

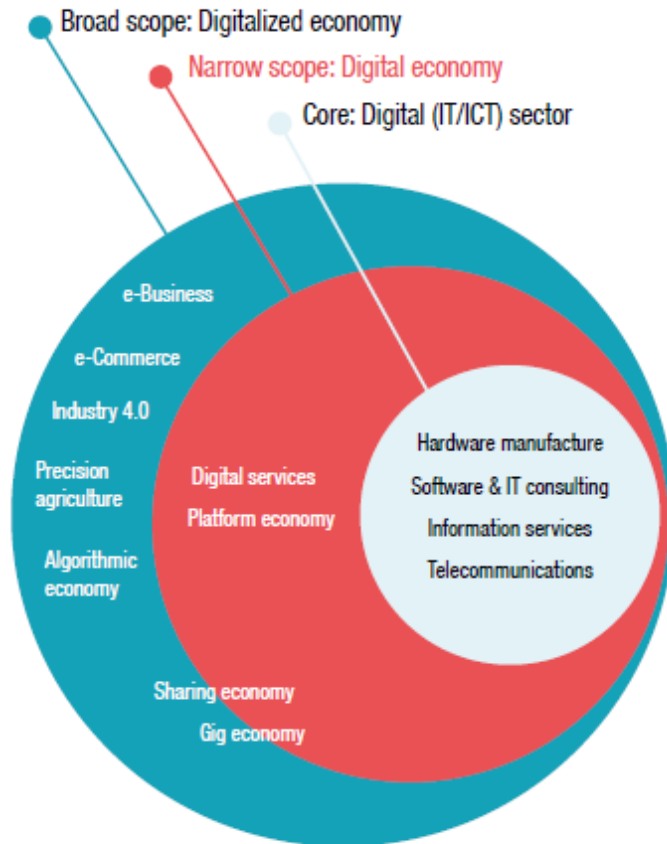


# Some trends in digitalization and development

Geneva, 28 October 2019

Angel González Sanz  
Division on Technology and Logistics  
UNCTAD

Figure I.1. A representation of the digital economy



Source: Bukht and Heeks, 2017: 13.

# What is the digital economy?

# What do we know about the size and the scope of the digital economy?

## Global digital economy

estimates range from:

**Narrow definition**



**4.5%**  
of GDP

**Broad definition**



**15.5%**  
of GDP

In the **US** estimates range from:

**Narrow definition**



**6.9%**  
of GDP

**Broad definition**



**21.6%**  
of GDP

In **China** they range from:

**Narrow definition**



**6%**  
of GDP

**Broad definition**



**30%**  
of GDP

Source: UNCTAD, Huawei and Oxford Economics, US BEA, Miura.

The evolving digital economy is closely associated with key **frontier technologies** that impact **all SDGs**

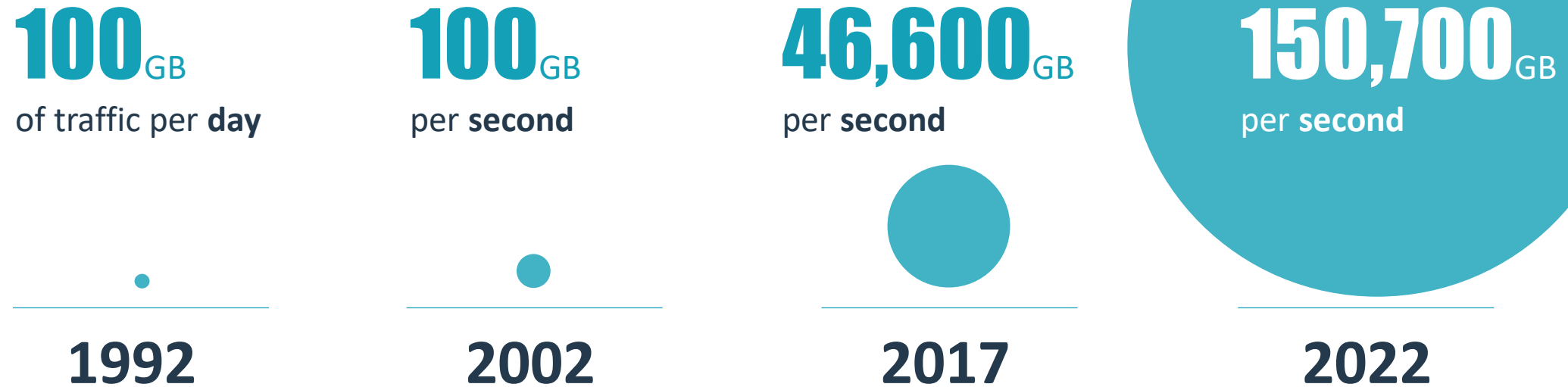
- Internet of Things
- Data analytics
- Machine learning
- Artificial intelligence
- Automation & Robotics
- 3D printing
- Cloud computing



# A classification of new technologies

- New enablers of digitalization
  - Smart sensors, wearables, GPS navigation, drones
- Optimizers of production processes
  - IoT, additive manufacturing, machine learning, data analytics, robots, remote operation, digital twins...
- Enhancers of the use of resources
  - New renewable energies, nanotech

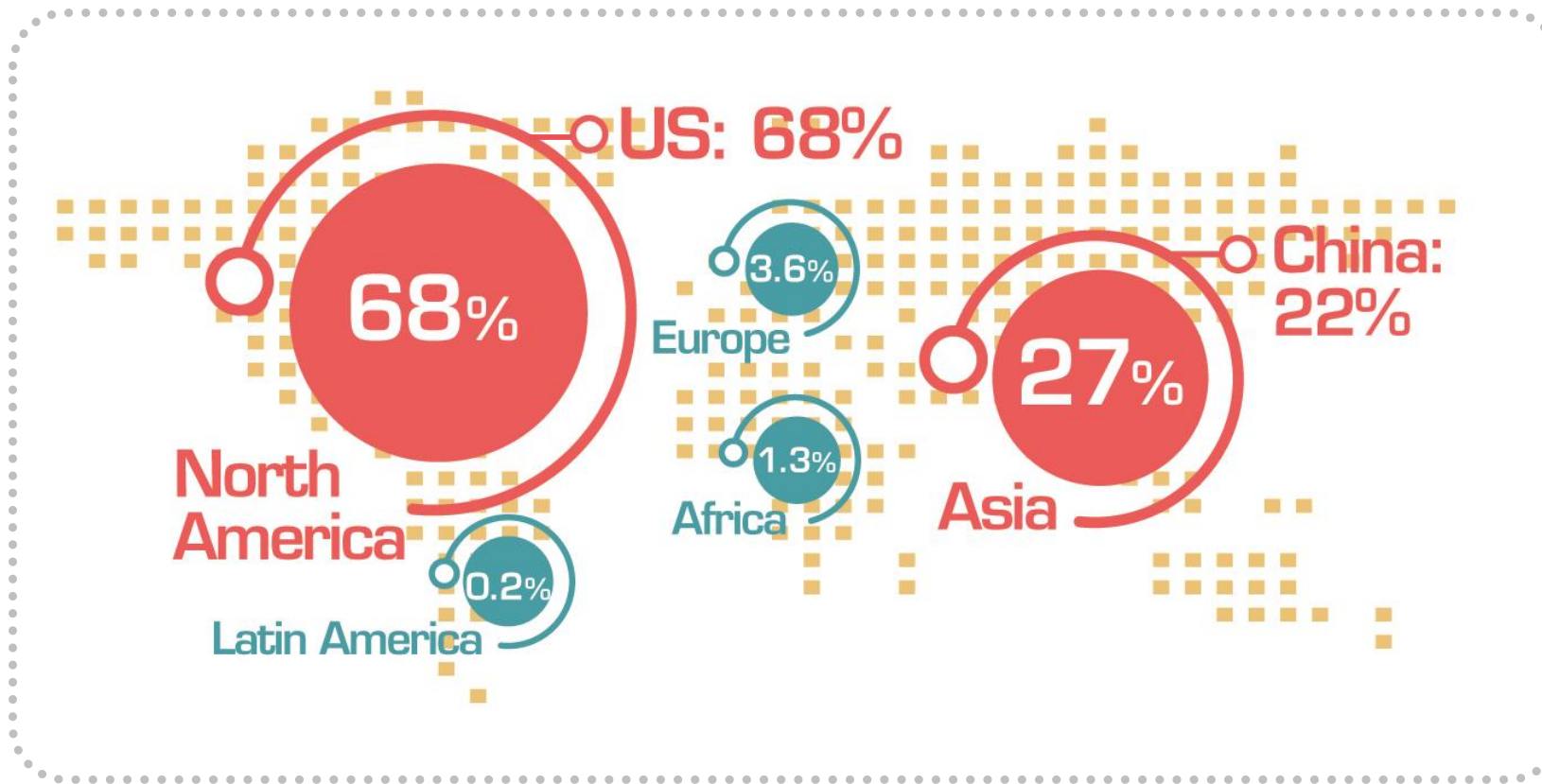
Global Internet Protocol (IP) traffic, a proxy for data flows, has grown dramatically...



...but the world is only in the early days of the data-driven economy

Source: UNCTAD, based on data from Cisco.

# Geography of the digital economy is highly concentrated in **two countries**



**US and China:**  
**90%** of the market capitalization value of the world's 70 largest digital platforms

Source: Holger Schmidt (<https://www.netzoekonom.de/vortraege/#tab-id-1>).

# Geography of the digital economy is highly concentrated in **two countries**

US and China account for:



**75%** of all patents related to **blockchain technologies**



**50%** of of global spending on **IoT**



**>75%** of the **cloud computing market**

Source: UNCTAD, based on ACS, IDC and Cisco.



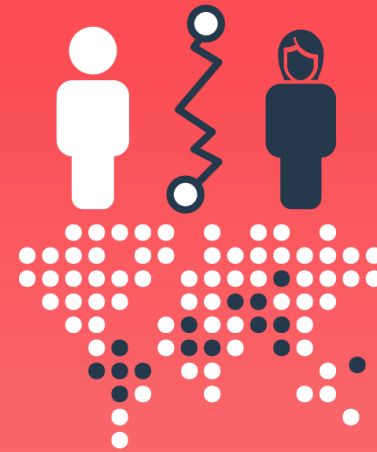
And there are still huge digital divides



Half of the world  
remains **offline**



In LDCs only  
**1 in 5** people  
is online



**Gender gap**  
is the widest in the  
poorest economies

Source: UNCTAD, based on ITU Statistics database.

# DRIVERS AND IMPACT OF DIGITALIZATION

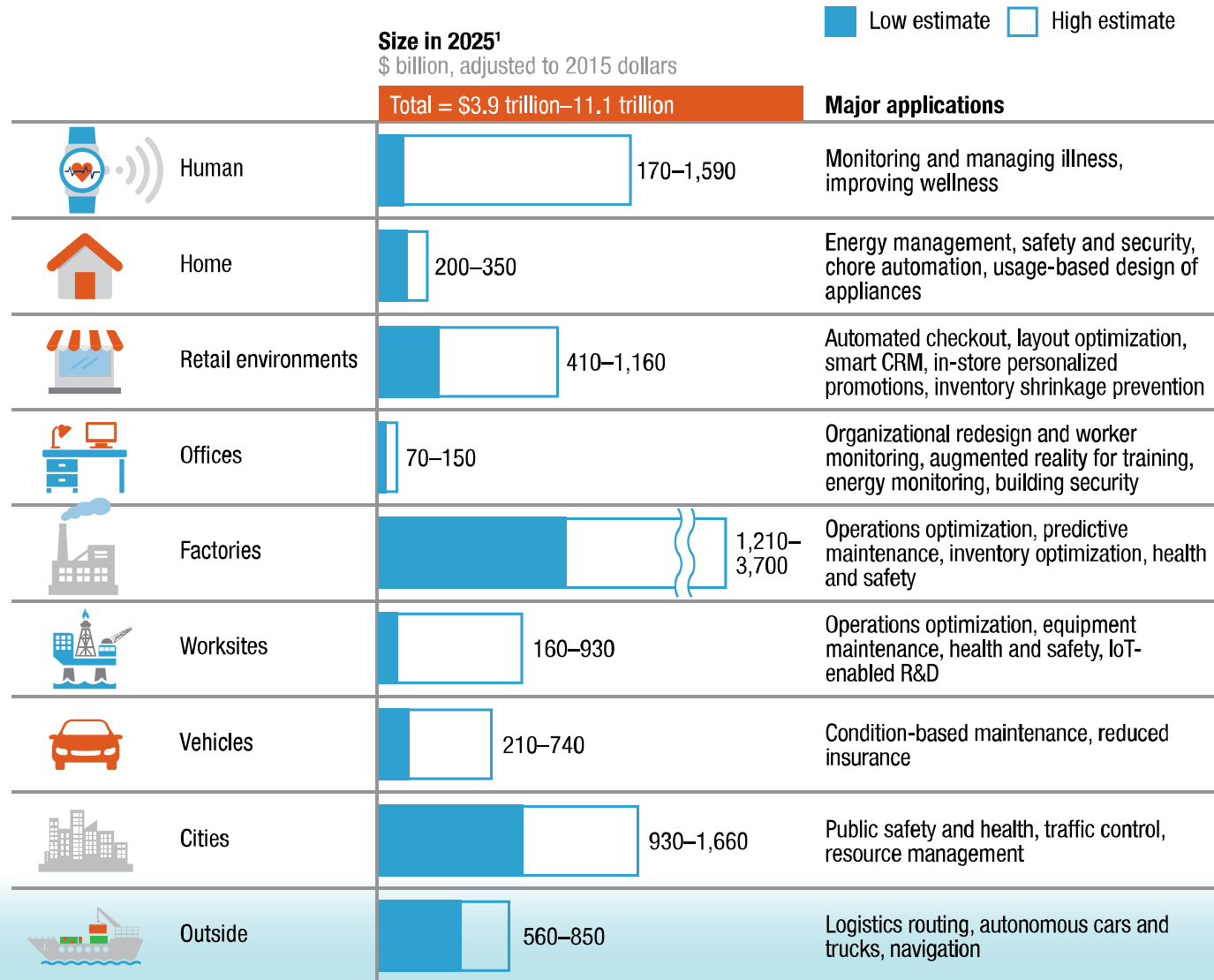
# Trends driving digitalization of production

- Rapid technical change in various fields create opportunities for massive efficiency gains through combined application
- Falling prices of computing power
- Competitive pressures
- Opportunities to remove human error (safety), risks (environment),
- Reduction in the cost of experimenting with new products/processes

# Impact on value creation

- Possibility to revive productivity growth
- Mixed effects
  - For example, robots can improve productivity and safety in industry, but reduce employment for less-skilled workers
- Inequality
  - Polarized labour market
  - Gender
  - Geography
- Context dependence
  - Technical feasibility does not equal economic viability
  - Technological capabilities define chances to benefit

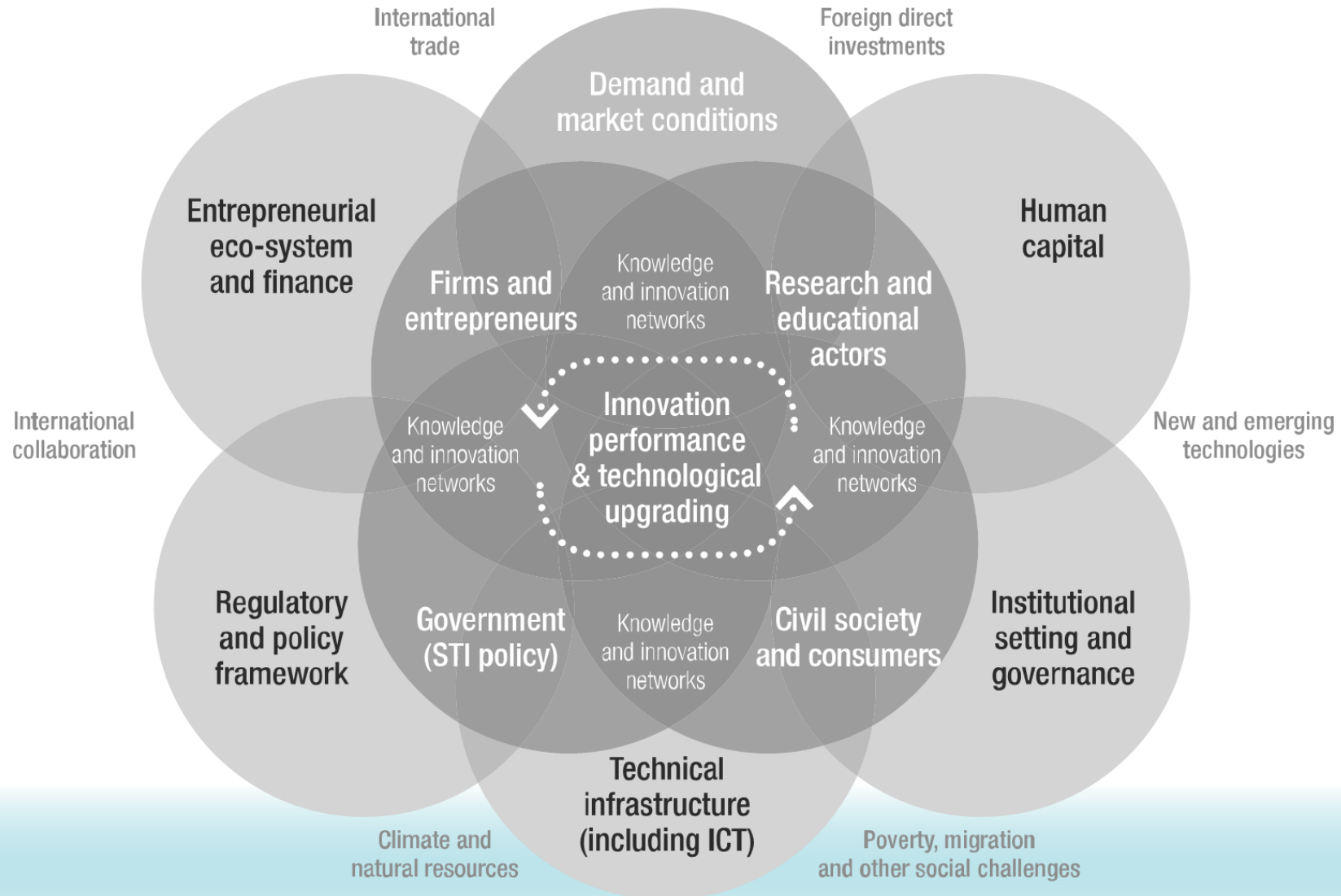
# Potential impact of IoT, 2025



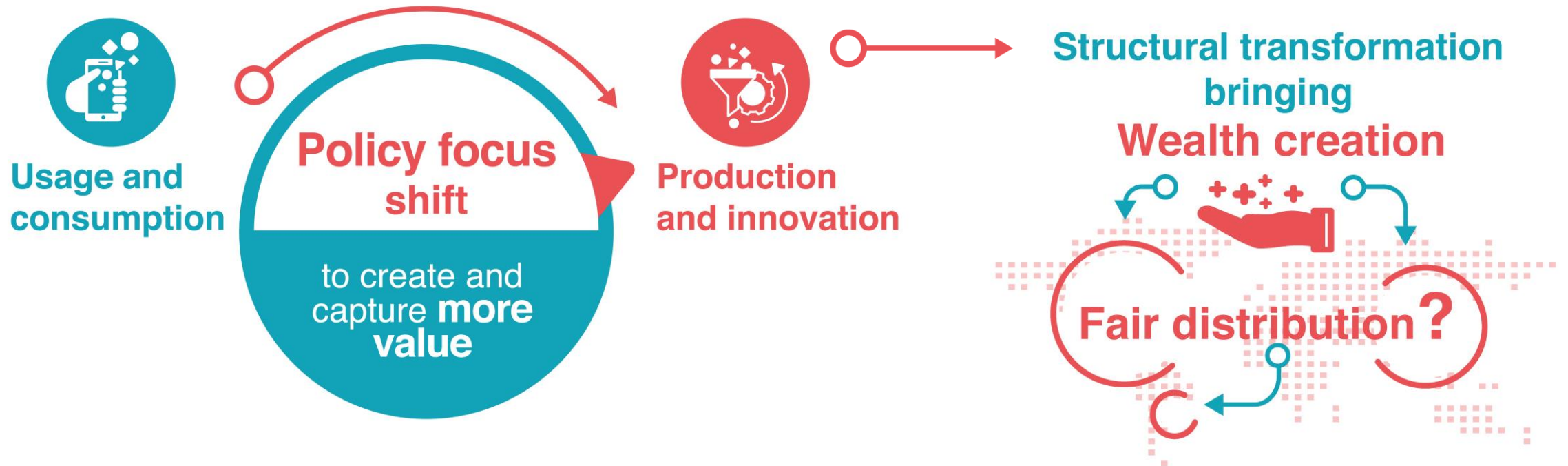
<sup>1</sup> Includes sized applications only.  
Note: Numbers may not sum due to rounding.



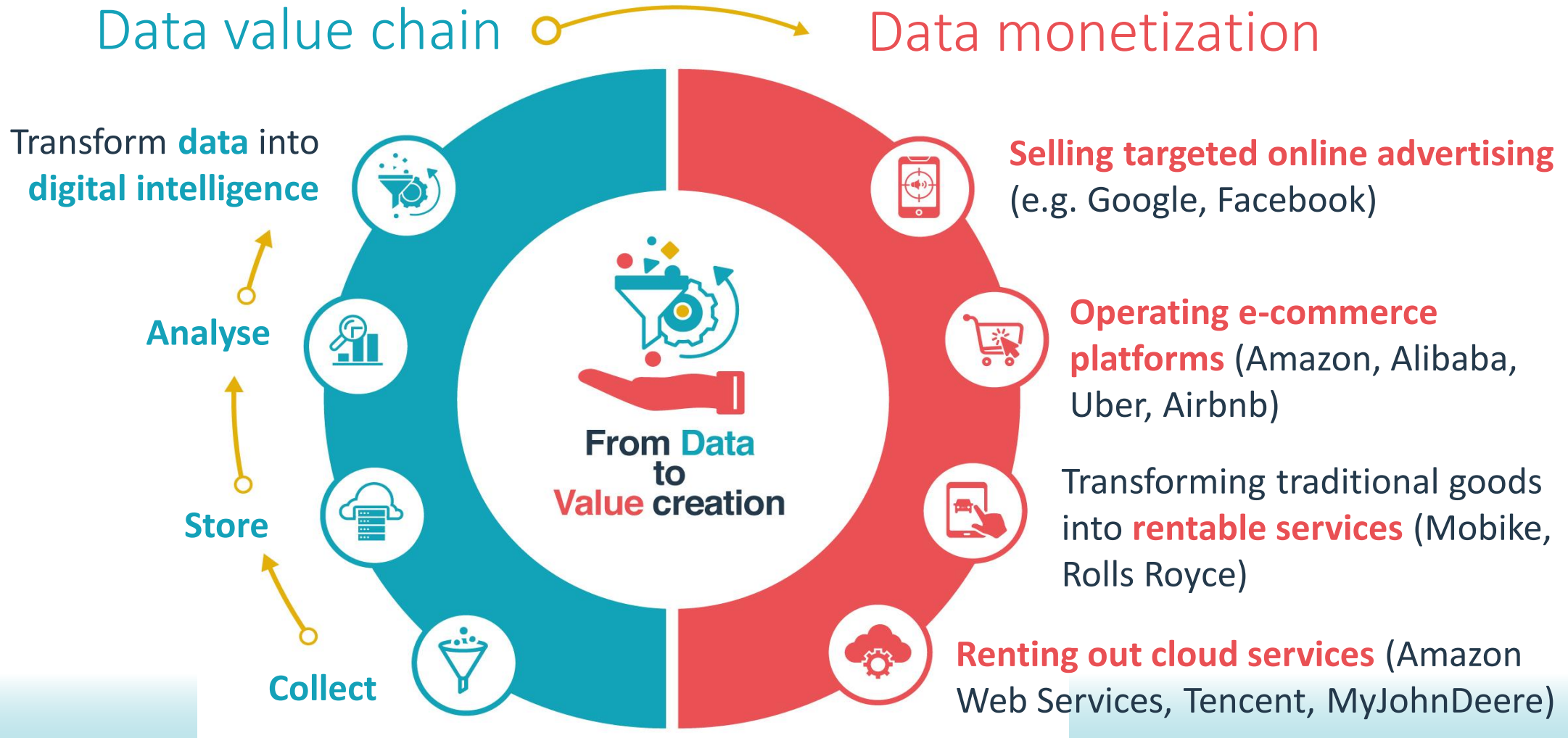
# Digitalization cannot deliver without a functional NSI



# Productive and innovative capabilities key for value creation and capture in the digital economy



Economic value of data arises once data are refined into **digital intelligence** that can be monetized.





## Four dimensions to consider

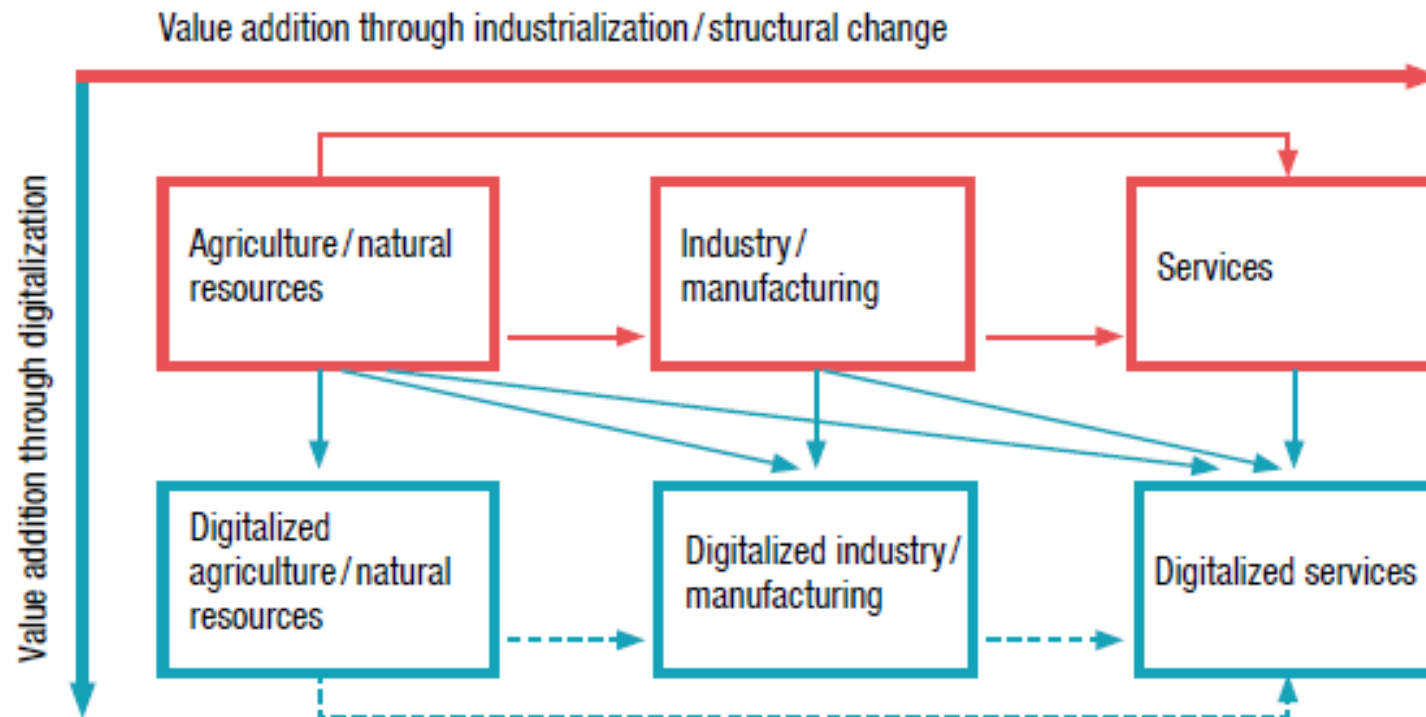
- Distribution of value
- Scope of upgrading
- Governance of value creation
- Value creation vs. capture

## Different actors to consider

- Individuals
- Small and large businesses
- Governments
- Economy-wide effects

# New pathways for structural change

Figure II.4. From industrialization to digitalization



Source: UNCTAD.

# MEASURING VALUE IN THE DIGITAL ECONOMY

# Measurement of the digital economy **needs** **improvement**



Need for agreed definitions of value in the digital economy

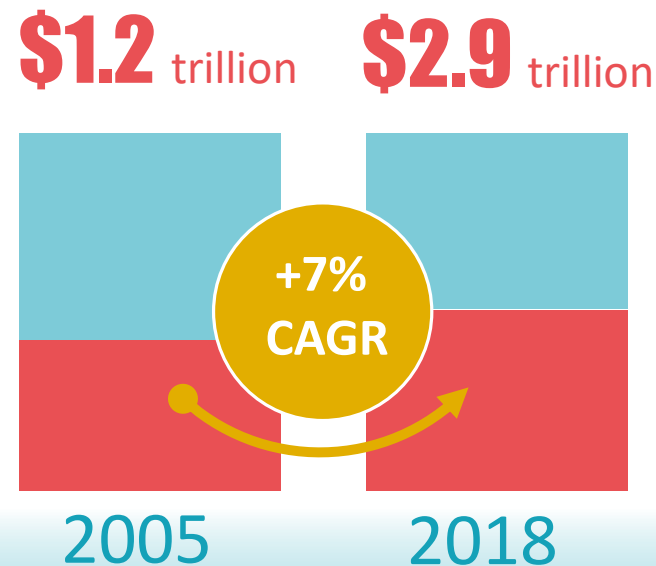


Need to collect official statistics

More needs to be done to make progress in measurement of the digital economy, especially to support developing countries in **building statistical capacities to produce relevant information.**

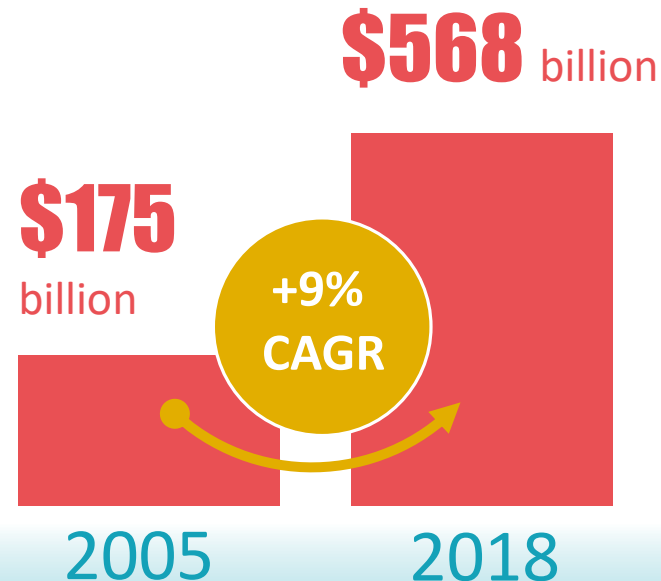
# Growing importance of digitalization in the global economy

**Digitally deliverable services exports** in global services exports

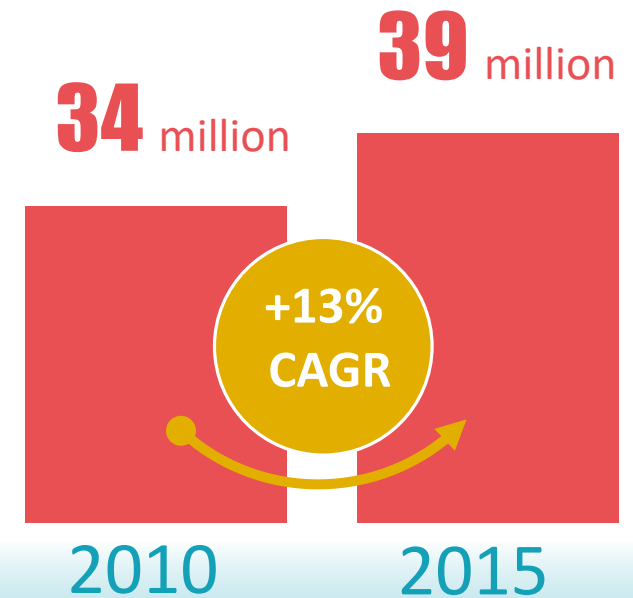


Source: UNCTAD.

Global **ICT services exports**



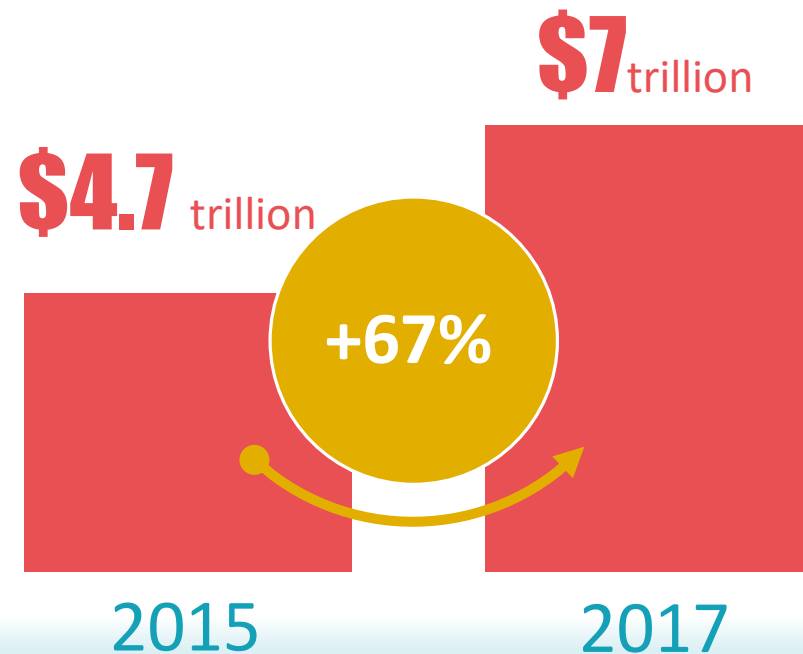
Global **employment** in the **ICT sector**



VALUE CREATION  
AND CAPTURE IN THE  
DIGITAL ECONOMY:  
A GLOBAL  
PERSPECTIVE

# Global digital platforms have achieved **very strong** market positions

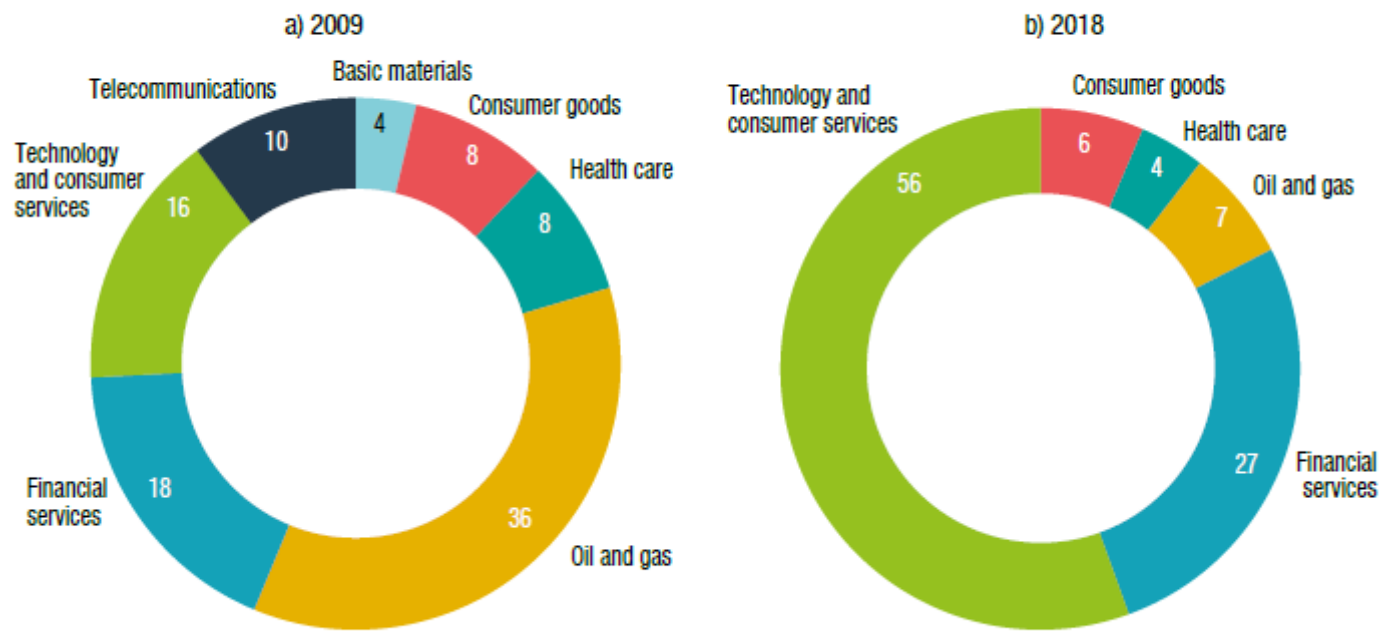
Combined value of the platform companies with a market capitalization of **>\$100 million**



**Top 7** platform companies in terms of market capitalization



Figure I.16. World's top 20 companies by market capitalization, by sector, 2009 versus 2018  
(Per cent)



Source: UNCTAD, based on PwC, 2018b.

## Digital Economy is *not* Business as Usual

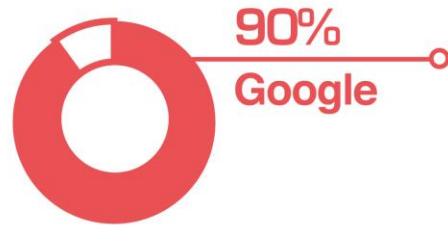
### Sectoral shifts in a decade

- Technology and consumer services up from 16% to 56%.
- Oil, gas and mining down from 40% to 7%.



# US and China giants capture large share in the global digital services market

Internet search market



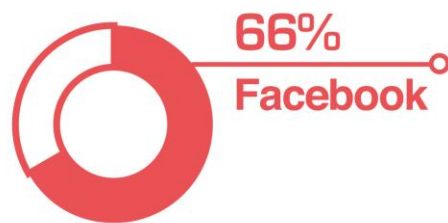
World's online retail activity



Global cloud infrastructure services



Global social media market



Mobile payment solution



Active users



Source: UNCTAD, based on *The Economist*, *Internet Society* and *Digital Marketing China*.

# Factors explaining the rapid rise and consolidation of dominance



Network effects



Ability to extract, control and analyze data



High switching costs

## Actions taken by platforms:

- Acquiring potential competitors
- Expanding into complementary products or services
- Investing strategically in research and development
- Lobbying in domestic and international policy-making
- Exploring strategic partnerships with traditional sectors

# Growing power of digital platforms has global implications

- Market concentration
- Emergence of global data value chains
- Employment and online work
- Taxation 
- Disruption of traditional sectors

**Table IV.2. Facebook and Alphabet (Google) revenues, profits and taxes, 2017**  
(\$ million and per cent)

| Facebook                     | Foreign | United States | Total   | Foreign share (per cent) | United States share (per cent) |
|------------------------------|---------|---------------|---------|--------------------------|--------------------------------|
| Revenue (\$ million)         | 22 919  | 17 734        | 40 653  | 56                       | 44                             |
| Profits (\$ million)         | 13 515  | 7 079         | 20 594  | 66                       | 34                             |
| Share of revenue (per cent)  | 59      | 40            | 51      |                          |                                |
| Taxes (current) (\$ million) | 389     | 4 645         | 5 034   | 8                        | 92                             |
| Share of profits (per cent)  | 2.9     | 65.6          | 24.4    |                          |                                |
| <b>Alphabet (Google)</b>     |         |               |         |                          |                                |
| Revenue (\$ million)         | 58 406  | 52 449        | 110 855 | 53                       | 47                             |
| Profits (\$ million)         | 16 500  | 10 700        | 27 193  | 61                       | 39                             |
| Share of revenue (per cent)  | 28.2    | 20.4          | 24.5    |                          |                                |
| Taxes (current) (\$ million) | 1 746   | 12 608        | 14 354  | 12                       | 88                             |
| Share of profits (per cent)  | 10.1    | >100          | 53.8    |                          |                                |

Source: UNCTAD, based on Facebook Annual Report (<https://investor.fb.com/financials/default.aspx>); and Alphabet Annual Report ([https://abc.xyz/investor/static/pdf/20171231\\_alphabet\\_10K.pdf?cache=7ac82f7](https://abc.xyz/investor/static/pdf/20171231_alphabet_10K.pdf?cache=7ac82f7)).

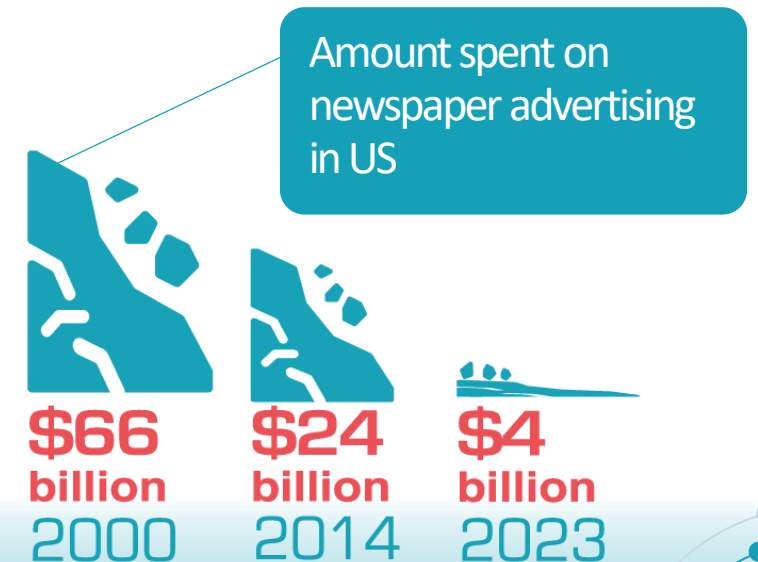
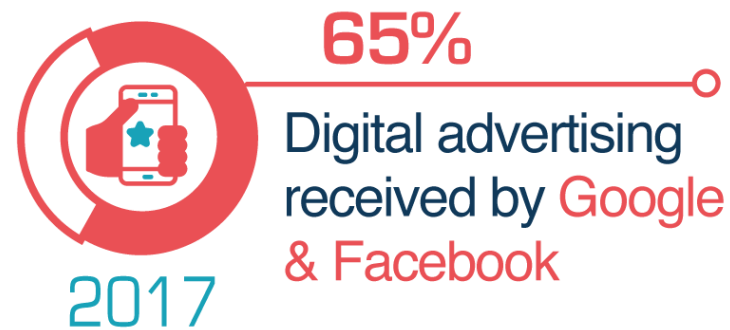
# Growing power of digital platforms has **global** implications: *the case of advertising*

Internet advertising share in the global advertising revenue



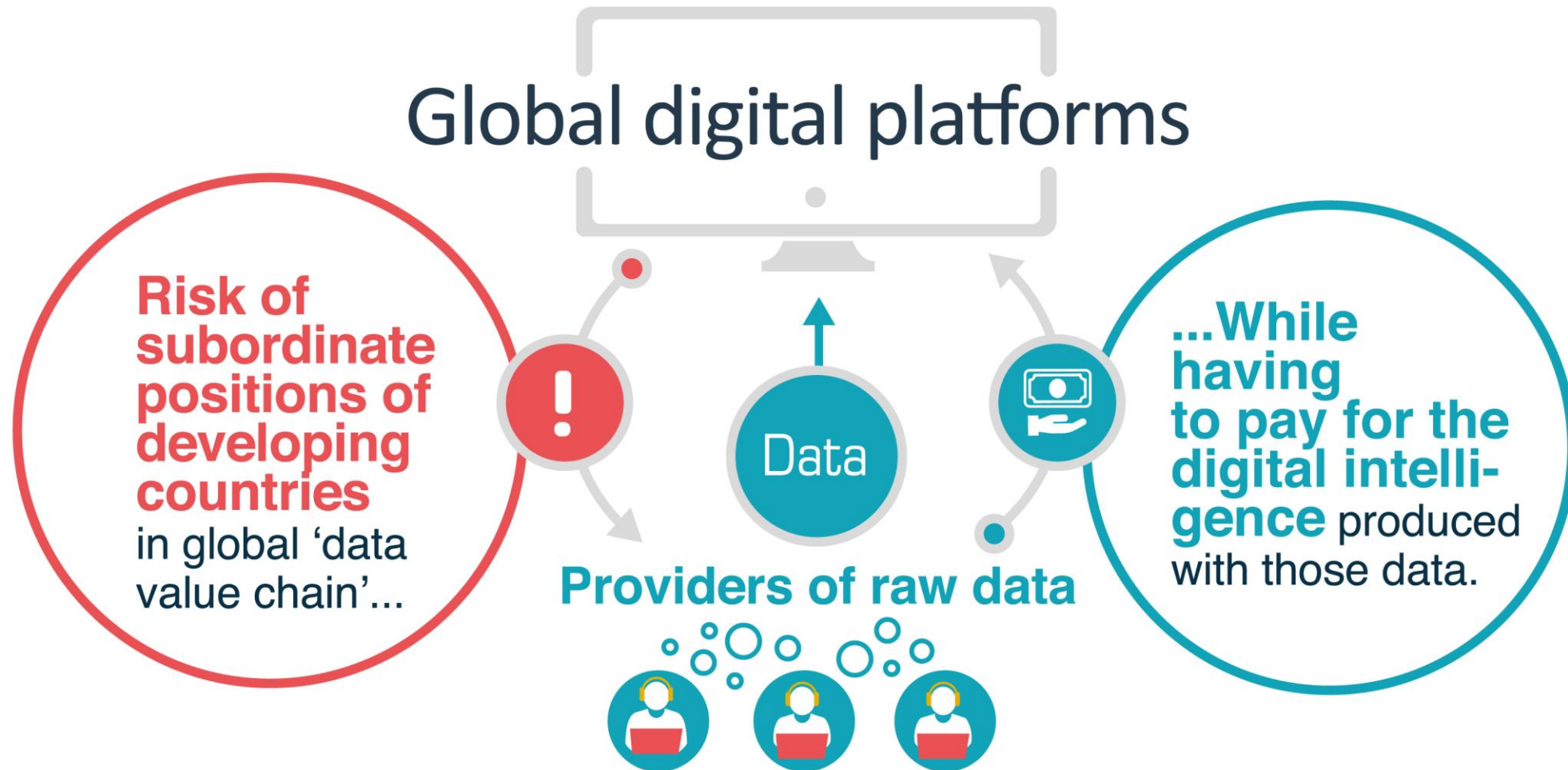
Digital advertising spending more and more concentrated... 

...leading to the **erosion** of advertising as a viable revenue source for other businesses



Source: UNCTAD, based on Zenith advertising forecasts, Alphabet, Facebook, eMarketer.

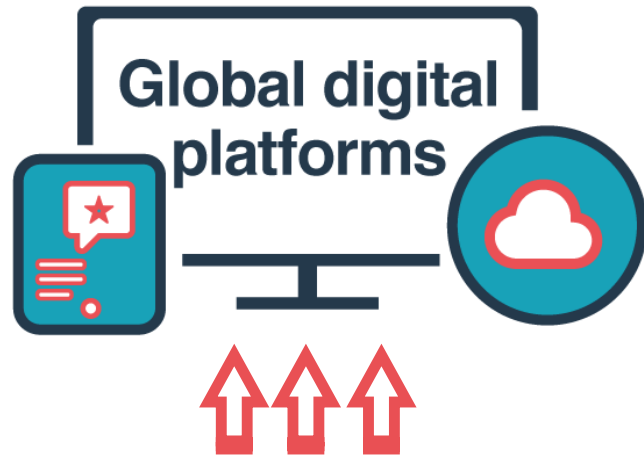
# The **risk of subordinate** positions of developing countries



# OPPORTUNITIES AND LIMITATIONS IN DEVELOPING COUNTRIES



# Digital economy offers a opportunities, especially for MSMEs...



Small businesses can leverage global platforms, but only if they are accessible.



By strengthening domestic productive capacity



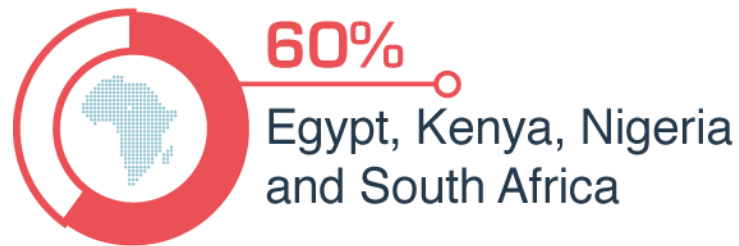
More value can be captured in the digital economy



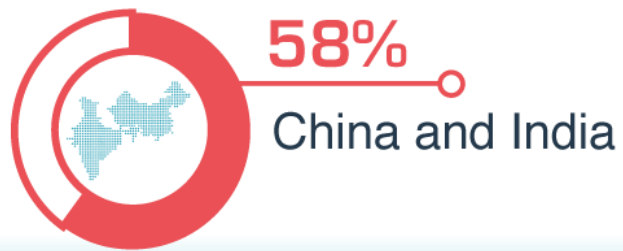
**Main growth opportunities:** enter a new product category or find market niches that globally operating platforms are unable or unwilling to address.

# High concentration of innovation and entrepreneurship activity in all regions

## Digital entrepreneurship in **Africa**



## Start-ups in **Asia**



In **Latin America**, leading start-up cities include:



Source: UNCTAD, based on Friederici et al. and Startup Genome 2017.



# Digital entrepreneurship **challenges** in developing countries



Limited demand



Weak entrepreneurial knowledge and skills



Lack of skilled workforce



Shortage of finance



Innovation hubs can make important contributions but often fail to deliver. More attention now given to **direct interventions**, supplying promising startups with capital and networks.



Platforms in developing countries, and especially in Africa, cannot be as **“physical-asset light”** as their global counterparts.

POLICIES TO  
FACILITATE VALUE  
CREATION  
AND CAPTURE

# New policies at national and international levels are needed to build an **inclusive digital economy**

Technology is **not deterministic.**

It creates both:



Opportunities



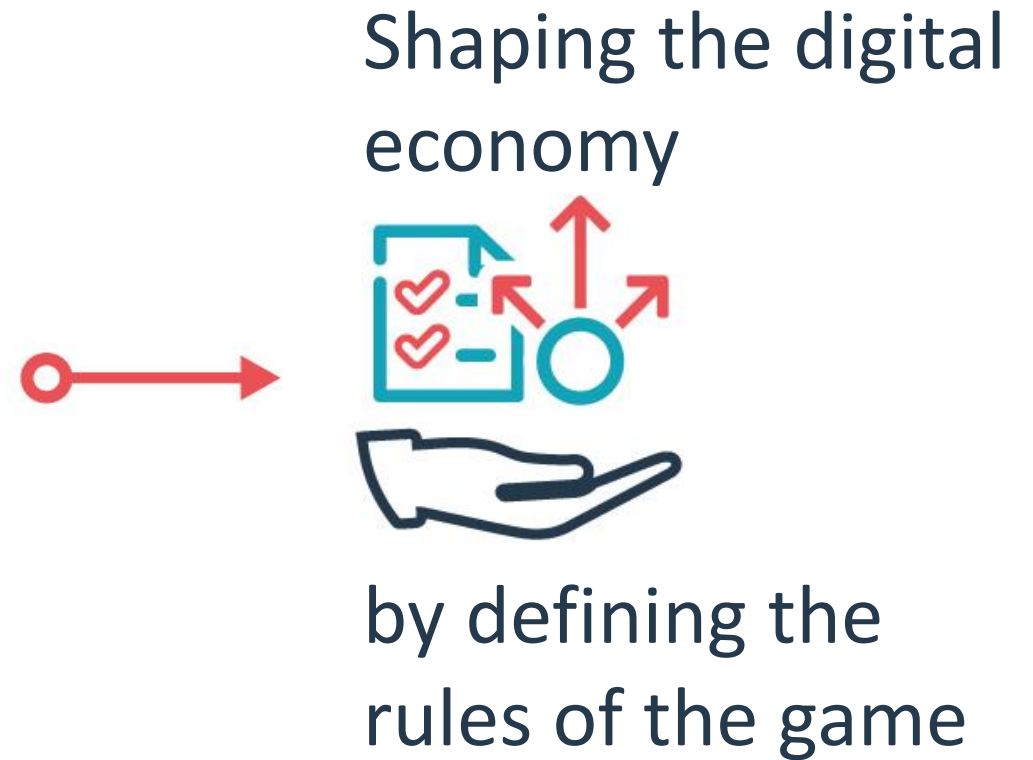
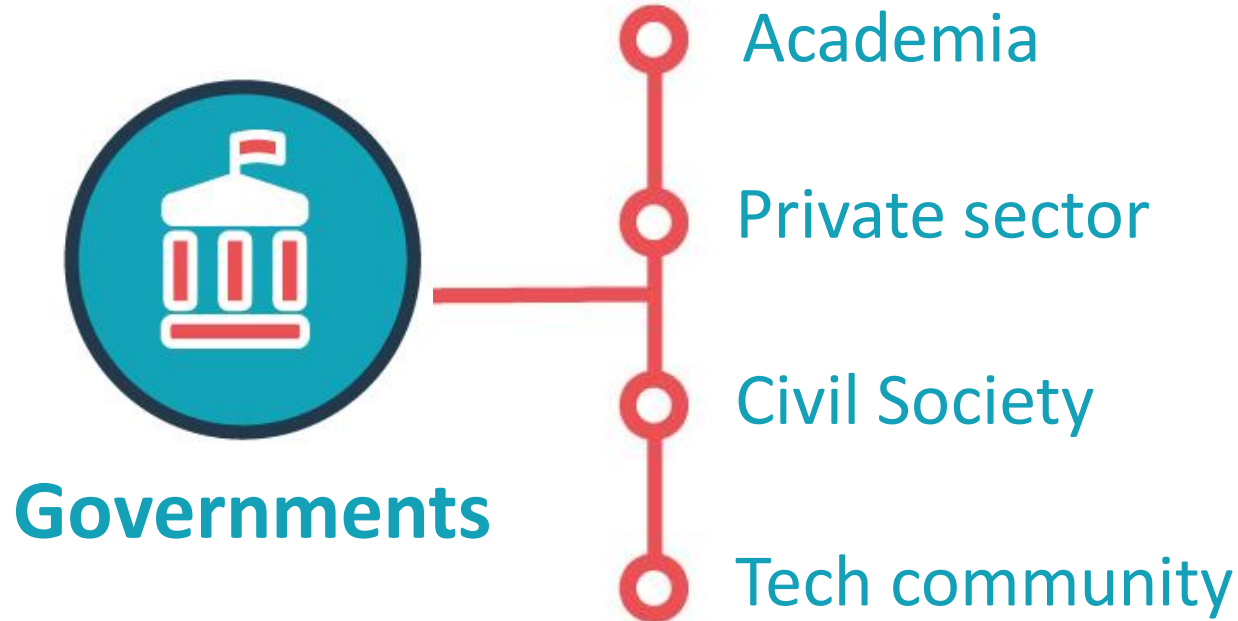
Challenges

**Policy makers need to make choices** that can help reverse...



...the trend towards widening **inequalities and power imbalances**

It is up to **governments** in close dialogue with other stakeholders to set the **rules of the game**



# Need for **new policies** that can create a **fairer** distribution of gains



# Policy areas that need **particular attention**

**Strengthening the readiness** of developing countries to engage in and benefit from e-commerce and the digital economy

**Digital entrepreneurship** and innovation policies, leveraging niche areas and domestic opportunities, including for women

Data policies for **capturing value**

Digitalization of **MSMEs**

**Competition policies** for the digital era

**Taxation** of digital platforms

**Labour market**, skills and social protection policies

**Intellectual property** policies in the digital economy

**Development cooperation** with more attention to the digital dimension

New policies that are tailored to **national objectives** backed by **more international support**

Need for policy space for **experimentation** to assess the benefits and disadvantages of **different options**

**National efforts** in developing countries



More **International support**



UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

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# DIGITAL ECONOMY REPORT 2019

VALUE CREATION AND CAPTURE:  
IMPLICATIONS FOR DEVELOPING COUNTRIES



UNITED NATIONS  
Geneva, 2019

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# Thank you!

