

Section B: Towards a new digital era



Emergence of digital technologies



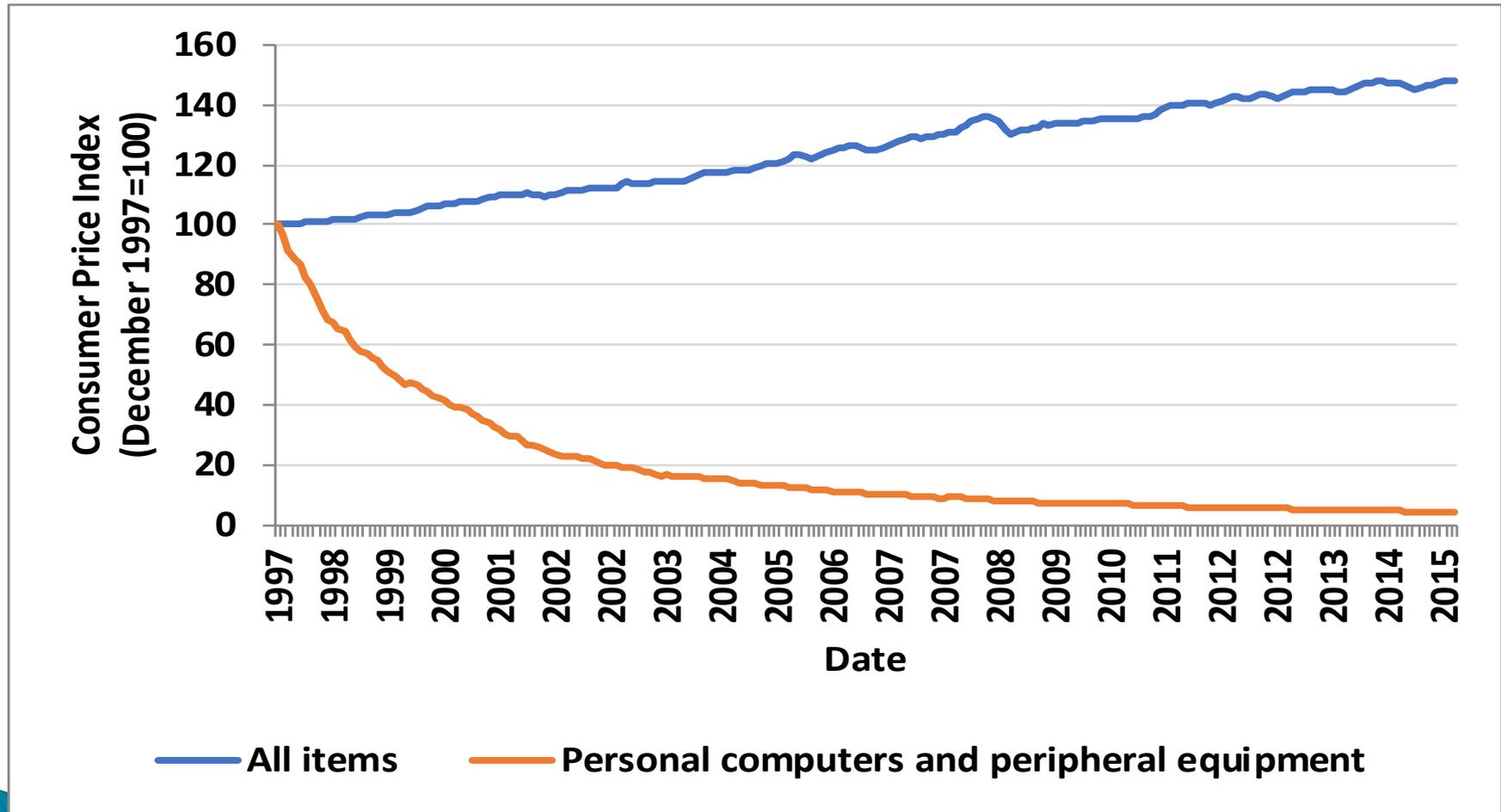
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- ▶ Technological developments contributing to emergence of digital technologies:
 - Advances in computing power (Moore's law)
 - Increases in bandwidth (Gilder's Law)
 - Explosive growth of digital data
 - 16.1 trillion gigabytes created in 2016
 - 163 trillion gigabytes will be created in 2025

Moore's Law



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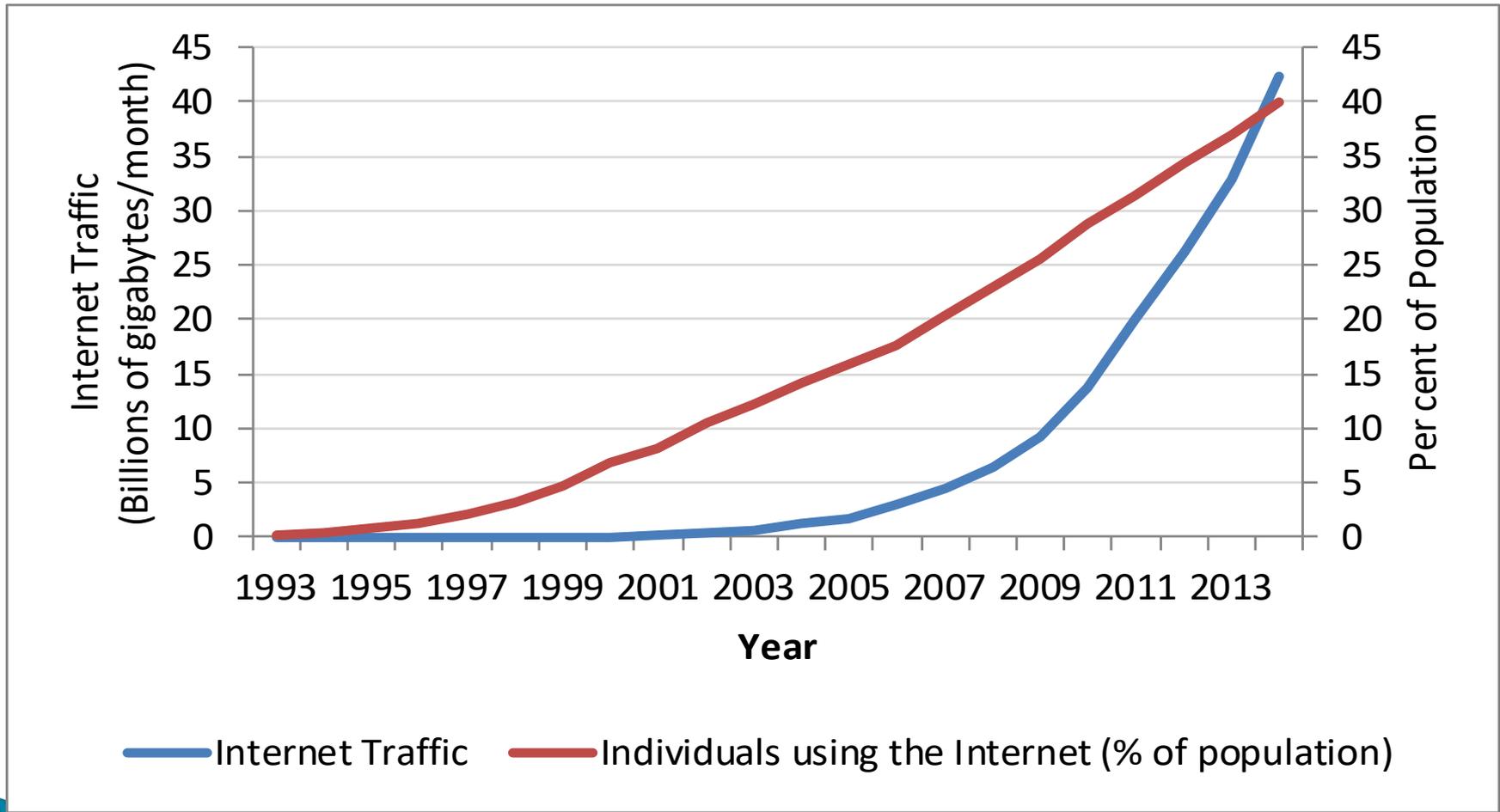


Source: US Bureau of Labor Statistics

Increased bandwidth



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Source: CISCO Systems and World Development Indicators.

How digital era is impacting the economy



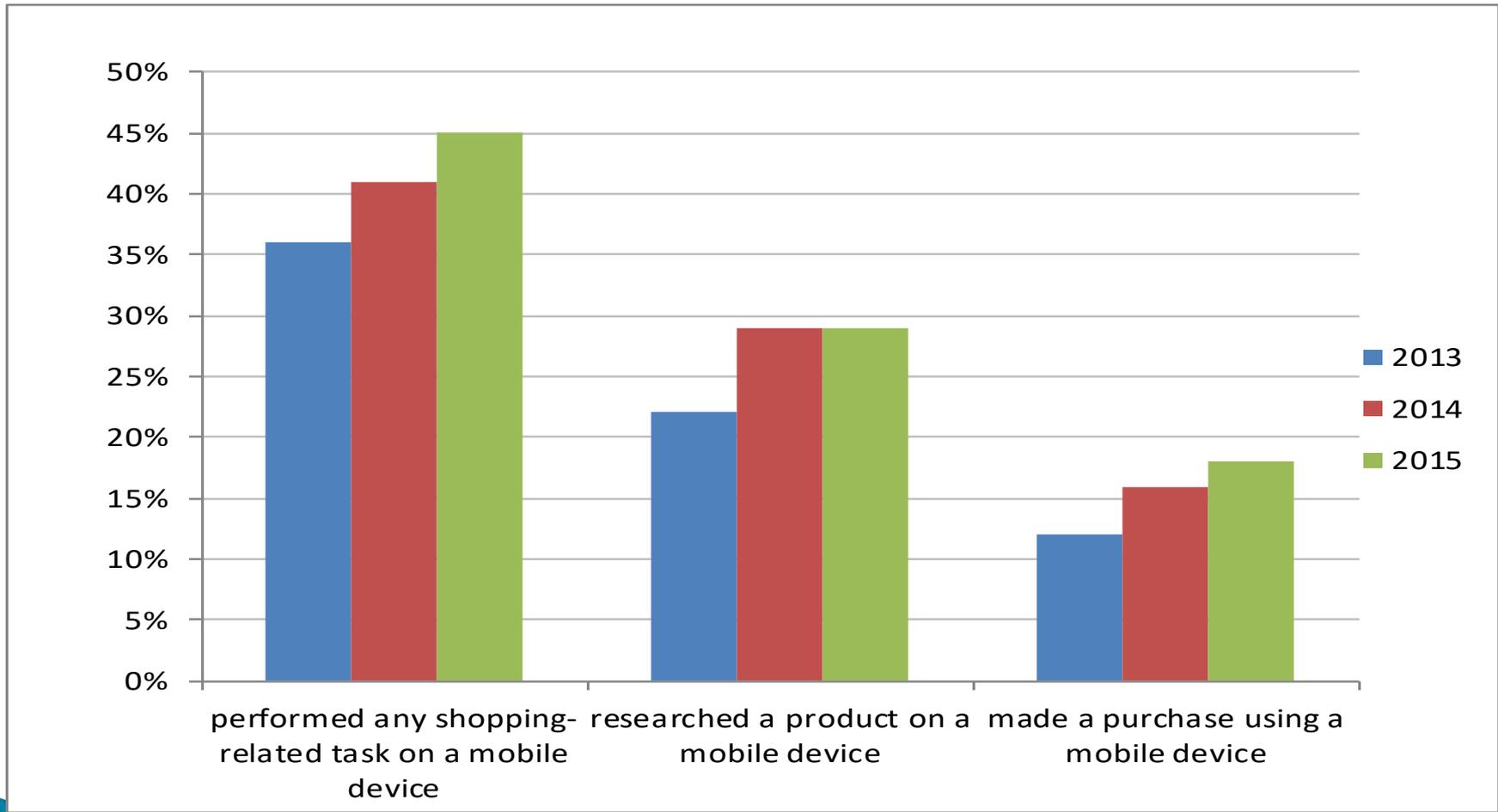
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- ▶ Growth of online markets
 - research products, compare prices, provide feedback (customer ratings)
- ▶ Customized goods and services
 - product visualization and 3D printing, use of AI to generate recommendations
- ▶ Improves firms' ability to produce, promote, distribute and maintain their products
 - IOT in smart manufacturing

Growth of online markets



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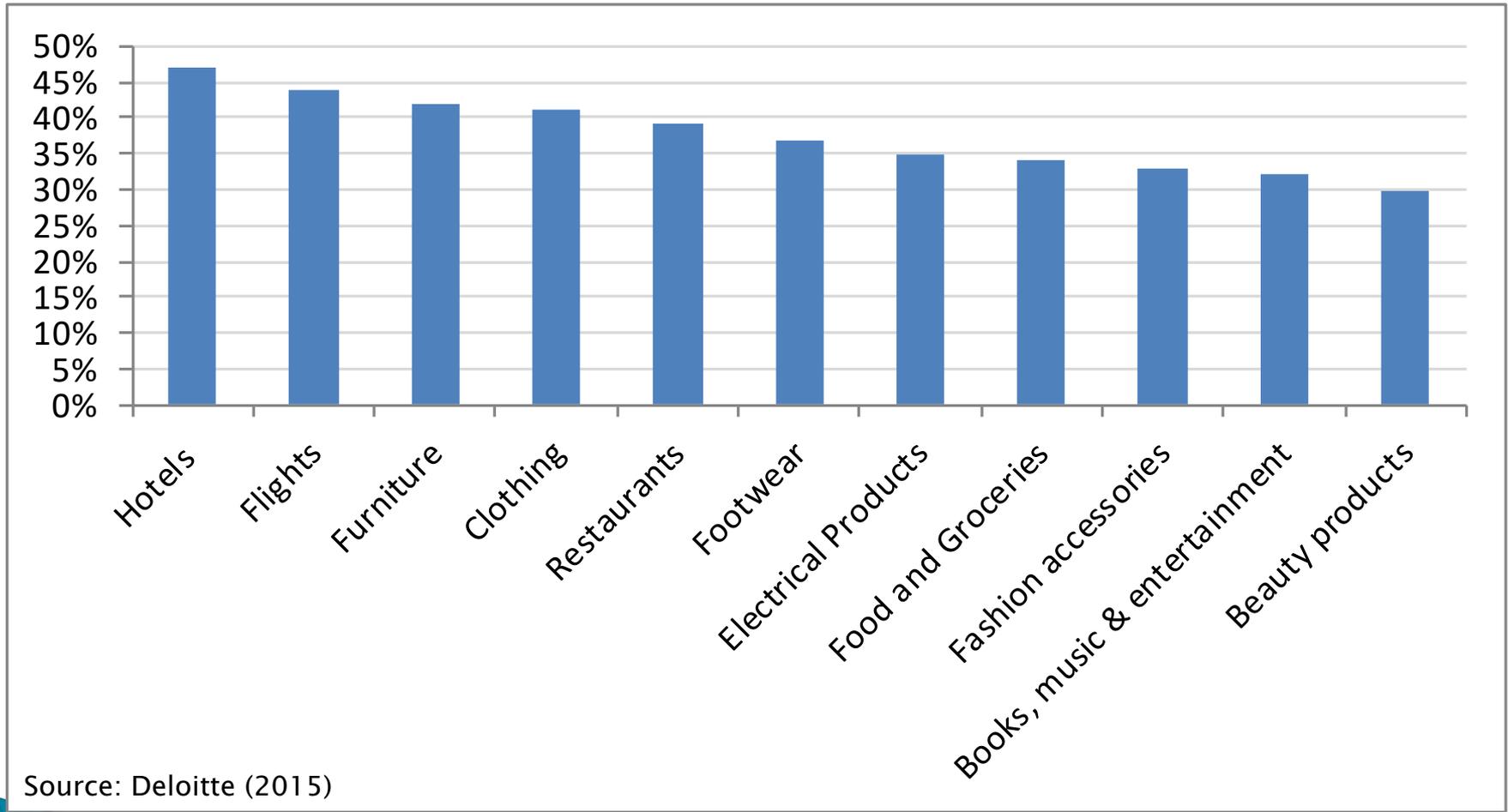


Source: Ernst & Young (2015)

Personalized goods and services



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Source: Deloitte (2015)

Challenges posed by digital technologies



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- ▶ Privacy and security (increased public concern)
- ▶ Market concentration
 - Network effects, scale without mass (Brynjolfsson et al, 2008), high switching costs
- ▶ The many dimensions of the digital divide
 - Regulatory divide
 - Gender divide
 - Small and big firms
 - High and low-skilled workers

Concern over privacy



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Percentage of US adults confident in the ability of institutions to protect their privacy

Institutions	Not at all confident	Not too confident	Somewhat confident	Very confident
Their mobile phone manufacturers	13	13	43	27
Their credit card companies	15	15	42	27
Their mobile phone service providers	15	15	47	21
Their email providers	13	17	46	20
Companies/retailers they do business with	15	21	46	14
The federal government	28	21	37	12
Social media sites they use	24	27	38	9

Source: Pew Research Center.

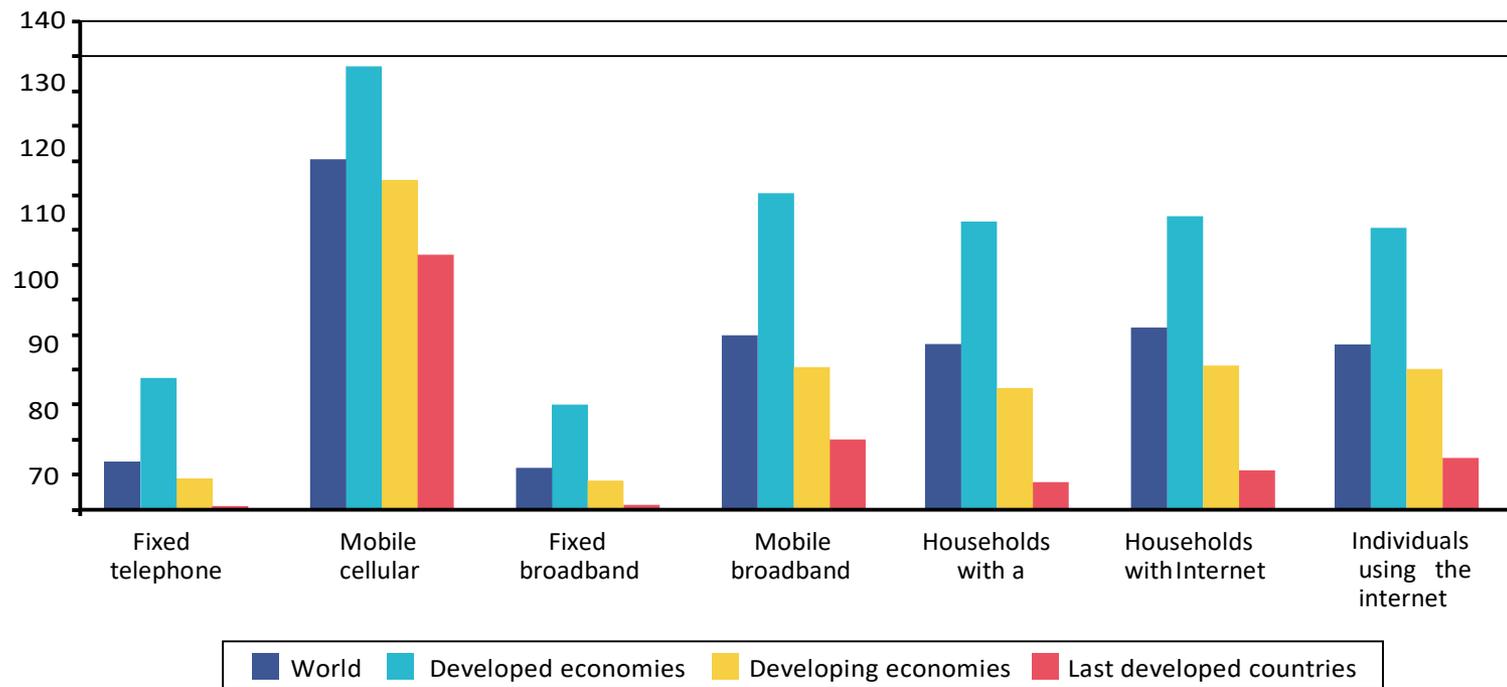
Notes: Survey conducted 30 March – 3 May 2016.

Digital divide



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Figure B.15: ICT by development levels

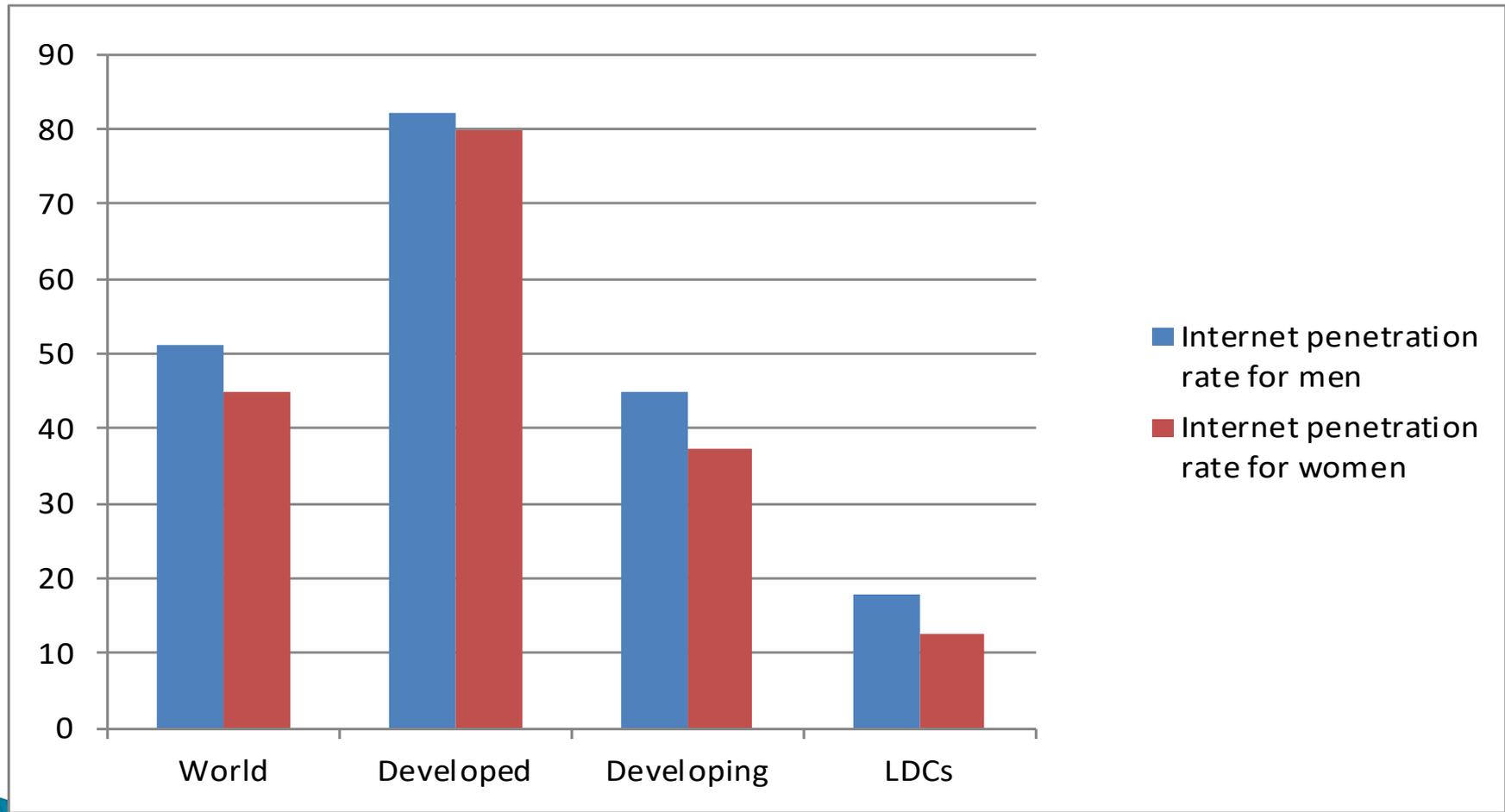


Sources: UNCTAD (2017b), based on ITU data.

Gender divide



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How much digitalization?



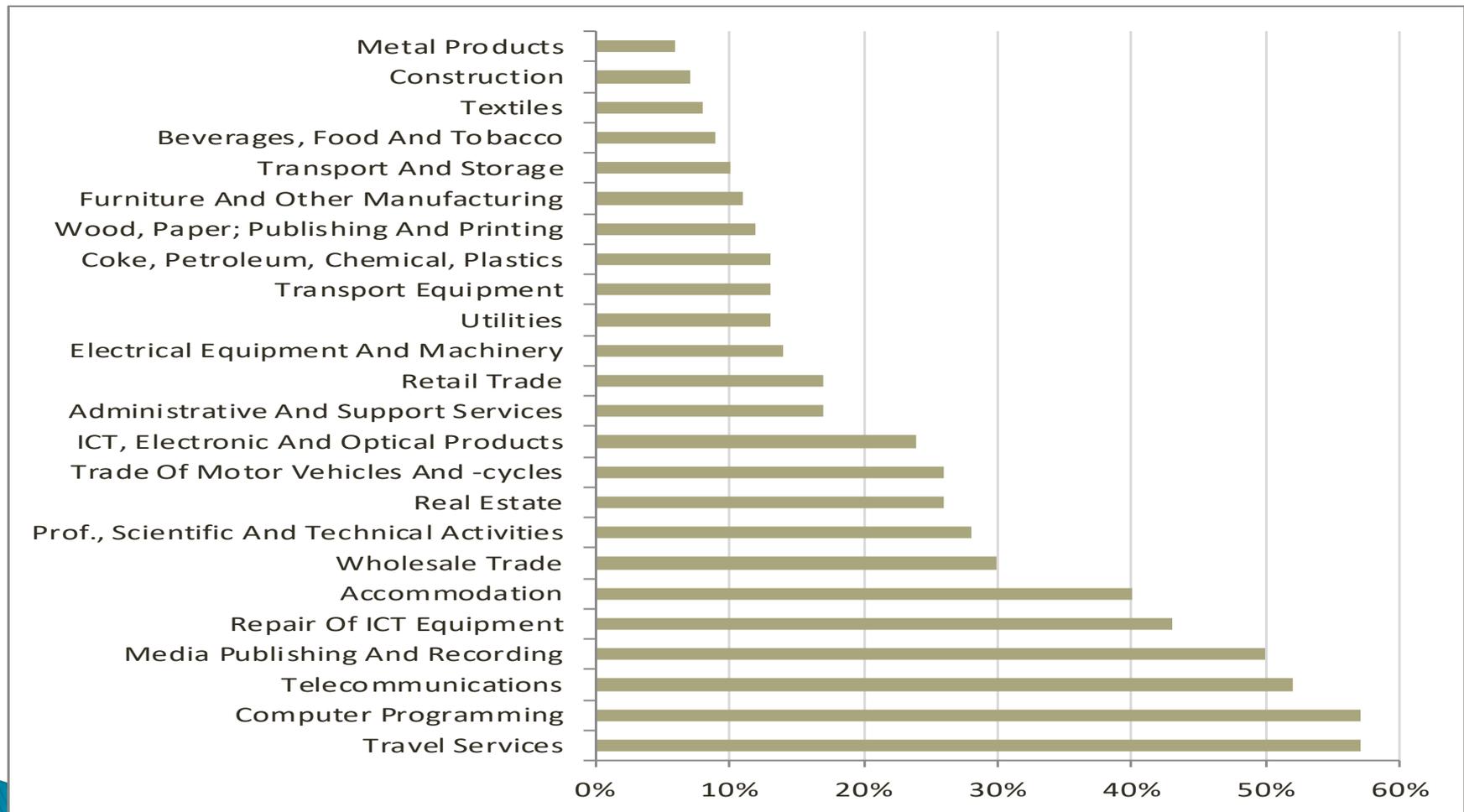
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- ▶ Measuring digitalization of the economy
- ▶ Estimates of e-commerce transactions and trade in potentially ICT-enabled services
- ▶ Data from e-commerce platforms (Amazon, Alibaba), search engines (Alphabet/Google), mobile payment services (M-Pesa) and content streaming (Netflix, Spotify)

Digital intensity of sales



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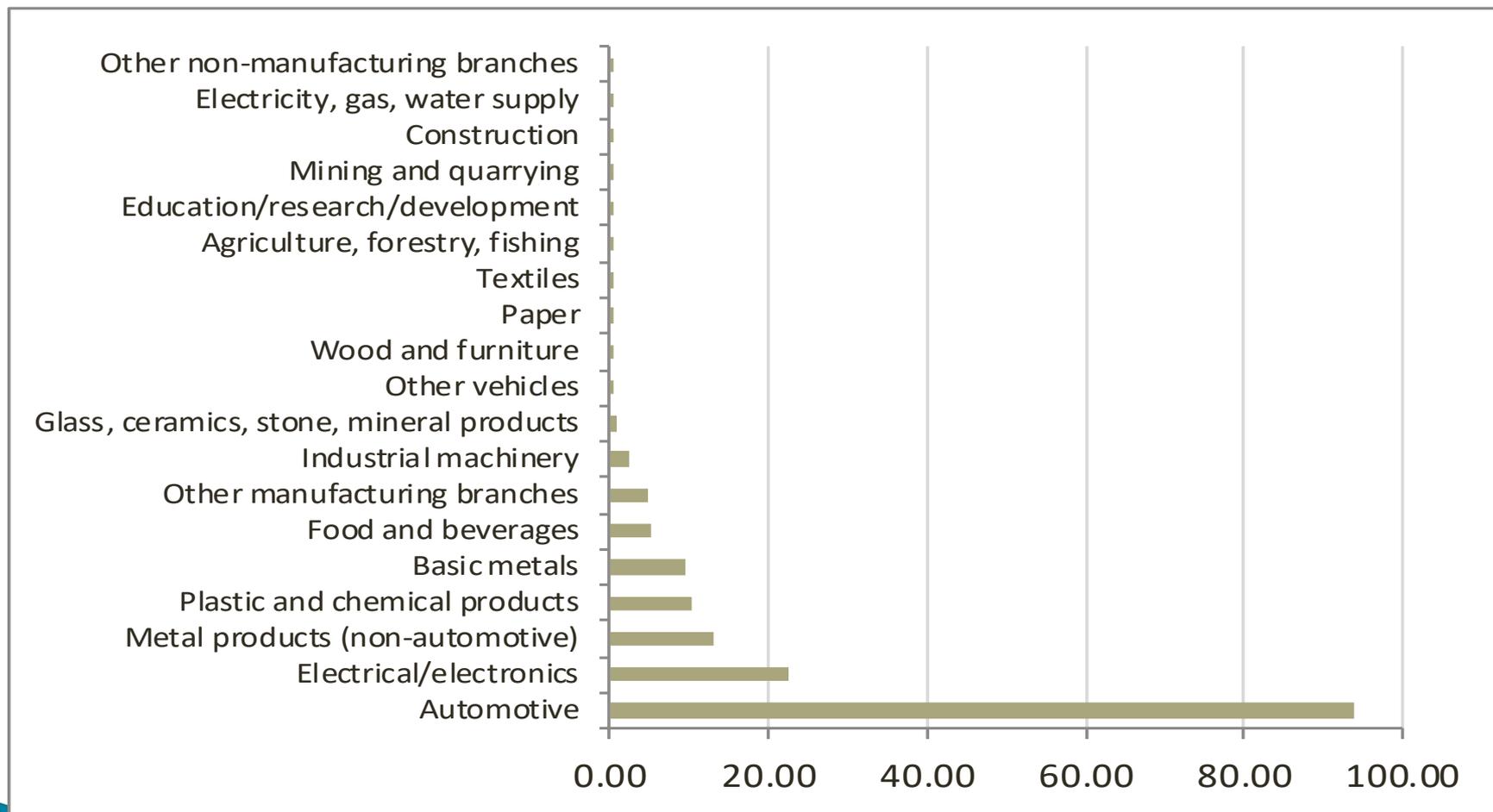


Source: European Commission (2017).

Robotization



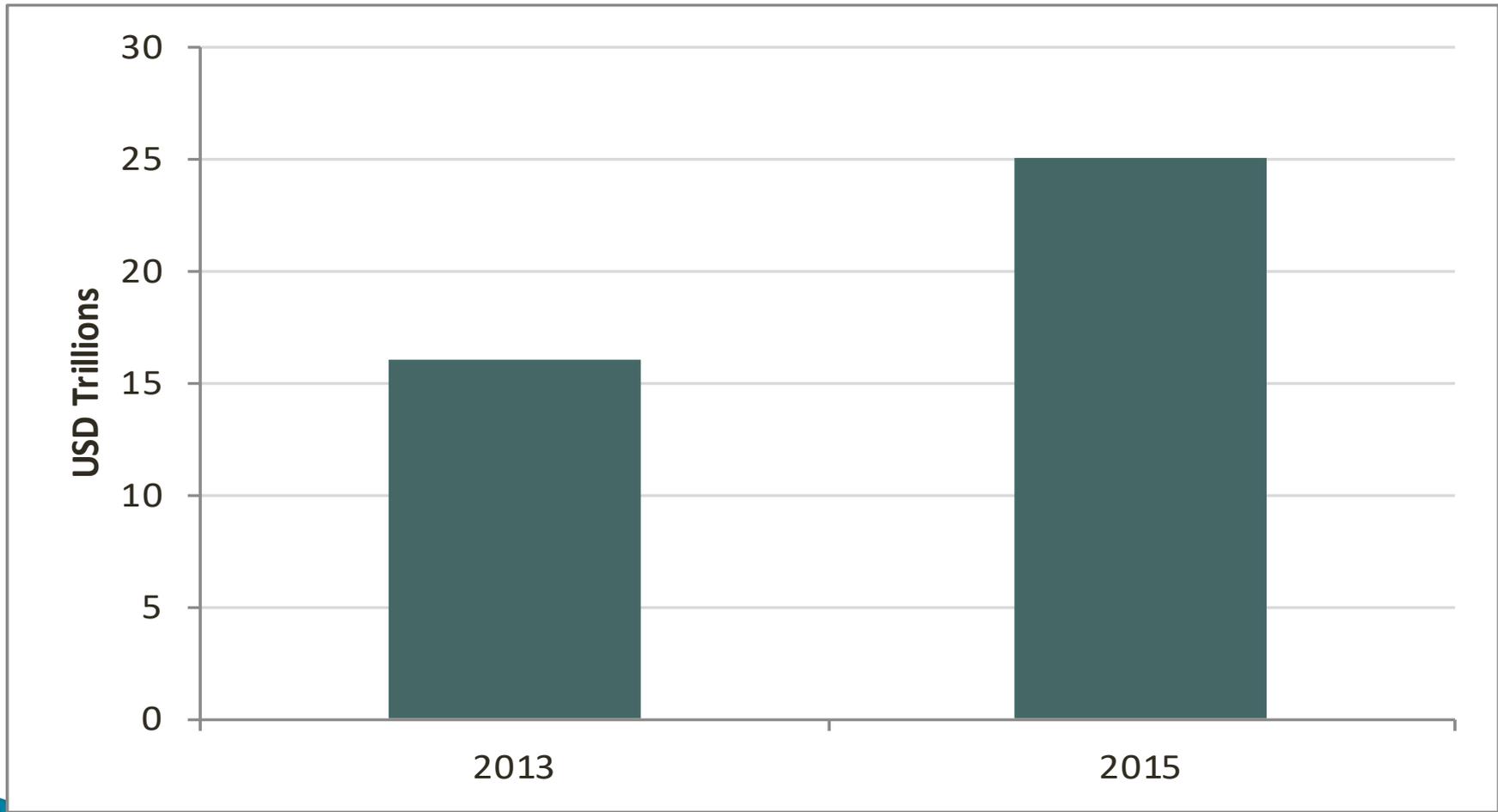
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Global e-commerce



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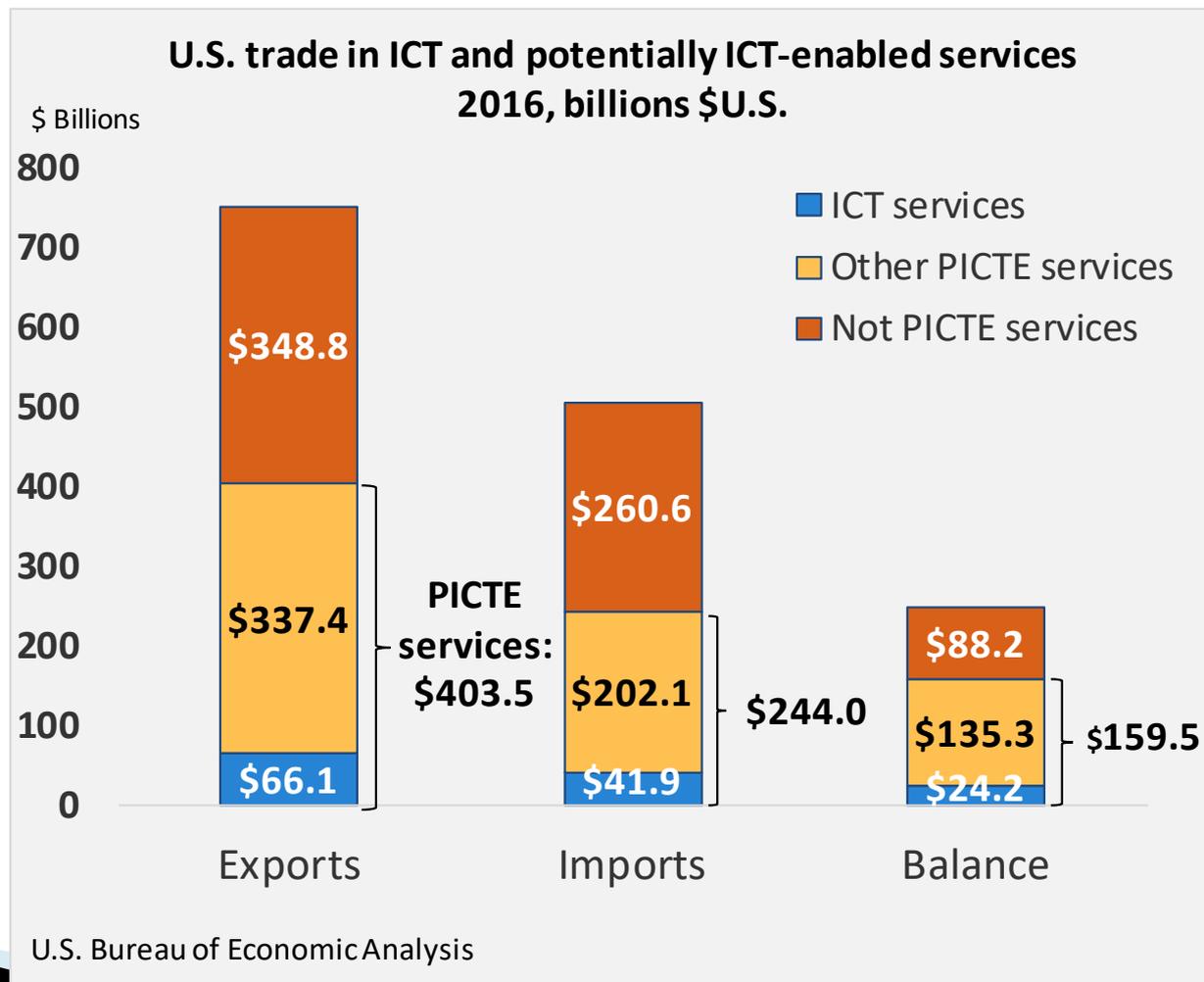


Source: UNCTAD (2017).

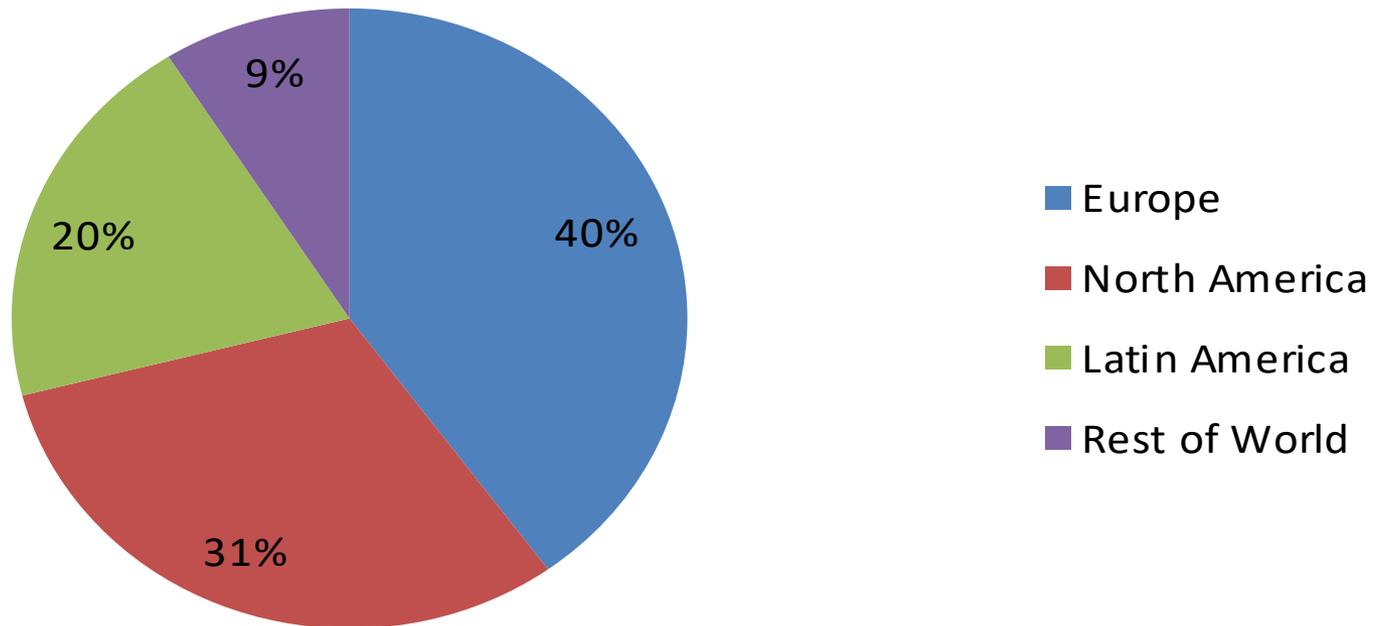
Potentially ICT-enabled services



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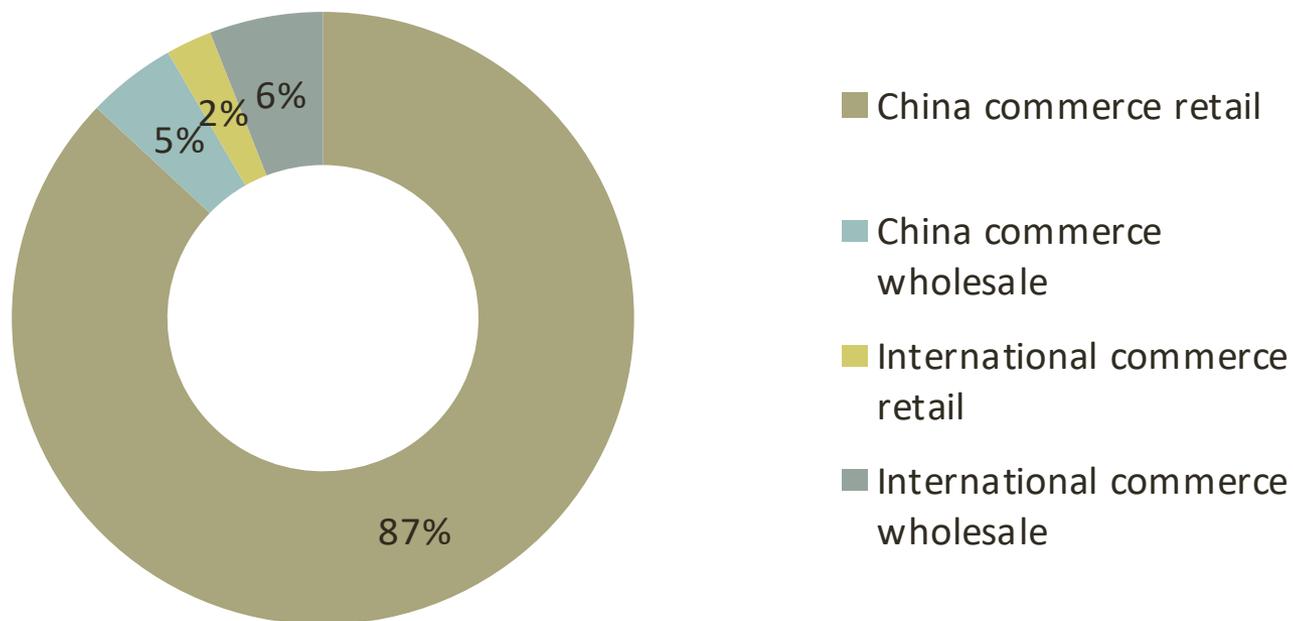


Subscribers by region



Source: US SEC (2017).

Alibaba revenue breakdown (per cent), 2016-17



Source: SEC (2017).