Technology and the Challenges in Future Trade

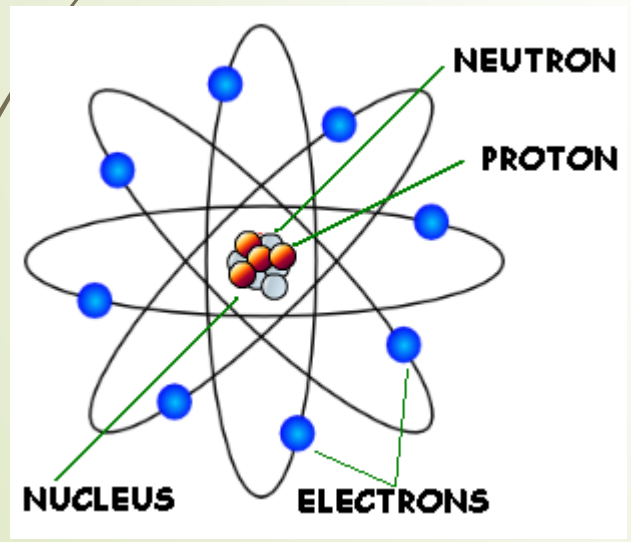
Session II: Artificial Intelligence and the Future of Tomorrow

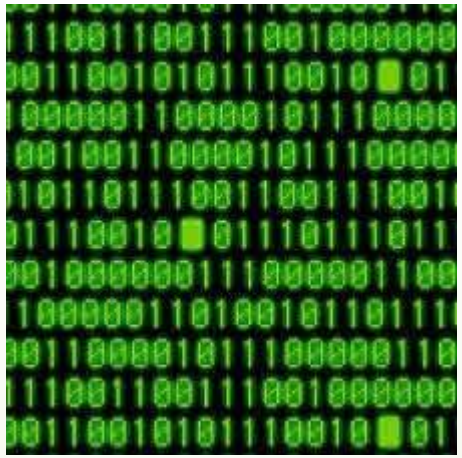
2 September, 2019

1300-1430 I Bangkok, Thailand

Shifting in Paradigm for Trade

- Atoms ➔ Bits
- Ownership ➔ Rights
- The End of Private Assets?
- Finished Goods ➔ Unbundling





1 Byte		8 Bits
1024 Bytes	2^10	1 Kilobyte
1024 Kilobytes	2^20	1 Megabyte
1024 Megabytes	2^30	1 Gigabyte
1024 Gigabytes	2^40	1 Terabyte
1024 Terabytes	2^50	1 Petabyte
1024 Petabytes	2^60	1 Exabyte
1024 Exabytes	2^70	1 Zettabyte
1024 Zettabytes	2^80	1 Yottabyte
1024 Yottabytes	2^90	1 Brontobyte
1024 Brontobytes	2^100	1 GeopByte

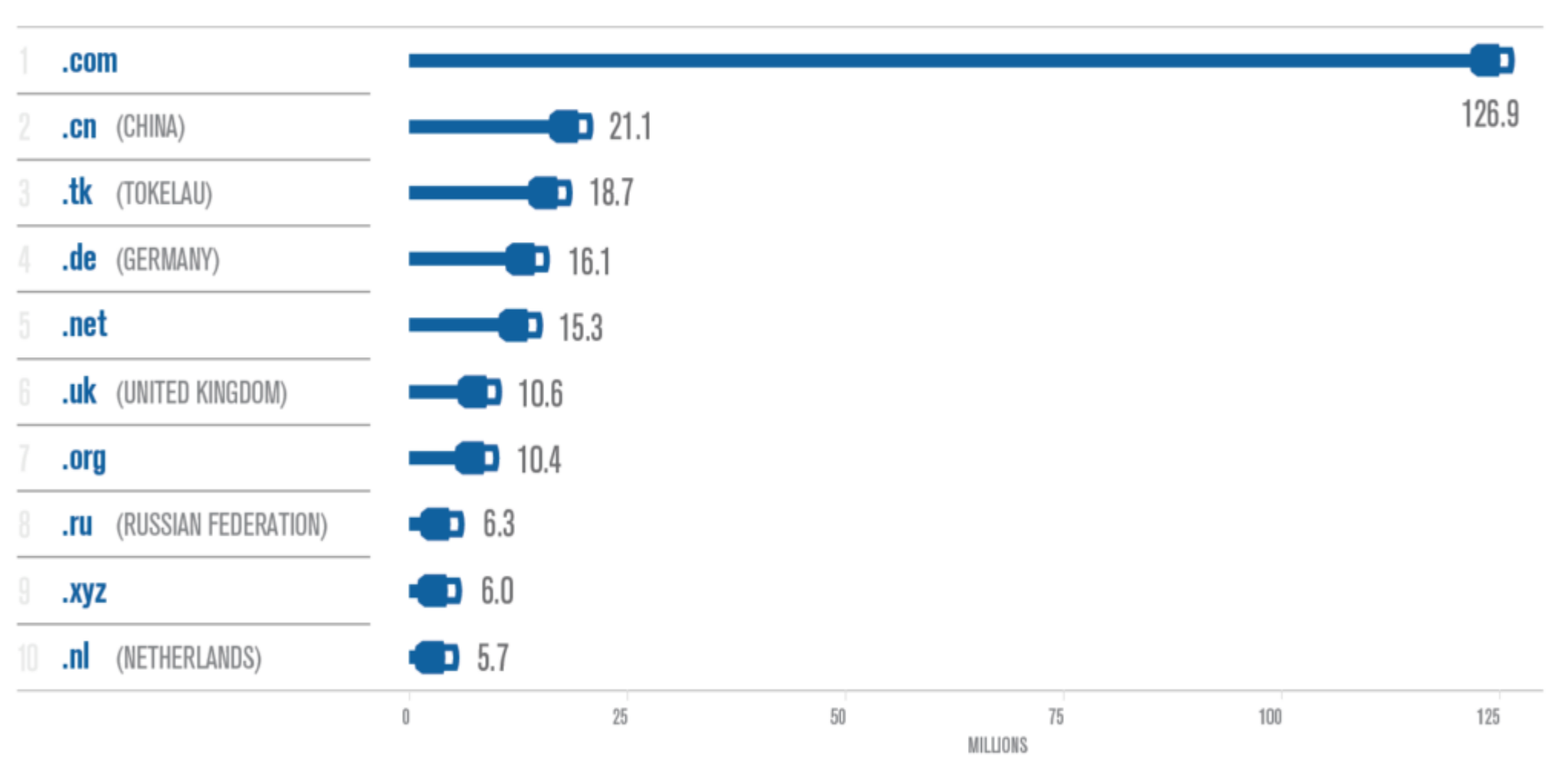
Image Source: http://chemistry.tutorcircle.com/inorganic-chemistry/atomic-structure.html

Image Source: http://www.jcsipl.com/what-are-bits

Immediate Impact

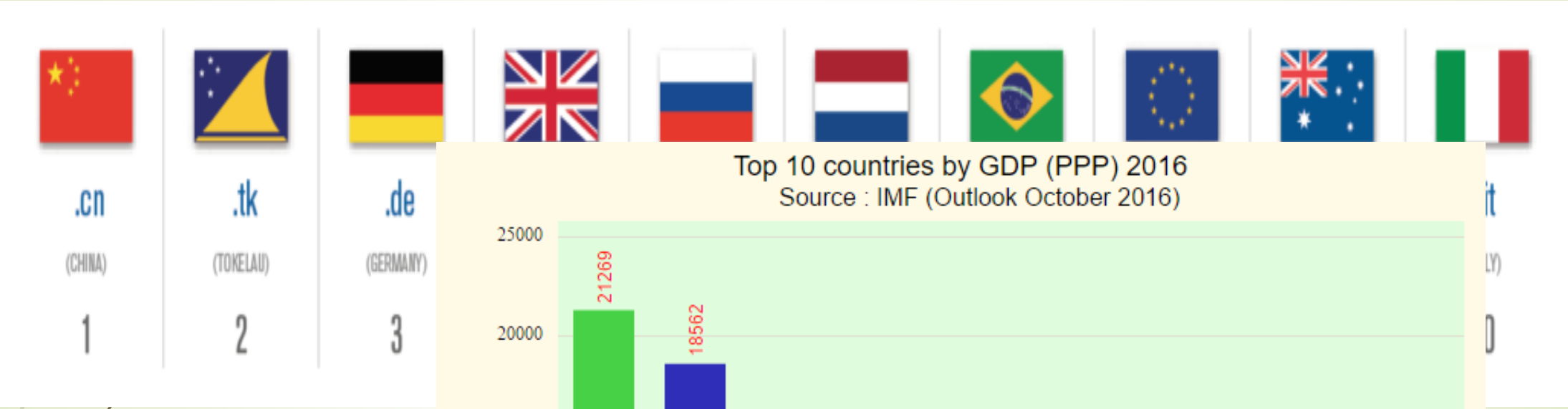
- The Future ability to export
- The Future ability to produce (manufacturing)
- The future ability to access technology (permission-less innovation)

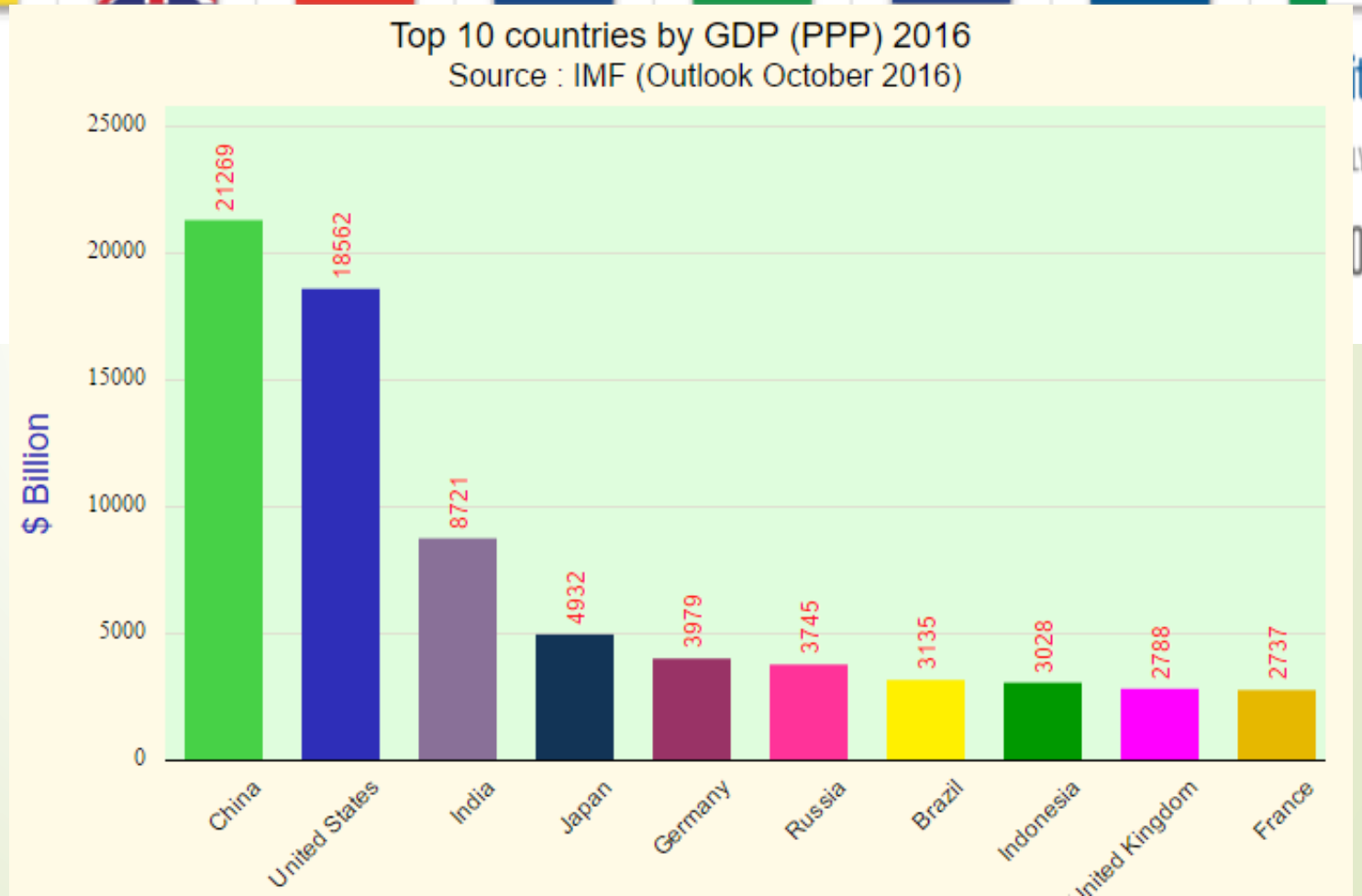
Most Valued Internet Domain Name To Date



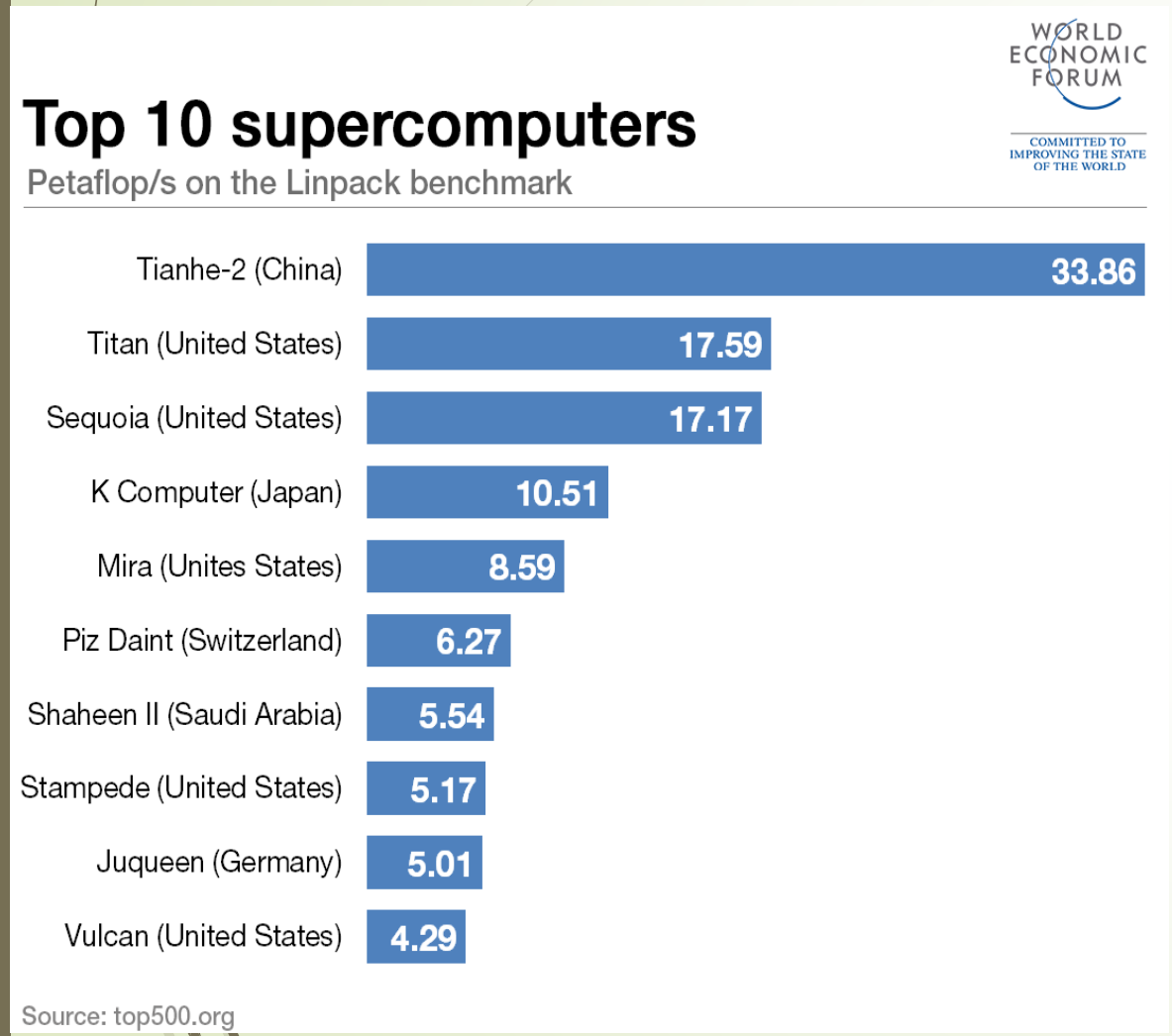
https://blog.domraider.com/en/what-are-the-tld-most-used-on-internet-in-2017/

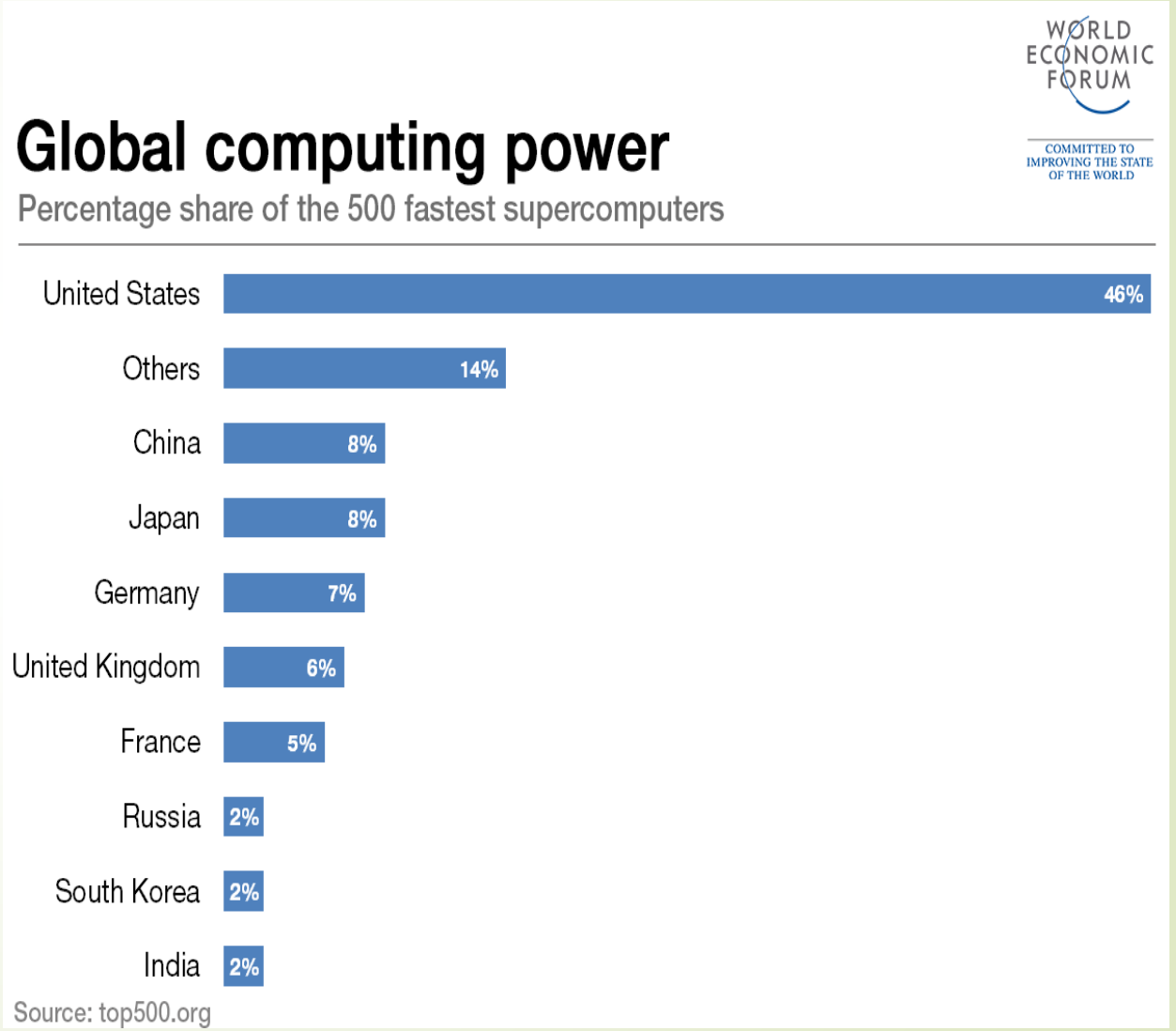
Most Valuable CCTLD





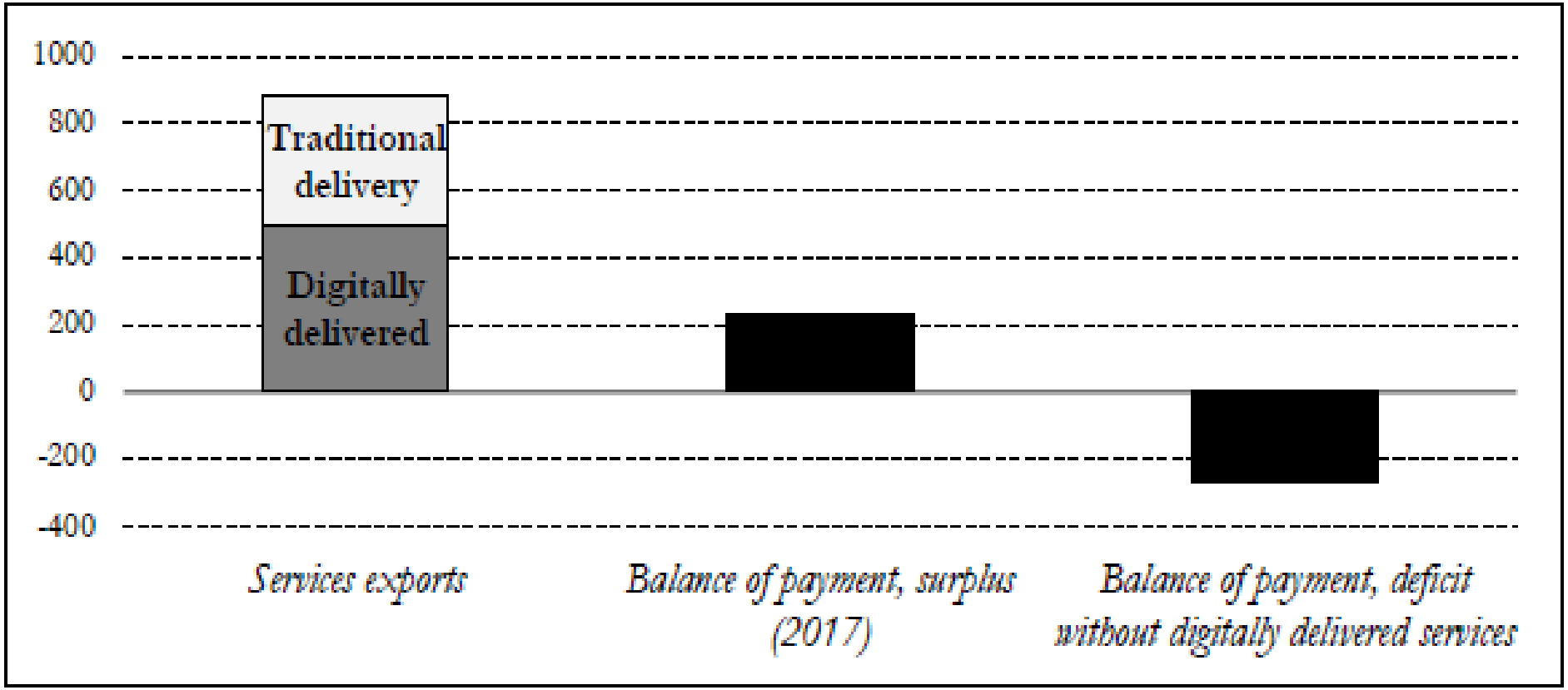
Future Digital Technology Leaders





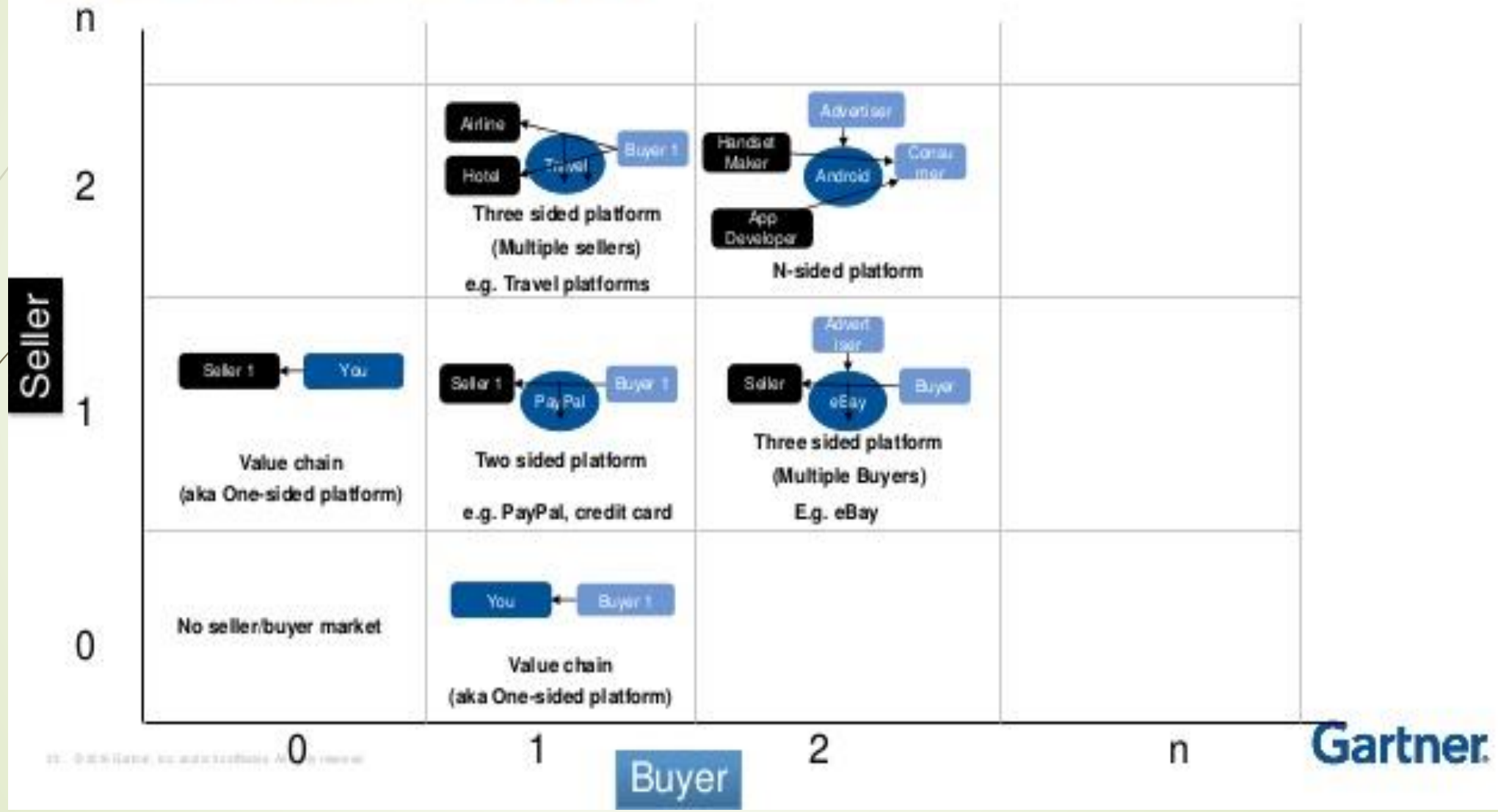
Servification and Trade in Services

Figure 1 — EU enters into a balance of payment deficit without digitally supported service



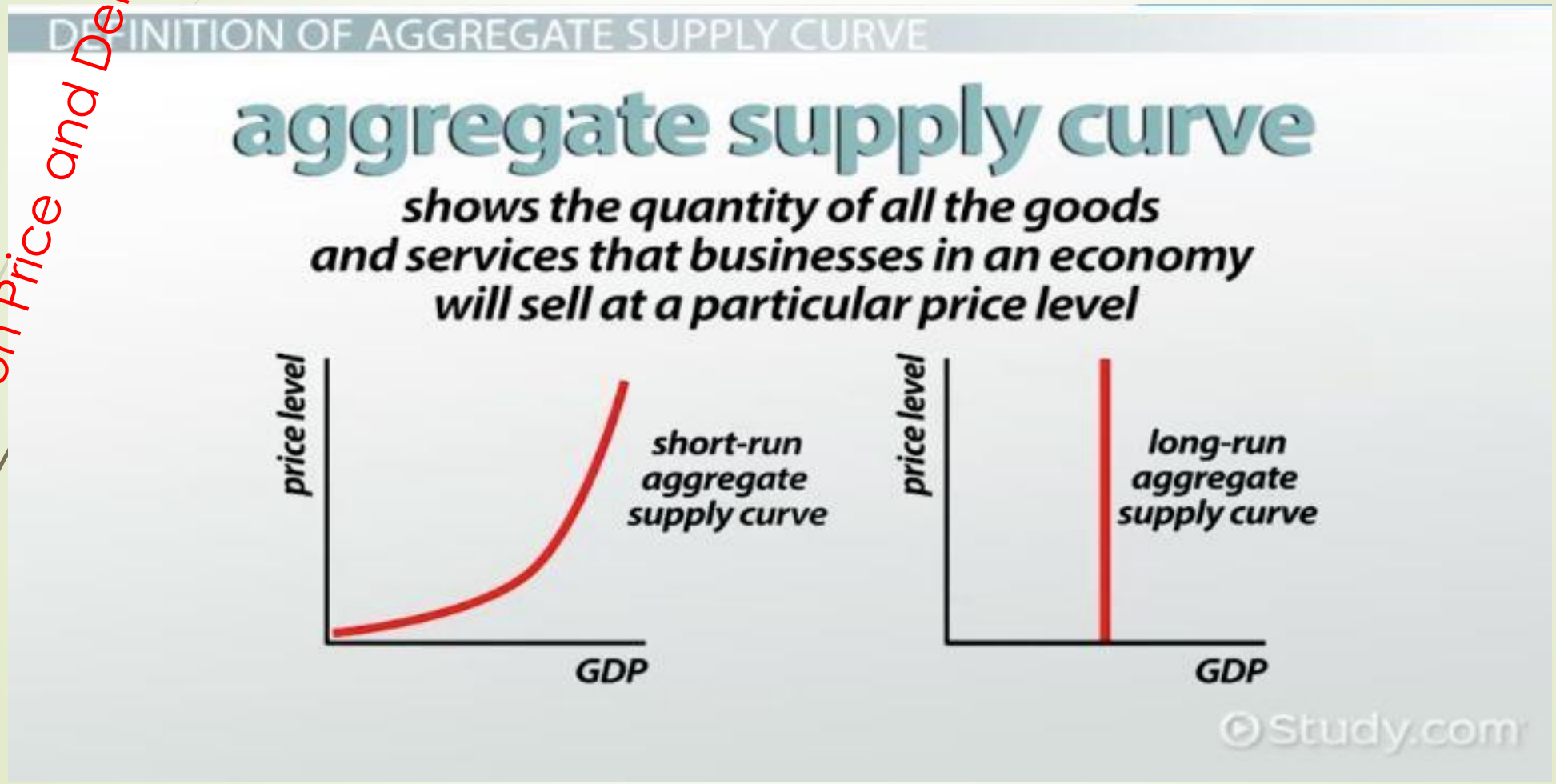
Source: author's calculations based on Eurostat, 2018; Nicholson, 2017

Multi-sided Market Styles

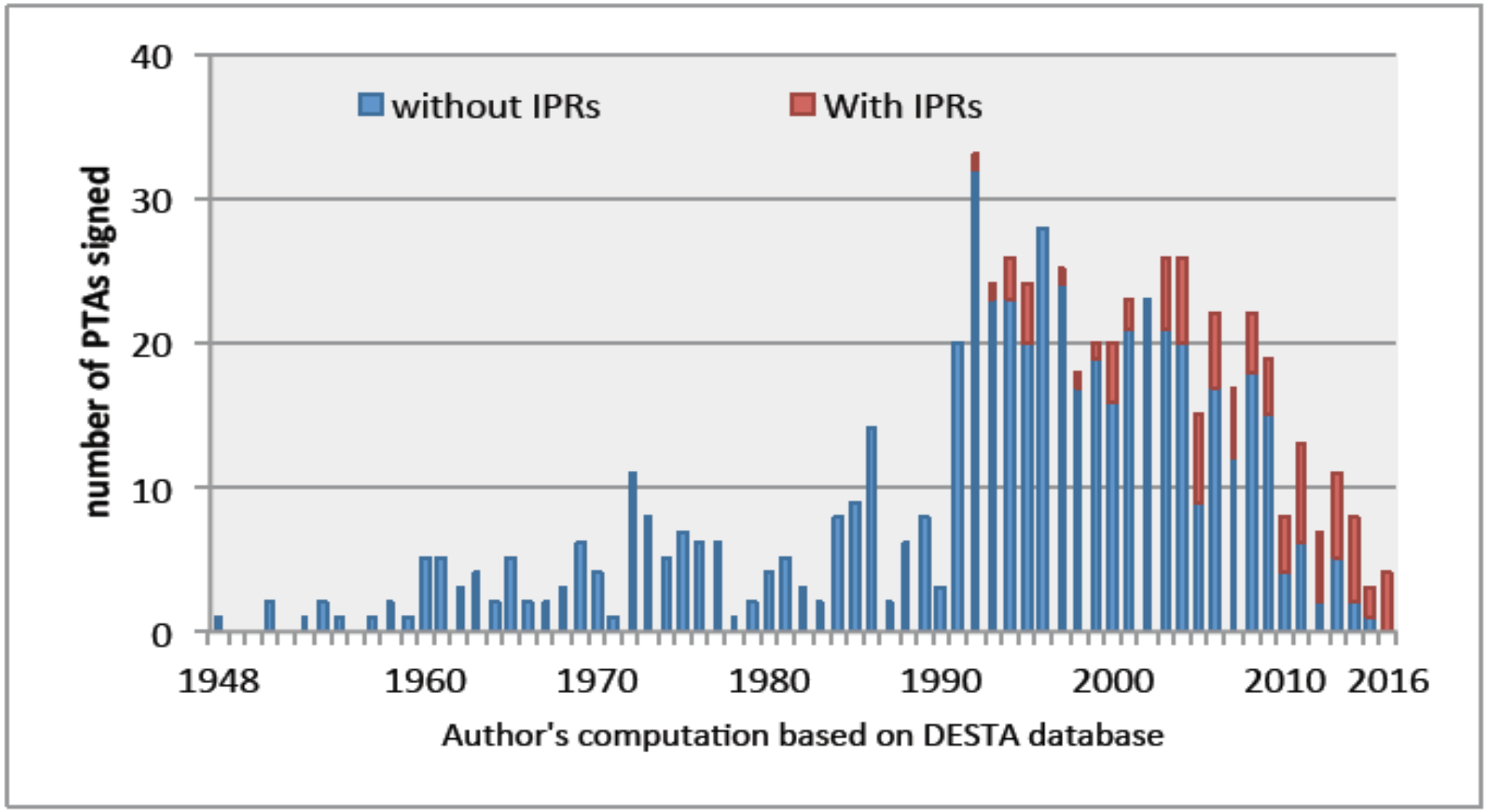


Disruptions on Price and Demand

Aggregate Supply Curve and Price



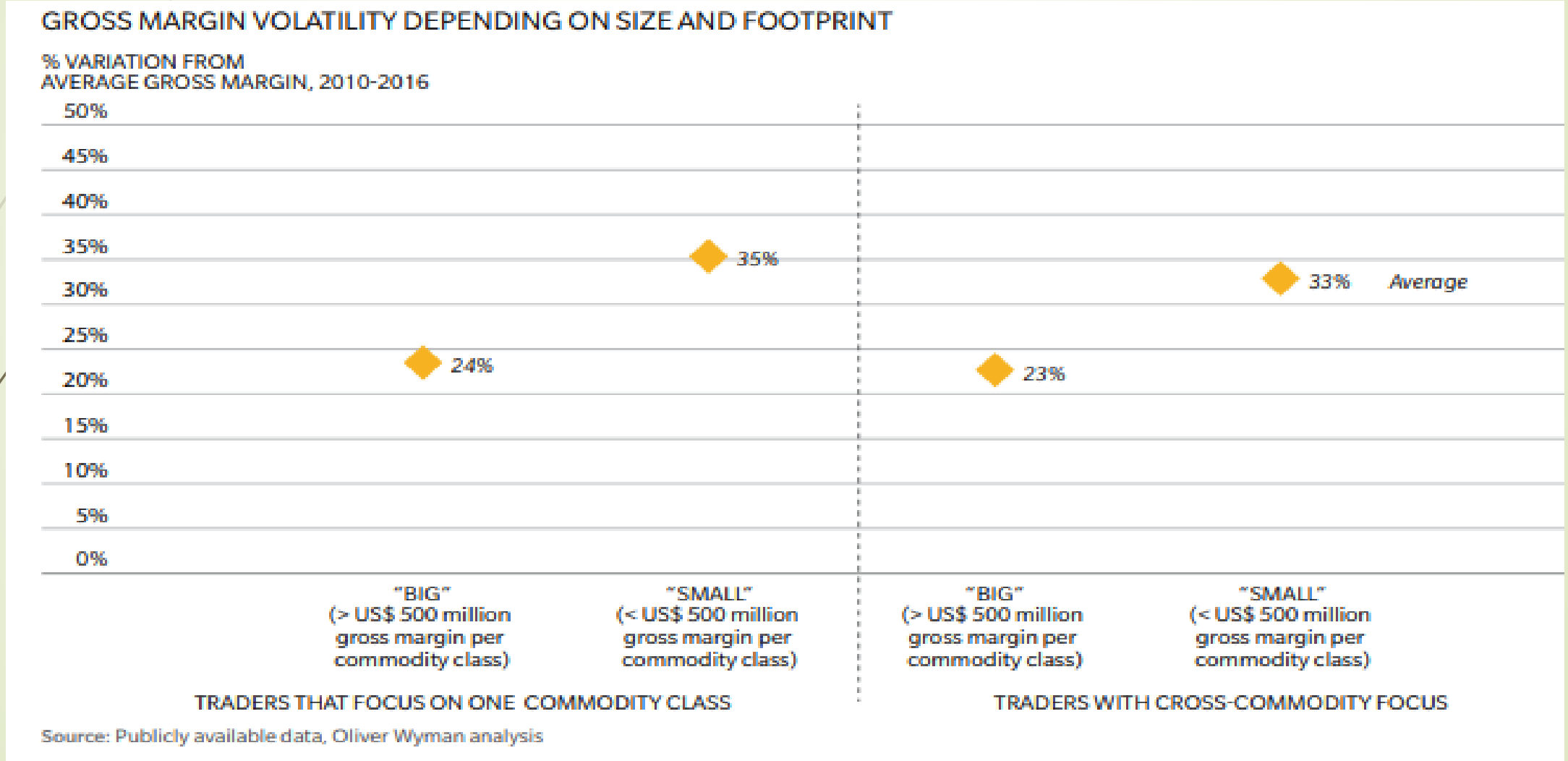
Trade Agreements and IPRs



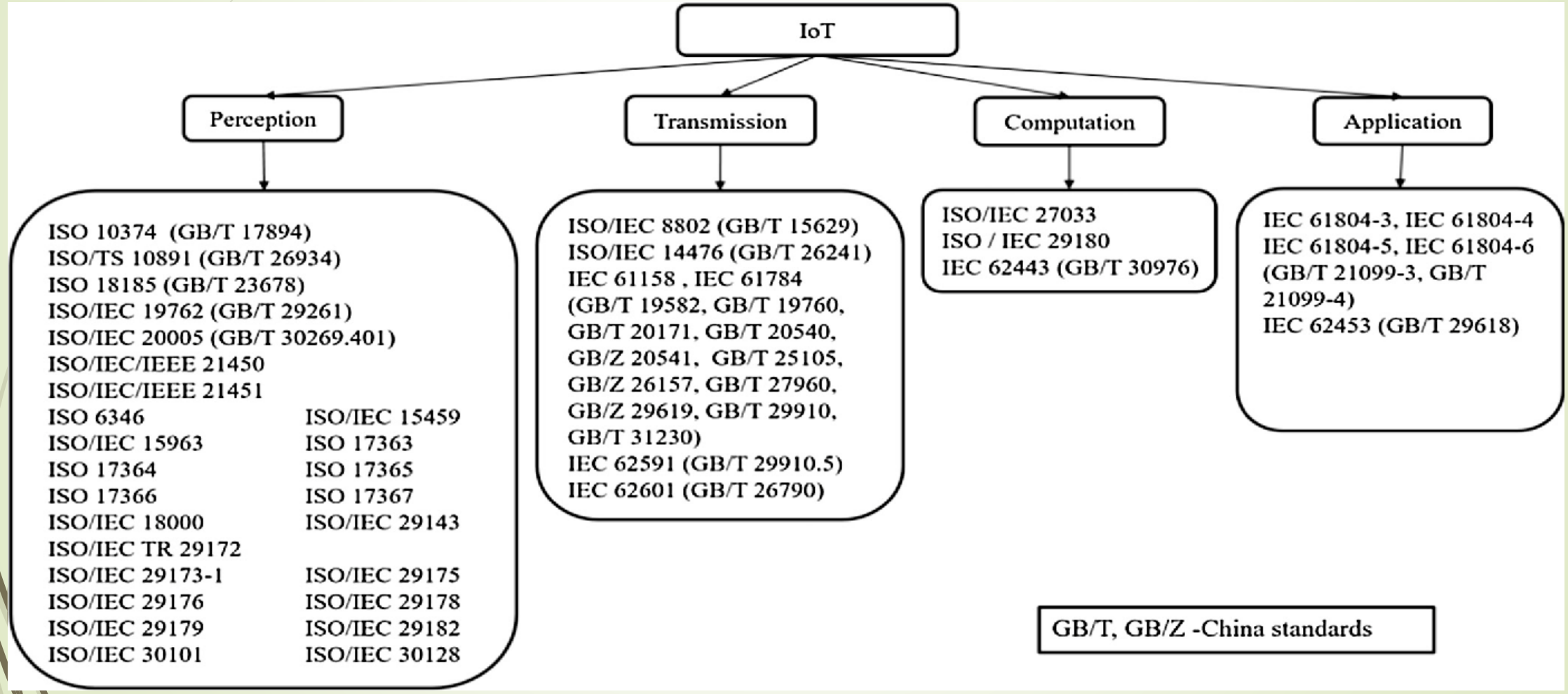
US Trading Commodity Futures (CFTC)

- Between 2012-2016, Futures trading systems and their transactions are mainly automated using AI
  - Energy 50%
  - Precious metals 100%
  - Agriculture products 200%

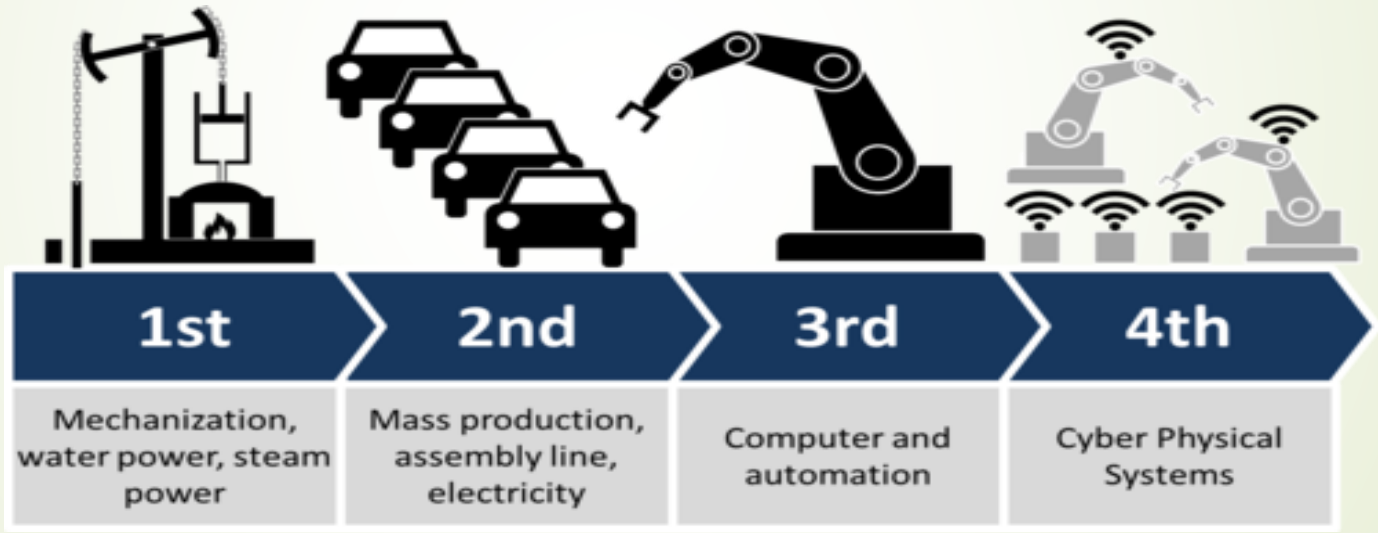
Trading by AI



Standard Essential Patents:
Internet of Things (IoT)



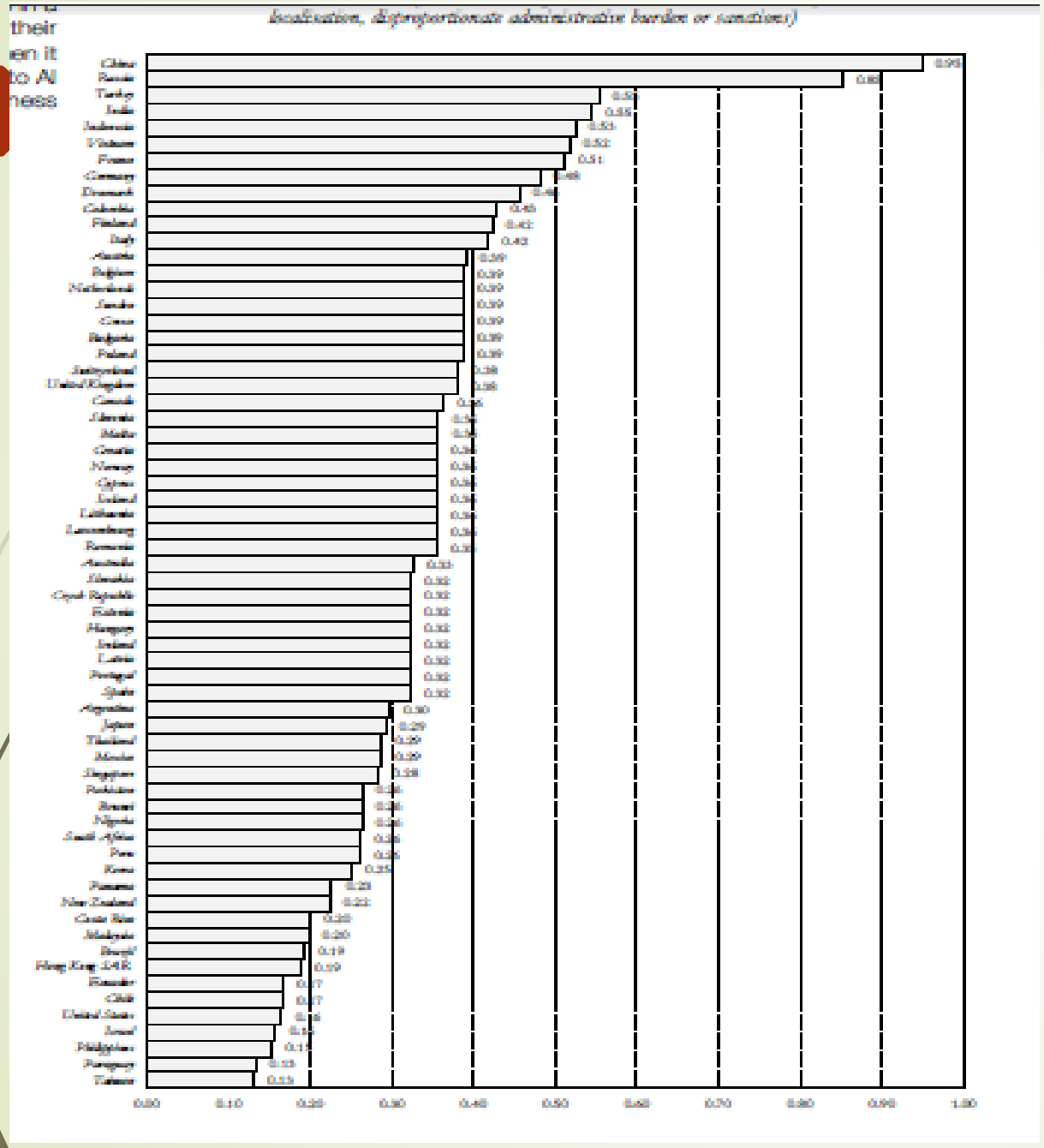
A **technological revolution** is a period in which one or more technologies is replaced by another technology in a short amount of time. It is an era of accelerated technological progresscharacterized by new innovations whose rapid application and diffusion cause an abrupt change in society.



Source: Wikipedia

Technology and New Forms of Non-Tariff Barriers

- Digital Rights Management (DRM) i.e. Geoblocking
- Standard Essential Patents (SEP)
- AI trading systems
- Digital Taxation
- Others i.e. Limitation on Text-and-Data Mining (TDM), product liability, fair use, data localization, etc.



1. China
2. Russia
3. Turkey
4. India
5. Indonesia

42. Japan
43. Thailand
44. Mexico
45. Singapore

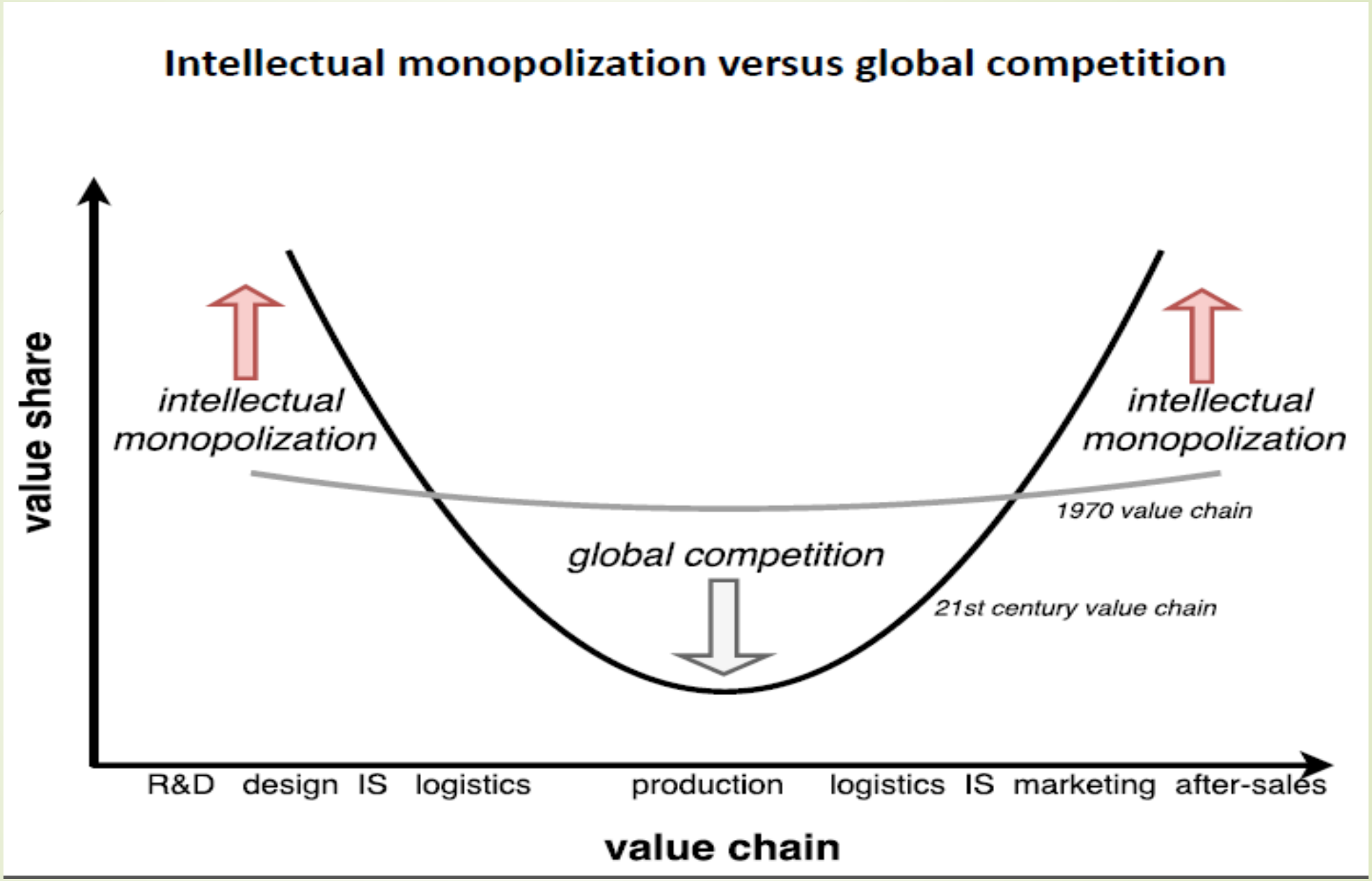
55. Malaysia

57. Hong Kong SAR
60. United States
61. Israel
62 Philippines

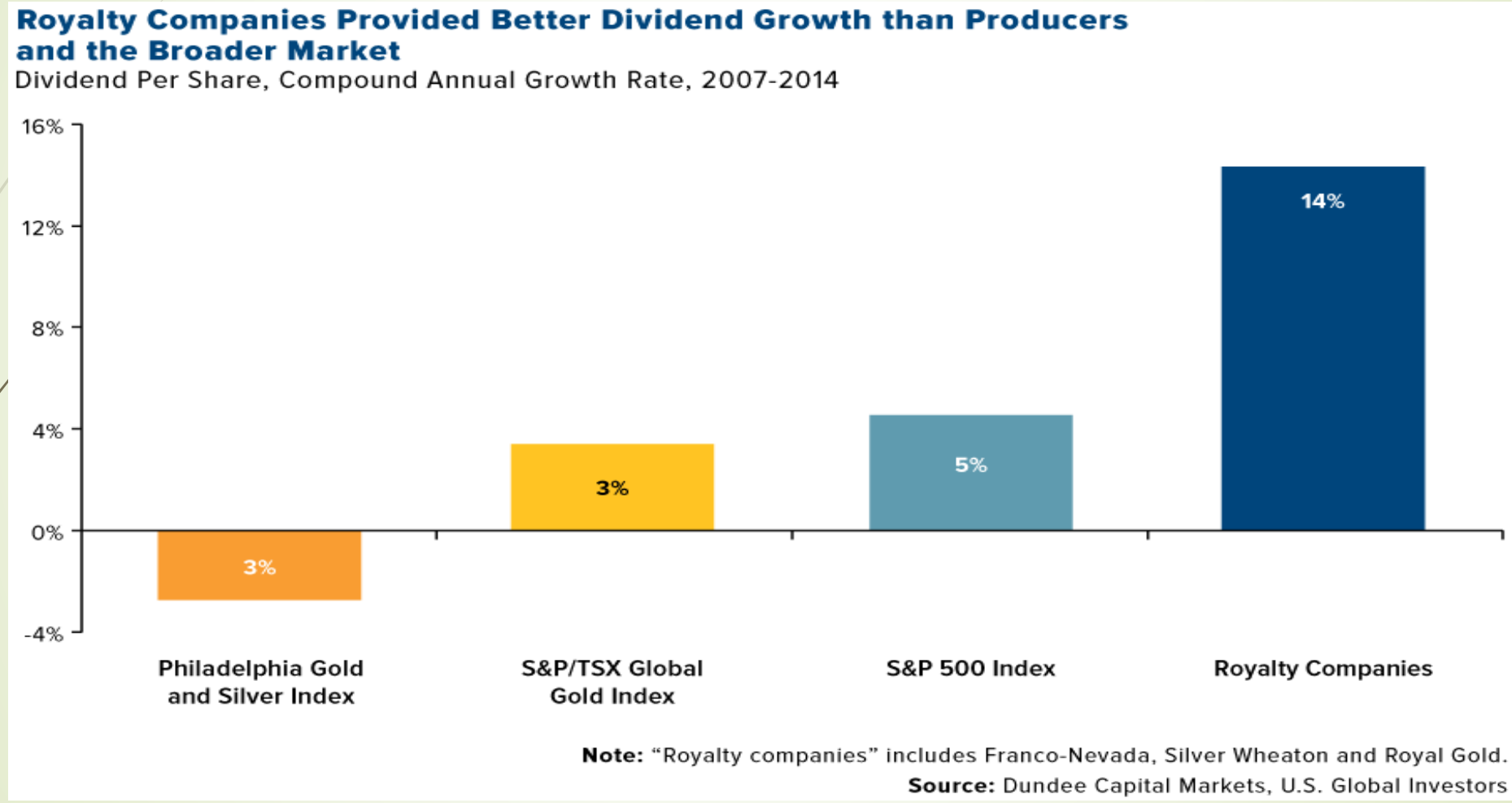
64 Taiwan

More restricted

Less restricted


Intellectual monopolization versus global competition
value share
intellectual monopolization
intellectual monopolization
1970 value chain
global competition
21st century value chain
R&D
design
IS
logistics
production
logistics
IS
marketing
after-sales
value chain

IP business or Innovation Business

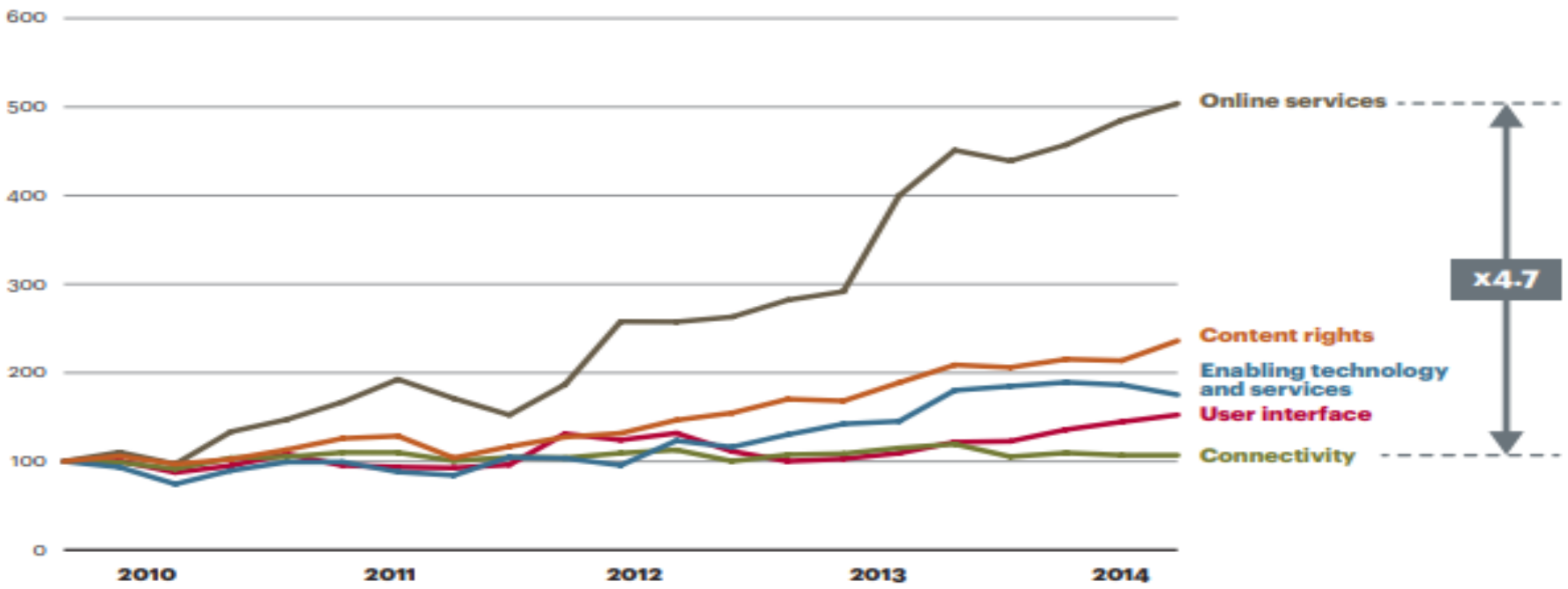


GDPR – New Norm (technical barrier)

- Processing and handling personal data of EU citizens based on the following principles or rights:
  - Right to access of services (Geoblocking)
  - Right to data portability
  - Right to be forgotten
  - Right to be informed
  - Data protection (safe)
  - Transparency and enforcement (notification or fined 4% of global turnover or EUR 20million (max)

Figure 3

In the past five years, online services have created close to five times the value of connectivity



Notes: Content rights: Comcast, Vivendi, Dish Network, Time Warner, and Sky. Online services: Netflix, Facebook, Amazon, Baidu, eBay, and Expedia. Enabling technology and services: Akamai, WPP, Google, and Verisign. Connectivity: AT&T, BT, NTT, Vodafone, Deutsche Telekom, and France Telekom. User interface: Microsoft, Lenovo, Apple, and Acer.

Source: A.T. Kearney analysis

De Minimis Threshold?

ASEAN's De Minimis Tax Rates

Member State	Amount	Types of Taxes Exempted	Commodity	Modes of Transport
Brunei Darussalam	BND 400 (US$295)	Import duty	All dutiable goods	Air (courier service)
Cambodia	US$50	Duty and tax	All	All
Indonesia	US$50	Import duty and taxes	All	Air express and postal
Lao PDR	US$50 (of goods value)	Import duty and tax	All	All
Malaysia	RM 500 (USD$128)	Import duty	Except tobacco, cigarette and liquor	Air (courier service) and postal
Myanmar	US$500	Duty and tax	All	All
The Philippines	PHP 10,000 (US$200)	Duty and tax	Except tobacco goods, wines and spirits	All
Singapore	SGD 400 (US$296)	Goods and services tax	Exclude liquor and tobacco	Air and Post
Thailand	THB 1,500 (US$40)	Import duty and VAT	Except prohibited and restricted goods	All
Viet Nam	VND 1,000,000 (US$28)	Import duty and taxes	All	All

Note: Myanmar Customs implemented the US$50 de minimis on 1 April 2017. However, this is only applicable to express consignment cargo. Goods valued at US$ 500 and below (except restricted goods) are not subject to import licensing.

Source: ASEAN Secretariat (figures from April 2016)

What is Technology's role in SDG 2030?

- Only 1% of R&D by MNC addresses agriculture problems for developing countries.
- Around 1% of drugs developed in the past 30 years by large pharmaceutical companies addresses developing countries healthcare concerns (priority diseases)
- Growing trends in the privatisation of knowledge i.e. access to science and technology and its use

Comparisons

I.3

- Linear growth, globalisation
- Comparative Advantage (Smile Curve: Acer)
- Labour and Capital Intensive
- Low to Intermediate Technology Complexities (limited cluster)
- Interoperable Standards: Tech Transfers
- Financial Incentives: Greenfield

I.4

- Non-linear growth, regional growth
- Collaborative Advantage
- Networked Capital and Technology Intensive
- Intermediate to Home Grown Technology
- Customised Technology, Compex
- Cluster driven
- Open Standard and Open Source
- Ecosystem Approach: Greenfield

Immediate Impact

- The Future ability to export
- The Future ability to produce (manufacturing)
- The future ability to access technology (permission-less innovation)

Q&A

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ITD