsive and adaptive regulation**
  e.g. Monetary Authority Singapore allows banks and their partnering tech firms to conduct pilot trials of their FinTech initiatives without the need to achieve full compliance in early-stage development.

- **Tech for quicker and more efficient regulation**
  e.g. Bank of England use of AI in regulatory processes.

- **Tech ethics**
  e.g. In Germany, the Federal Government has proposed rules for decision-making to promote ethical behaviour by systems guiding crash scenarios for driverless cars. These rules prioritize human life above property damage and do not discriminate between human lives.

A private sector that pursues responsible frontier technology development

- Past tech revolutions were government led (Internet / GPS).
- This one is private sector led (AI, robotics).
- Incentivising responsible tech development in the private sector must be a policy priority.

A catalysing role of government in frontier technologies' evolution

- **Public sector innovation skills**
  e.g. UK Government Digital Services

- **The government as a market maker and shaper:** Although the private sector has been the prime investor in frontier technologies, governments have established dedicated agencies to help realize the transformative potential of frontier technologies for sustainable development.
  e.g. SGInnovate as the venture capital arm of Singapore's Infocomm Development Authority.

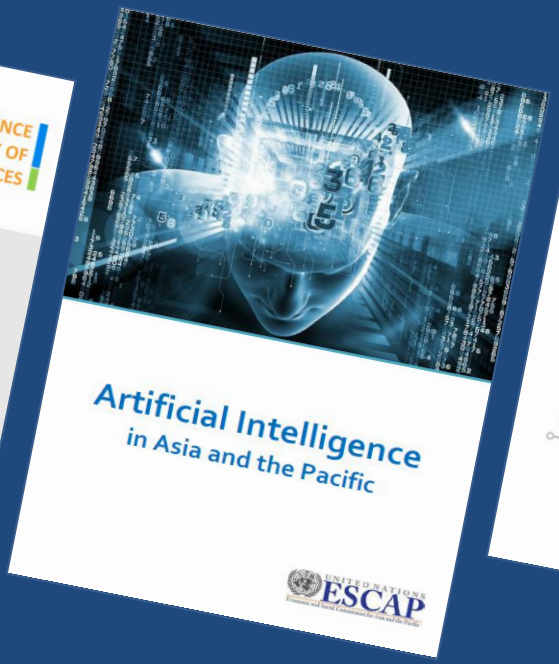
And make sure it's inclusive!

- Women and girls
- Grassroots innovators

Key messages

- **Take a balanced view on emerging technologies.**
- **Be prepared! – preparatory policy responses.**
- **Commit to "leave no one behind":** Asia in particular is home to some of the most innovative in the world but also some of the most technologically deprived.
- **Commit to policy evaluation, experimentation and sharing of effective practices.**
- **Collaboration, collaboration, collaboration!!** Cross-government cooperation; and honest, open and regular discussion with civil society and the private sector, specifically technology developers; will be critical to ensure that frontier technologies have a positive impact on sustainable development.

Further reading



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Thank You

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