

Risques et possibilités de la transformation digitale pour le monde et la Russie: dépendance technologique ou passage à de nouvelles formes de développement financier

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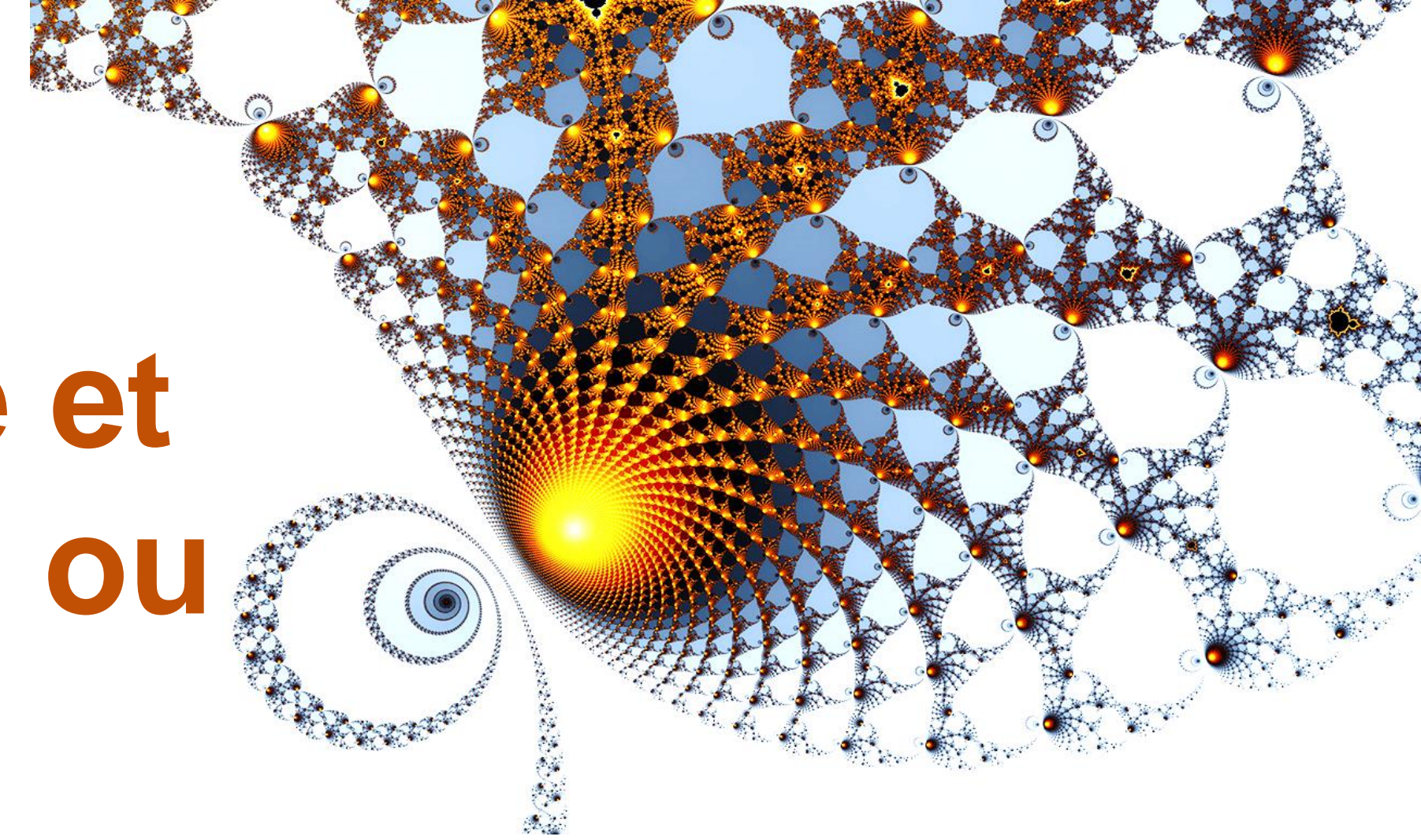
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Problemes theoriques des modes de financement

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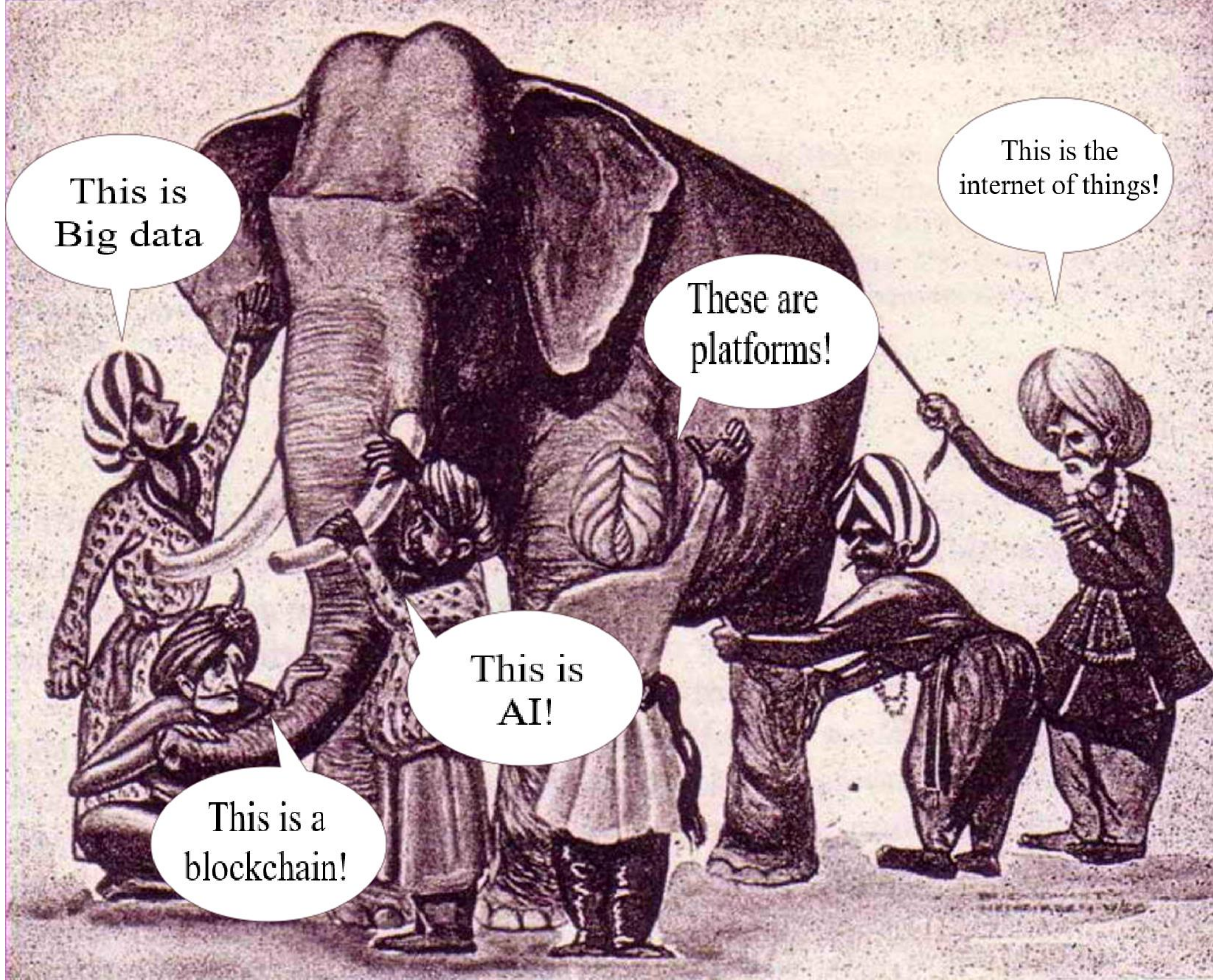


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- II. Platforms as a key element of Digital Economy
- III. Digital Economy as a “ Big Project”
- IV. Digitalization or Digital Transformation?
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Et quid fiet quod et quid facere?

The term "digital economy" first appeared in the scientific literature in 1997 in the book of the same name by Canadian publicist D. Tapscott, and has now become commonplace. Nevertheless, in over 20 years this concept has not acquired a clear, well-established meaning. The most comprehensive review to-date of various approaches to defining DE by the Global Development Institute contains more than 20 different versions proposed by reputable economists and presented in the official documents of the international development institutions.



This is Big data

This is the internet of things!

These are platforms!

This is AI!

This is a blockchain!

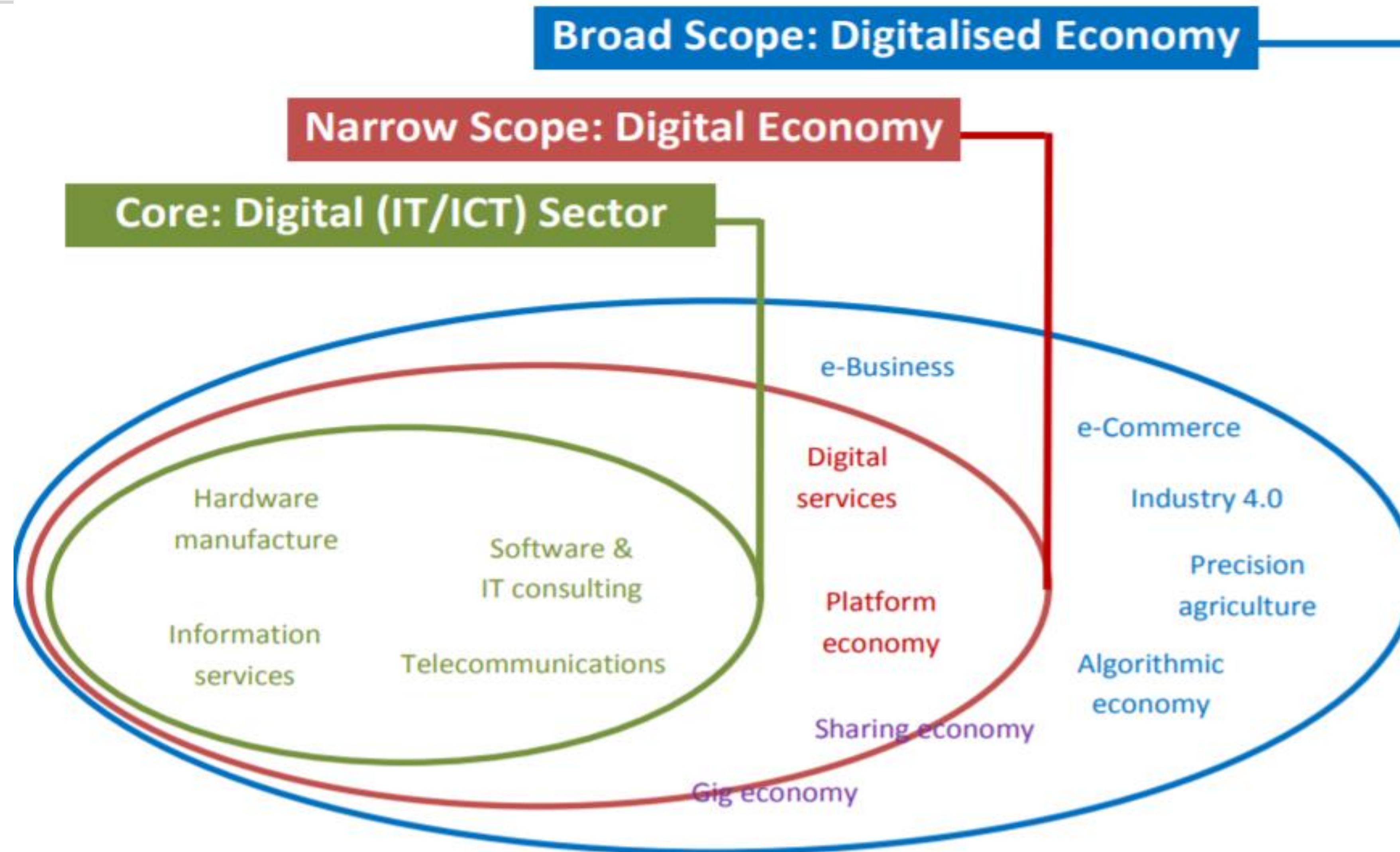
GENERALIZED CONCEPT OF DIGITAL ECONOMY



In 2018, R. Bucht and R. Hicks proposed a conceptual approach to defining digital economy, which formed the basis for the DE definition adopted by the World Bank and UNCTAD. It includes the following three levels:

1. The "digital sector" is the core of the digital economy and relates to the OECD's basic definition of the electronic manufacturing and information and communication service sector: "The combination of services and manufacturing industries encompassing the transmission and display of data and information in electronic form" [OECD, 2002].
2. The "digital economy" itself which includes, in addition to the digital sector, those areas that would not have appeared or could not exist without the use of ICT - digital services, retail sales and information activities that are not within the scope of the OECD definition, the platform economy, ***gig economy***, ***sharing economy***.
3. "Digitized economy" – those economic activities that existed before the widespread use of ICT but are increasingly using digitized data in their processes. This broad definition encompasses online business (implementation of business transactions with the help of ICT), e-commerce (external business transactions using ICT), algorithmization of business decision-making etc.

Scoping the digital economy



MEASURING VALUE IN DIGITAL ECONOMY IS DIFFICULT



Measuring the digital economy and related value creation and capture is fraught with difficulties. Firstly, there is no widely accepted definition of the digital economy. Secondly, reliable statistics on its key components and dimensions, especially in developing countries, are lacking. Although several initiatives are under way to improve the situation, they remain insufficient, and are struggling to cope with the rapid pace of evolution of the digital economy. Depending on the definition, estimates of the size of the digital economy range from 4.5 to 15.5 per cent of world GDP. Regarding value added in the information and communications technology (ICT) sector, the United States and China together account for almost 40 per cent of the world total.

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

US: digital economy in 2017 has been estimated to account for:

Narrow definition



6.9%
of GDP

Broad definition



21.6%
of GDP

China: digital economy in 2017 has been estimated to account for:

Narrow definition



6%
of GDP

Broad definition



30%
of GDP

Growing importance of digitalization in the global economy



Share of the **digitally deliverable services exports** in the **global services exports**

\$1.2 trillion **\$2.9 trillion**



Global **ICT services exports**

\$175 billion **\$568 billion**



Global **employment in the ICT sector**

34 million **39 million**



2005

2018

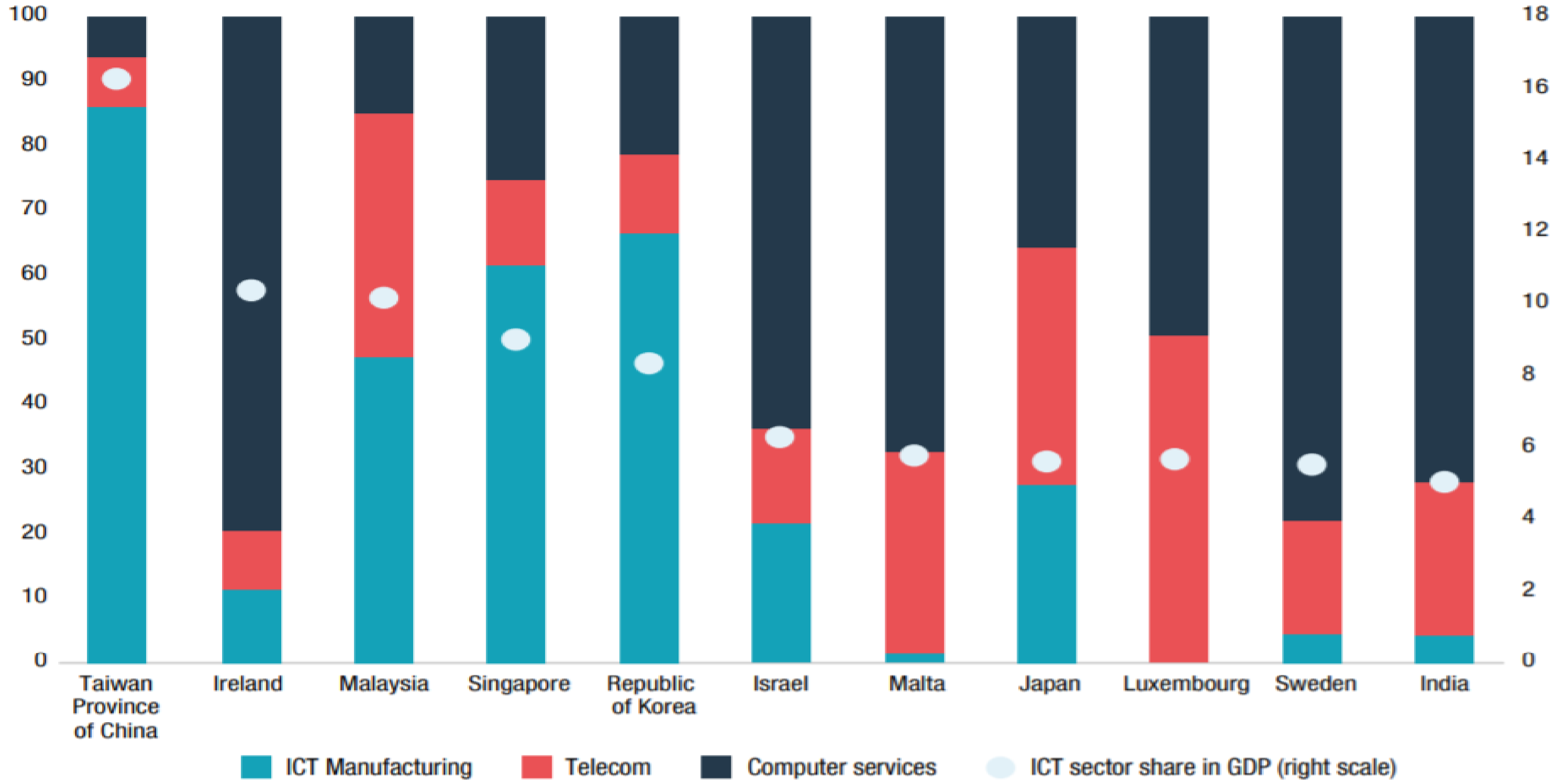
2005

2018

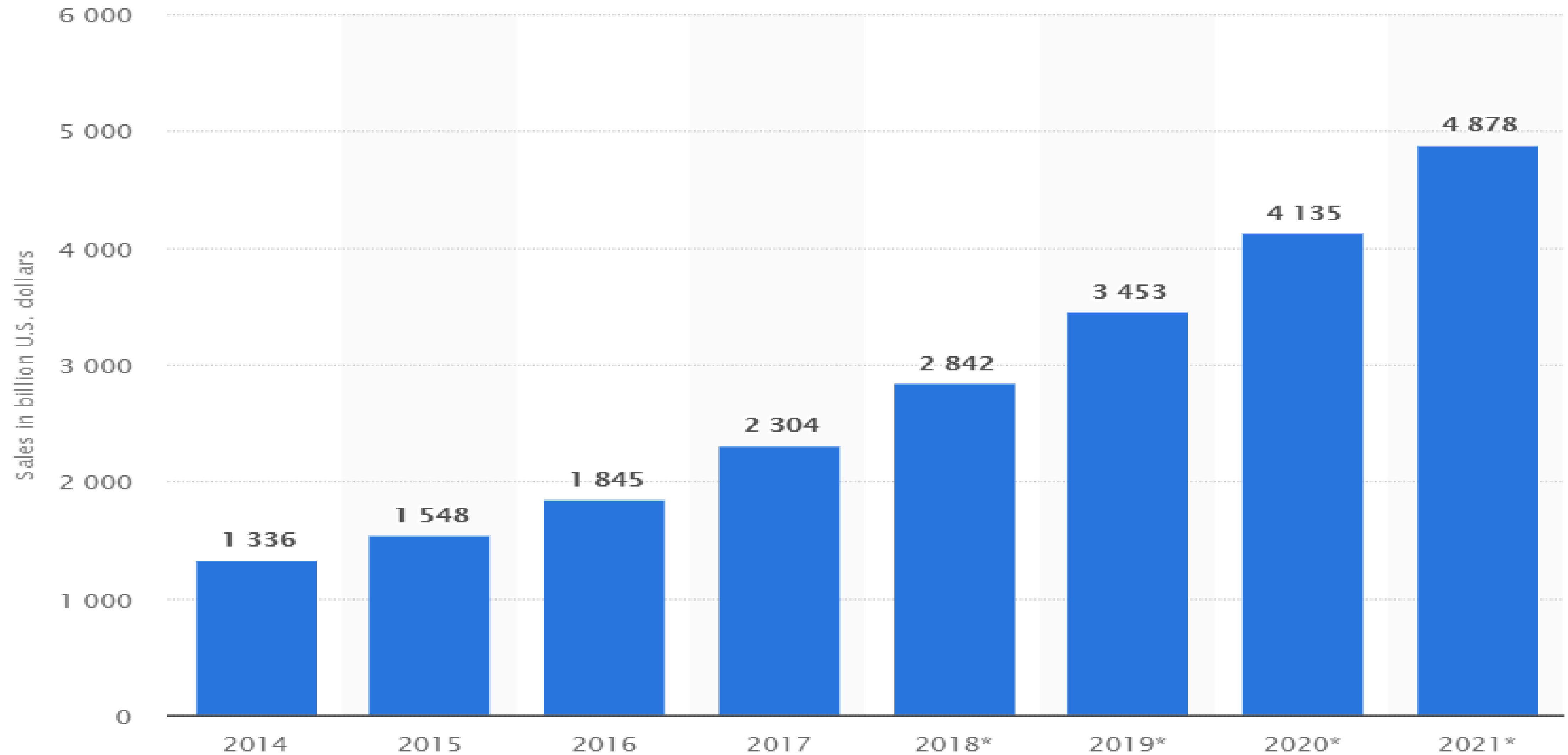
2010

2015

Share of the ICT sector's value added in GDP, and its distribution by subsector: Top 10 economies, 2017 (Per cent)

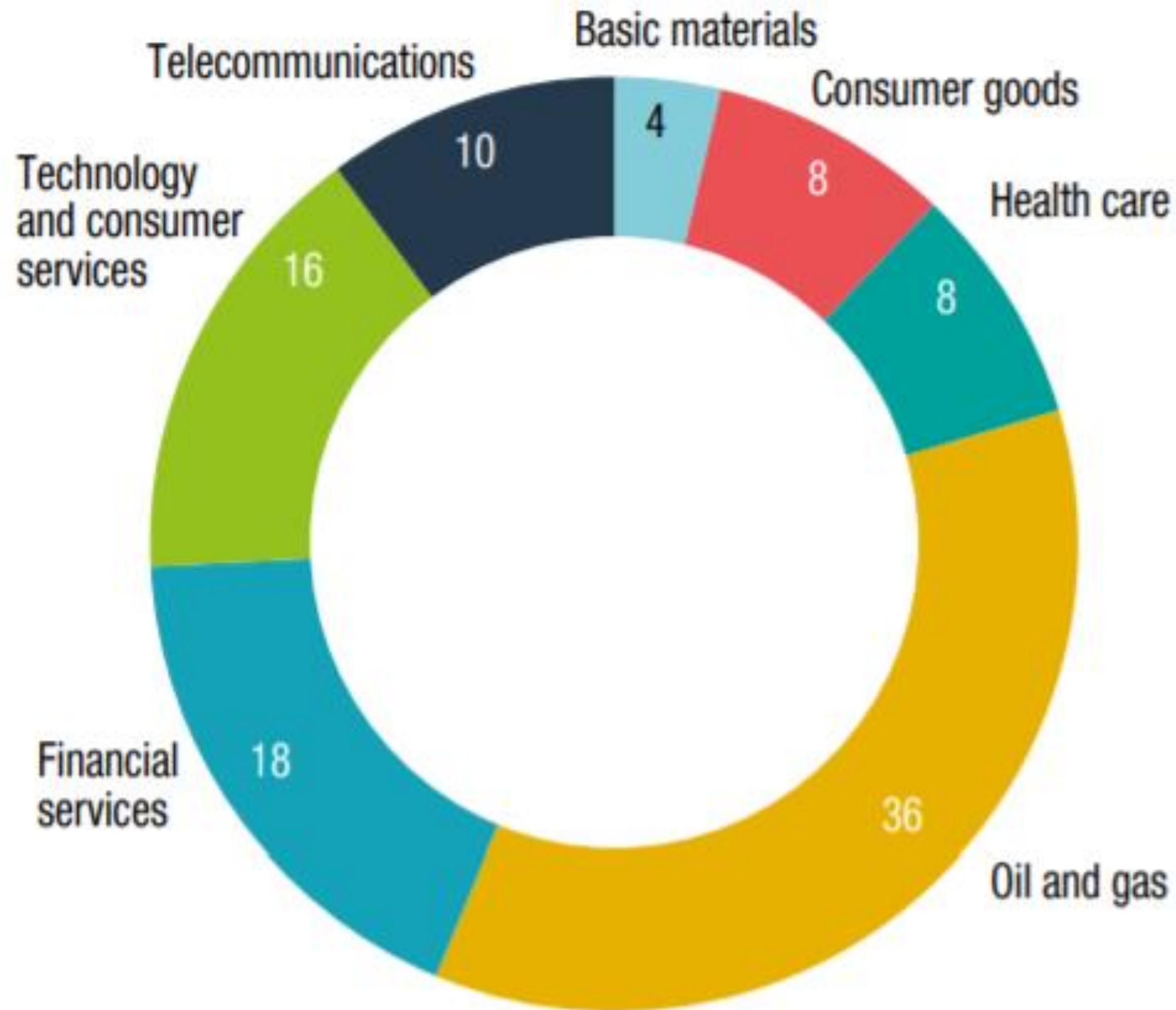


Retail e-commerce sales worldwide from 2014 to 2021 (in billion U.S. dollars)

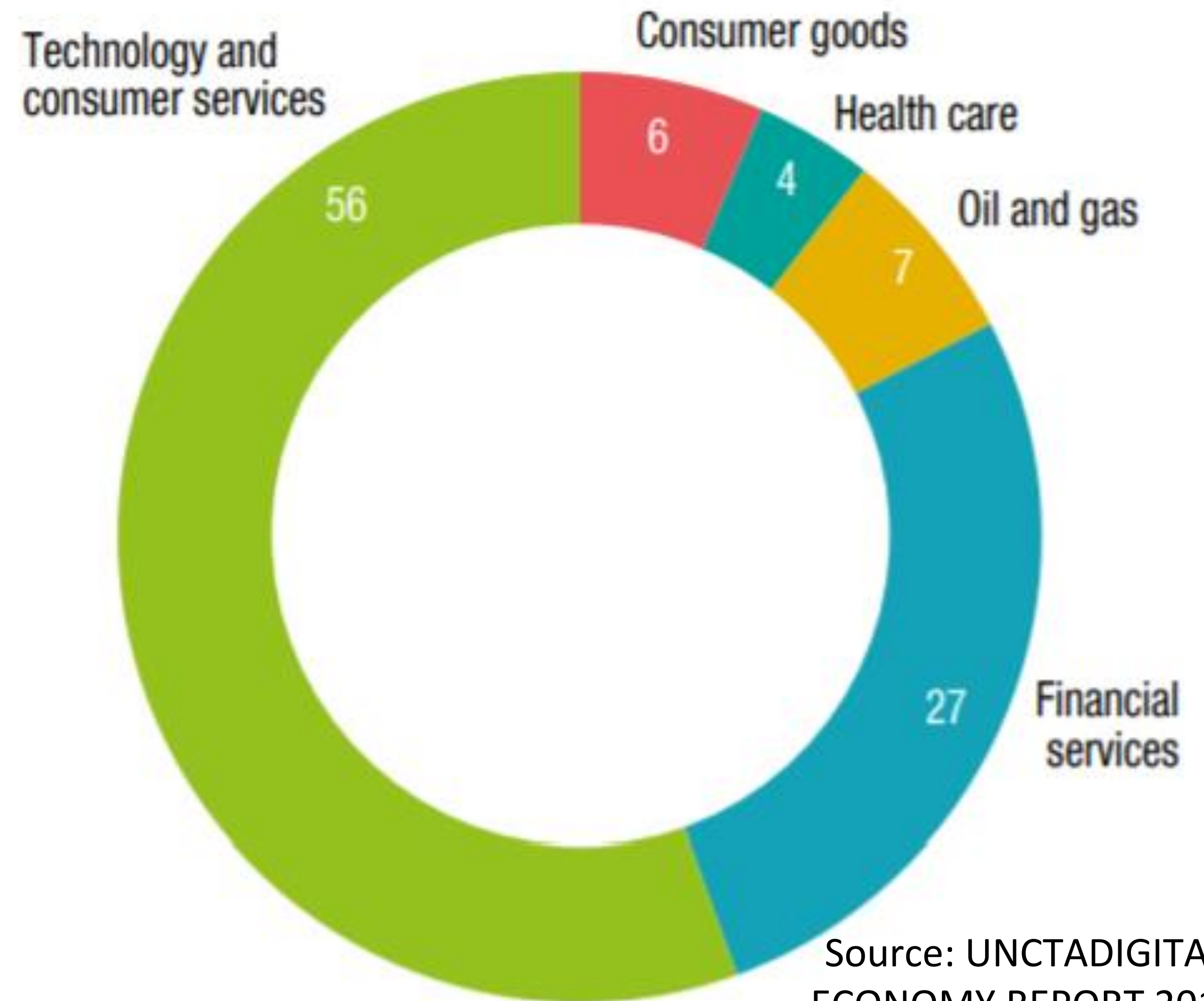


World's top 20 companies by market capitalization, by sector, 2009 versus 2018 (Per cent)

a) 2009

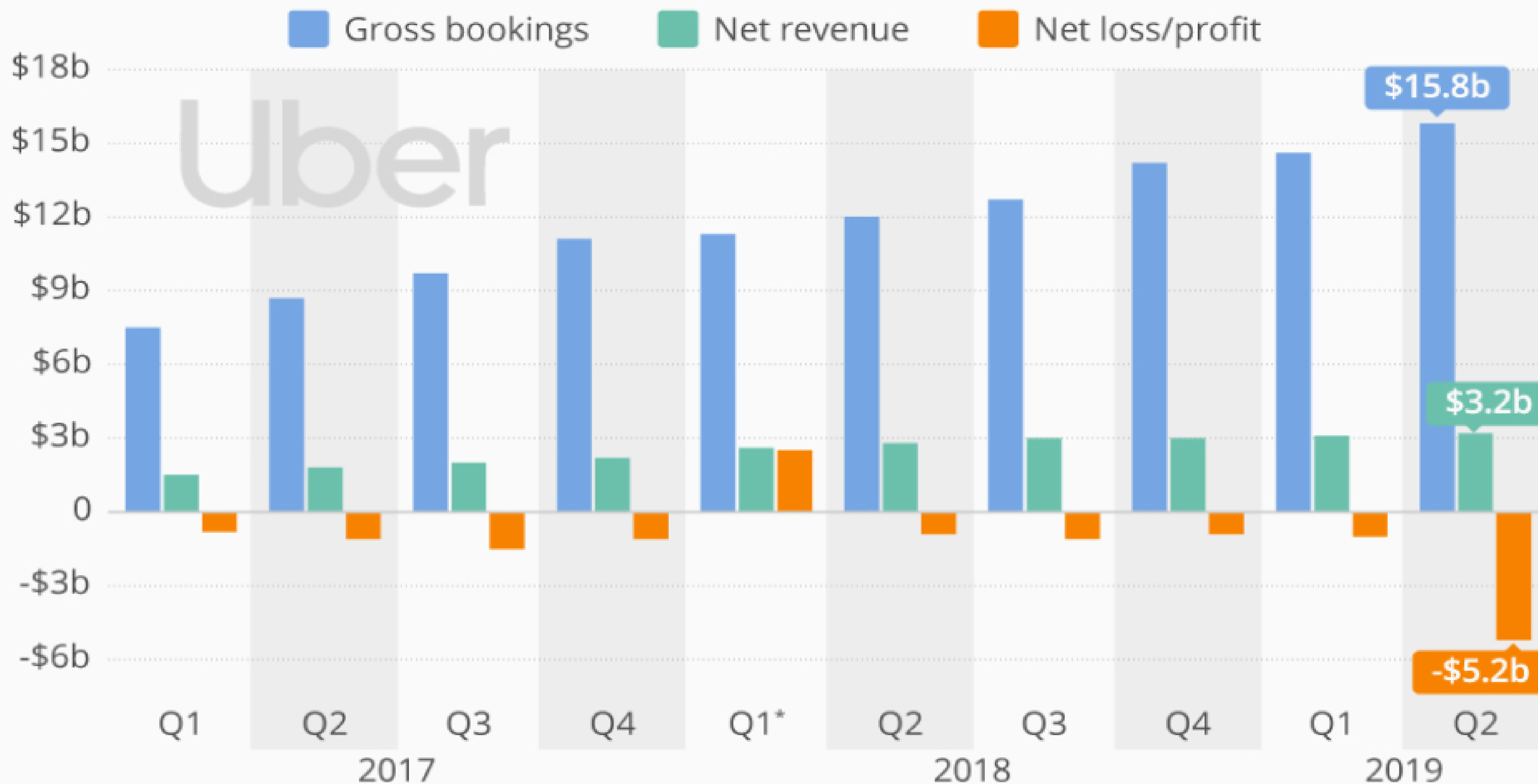


b) 2018



Uber Posts Colossal Q2 2019 Losses

Uber's quarterly gross bookings, net revenue and net profit/loss since Q1 2017



The electronic market development model that had emerged by the mid-1990s envisages the production of high-tech goods for mass consumption with the shortest possible, sometimes artificially truncated life cycle of 1 to 3 years.

This resulted in an extremely high growth rate of the semiconductor industry, whose global output in monetary terms increased by more than 6 times in 20 years. This stimulated the transition of the entire ICT and electronics sector to a model of mass-producing short-lived high-tech products, including manufacturers of mass-market end-user electronic equipment whose output had reached more than \$1.5 trillion per year by 2015.

Nonetheless, in the second half of the 2000s signs of exhaustion of this growth model in the ICT sector emerged, not least because the reduction of design norms for microchip manufacturing ceased to decrease the cost of a single transistor. In addition, the growth of operating costs in modern microelectronics production became largely determined by increased energy consumption, which had surpassed the energy consumption of many automotive plants.

Even successful resolution of the scientific and technological issues associated with this impasse will not significantly raise the profitability of semiconductor manufacturing, primarily due to the extremely high cost of the necessary infrastructure, including the appropriate equipment and processes.

If we consider the DE development forecasts till 2030 based on the data by BCG, McKinsey and PwC, then the volume of the digital economy should increase by about 3.5 times from 2017 to 2030 and reach more than 13% of the global added value. But, according to the Institute of Economic Forecasting of the Russian Academy of Sciences estimates, this will require raising the predicted annual investment level in this economic sector by about 3 times, based on the modern possibilities of high-tech campaigns.

OBJECTIVE PURPOSES: "GLOBAL PROJECTS"



Since the beginning of the 2010s, global projects have been promoted at the international level as catalysts for economic growth, including:

1. "Industry 4.0" is a wide range of automation and robotization methods in manufacturing based on digital technologies, the introduction of artificial intelligence, etc.

2. Reshoring is a project similar to Industry 4.0 but envisaging a new industrialization of the United States through moving back the production facilities of American companies from the Asia-Pacific region to the United States.

3. Cashless society is a project envisaging gradual abandonment of cash turnover and transition of all transactions to non-cash electronic form.

From 2015 to 2018 **the digital economy became a priority area of consolidated international efforts**, which was reflected in the final documents of all the recent G-20 summits.

OBJECTIVE PURPOSES



A) PLATFORM TRANSITION - as a replication of technological platforms as new types of business integration, i.e. the emergence of a new basic infrastructure that enables business interaction around the objectives of extraction, recording, accumulation and storage, processing and use of data on user behavior, which is in fact becoming a special resource type with the potential for commercialization and capitalization.

B) A combination of a special kind of financial innovations based on ICT and digital technologies, collectively known as "Fintech".

PLATFORMS AS THE KEY ELEMENT



The following types of technology platforms are distinguished (N. Srnicek, 2016).

Advertising platforms, e.g. Google, Facebook: they extract data on user behavior and preferences, analyze it, package it and sell it to advertisers.

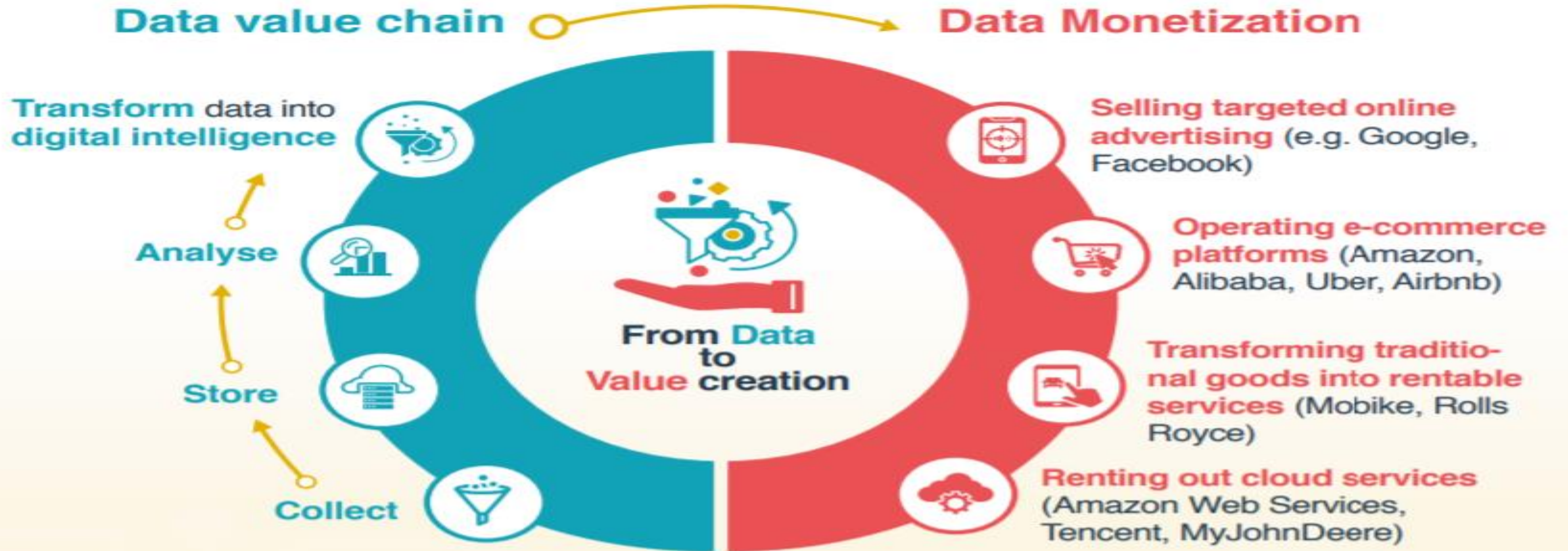
Cloud platforms, e.g. AWS, Salesforce: they own hardware and software used by the companies operating in the digital sphere, and offer them for rent.

Industrial platforms, e.g. GE, Siemens: they create the hardware and software needed to translate traditional manufacturing into the Internet of Things, which reduces costs.

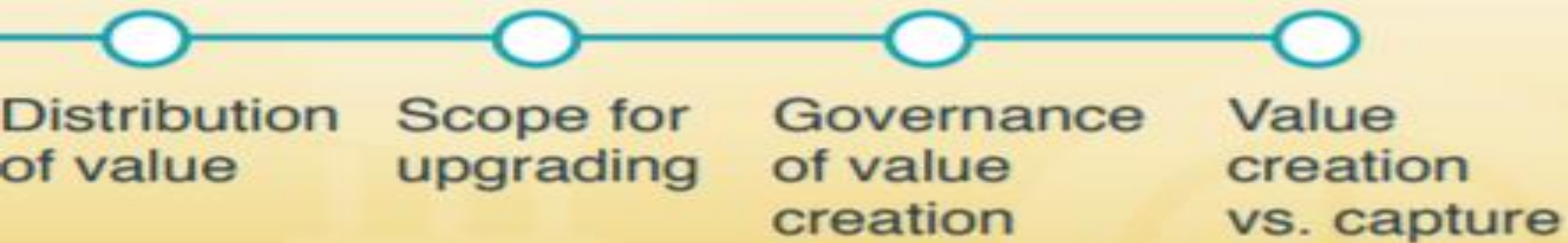
Product platforms, e.g. Rolls Royce, Spotify, use other platforms, transforming a number of product functions into a service and collecting rent or subscription fees.

Lean platforms, e.g. Uber, Airbnb: - use some of the "associated labor" of the outsourced staff, minimize their own property, reduce costs.

How to create value from digital data?



Four dimensions to consider



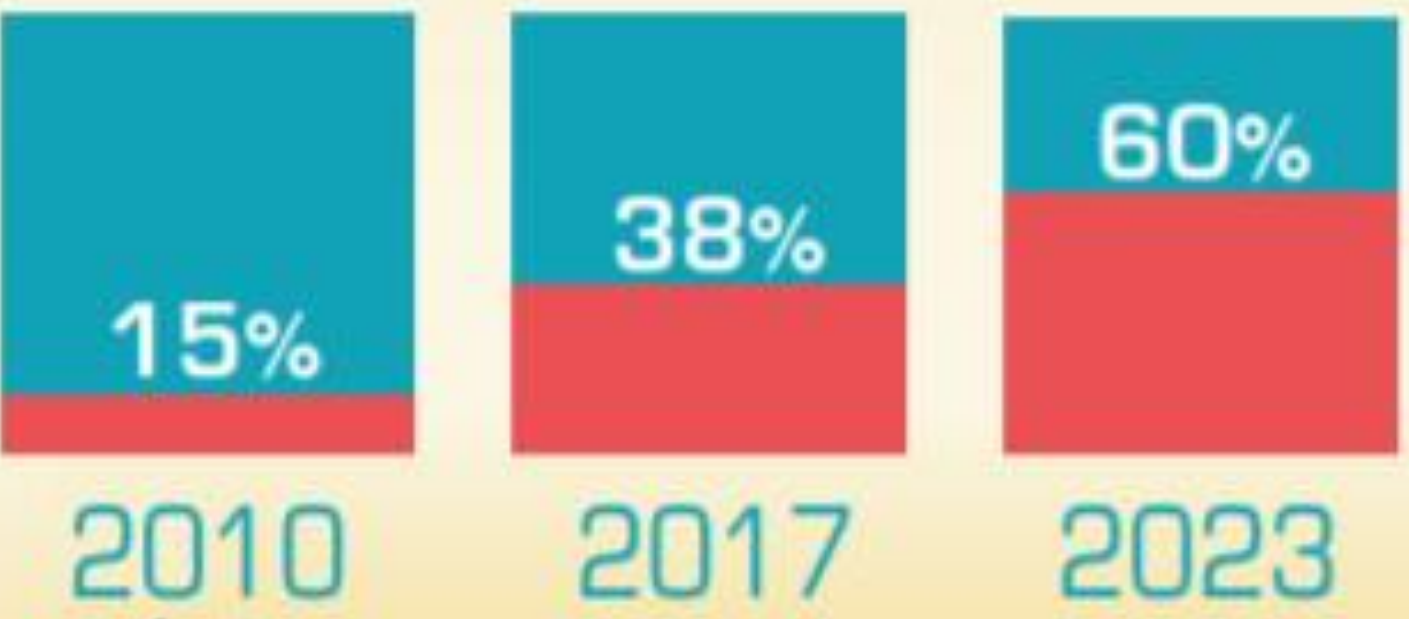
Different actors to consider

Assessing the scope for value creation needs to consider the **possible impacts** on different **actors**:



The growing power of digital platforms has global implications that are likely to accentuate inequalities

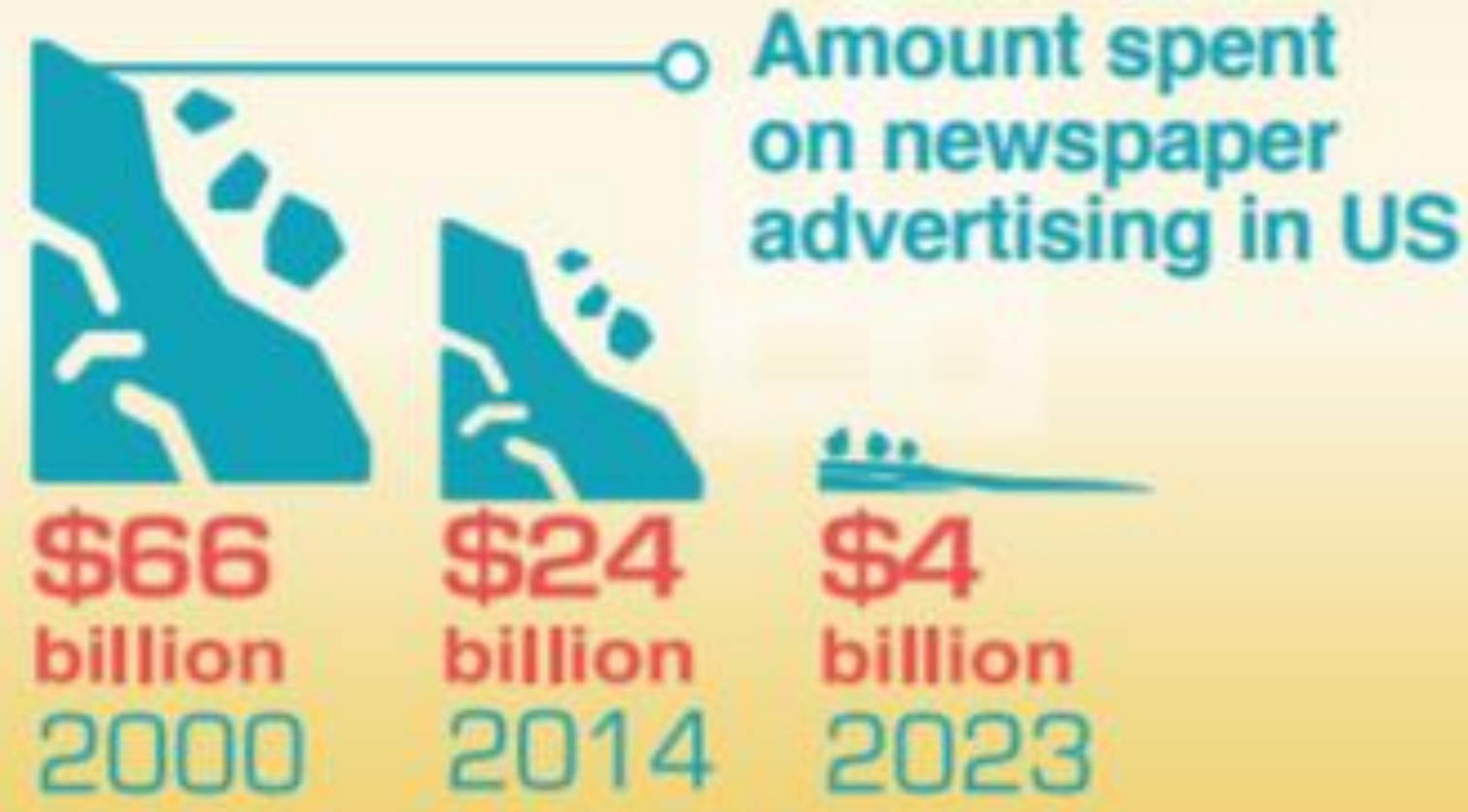
Internet advertising share in the global advertising revenue



Digital advertising spending more and more concentrated



Erosion of advertising as a viable revenue source for other businesses



Global digital platforms

The dominance of global digital platforms and their capacity to create and capture the ensuing value, are set to accentuate global inequalities. Breaking this vicious circle to generate a fairer distribution of gains from data and digital intelligence requires out of the box thinking.



“... 'if it was so, it might be; and if it were so, it would be; but as it isn't, it ain't. That's logic.”

Если бы это было так, это бы ещё ничего. Если бы, конечно, оно так и было. Но так как это не так, так оно и не этак. Такова логика.

L. Carroll, *Alice's Adventures in Wonderland & Through the Looking-Glass*

WHAT IS A "BIG PROJECT" IN ECONOMIC DIGITIZATION?



Project: - this is what exists "on the other side of the subject, on this side of the object..."

G. Bashliar

In other words, a project *is a plan to create a new type of reality*, something that *has not existed* before, but can now exist *independently*.

Accordingly, a "Big project" is the creation of *a new field of activity*, which gradually becomes independent and in the long term *partially commercialized*, and, accordingly, attracts *new resources*.

Hypothesis: DE is a fundamentally new "Big project" of "digital transformation" aimed at a global economic transition to a qualitatively new state based on digital technology platforms and fintech as a new basic infrastructure for creating a *cashless society*.

It is necessary to distinguish:

1. "**Digitization**" - as the creation and development of complementary technologies in different economic sectors (including the introduction of certain service types that everyone will have to go through):

- 5G networks;
- Artificial intelligence;
- Big Data;
- Blockchain.

2. "**Digital transformation**" is a global economic transition to a qualitatively new state based on digital technology platforms and fintech.

CONCLUSIONS (OPPORTUNITIES AND RISKS)-1:



1. In developed countries, **digital transformation** has already passed the ICT infrastructure creation stage and moved to a **new development stage** that implies a new technology level, a new face of the traditional industry and agriculture, public administration, etc.

2. There is an emergence of new functions ("digital doubles", etc.), acceleration of communications and payments, and a new comfort level for the middle class, increase in the speed and standardization of services, "uberization" of medicine, education, transport, and services.

CONCLUSIONS (OPPORTUNITIES AND RISKS)-2:



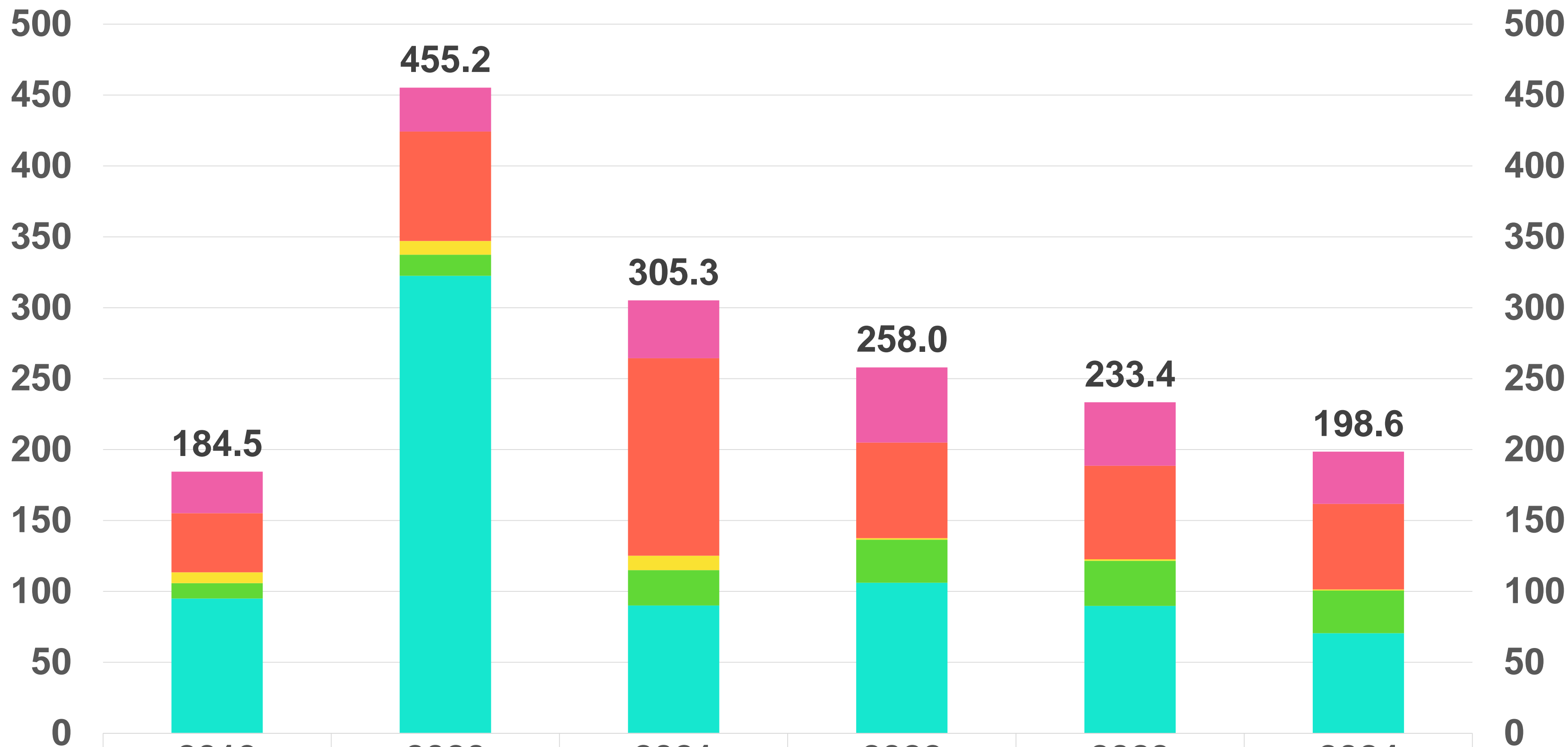
For Russia, the concept of DE implies only accelerated ICT infrastructure development and reform of the legal framework to ***remove barriers to international integration in this area***. This is the World Bank approach of using the budget of developing countries to finance projects by large TNCs that hold the rights to key technologies. It implies the creation of a developed ICT infrastructure at the expense of the state budget, which will become a beneficial environment for the widespread introduction and dissemination of innovations to be supplied by the leading TNCs that have already secured ***intellectual property rights*** to them.

Russia's Digital Economy Assessment Summary



Priorities for financing the "Digital Economy of the Russian Federation" program

Billion rub.



■ «Digital state»	29.3	30.9	40.8	53.1	44.8	36.8
■ «Digital technologies and projects»	41.7	77.2	139.3	67.3	66.0	60.3
■ «Information Security»	7.6	9.7	10.1	1.1	1.0	0.8
■ «Personnel for the digital economy»	10.9	14.9	25.0	30.4	31.9	30.1
■ «Information infrastructure»	94.7	322.3	89.8	105.9	89.5	70.2
■ «Normative regulation of the digital environment»	0.3	0.3	0.3	0.3	0.3	0.3
TOTAL	184.5	455.2	305.3	258.0	233.4	198.6

CONCLUSIONS (OPPORTUNITIES AND RISKS)-3:



Accordingly, the following **risks emerge**:

1. Leaks of personal data abroad to TNCs, a drastic reduction in privacy, growth of social alienation, etc.
2. The launch of a new phase of imposing and borrowing foreign technologies, degradation of domestic technological expertise, seizure of Russian markets by transnational companies, growth of unemployment.

CONCLUSIONS (OPPORTUNITIES AND RISKS)-4:



Predicted Outcome: increasing technological dependence on the developed countries and major TNCs, emergence of digital colonization.

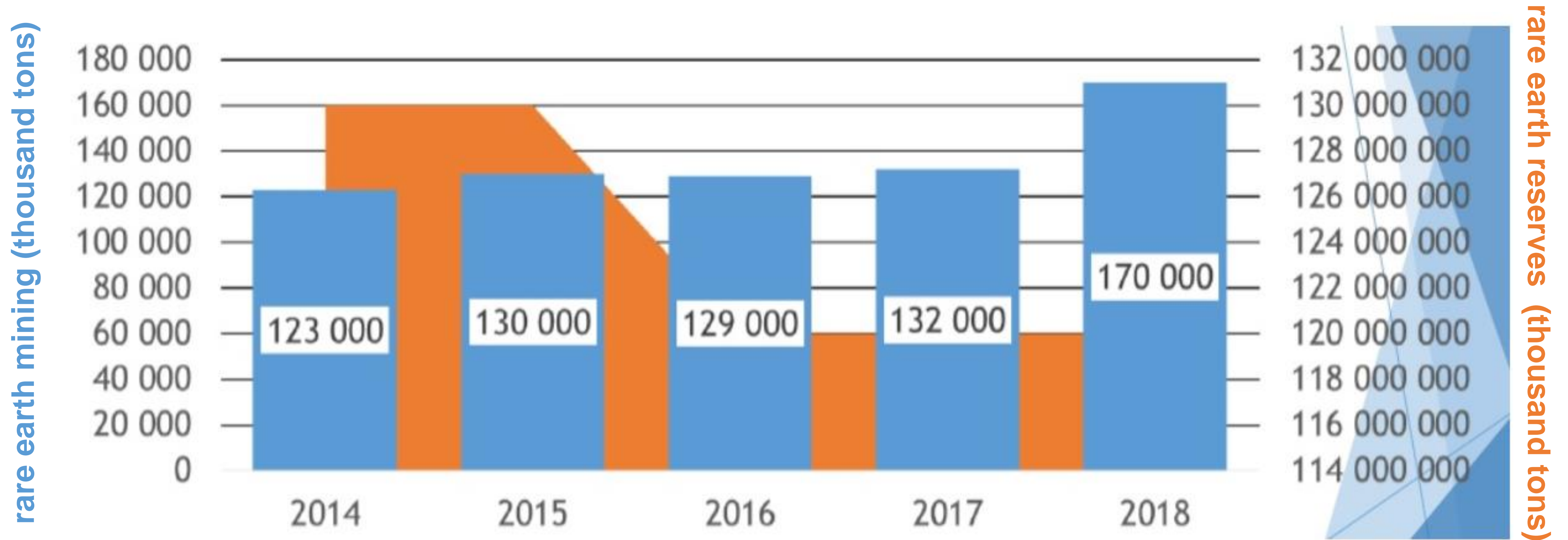
DE will represent a multi-level phenomenon in the long term: a) infrastructure - forms and applications of ICT; b) technology platforms; c) fintech etc. ...

What are alternatives to "digital transformation" and transition to a "digital economy"?



TRADE
WAR

Dynamics of reserves and production of rare earth elements (REE) in 2014-2018



In 2018, the production volume of rare earth metals increased by almost 30% (from 132,000 tons to 170,000 tons). The market reserves are estimated at 120 million tons. At the same time, from 2014 to 2017 the REM production volume remained fairly stable.

ET QUID FIET QUOD ET QUID FACERE?



For Russia, we should look for such a **digitization stratagem** where:

- Domestic ***critical components*** of the key technologies for the future digital economy may be created and reproduced;
- Strategic alliances would be concluded with ***different*** world actors on this basis.

2. The strategic goal of developing a domestic technological base for digitization should be to increase the autonomy of the Russian economic development and create a ***new resource type*** on this basis.

Thanks for attention!

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