Digital Futures:

dynamics, inequalities, governance, Latin America, South East Asia

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Relações Internacionais
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This presentation contains preliminary conceptualization and data from a research project (**Digital Futures and Global Power**) conducted by Professor Marco Cepik (UFRGS and INCT-INEU UNESP-PUC SP-UNICAMP) and Dr. Pedro Brancher (UFRGS and INCT-PPED IESP-UERJ). We want to thank the invitation and the opportunity to exchange ideas with students and colleagues from PUC Minas. We also would like to express our appreciation to the CNPq for the research grants. Thanks also to our research assistant Francisco Fabris (PIBIC CNPq UFRGS).

1. Dynamics
2. Inequalities
3. Governance
4. Latin America
5. Southeast Asia

1. Dynamics

Digital Age

By Digital Age, one should understand the historical period since 1971 (the first microprocessor), distinguished by the growing **centrality** of digitized science, technology, and innovation systems for the production, circulation, and consumption of material and cultural values engendered by **networked intellectual work** (Cepik; Brancher, 2022).

In this sense, the two most important properties and dynamics of the Digital Age are exponential **datafication** and free-of-scale **networking** (Śledziewska & Włoch, 2021).

Digital **platforms** are the dominant **organizational form** of firms and institutions in the contemporary world (Srnicek, 2016).

The transition to the Digital Age is also characterized by the hegemony of financial capital (**financialization**) and the **global power struggle** between the United States of America (USA) and the People's Republic of China (PRC).

Digital Transformation

Digital transformation, therefore, is the process through which organizations create and incorporate digital technologies that increasingly integrate the **physical**, **application**, and **cognitive** layers of **cyberspace** shared by billions of people.

Platforms

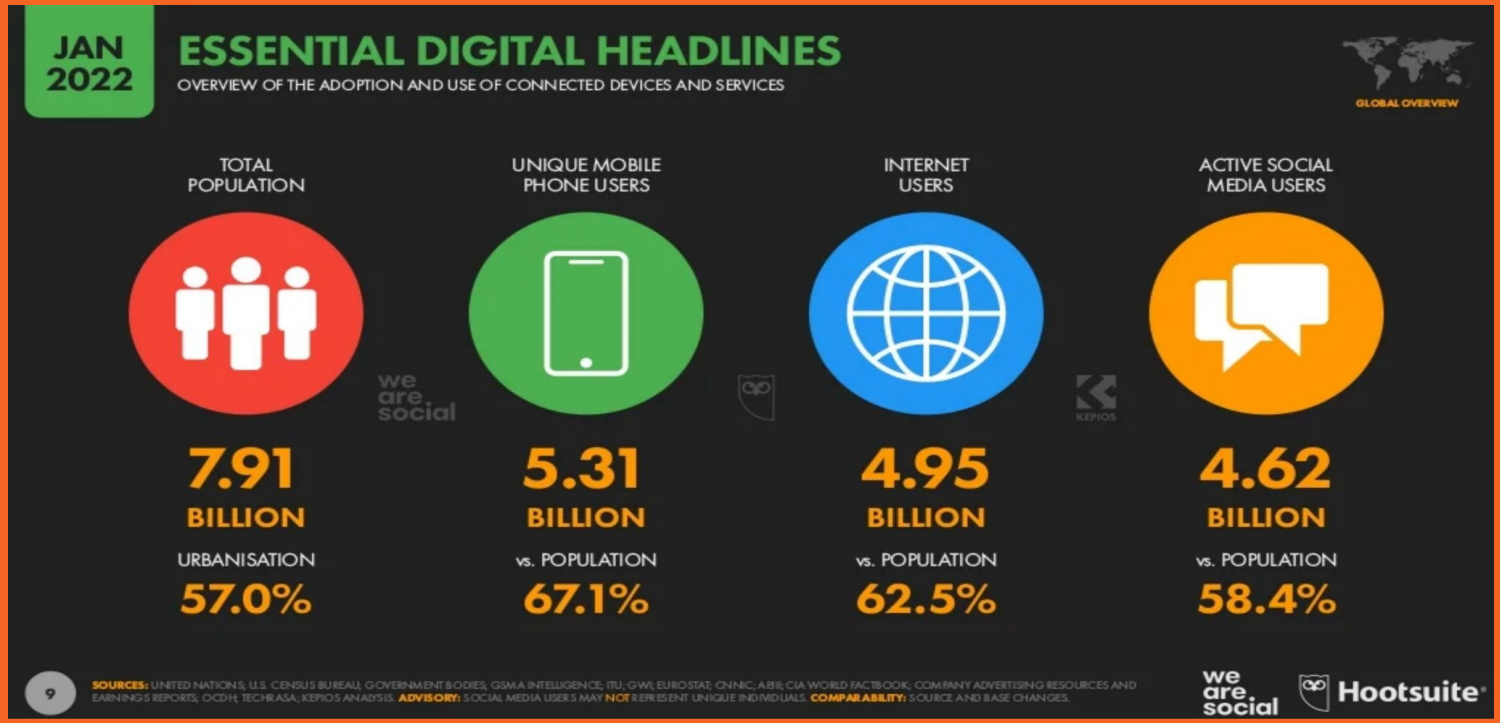
First, the platforms' center of gravity is **cyberspace** itself, where leading corporations impose entry barriers and interaction norms (Djick, Poell & Waal, 2018).

Second, platforms develop reprogrammable software. Abundant **data** and financial concentration allow continuous updating of interfaces and algorithms and novel applications from core components (Helmond, 2015).

Third, the market capitalization **value** of the digital platform is not based on earnings, physical assets, or even scale and scope economies. It depends on users and network traffic generating Big Data (Cusumano, Gawer & Yoffie, 2019).

According to Lang (2021), general-purpose technologies and specific innovation breakthroughs have defined the Digital Age. Three exponential laws predicted the **general direction** of such changes:

- **Moore's law** (number of processing units in computer chips doubles every 18 months)
- **Butter's law** (network communication speed doubles every nine months)
- **Kryder's law** (storage capacity doubles every 13 months).



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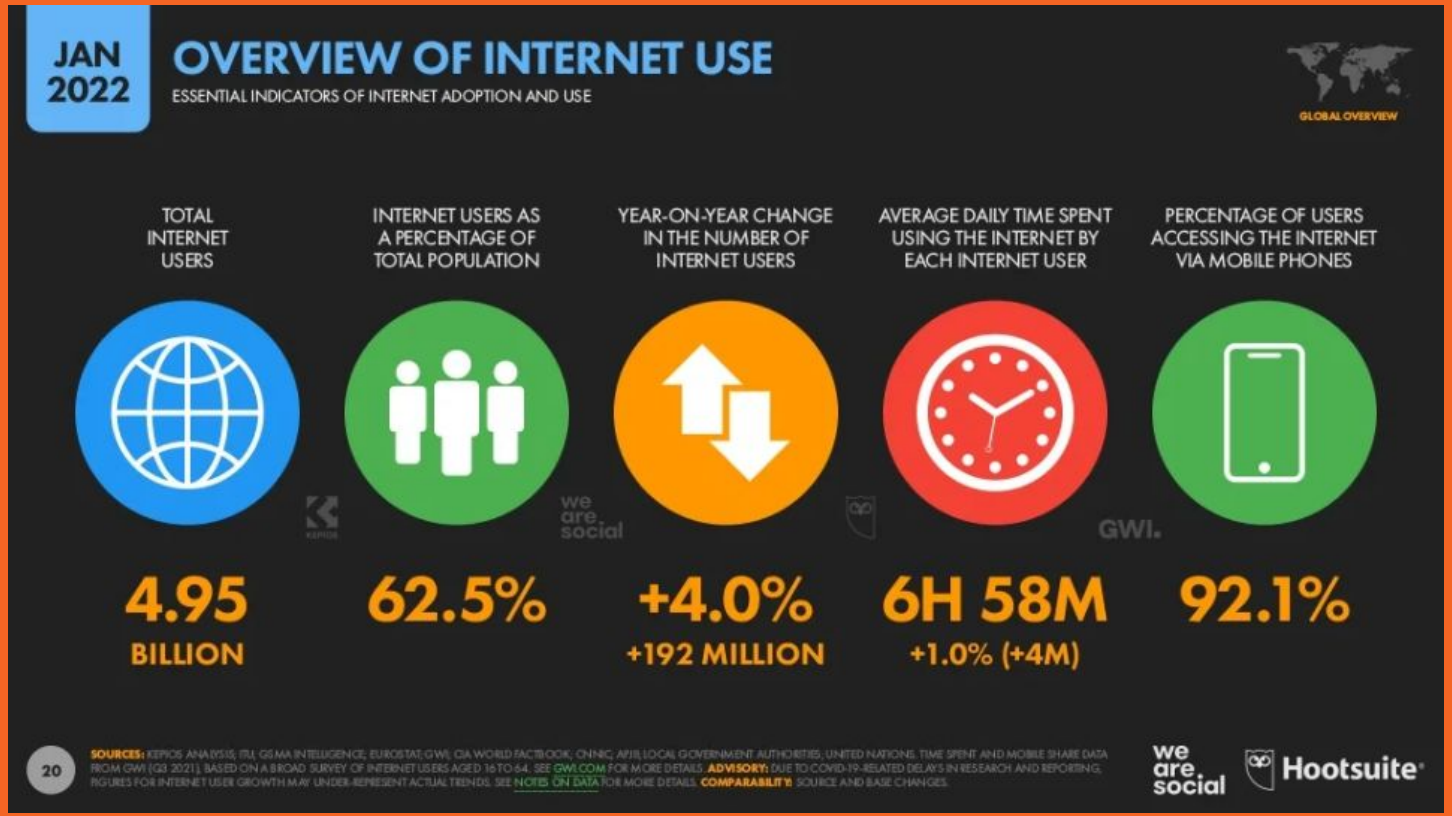

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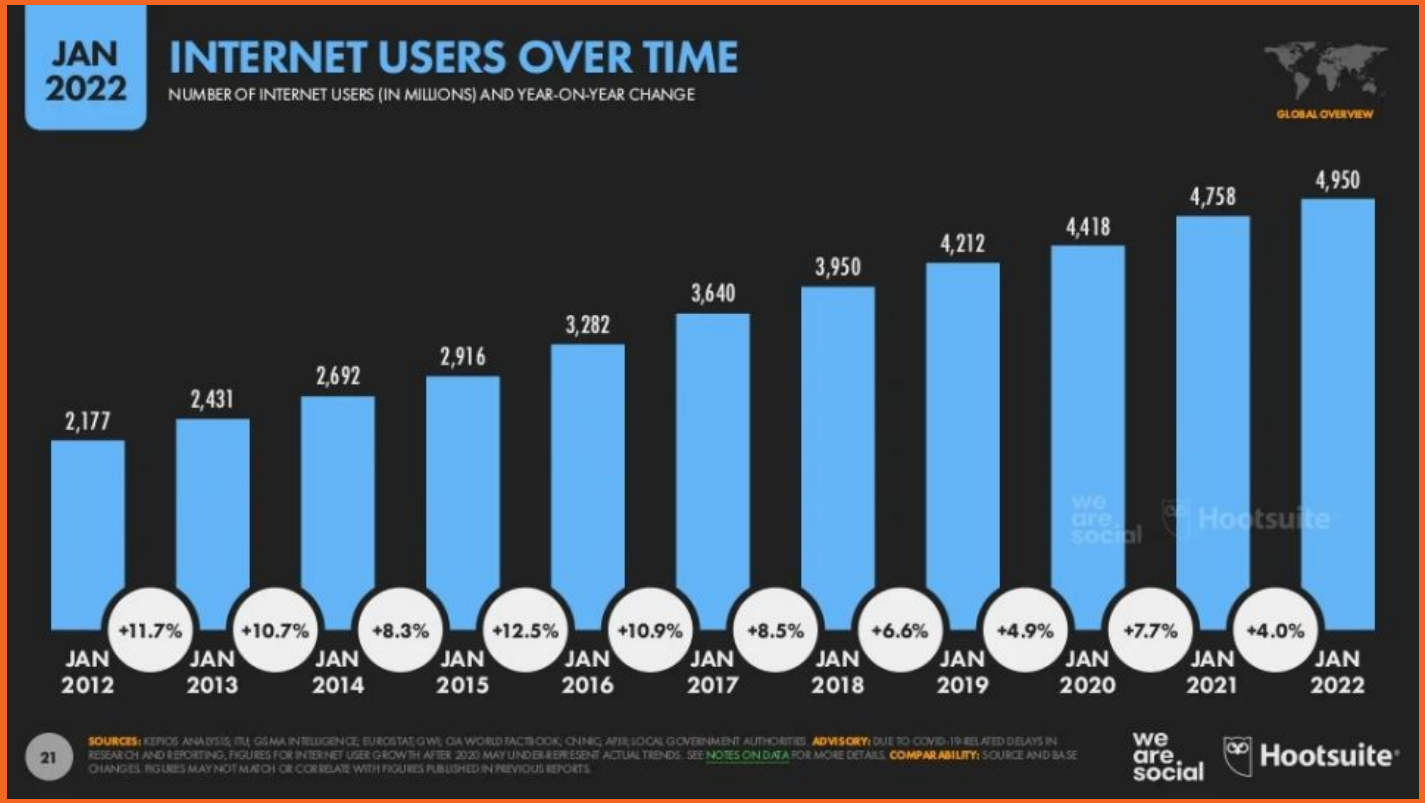

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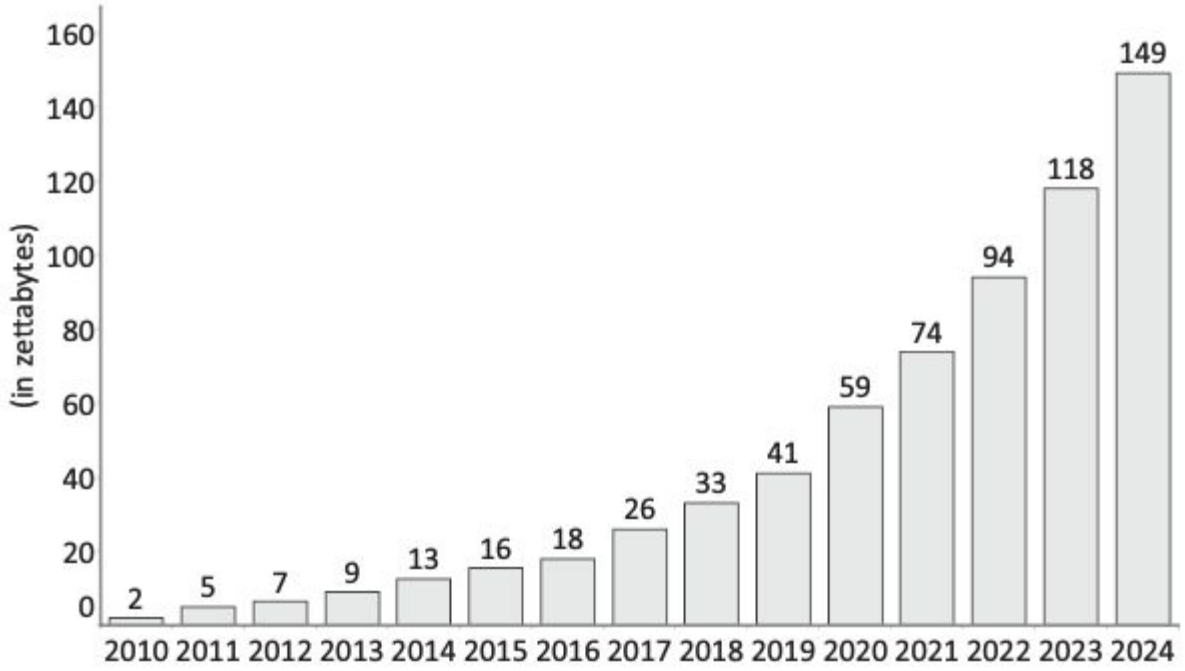


Figure 1.7 Volume of data as an effect of digitalisation (in zettabytes, 2010–2024).

Source: Śledziewska & Włoch, 2021

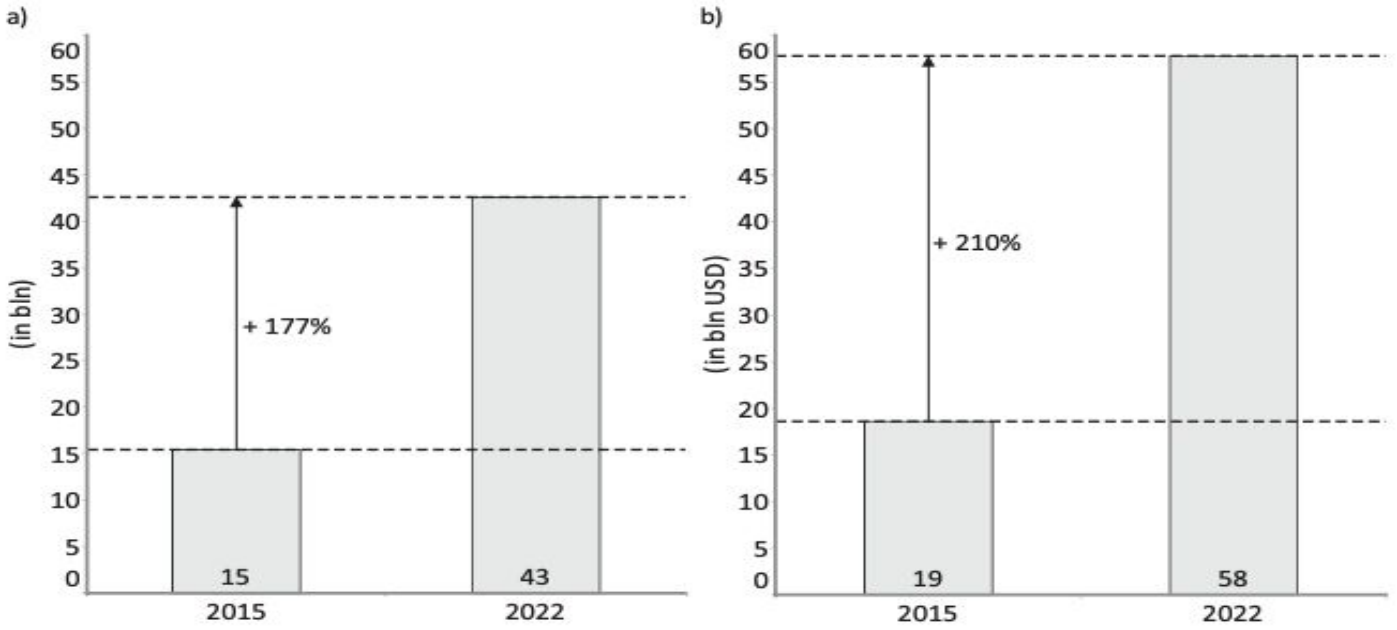


Figure 1.6 (a) Number of interconnected IoT devices (in billion units, worldwide, 2015 and 2022★); (b) global smart sensors market size (in billion USD, 2015 and 2022★).

Source: Śledziewska & Włoch, 2021

Since the beginning of the **Covid-19 pandemic**, there has been an enormous increase in online activities, measured by the number of new users, consumers, products, and services (private and government). Major platforms have concentrated even more capital and have entered into fierce competition among themselves and less so with governments.

For example, the combined market capitalization value of Apple, Microsoft, Alphabet (Google), Amazon, and Meta (Facebook) reached **8.7 trillion** dollars in January 2022. The European Union has fined Google over 8 billion dollars since 2010.

Even the so-called China's "regulatory crackdown" on the tech sector has not prevented the combined market capitalization value of Tencent, Alibaba, Meituan, and China Mobile from reaching **1.1 trillion dollars** in the same period (https://companiesmarketcap.com).

Firms and governments will dispute emerging general-purpose technologies sustaining **datafication and networks** (*e.g.*, blockchain, cloud computing, artificial intelligence (AI), robotics, semiconductors, 3D printing, internet of things (IoT), 5G mobile, and quantum computing).

Along with **bio**, **energy**, and **space** technologies, **digital** techs will profoundly impact economics, society, and security in the decades ahead (UNCTAD, 2019. Allison et al., 2021).

Our current research project will analyze the strategic response of **Latin American** and **Southeast Asian** peoples and governments to the challenges and opportunities engendered by the advancement of digitalization in various social formations.

The future of humanity and the planet depend on the **global working class's strategic struggle** to transform the Digital Age into a more democratic, equal, and sustainable system (*Gesellschaftsformation*).

Neither dystopian pessimism nor utopian optimism will be able to build a better future.

2. Inequalities

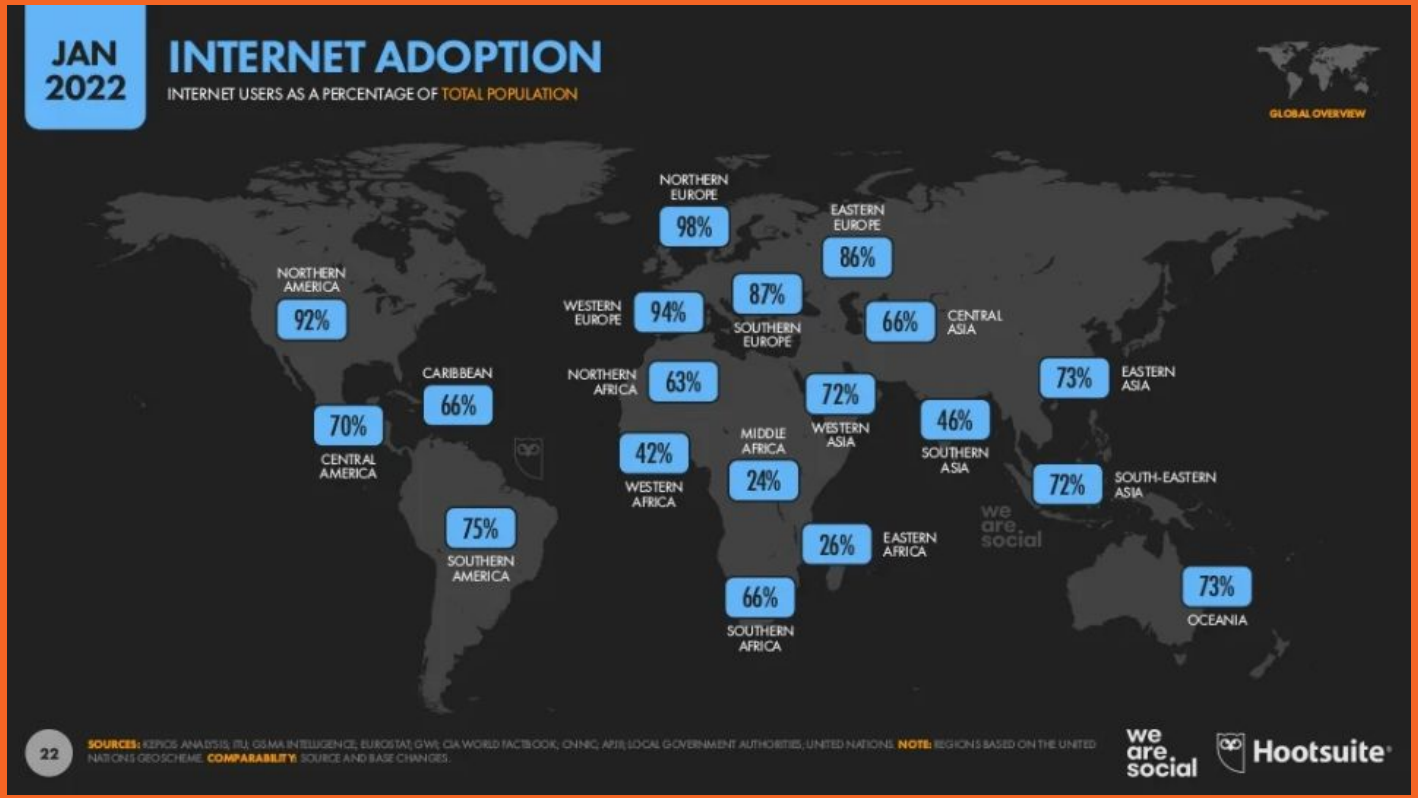
Digital inequalities are part of a much more significant and persistent structural problem intrinsic to capitalism.

According to Ragnedda and Gladkova (2017), we can talk about **three levels** of digital inequalities.

The **first** level is a divide between those who have and do not have adequate **access** to the required devices and the Internet.

The **second** level relates to how different sociodemographic groups and individuals' **use** digital technologies and data.

The **third** level of the digital divide is related to unequal **capacities** to create tangible and intangible benefits and outcomes from digital technologies.



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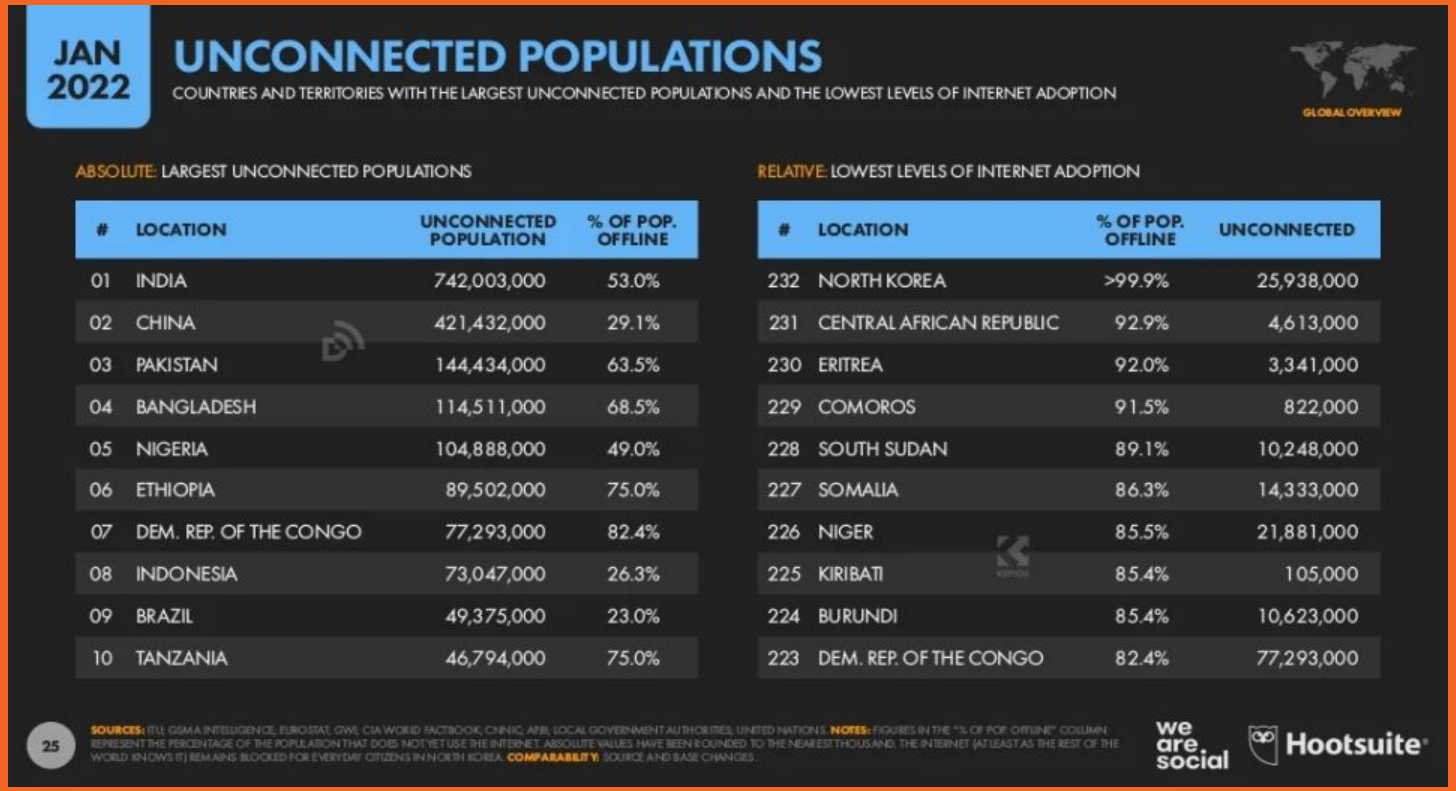

JAN 2022

UNCONNECTED POPULATIONS

COUNTRIES AND TERRITORIES WITH THE LARGEST UNCONNECTED POPULATIONS AND THE LOWEST LEVELS OF INTERNET ADOPTION

GLOBAL OVERVIEW

ABSOLUTE: LARGEST UNCONNECTED POPULATIONS

#	LOCATION	UNCONNECTED POPULATION	% OF POP. OFFLINE
01	INDIA	742,003,000	53.0%
02	CHINA	421,432,000	29.1%
03	PAKISTAN	144,434,000	63.5%
04	BANGLADESH	114,511,000	68.5%
05	NIGERIA	104,888,000	49.0%
06	ETHIOPIA	89,502,000	75.0%
07	DEM. REP. OF THE CONGO	77,293,000	82.4%
08	INDONESIA	73,047,000	26.3%
09	BRAZIL	49,375,000	23.0%
10	TANZANIA	46,794,000	75.0%

RELATIVE: LOWEST LEVELS OF INTERNET ADOPTION

#	LOCATION	% OF POP. OFFLINE	UNCONNECTED
232	NORTH KOREA	>99.9%	25,938,000
231	CENTRAL AFRICAN REPUBLIC	92.9%	4,613,000
230	ERITREA	92.0%	3,341,000
229	COMOROS	91.5%	822,000
228	SOUTH SUDAN	89.1%	10,248,000
227	SOMALIA	86.3%	14,333,000
226	NIGER	85.5%	21,881,000
225	KIRIBATI	85.4%	105,000
224	BURUNDI	85.4%	10,623,000
223	DEM. REP. OF THE CONGO	82.4%	77,293,000

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SOURCES: ITU; GSMA INTELLIGENCE; EUROSTAT; GWI; CIA WORLD FACTBOOK; CNNIC; APJII; LOCAL GOVERNMENT AUTHORITIES; UNITED NATIONS. NOTES: FIGURES IN THE "% OF POP. OFFLINE" COLUMN REPRESENT THE PERCENTAGE OF THE POPULATION THAT DOES NOT YET USE THE INTERNET. ABSOLUTE VALUES HAVE BEEN ROUNDED TO THE NEAREST THOUSAND. THE INTERNET (AT LEAST AS THE REST OF THE WORLD KNOWS IT) REMAINS BLOCKED FOR EVERYDAY CITIZENS IN NORTH KOREA. COMPARABILITY: SOURCE AND BASE CHANGES.

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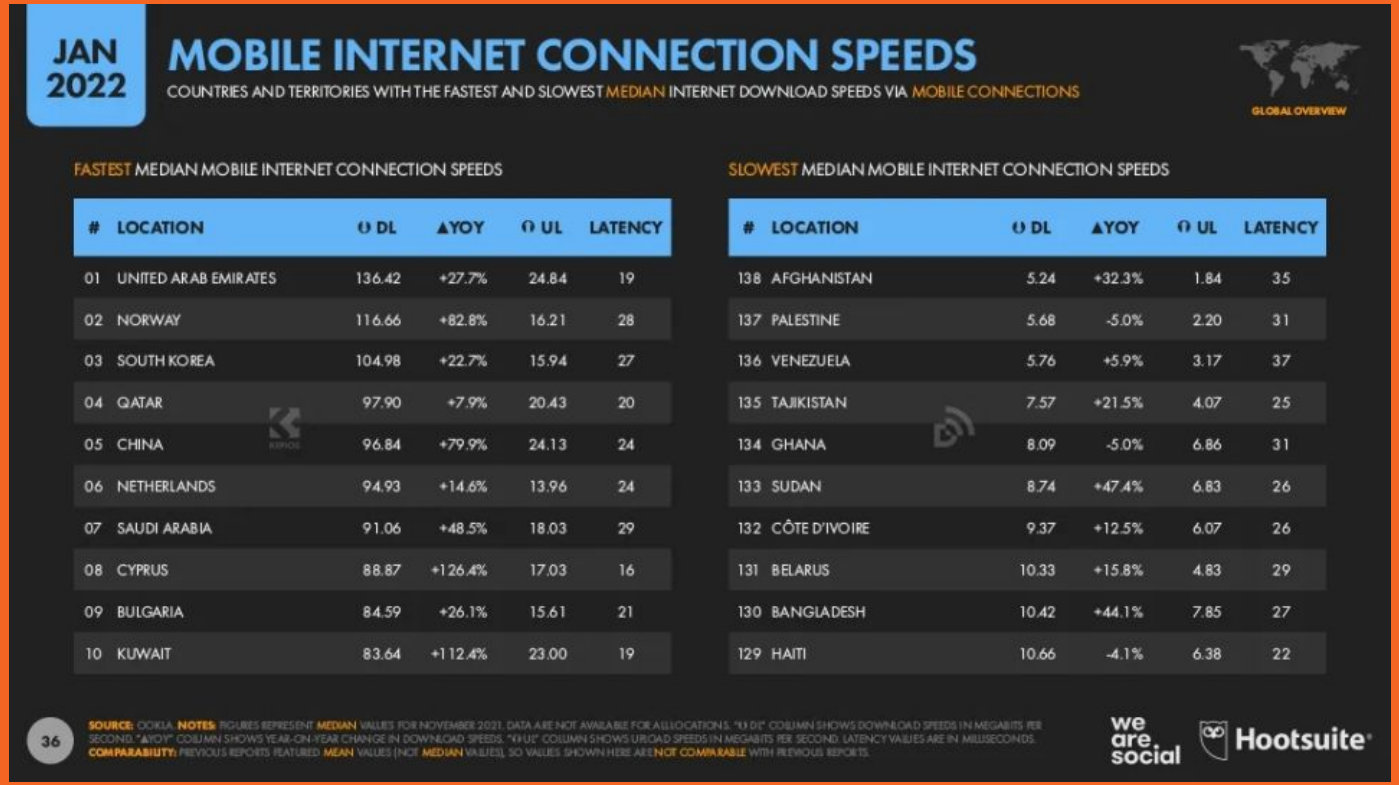
Source: https://datareportal.com/reports/digital-2022-global-overview-report



JAN 2022

MOBILE INTERNET CONNECTION SPEEDS

COUNTRIES AND TERRITORIES WITH THE FASTEST AND SLOWEST MEDIAN INTERNET DOWNLOAD SPEEDS VIA MOBILE CONNECTIONS

GLOBAL OVERVIEW

FASTEST MEDIAN MOBILE INTERNET CONNECTION SPEEDS

#	LOCATION	DL	▲YOY	UL	LATENCY
01	UNITED ARAB EMIRATES	136.42	+27.7%	24.84	19
02	NORWAY	116.66	+82.8%	16.21	28
03	SOUTH KOREA	104.98	+22.7%	15.94	27
04	QATAR	97.90	+7.9%	20.43	20
05	CHINA	96.84	+79.9%	24.13	24
06	NETHERLANDS	94.93	+14.6%	13.96	24
07	SAUDI ARABIA	91.06	+48.5%	18.03	29
08	CYPRUS	88.87	+126.4%	17.03	16
09	BULGARIA	84.59	+26.1%	15.61	21
10	KUWAIT	83.64	+112.4%	23.00	19

SLOWEST MEDIAN MOBILE INTERNET CONNECTION SPEEDS

#	LOCATION	DL	▲YOY	UL	LATENCY
138	AFGHANISTAN	5.24	+32.3%	1.84	35
137	PALESTINE	5.68	-5.0%	2.20	31
136	VENEZUELA	5.76	+5.9%	3.17	37
135	TAJIKISTAN	7.57	+21.5%	4.07	25
134	GHANA	8.09	-5.0%	6.86	31
133	SUDAN	8.74	+47.4%	6.83	26
132	CÔTE D'IVOIRE	9.37	+12.5%	6.07	26
131	BELARUS	10.33	+15.8%	4.83	29
130	BANGLADESH	10.42	+44.1%	7.85	27
129	HAITI	10.66	-4.1%	6.38	22

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SOURCE: OOKLA. NOTES: FIGURES REPRESENT MEDIAN VALUES FOR NOVEMBER 2021. DATA ARE NOT AVAILABLE FOR ALL LOCATIONS. "DL" COLUMN SHOWS DOWNLOAD SPEEDS IN MEGABITS PER SECOND. "▲YOY" COLUMN SHOWS YEAR-ON-YEAR CHANGE IN DOWNLOAD SPEEDS. "UL" COLUMN SHOWS UPLOAD SPEEDS IN MEGABITS PER SECOND. LATENCY VALUES ARE IN MILLISECONDS. COMPARABILITY: PREVIOUS REPORTS FEATURED MEAN VALUES (NOT MEDIAN VALUES), SO VALUES SHOWN HERE ARE NOT COMPARABLE WITH PREVIOUS REPORTS.

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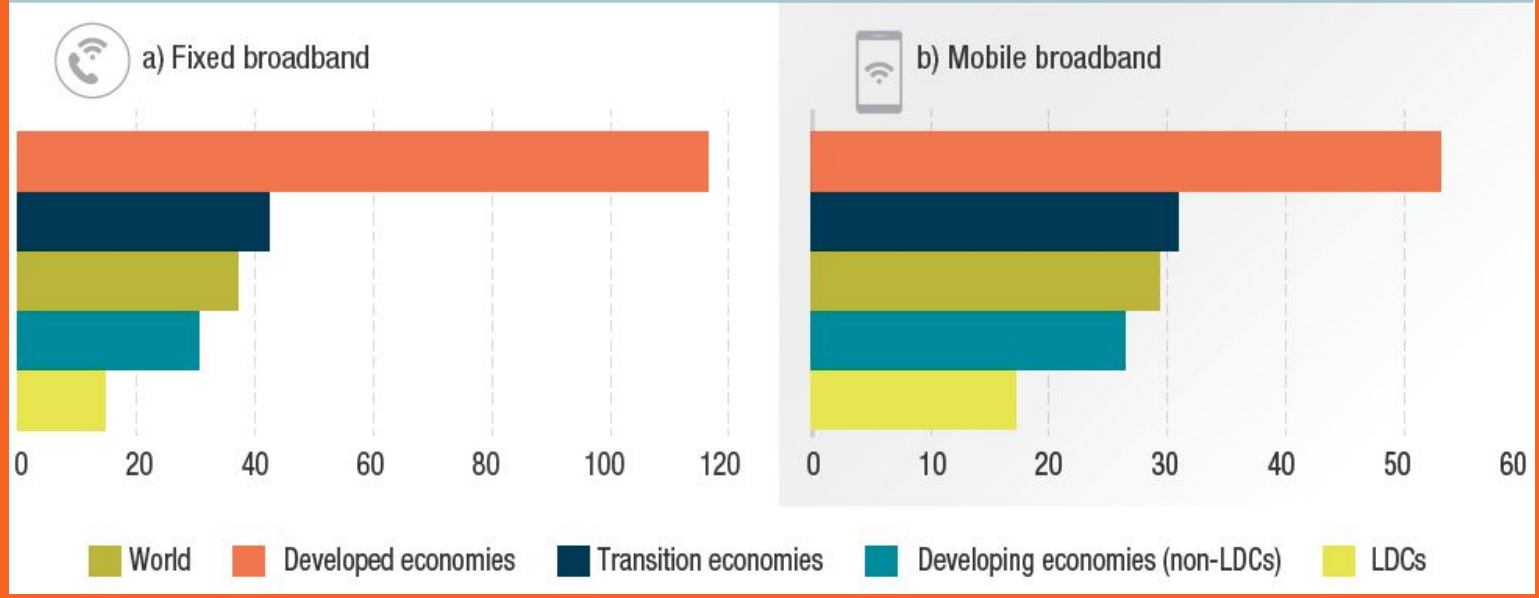
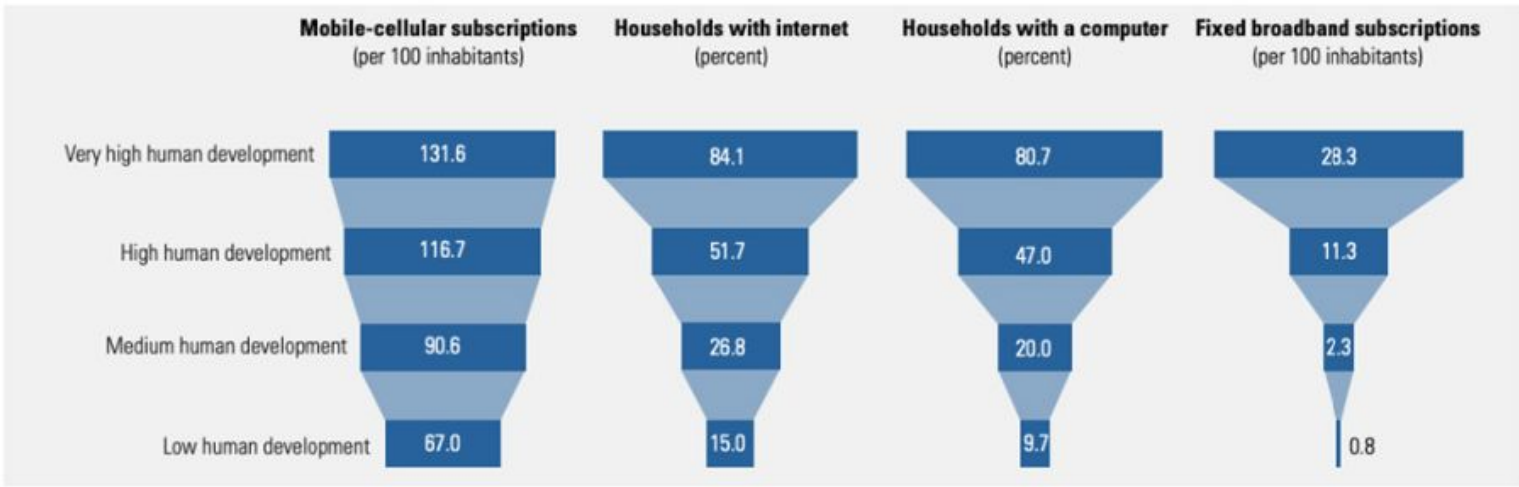
Source: https://datareportal.com/reports/digital-2022-global-overview-report

Figure I.6. Broadband Internet connection speeds, global and by level of development, 2020
(Megabits per second)



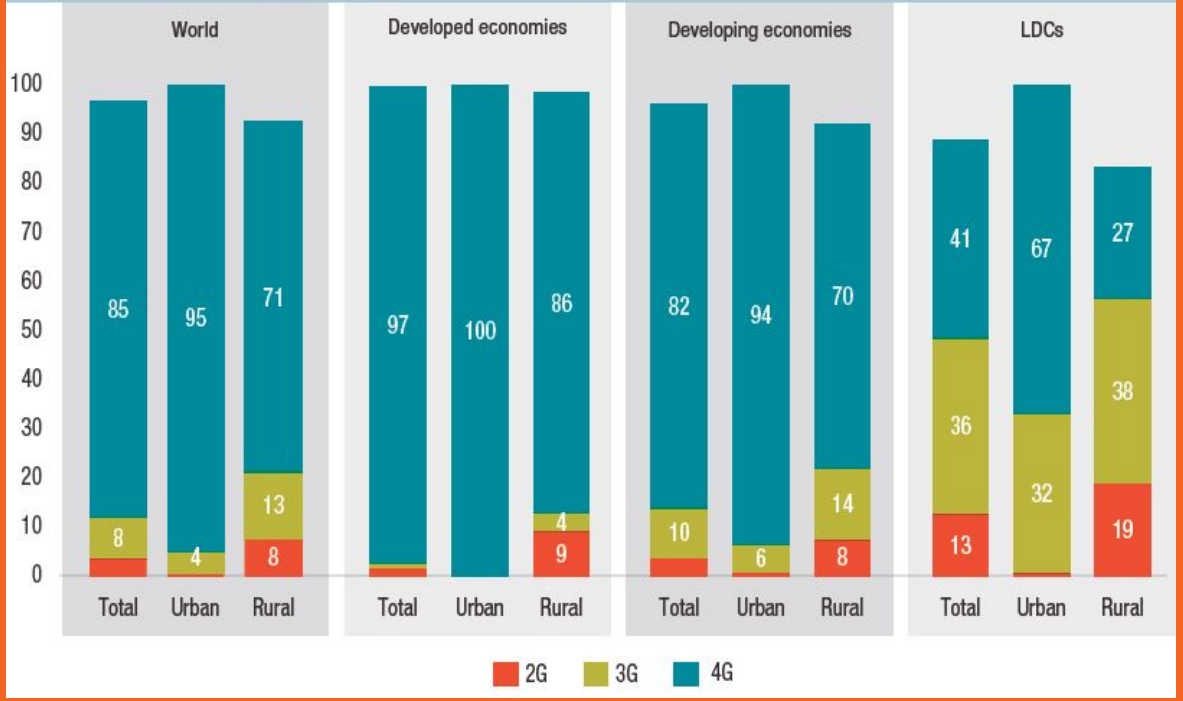
Source: UNCTAD, 2021



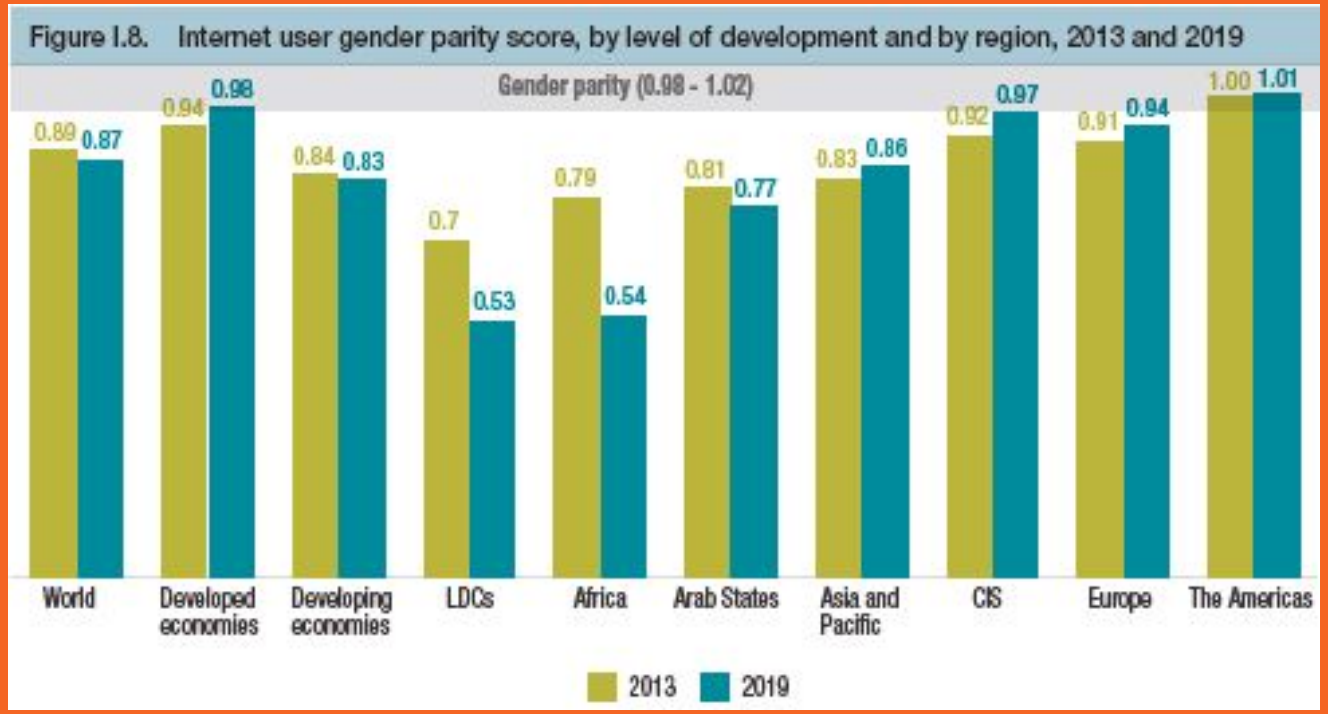
Note: Data are simple averages across human development groups.
Note that for advanced technologies and more intensives ICTs, inequalities are much greater. See Figure 25.

Source: ITU UNESCO (2020)

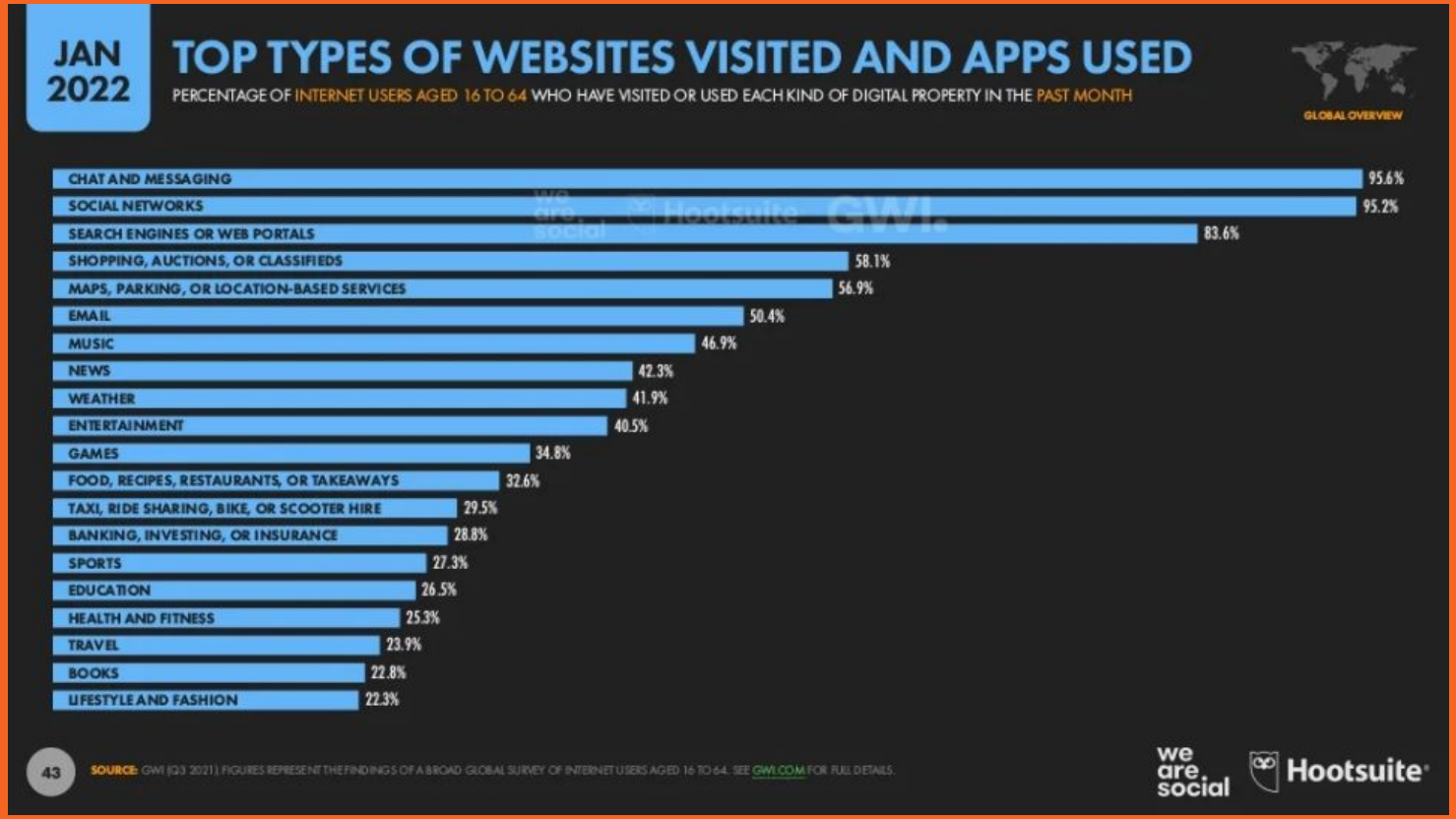
Figure I.3. Distribution of mobile network types coverage, rural and urban areas, by level of development, 2020
(Per cent of population)



Source: UNCTAD (2021)



Source: UNCTAD (2021)



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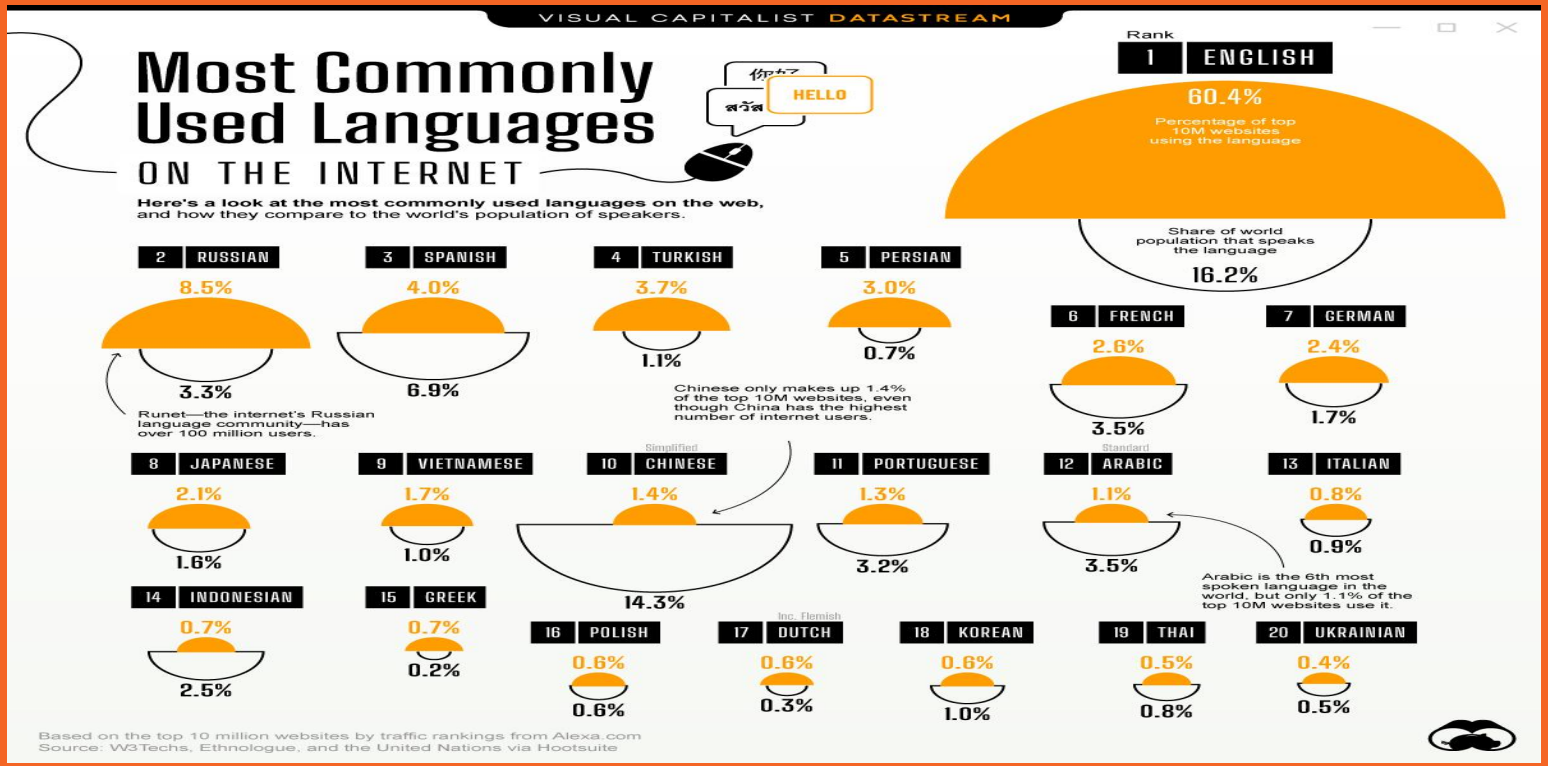
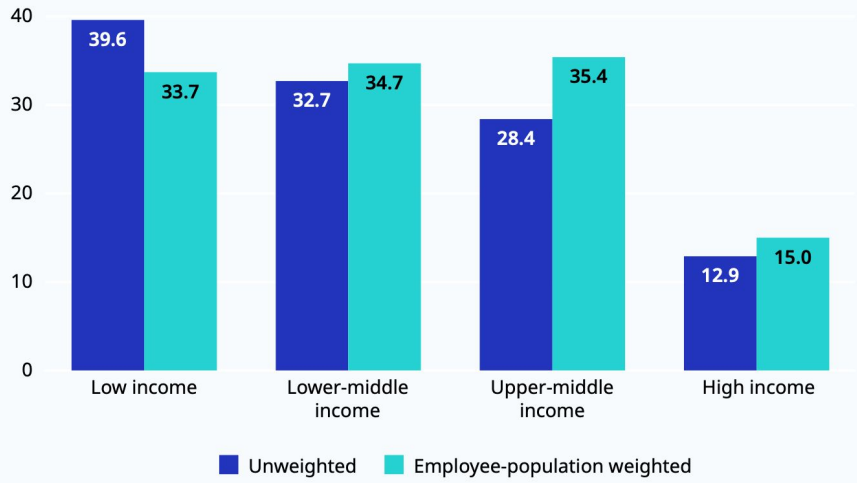


Source: https://www.visualcapitalist.com/the-most-used-languages-on-the-internet/

Figure 3.3 Temporary employees as a proportion of all employees, by country income group (percentages)



Note: Latest year of available data within the period 2011–19 for countries with available annual data. See note to figure 3.2.

Source: ILOSTAT database.

Source: https://www.ilo.org

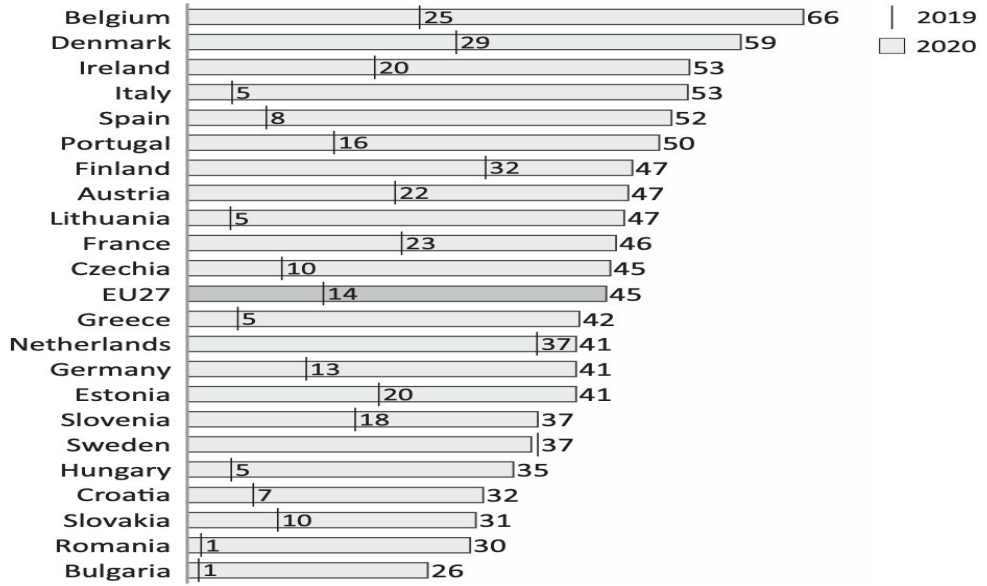
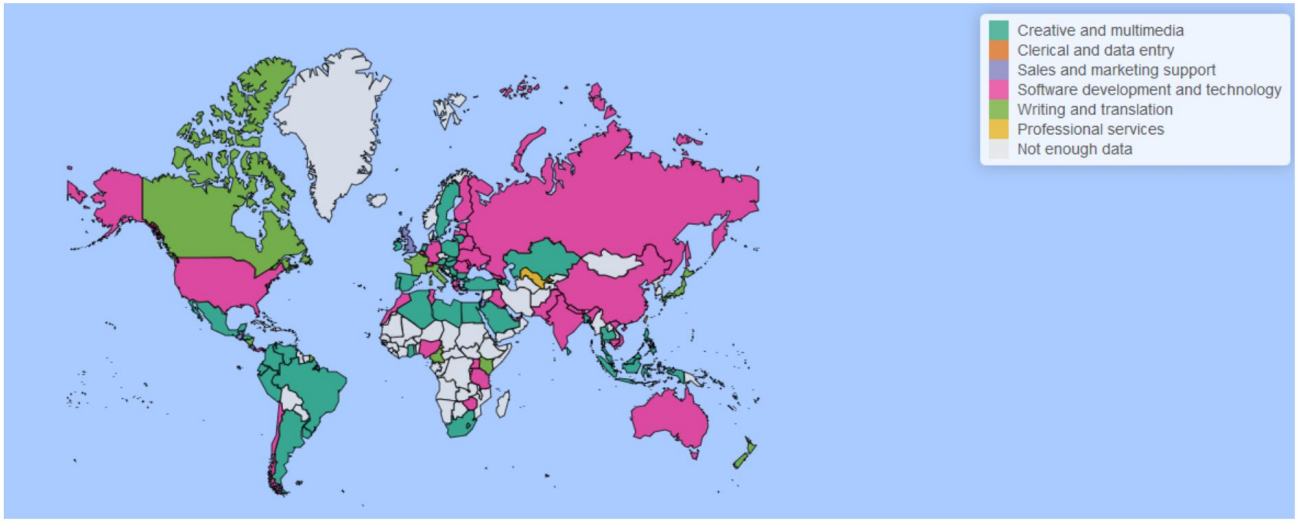


Figure 7.9 Percentage of employed individuals working remotely before (2019) and during (2020) Covid-19 pandemics (in %, EU countries with available data, 2019 and 2020).

Source: Own work based on Eurofound data (2020) [% of 'Yes' answers for: During the Covid-19 pandemic, where did you work? – At home] and Eurostat data (2019) [Employed persons working from home – Usually and Sometimes, [lfsa_ehomp]].

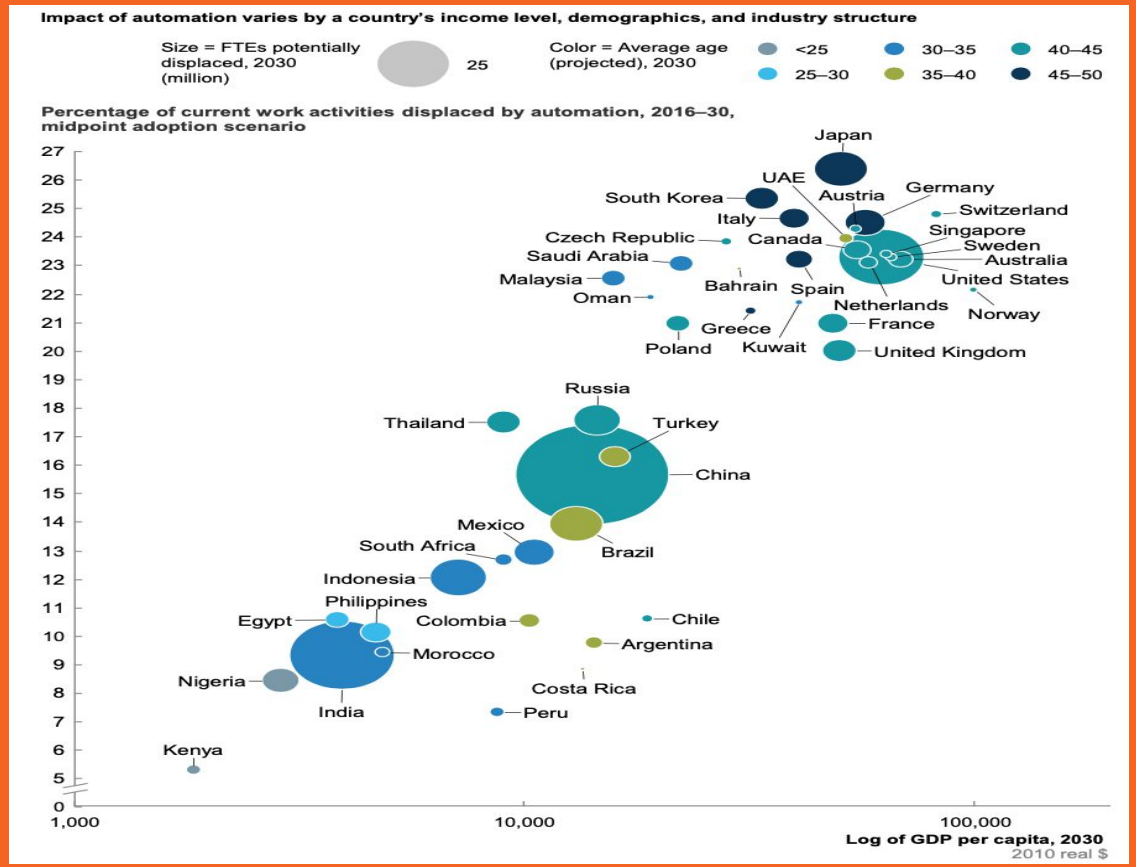
Source: Śledziewska & Włoch, 2021

Figure 3. Top occupations by country of origin



Source: Online Labour Index

Source: https://www.ilo.org



Source: McKinsey (2017)

Big Data and Algorithm bias

- **Predictive Policing and the COMPASS case**: “Black defendants were twice as likely to be misclassified as being a higher risk of violent recidivism. White violent recidivists were 63 percent more likely to have been misclassified as a low risk of violent recidivism” (ProPublica, 2016),

- **Health-Care Racial Bias:** “algorithm assigned people to high-risk categories on the basis of costs, those biases were passed on in its results: black people had to be sicker than white people before being referred for additional help. Only 17.7% of patients that the algorithm assigned to receive extra care were black” (Nature, 2019).

3. Governance

"**Digital governance** is a discipline that focuses on establishing clear accountability for digital strategy, policy, and standards. A digital governance framework, when effectively designed and implemented, helps to streamline digital development." **WELCHMAN (2015)**

"Shaping a shared vision on digital cooperation and a **digital future** that show the full potential for beneficial technology usage, and addressing digital trust and security, must continue to be a priority as our world is now more than ever relying on digital tools for connectivity and social-economic prosperity. Digital technologies have a potential to accelerate the realization of the 2030 Agenda." **UN GLOBAL DIGITAL COMPACT (2022)**

"**Global digital governance** encompasses the norms, institutions, and standards that shape the regulation around the development and use of these technologies. Digital governance has long-term commercial and political implications." **RAMANUJAM & RUNDE (2022)**

UN Global Compact (2023)

“Furthermore, building on the recommendations of the road map for digital cooperation (see A/74/821), the United Nations, Governments, the private sector and civil society could come together as a multi-stakeholder digital technology track in preparation for a Summit of the Future to agree on a Global Digital Compact. This would outline shared principles for an open, free and secure digital future for all. “Complex digital issues that could be addressed may include: reaffirming the fundamental commitment to connecting the unconnected; avoiding fragmentation of the Internet; providing people with options as to how their data is used; application of human rights online; and promoting a trustworthy Internet by introducing accountability criteria for discrimination and misleading content."

Source: https://www.un.org/techenvoy/global-digital-compact

"Nonetheless, and as we argue below, the analytical utility of the term “global governance” has not yet been fully realized. Suffice to say, global governance is different from IO and related work on international institutions and regimes. **The core idea is still one of organization—in the sense of the structure and order of things—but the scale and level are different, as is the understanding of the specific forms of organization**. Scale wise, **global governance refers to the totality of the ways, formal and informal, the world is governed.** The emergence and widespread recognition of transnational issues that circumscribe state capacity along with the proliferation of non-state actors responding to perceived shortfalls in national capabilities and a willingness to address them in the context of a perceived crisis of multilateralism combined to stimulate new thinking. The i**mperative is to establish the general character of global governance and to identify the dominant actors and mechanisms**. Critics have suggested that it is little more than a kitchen-sink approach with an all-too-fuzzy grasp of the way that the world works. While containing elements of apparent accuracy, this characterization misses the importance of struggling to capture more fully the totality of ways life on the planet is ordered." **WEISS & WILKINSON (2018)**

Issues: a growing list

- Interoperability
- Internet domains
- Cybersecurity
- Digital inequalities
- Digital government
- Privacy/surveillance
- Digital platforms: monopolies, taxation, algorithms, fake news
- E-commerce / digitally enabled commerce
- …

	LOCAL	NATIONAL	INTERNATIONAL
DIGI GOV	CIDADE	SOUTH AFRICA	UN
INTERNET	Comunitaria	BRASIL	ICANN x China
CYBERSECURITY	Empresa	USA	Index
AI	empresa	Estrategia	UN
PLATFORMS	Cooperativism	China	Taxation
E-COMMERCE	marketplace	China	WTO

Example 01 - AI and smart cities

- **RoadBotics:** analyze road imagery and deliver insights on preventative maintenance and construction plans.
- **Fetch.AI:** with real-time data of vehicles on road, AI adjusts the signal timings to ensure smooth flow of vehicles.
- **Building Energy Efficiency:** automatically derives an optimal control to minimize energy usage and shift consumption to renewables.
- **Max-AI:** neural networks, robotics, and machine vision to analyze and sort material streams in Material Recovery Facilities.
- **Percepto:** autonomous flying drones can track humans, monitor traffic movement and provide the 2D aerial view imagery mapping.
- **Dassault Systemes**: Singapore 3D digital twin allows users to visualize, plan, and simulate major events.

Example 02 - gig economy x platform cooperativism

- Up & Go is a home cleaning app owned by NY workers.
- While apps take 20% cut, Up & Go only takes 5%.
- Monthly meetings to collective decide platform governance.
- Users don't have the ability to rate individual workers.
- Funded by the Robin Hood Foundation

Example 03 - Trustworthy Internet

Example 05 - Platformization in China

- **Content:** ordered Baidu to eliminate inappropriate information and to stop disseminating socially bad influence content through its platform **(April 2020)**.
- **Interfaces:** ordered Alibaba, Tencent, ByteDance, Baidu, Huawei and Xiaomi to allow users interoperability on their platforms (**December 2020)**.
- **Market:** fined in RMB 500,000 twelve platforms including Tencent, Alibaba, and Baidu for failure to disclose new acquisitions and joint ventures **(March 2021)**.
- **Business:** opened an investigation against the Meituan delivery platform for practices that restricted sellers from using other platforms to display their products (**April 2021)**.
- **Labour:** four government agencies instructed companies to “have political, ideological and actionable consciousness of” gig workers (**January 2022)**.

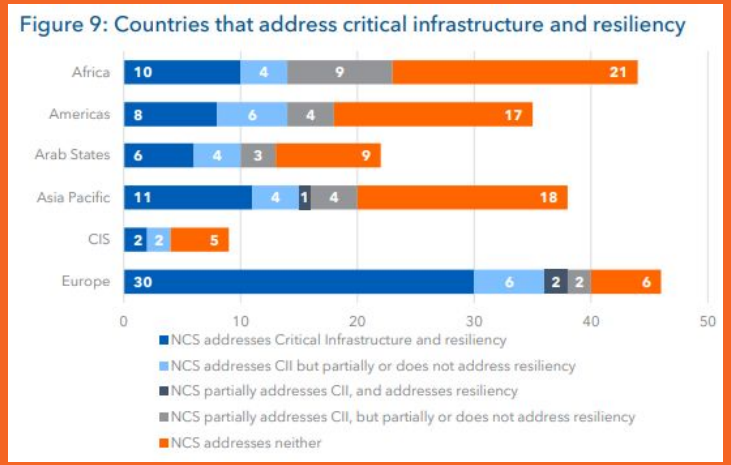
Example 06 - Platform International Taxation

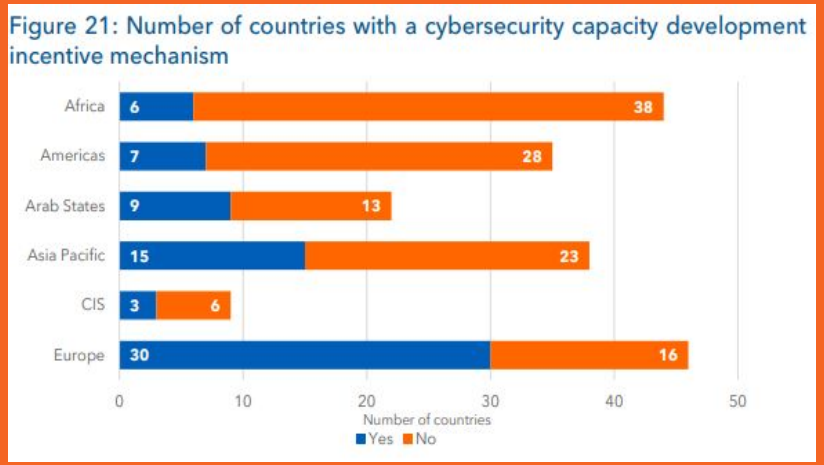
Table IV.2. Facebook and Alphabet (Google) revenues, profits and taxes, 2017 ($ million and per cent)

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		
Alphabet (Google)					
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 (2019)

Example 07 - Cybersecurity

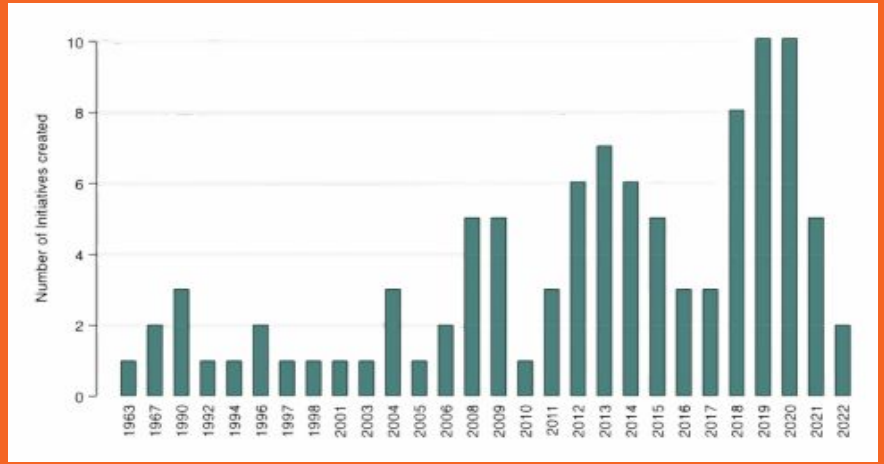




Source: GCI, 2020

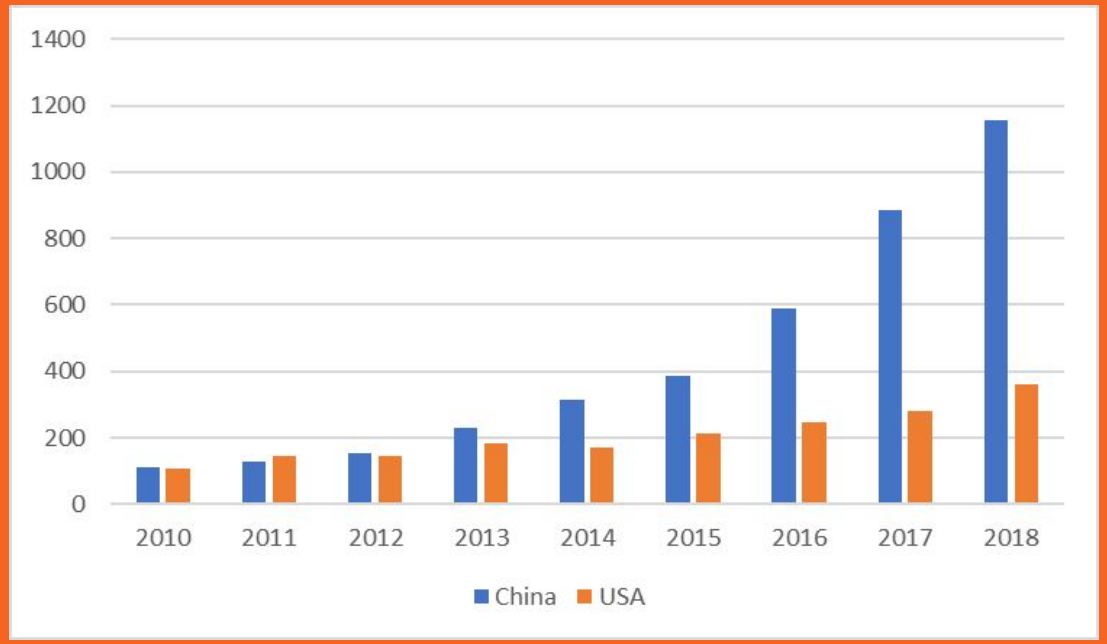
Example 08 - Comprehensive Digital Governance

- UN High Level Panel on Digital Cooperation
- International Telecommunications Union (ITU)
- Internet Corporation for Assigned Names and Numbers (ICANN)
- Internet Governance Forum (IGF)



Source: COLLINS-FATTEDAD et al (2022)

Example 9 - Digital Competition USA and China



USA and China: quantum patents per year (2010-2018)

Source: ALLISON et al, 2021

Example 10 - China's Digital Silk Road

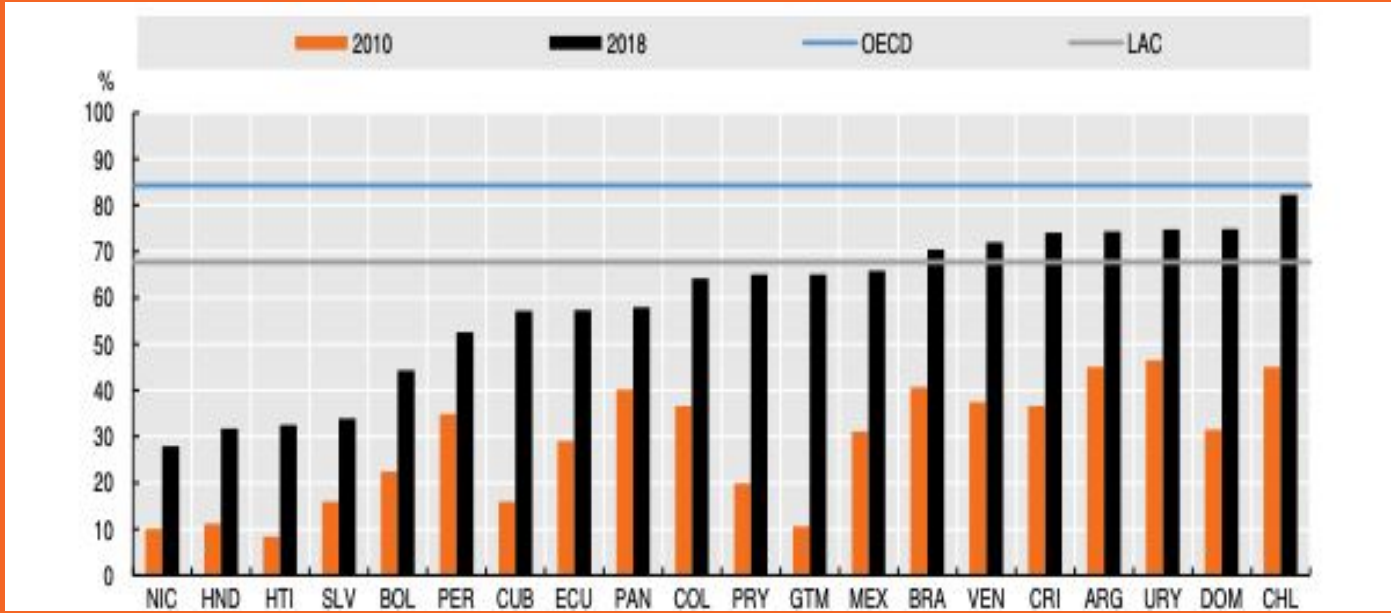
- Land and submarine cables (China Unicom - Global Center HKSAR)
- 5G cellular and smart cities (Huawei in South Africa and Kenya)
- Internet Infrastructure (Guangxi "China-ASEAN Information Harbor")
- Cloud and Big Data (DSR Industrial Alliance with Alibaba and +40)
- BeiDou Navigation Satellite System (北斗卫星导航系统)

4. Latin America

Latin America Population

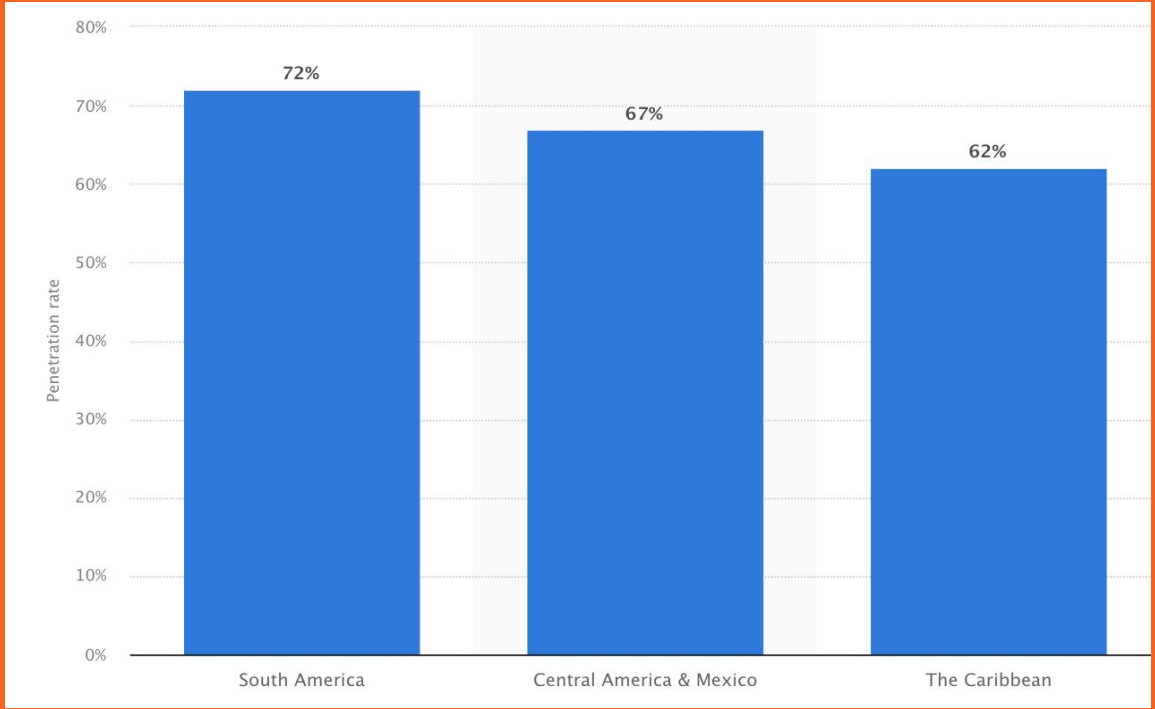
Source: ATLANTICO (2021)

Internet Users Latin America 2010-2018



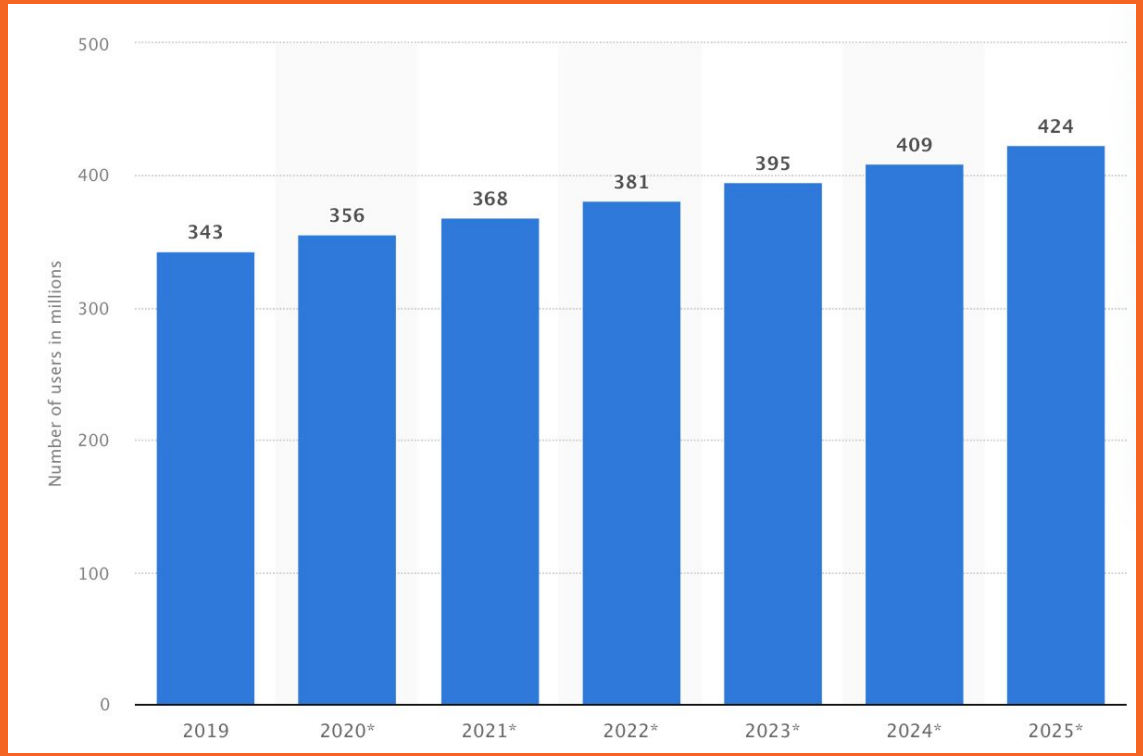
Source: OECD (2020)

Internet Users by LAC Sub-Regions as % of Total Population 2021



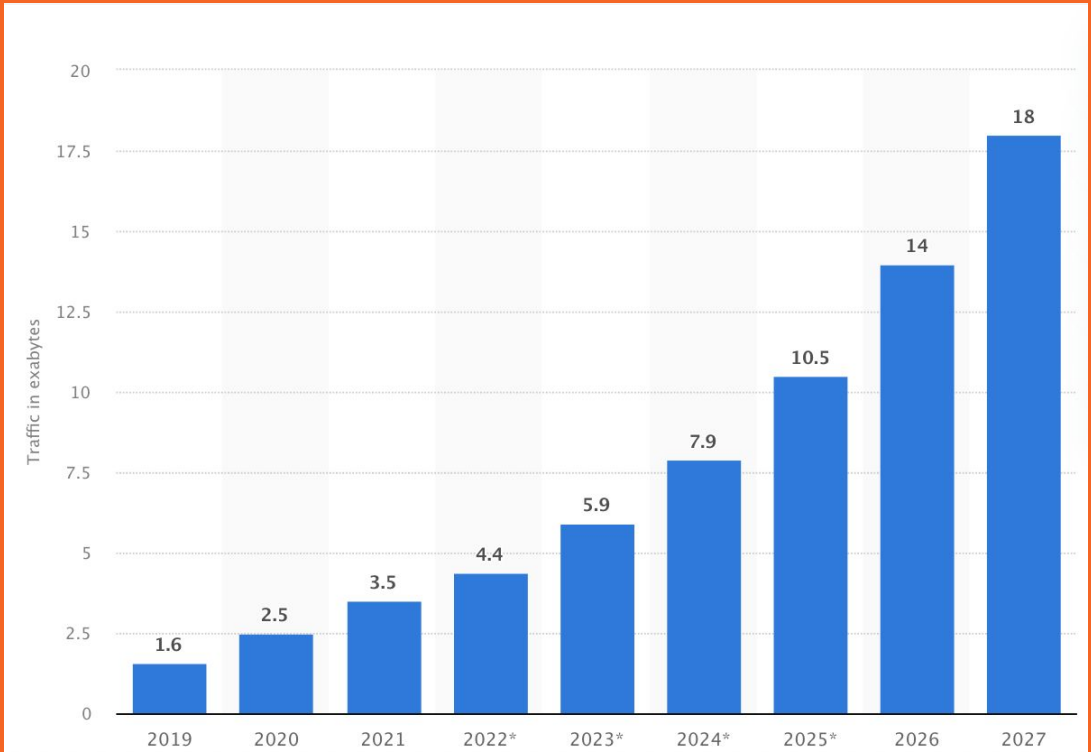
Source: www.statista.com

Mobile Internet Users 2019 - 2025 (millions)



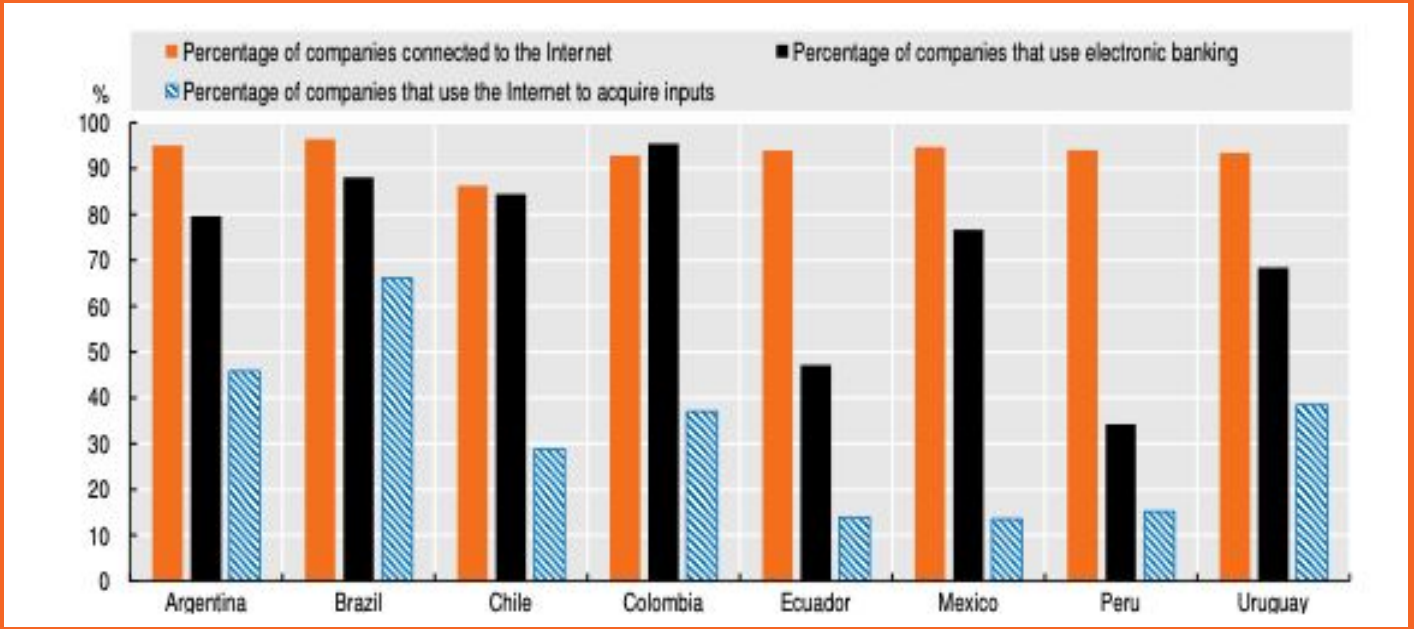
Source: https://www.statista.com

Mobile Internet Traffic 2019 - 2027 (exabytes)



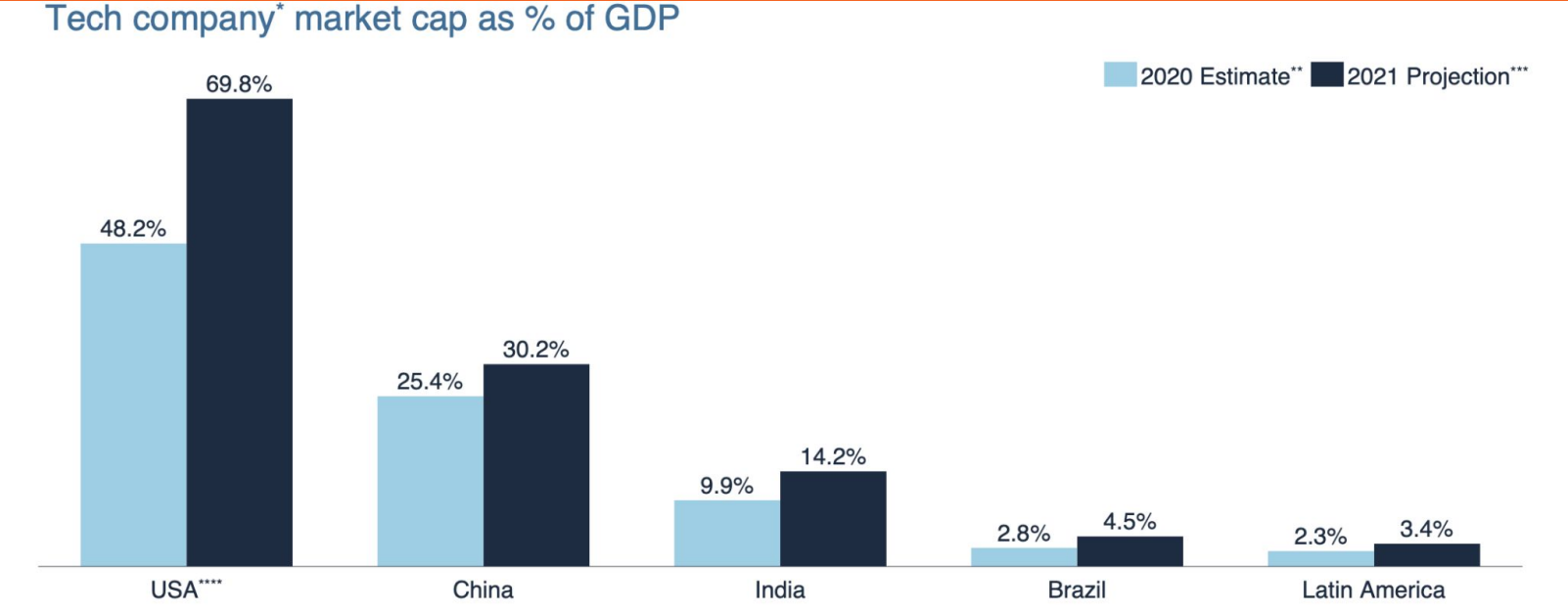
Source: https://www.statista.com

Companies and Internet in 2018



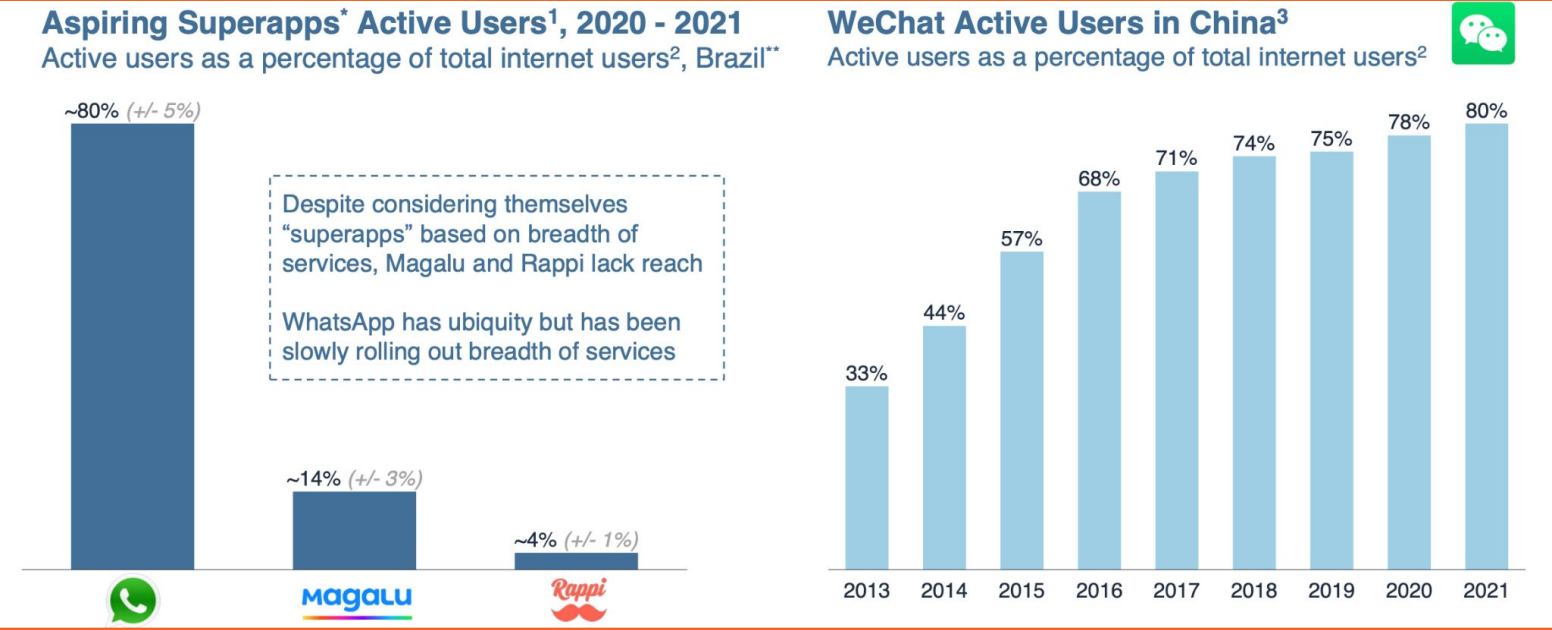
Source: OECD (2020)

Tech Company Market Value % GDP



Source: ATLANTICO (2021)

Platform Challenges in Latin America

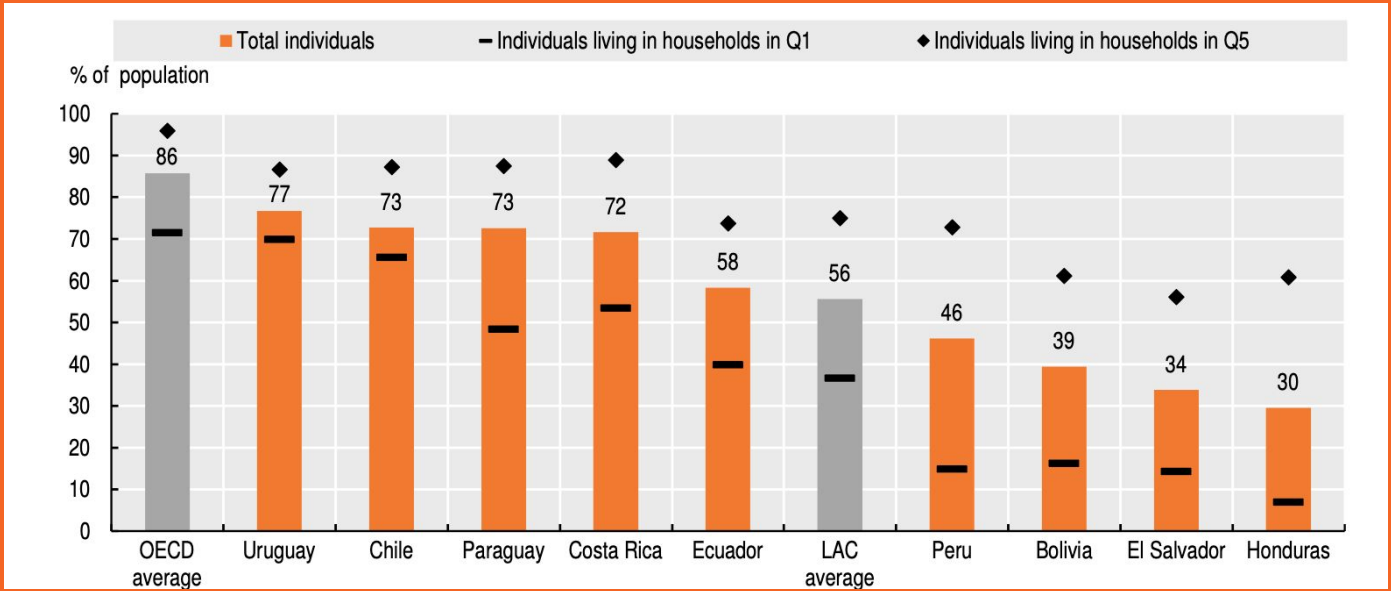


Source: ATLANTICO (2021)

E-commerce Market Share: concentration

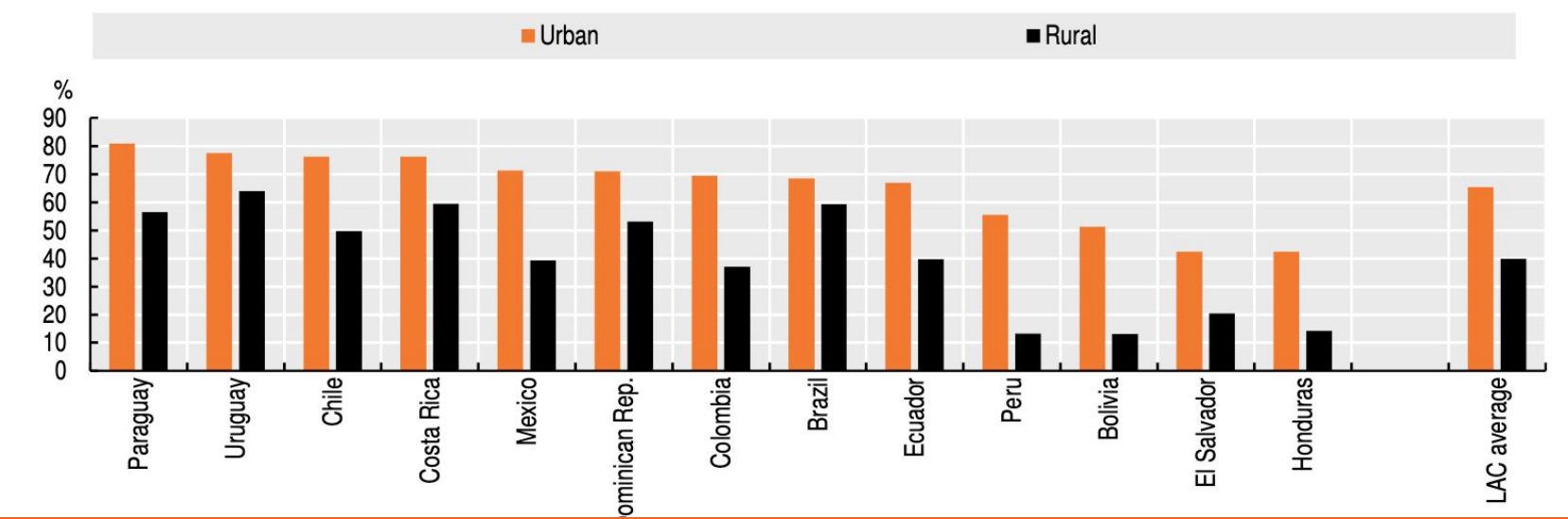
Source: ATLANTICO (2021)

Internet Users by Income Quintile in Latin America - 2017



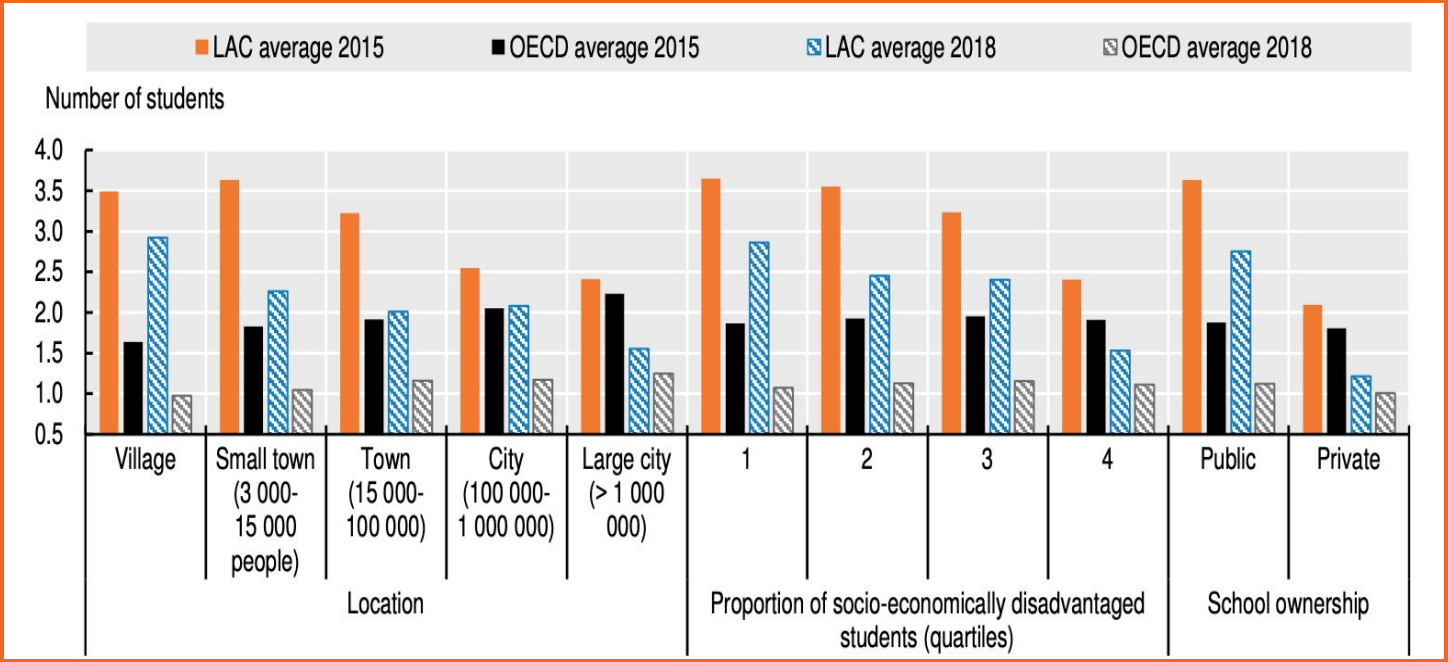
Source: OECD (2020)

Share of Urban and Rural Internet Users in Latin America



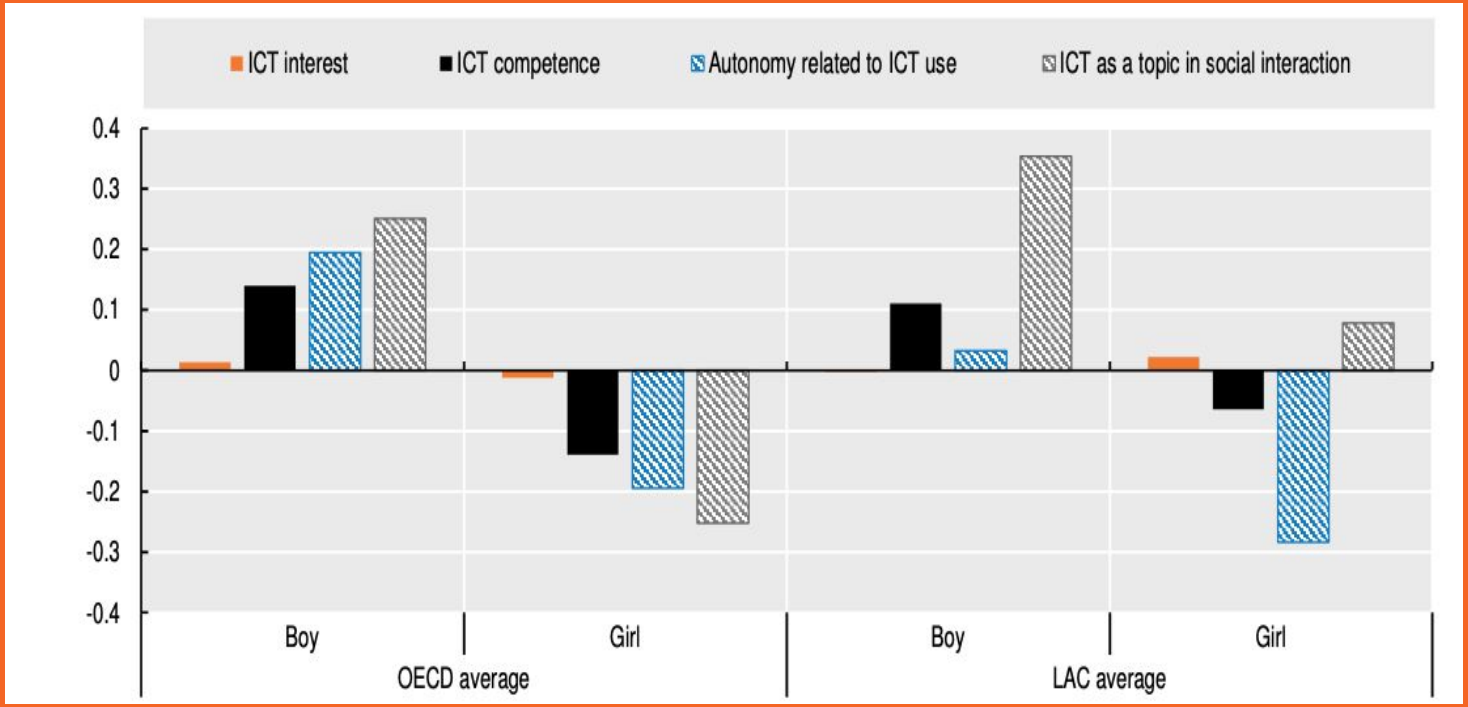
Source: OECD (2020)

Number of students per Internet-connected computer



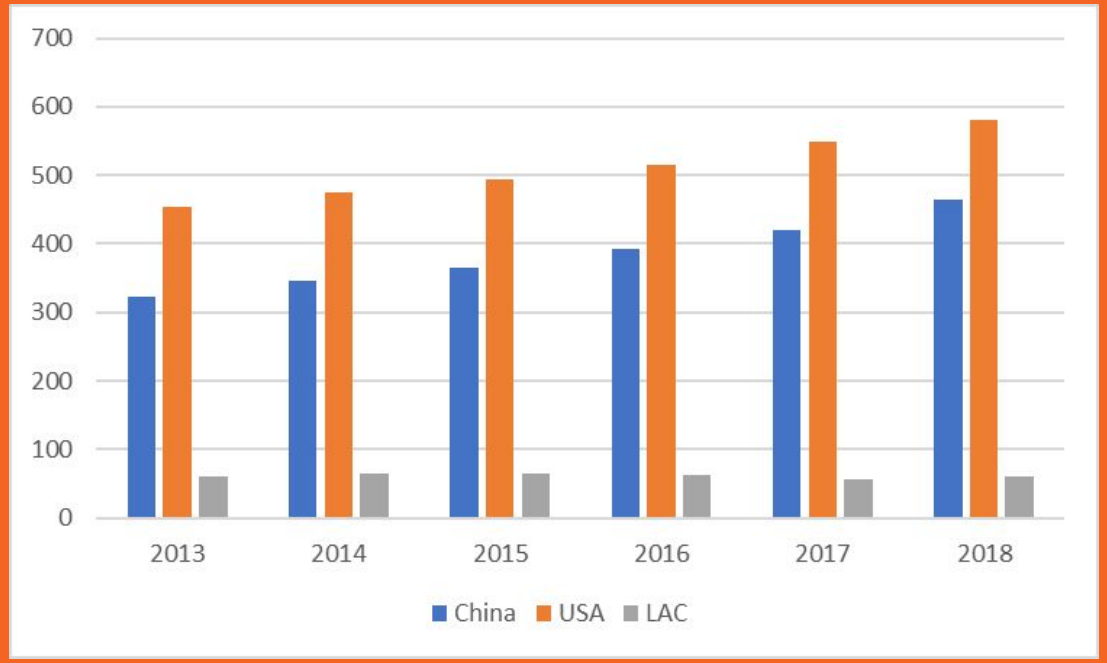
Source: OECD (2020)

Students Self-perception of Digital Tech by Gender



Source: OECD (2020)

Expenditure on R&D (billions of current PPP dollars)



Source: UNESCO, 2022

Global Innovation Index (2021)

Country	Overall Ranking	Institutions	Human capital and research	Infra structure	Market sophistication	Business sophistication	Knowledge and technology outputs	Creative outputs
China	12	61	21	24	16	13	4	14
Brazil	57	78	48	69	75	34	51	66
Mexico	55	77	56	67	55	56	53	52
Chile	53	40	51	47	66	48	58	60
Argentina	79	102	50	64	110	57	73	73

Source: World Intellectual Property Organization , 2021

Digital Development Levels by Group of Countries

Comparative analysis of digital indicators in the **public administration**, **education**, **business**, **individuals**, and **households** show three groups of countries:

- **Developed**: Chile, Mexico, Argentina, Brazil, and Uruguay.
- **Middle-developed**: Costa Rica, Colombia, Peru, Panama, and the Dominican Republic
- **Underdeveloped:** Ecuador, Paraguay, El Salvador, Bolivia, Honduras, and Guatemala

Source: PAMELA & PAUL, 2021

Local Issues: access

Trabajamos con comunidades indígenas en el diseño e implementación de un **modelo de redes mesh de última milla** cuyas bases técnicas, económicas y organizativas son definidas por las mismas comunidades. Además de brindar Internet, las redes inalámbricas permiten desarrollar una red local para difundir e intercambiar el contenido producido y administrado por las comunidades en repositorios que llamamos IntraNETs comunitarias. Actualmente desarrollamos el proyecto "Modelo de Conectividad Comunitaria e Indígena", (...) para vincular experiencias de **Chiapas, Oaxaca y Nayarit** en una red de IntraNETSs con el fin de diseñar y elaborar un modelo **técnico, económico, organizativo y jurídico** que pueda ser replicable.

Source: https://www.redesac.org.mx/redesinalambricas

Local Issues: empowerment

Por la importancia de generar conciencia entre las personas que usan las tecnologías y en quienes se encargan de atender la violencia de género, en **Fundación Karisma** iniciamos un banco de definiciones sobre las formas que puede adoptar la violencia digital (**amenazas en línea**, **ataques masivos coordinados**, **body shaming**, **ciberacoso** etc). También quisimos narrar algunos ejemplos para ilustrar los casos y para que las definiciones lleguen a la mayor cantidad de personas.

Source: https://web.karisma.org.co/violencia-de-genero-internet-su-nuevo-campo-de-batalla/

Local Issues: development

""Este viernes 22 de abril la **Municipalidad de Rosario** abrió la inscripción a los talleres de **robótica** en la Estación Digital del Centro Municipal de Distrito Sur (avenida Uriburu 637), para niñas y niños de entre 7 y 12 años. Son espacios de formación tecnológica que ofrecen herramientas para potenciar la creatividad, productividad e imaginación a través de las nuevas tecnologías".

Source: https://www.rosario.gob.ar/inicio/inscripcion-los-talleres-de-robotica-y-creacion-de-videojuegos-para-ninos-y-ninas

National Issues: governance

The Brazilian Internet Steering Committee (CGI.br) was created in 1995, amended by Presidential Decree 4,829/2003, with the purpose of **coordinating and integrating all Internet** service initiatives in Brazil, as well as promoting technical quality, innovation and the dissemination of the services available. The CGI.br is comprised of members from the government, the corporate sector, the third sector and the academic community, and as such constitutes a unique Internet governance model for the effective participation of society in decisions involving network implementation, management and use. Based on the principles of multilateralism, transparency and democracy, since July 2004 the CGI.br has been democratically electing representatives from the civil society to participate in discussions and to debate priorities for the Internet together with the government.

Source: https://www.cgi.br/membros/

National Issues: policy

From a national perspective, **cybernetic security** can only be implemented from an approach with multiple phases and perspectives. This shall ensure the key areas necessary are developed simultaneously for national cybernetic resilience. Acknowledging the fact that an informatics threat is not a future development but a current reality, Costa Rica shall destine the necessary government resources to ensure success of this strategy and make alliances with all stakeholders to advance in its objectives and goals. The Executive Power shall promote a cybersecurity culture at the public sector level with the aim the budgetary assignment in this area is established.

Source: https://www.micitt.go.cr/wp-content/uploads/2022/05/englishEstrategia-Nacional-de-Ciberseguridad-Costa-Rica.pdf

National Issues: regulation

HAVANA, April 27 (Reuters) - The Cuban central bank issued regulations on Tuesday for virtual asset service providers, after giving a nod last year to the personal use of **cryptocurrencies**, a move some experts said could help the Communist-run Caribbean island skirt stiff U.S. sanctions. The bank said it would consider the legality, socioeconomic interest and project characteristics of any request before granting a license, which would be valid initially for one year. The roll-out of mobile internet three years ago has opened the way for cryptocurrency transactions in Cuba, and enthusiasts on the island are growing in number as the currencies help overcome obstacles created by U.S. sanctions.

Source: https://www.reuters.com/world/americas/cuba-approves-cryptocurrency-services-requires-central-bank-license-2022-04-27/

International Issues: cooperation

The proposed **Digital Agenda for Latin America and the Caribbean** (eLAC2022), presented below, includes 8 areas of action (infrastructure, digital economy, digital government, inclusion, emerging technologies, digital security, regional digital market, regulatory cooperation) — in addition to a section on the fight against the pandemic and economic recovery and reactivation— and identifies 39 specific goals for implementation. This proposal was formulated based on a survey of eLAC2020 focal points and observers, consultation with working groups and a review of documents. The proposal aims to follow on from previous agreements and provide inputs for political dialogue at the seventh Ministerial Conference on the Information Society in Latin America and the Caribbean.

Source: https://conferenciaelac.cepal.org/7/en/documents/digital-agenda-elac2022

International Issues: positioning

India and South Africa's 2017 communication to the WTO General Council argues that the moratorium on e-commerce (1998) is "equivalent to developing countries giving the digitally advanced countries duty-free access to [their] markets," and jeopardizes achievement of the SDGs.(...) A communication from Australia, Canada, **Chile**, **Colombia**, Hong Kong, China, Iceland, the Republic of Korea, New Zealand, Norway, Singapore, Switzerland, Thailand, and **Uruguay**, circulated in June 2020, (...) state that "the overall benefits" of duty-free electronic transmissions "outweigh the potential forgone government revenues" due to the moratorium.

Source: https://sdg.iisd.org/news/wto-members-highlight-benefits-and-drawbacks-of-e-commerce-moratorium/

International Issues: competition

Country	Recognizes China's claim over Taiwan	Belt and Road Initiative participant	use Huawei equipment in 5G networks
Antigua and Barbuda	Yes	Yes	No data
Argentina	Yes	Yes	Yes
Bahamas	Yes, as of 1997*	No	No data
Barbados	Yes, as of 1977*	Yes	No data
Belize	No	No	No data
Bolivia	Yes	Yes	Yes
Brazil	Yes	No	Yes
Chile	Yes	Yes	Yes
Colombia	Yes, as of 1980*	No	Yes
Costa Rica	Yes, as of 2007*	Yes	No data
Cuba	Yes	Yes	No data
Dominica	Yes, as of 2004*	Yes	No data
Dominican Republic	Yes, as of 2018*	Yes	Yes
Ecuador	Yes	Yes	Yes
El Salvador	Yes, as of 2018*	Yes	No data

Source: https://www.cfr.org/backgrounder/china-influence-latin-america-argentina-brazil-venezuela-security-energy-bri

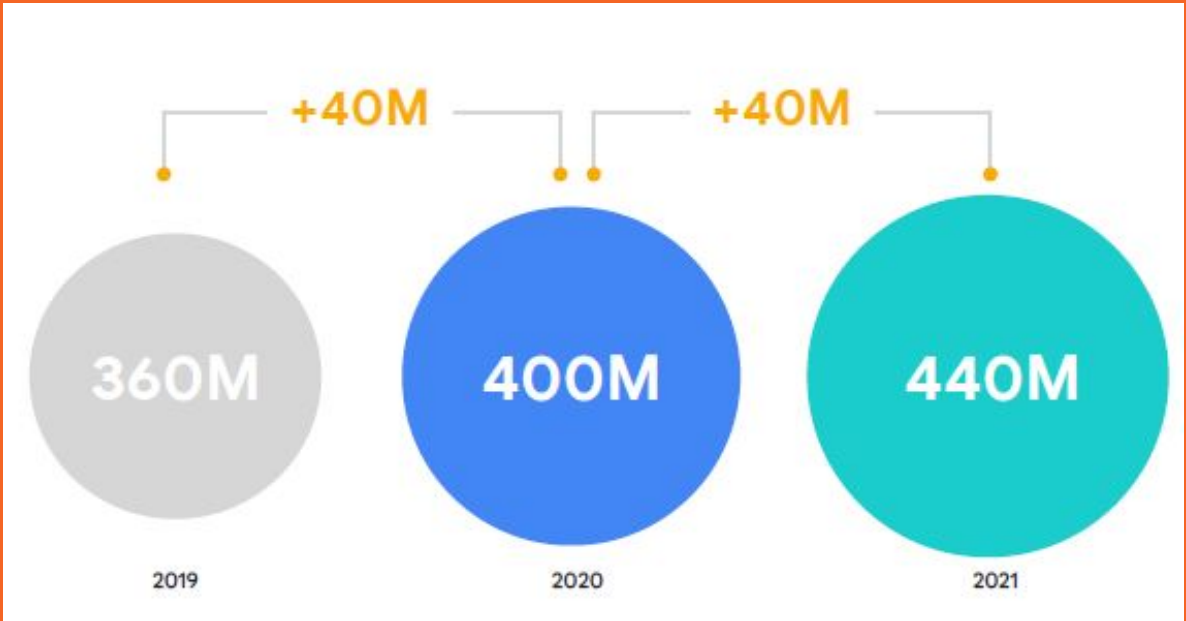
5. Southeast Asia

643M
Total population across 12 countries

Fonte: Google & Temasek, 2021

SEA Digital Economy is Expanding

Total Internet Users (2019; 2020; 2021)

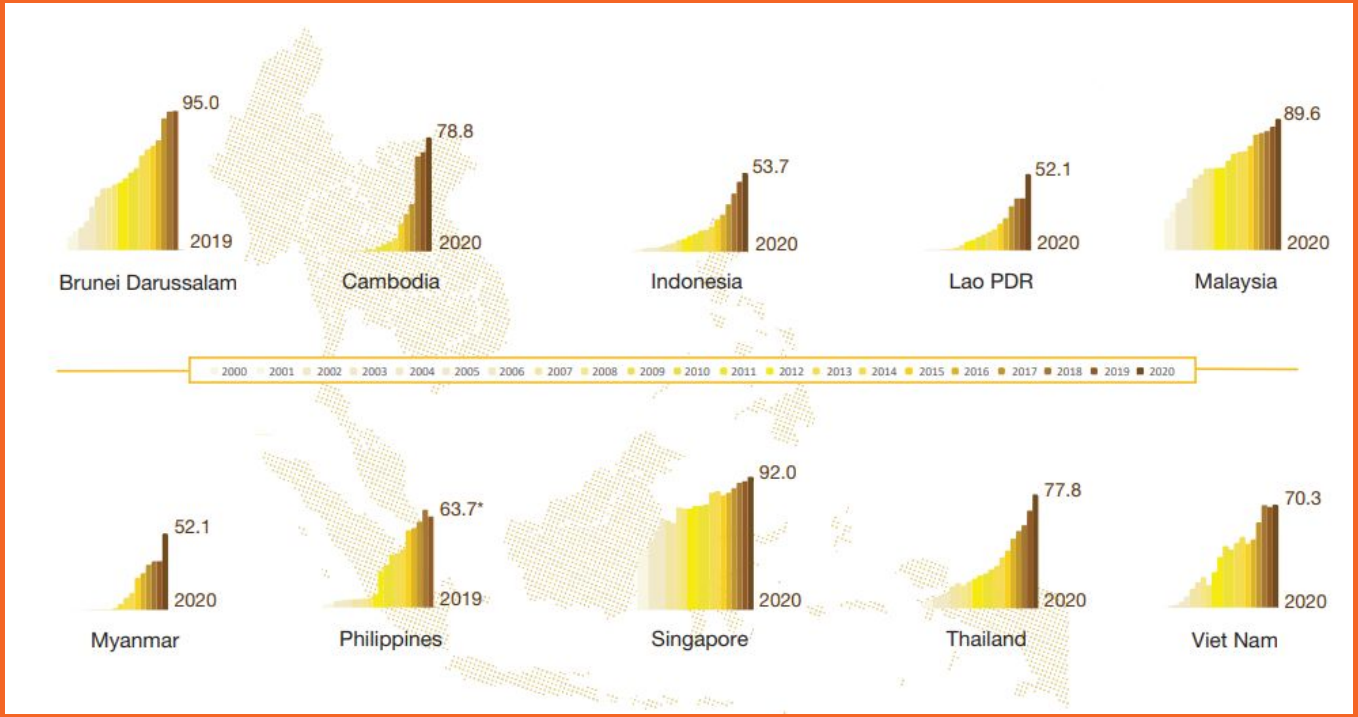


Fonte: Google & Temasek, 2021

SEA Digital Economy is expanding in all countries

Plataform	Headquarters	Activities	International Expansion	Market Value	Investment Partners
SEA Group	Singapore	Games, marketplace, finance	SEA, LAC, Asia, Europe, U.S.	U$ 46.37 bi	Tencent
Lazada	Singapore	Marketplace	Indonesia, Vietnam, Malasya, Thailand Singapore, Philippines	U$ 21	Alibaba
GoTo	Indonesia	Mobility, deliveries, marketplace, finance	Indonesia	U$ 32 bi	Alibaba, Facebook, SoftBank
Grab	Singapore	Deliveries, mobility, finance, enterprise	Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand Vietnam	U$ 40 bi	DiDi Chuxing, Blackrock, Temasek

Number of internet users per 100 person by ASEAN Member States, 2000-2020



Source: ASEAN, 2021

Mobile versus fixed broadband download speeds (Mbps)

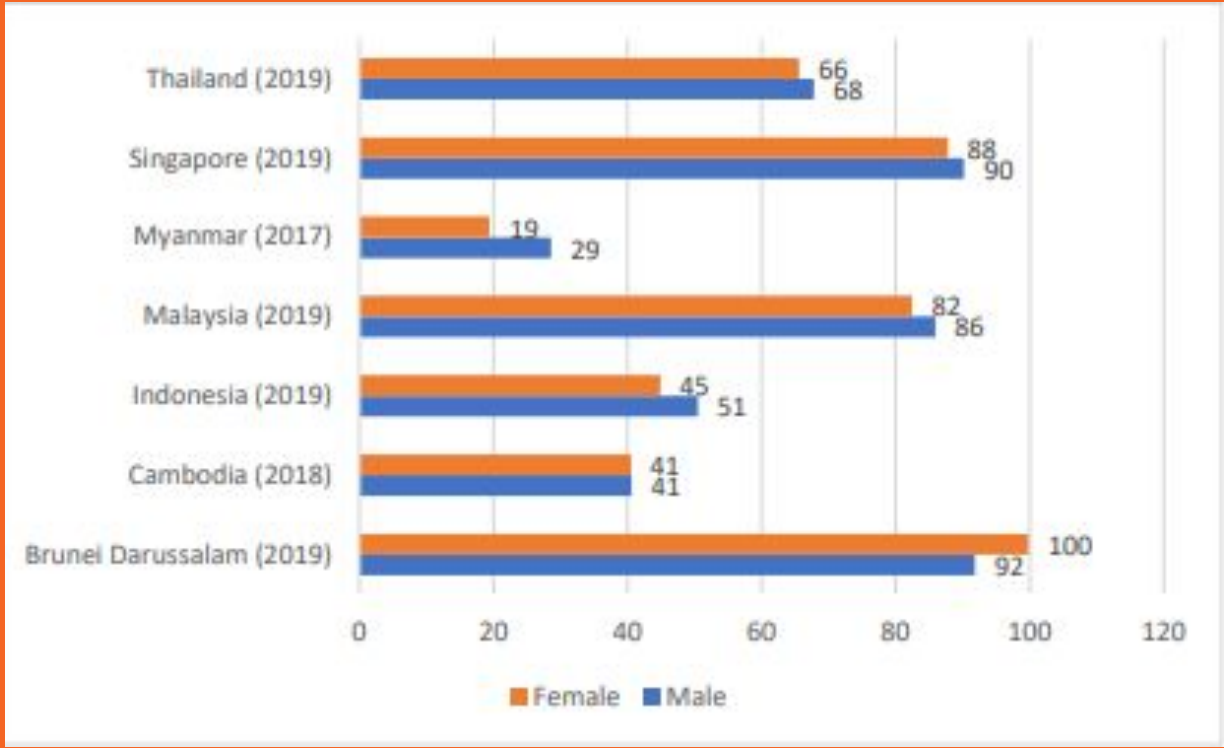
Source: Speedtest Global Index, October 2017.

Snapshot of SEA digital infrastructure development

Mobile broadband download speed (global ranking)[1]	104th	89th	75th	19th	48th	58th
Infrastructure gap, (US$ billion)	$2.1B	$2.3B	$2.1B	$0.01B	$3.0B	$3.1B
Logistics Performance Index (LPI)[3] (global ranking)	46	41	60	7	32	39

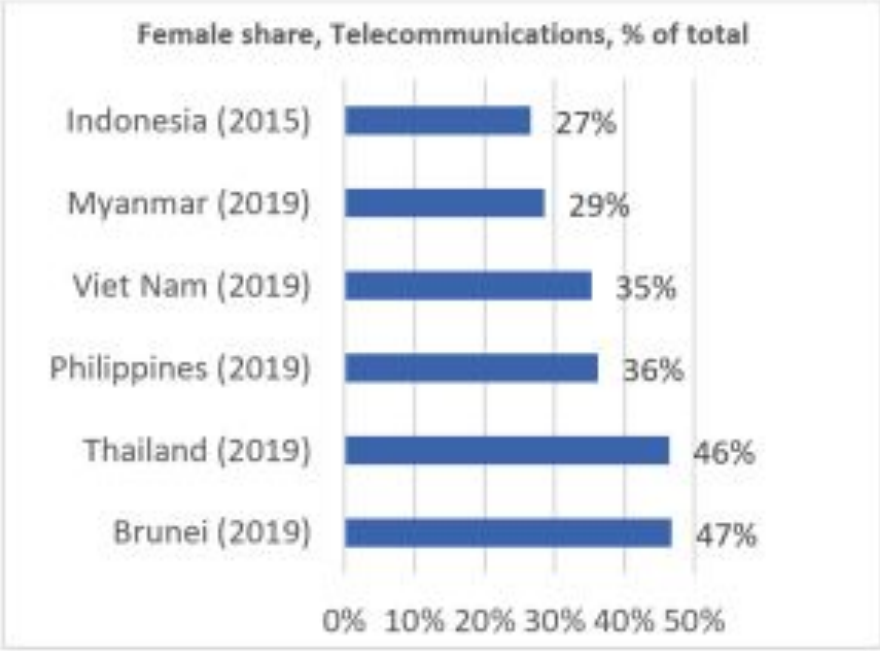
Source: (Bain, 2021)

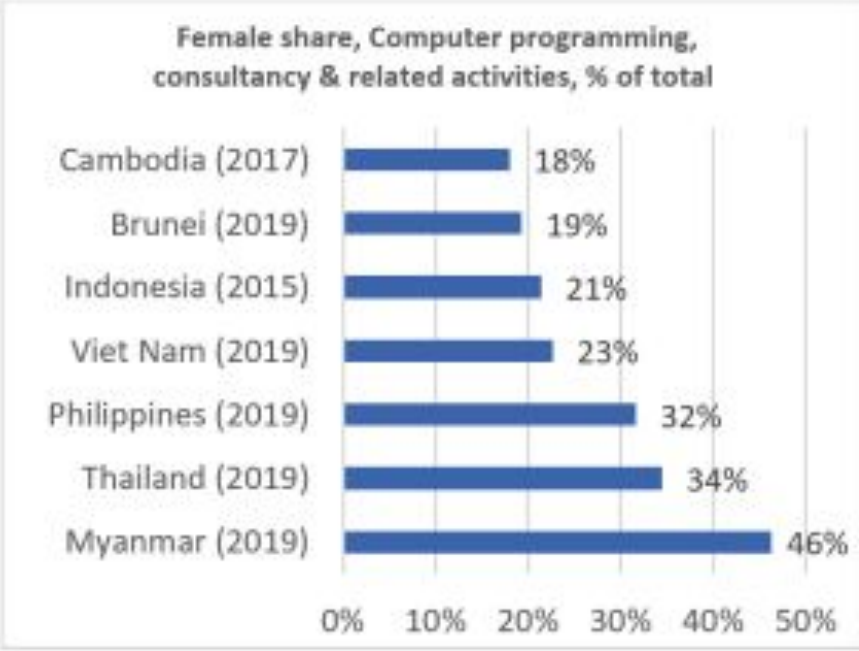
Internet Use by Gender (% of total)



Source: ITU (2020)

Third level gender inequalities are stronger





Source: ILO (2020)

ASEAN Digital Regional Initiatives

- ASEAN Ministers on Digital Cooperation Inaugural Meeting (2021)
- Digital Masterplan 2025
- ICT Masterplan 2020
- Data Management Framework (2021)
- Framework on Digital Data Governance (2019)
- Guidelines on 5G Ecosystem Development (2020)
- Contractual Clauses for Cross Border Data Flows (2021)
- The Asean-Singapore Cybersecurity Centre of Excellence (2019
- Smart Cities Framework (2018)

MNEs participating in the ASEAN Smart City Network

Company	Headquarters	Company	Headquarters
100 Resilient Cities	United States	EMC	Norway
ABB	Switzerland	EDF	France
Accenture	Ireland	Engie	France
Acronis	Switzerland	GE Healthcare	United States
Aecom	United States	General Electric	United States
Alibaba Cloud	China	Hitachi	Japan
Arup	United Kingdom	Honeywell	United States
Aurecon	Australia	Huawei International	China
Autodesk	United States	IBM	United States
Azbil Corporation	Japan	Johnson Control	United States
B+H Architects	Canada	Robert Bosch	Germany
Black & Veatch	United States	SAP	Germany
Danfoss	France	Siemens	Germany
Dassault Systèmes	France	Tencent	China
Dell	United States		

Source: Ministry of Foreign Affairs, Singapore (2018).

National Digital Initiatives

	Connectivity	Skills	Data security and management	Policy and Regulation	E-Government	E-Services	Digital R&D and innovation	Digital inclusivity
Cambodia	yes	yes	yes	yes	yes	yes	yes	yes
Indonesia	yes	yes	yes	yes	no	no	no	yes
Lao PDR	yes	yes	yes	yes	yes	no	yes	no
Myanmar	yes	yes	yes	yes	no	no	yes	no
Philippines	yes	yes	yes	yes	yes	no	yes	yes
Vietnam	yes	yes	yes	yes	yes	no	yes	yes

Source: Ingram (2020)

Civil Society and Digital Inclusion

The **Go Digital ASEAN** initiative focuses on closing the digital gap across ASEAN.

Approved by the ASEAN Coordinating Committee on Micro, Small and Medium Enterprises (ACCMSME) and Implemented by The Asia Foundation, with support from Google, the initiative will train up to 200,000 people from rural regions and underserved communities—including entrepreneurs, underemployed youth, and women.

Thank You