

27TH OSCE ECONOMIC AND ENVIRONMENTAL FORUM
CONCLUDING MEETING
Prague, 11-13 September
Opening Session

International Institute for Applied Systems Analysis
www.iiasa.ac.at

science for global insight

Digitalization as a new catalyst for economic growth and connectivity or a challenge to our well-being?

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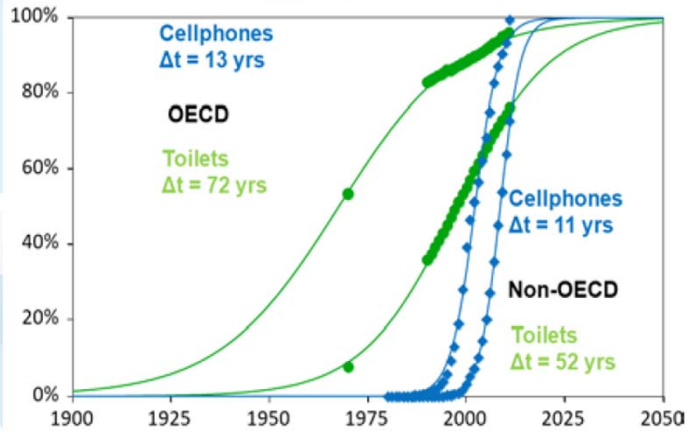
International Institute for Applied Systems Analysis
(IIASA), Laxenburg, Austria

IIASA, International Institute for Applied Systems Analysis

Digital transformation of the economy and society is happening at an accelerated pace

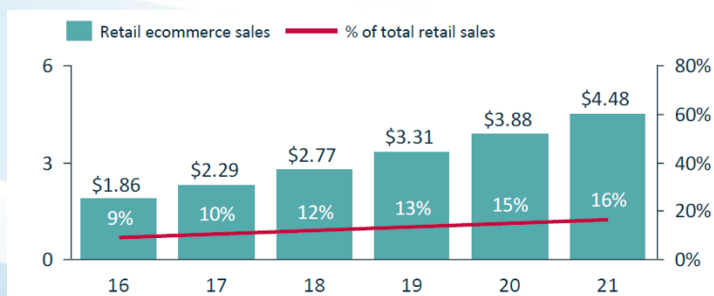
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Digital technology diffusion: fast and widespread



Source: IIASA

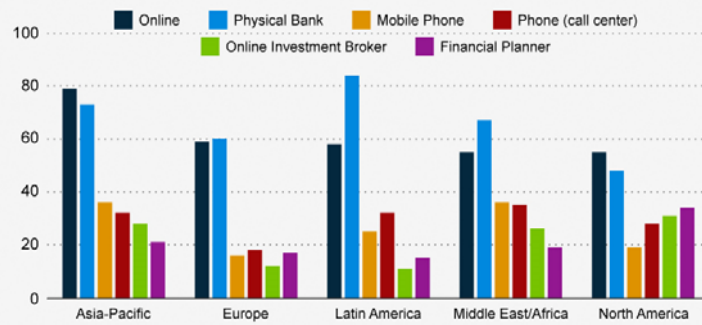
Retail e-commerce sales are growing worldwide



Source: IPC Market Insights

Online banking rivals physical branch banking

Channels used for investment transactions in the last three months (in %)



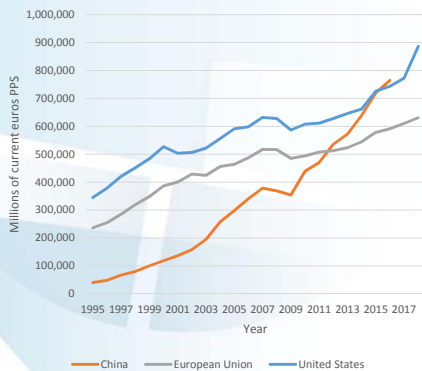
Survey of 28,000 online consumers, who have indicated they currently use investment services (February 2012)



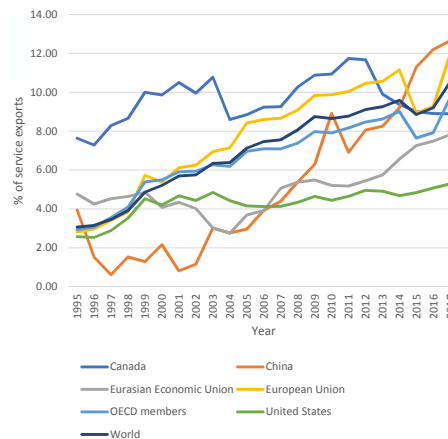
Source: Nielsen

Grows of ICT sector

ICT value added (Millions of current euros PPS), 1995-2018



ICT service exports (% of service exports), 1995-2017



Source: European Commission

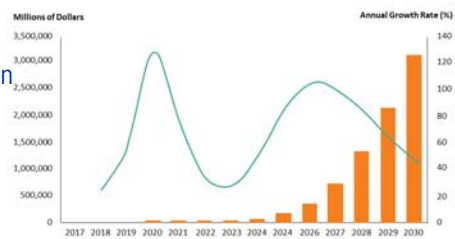
Digital transformation is expected to open up new opportunities



Blockchain

Blockchain application to trade

- Trade finance
- B2G and national inter-agency coordination
- Certification and licensing
- Release and customs clearance of goods
- Logistics and transportation
- Cross-border payments
- Insurance
- ...

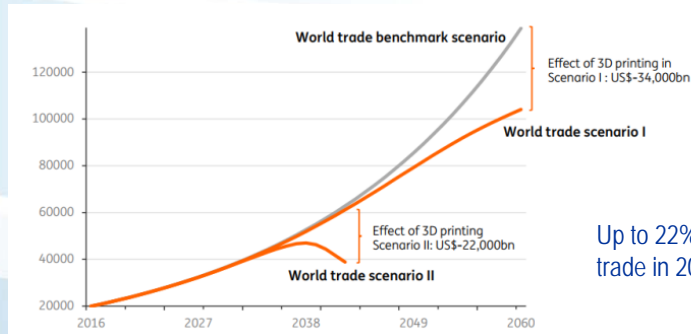


Value added (global); Source: Gartner Inc.

- US\$3.1 trillion valued added by 2030 (Gartner Inc.)
- Additional US\$1.1 trillion in global trade volumes by 2026 (7% increase; Bain & Company and HSBC)
- Combined with IoT, AI and 3D printing, 34% trade growth (2016-2030); increase in services trade share to 25% in 2030 (WTO)



3D printing



Effect of 3D printing on world trade in goods and services, bln USD: Source: ING

Scenario I: current trend of investment in 3D printers and traditional machines continues

Scenario II: doubled rate of investment in 3D printers



Digitalization to reduce trade costs

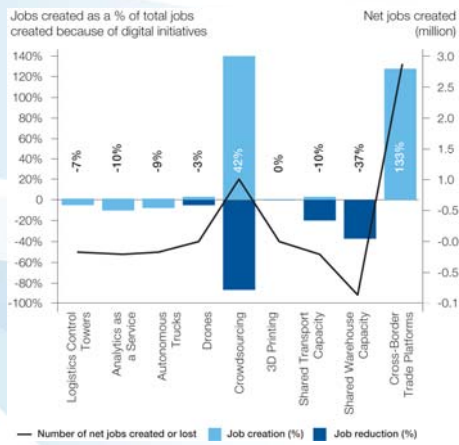
- Full implementation of digital trade facilitation (incl. paperless and cross-border trade facilitation) is projected to decrease trade costs by more than 26% in Asia-Pacific region cutting international transaction by about \$1.2 trillion annually (UN ESCAP).

Country/indicator	Documents to export (number)	Cost to export (US\$ per container)	Time to export (days)
China	8	823	21
India	7	1332	17
Japan	3	829	11
Russia	9	2401	21
South Korea	3	670	8
Azerbaijan	9	3460	27
Kazakhstan	10	5285	79
Kyrgyzstan	9	4760	63
Latvia	5	600	10



Source: Doing Business, World Bank

Digitalization can create new jobs



Net job creation from digitalization in logistics 2016-2025, globally



Source: World Economic Forum / Accenture analysis

Digitalization and sustainable development

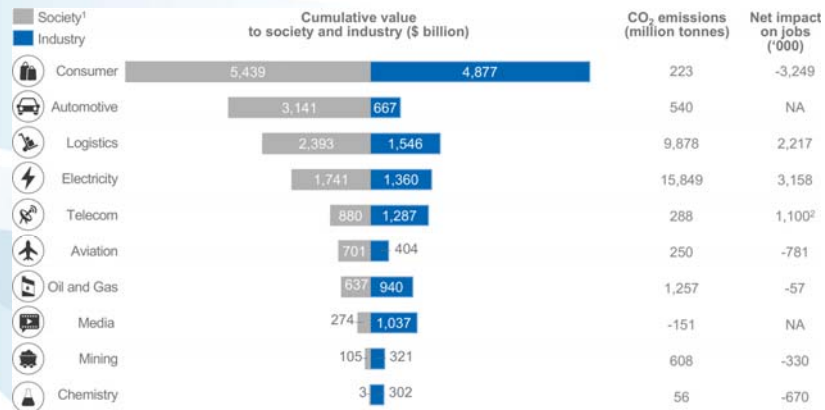
- Digitalization allows for a much more efficient energy and material use



Source: IIASA



Combined value of digitalization to industry and society (2016-2025)

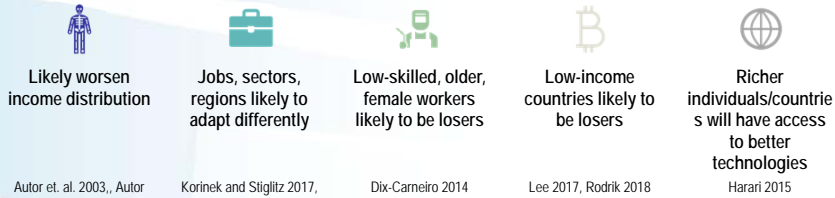


Note: ¹ Total societal value at stake includes impact on the customers, society and environment. Impact on external industries has not been considered.
²Excludes Extending Connectivity digital initiative.

Source: World Economic Forum / Accenture analysis

.... but there are serious challenges

Societal impacts



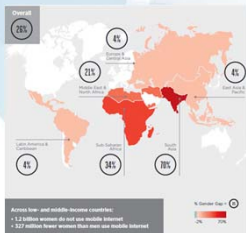
Likely worsen income distribution
 Autor et. al. 2003., Autor and Salmons 2017, Goos et. al. 2014, Darvas and Wolf 2016, Deming 2017, Acemoglu and Autor 2011, Sachs 2017

Jobs, sectors, regions likely to adapt differently
 Korinek and Stiglitz 2017, Goolsbee 2018, McKinsey 2016, 2018

Low-skilled, older, female workers likely to be losers
 Dix-Carneiro 2014

Low-income countries likely to be losers
 Lee 2017, Rodrik 2018

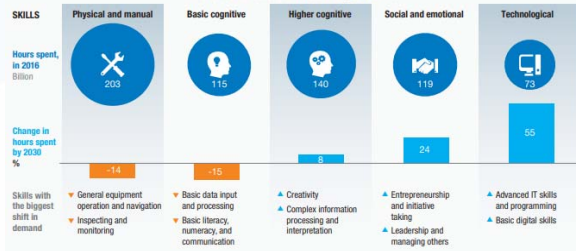
Richer individuals/countries will have access to better technologies
 Harari 2015



Gender gap in mobile Internet use (2017); Source: GSMA Intelligence

Automation and AI will change the skills needed in the workforce

Total is for United States and 14 Western European countries



Source: McKinsey

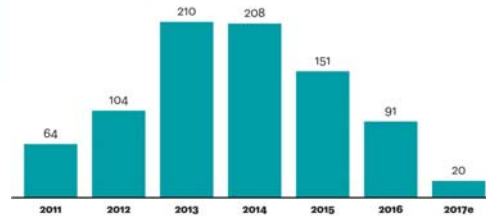
Reshoring

Reshoring is the process of returning production and manufacturing of goods back to the company's original country.

Reshored from Asia to Europe (selection)

- Adidas
- Burberry
- Electrostar
- Gigaset
- One-Lux
- Peugeot Scooters
- Prada
- Volvo car

Source: European Reshoring Monitor



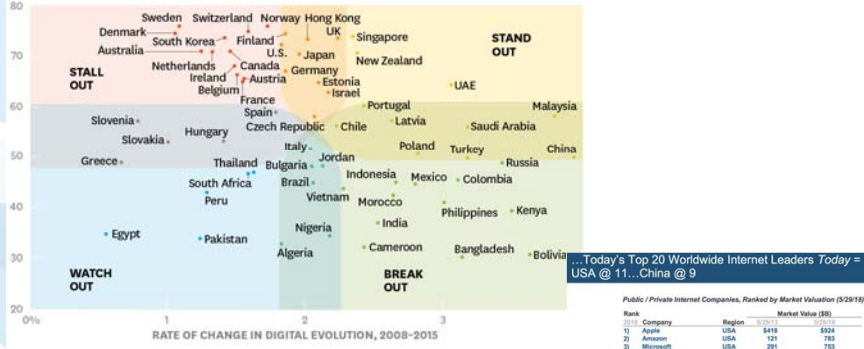
Published reshoring cases in the United States; Source: Robotics Business Review

Countries over the global digitalization landscape

Plotting the Digital Evolution Index, 2017

Where the digital economy is moving the fastest, and where it's in trouble.

HOW COUNTRIES SCORED ACROSS FOUR DRIVERS ON THE DIGITAL EVOLUTION INDEX (OUT OF 100)



Today's Top 20 Worldwide Internet Leaders Today - USA @ 11...China @ 9

Public / Private Internet Companies, Ranked by Market Valuation (\$2B+)

Rank	Company	Region	2016 (\$B)	2017 (\$B)
1)	Apple	USA	\$418	\$524
2)	Amaozn	USA	171	253
3)	Microsoft	USA	291	753
4)	Google Alphabet	USA	288	238
5)	Facebook	USA	58	538
6)	Alibaba	China	-	508
7)	Tencent	China	71	483
8)	Netflix	USA	13	152
9)	Ant Financial	China	-	150
10)	eBay + PayPal	USA	71	133
11)	Booking Holdings	USA	41	100
12)	Salesforce.com	USA	25	84
13)	Baidu	China	34	84
14)	Slack	China	-	75
15)	Uber	USA	-	72
16)	Didi Chuxing	China	-	56
17)	JD.com	China	-	52
18)	Alphab	USA	-	31
19)	Mellon-Dianping	China	-	30
20)	Twitter	China	-	30
Total			\$1,429	\$5,768

Ways forward

Impacts of previous technological waves



Research on the impact of automation started during the Industrial revolution (1800s), when textile mills started replacing humans



Each wave of new technologies has been seen as a threat to jobs



But has empirically increased employment, jobs, and growth



- International cooperation to

- Promote an enabling environment for digital innovations
- Foster competition in the digital economy
- Bridge digital divides
- Promote international labor standards
- Exchange experiences on digital transformation, digitalization of government and innovative models

“The openness of the European market should be maintained and developed further in the digital sphere. The EU should continue to press for the same openness and effective enforcement of intellectual property rights from ... trading partners ... an ambitious digital trade and investment policy should be further developed including by means of the EU’s free trade agreements.” (A Digital Single Market Strategy for Europe)



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Ministerial Council
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MC.DOC/2/18
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Second day of the Twenty-Fifth Meeting
MC(25) Journal No. 2, Agenda item 7

DECLARATION ON THE DIGITAL ECONOMY AS A DRIVER FOR PROMOTING CO-OPERATION, SECURITY AND GROWTH

1. We, the members of the Ministerial Council of the Organization for Security and Co-operation in Europe, recall the provisions of the OSCE Strategy Document for the Economic and Environmental Dimension adopted in Maastricht in 2003, the Ministerial Council Declaration on Strengthening Good Governance and Combating Corruption



IIASA as a platform for science-based dialogue to enhance global cooperation

- Established in 1972 by USA and USSR: **bridge between East and West**, science diplomacy
- Currently **22 member countries**
- International, independent, interdisciplinary research into the issues of sustainability and global transformation









Thank you for your attention

