COLOMBIA

Recent trends

Colombia has made efforts to enhance digital access and use for all. Internet users, active mobile broadband and fixed broadband subscriptions increased in the last decade. Colombia rose in the E-Government Development Index from 0.53 in 2008 to 0.69 in 2018, which is above the Latin America and the Caribbean (LAC) average (0.65) but below the Organisation for Economic Co-operation and Development (OECD) average (0.82). Colombia had lower foreign direct investment (FDI) restrictions than LAC and the OECD in the 2018 OECD FDI Regulatory Restrictiveness Index.

The country is below the LAC average in digital innovation metrics. High-technology exports as a percentage of total manufactured exports rose to 7.3% in 2018 but remain below the LAC (8.6%) and OECD (15.1%) averages. Finally, Colombia has made progress in terms of shaping an inclusive digital society. In particular, the number of students per computer fell from 1.6 in 2015 to 1.1 in 2018, which is in line with the OECD average and below the LAC average.

National strategies and international co-operation for digital transformation

The 2018-22 national development plan (NDP) *Pacto por Colombia, Pacto por la Equidad* (Pact for Colombia, pact for equity) and the 2018-22 information and communications technology (ICT) plan *El Futuro Digital es de Todos* (The digital future is for everybody) are the main planning instruments for the development strategy and digital transformation of Colombia. The NDP is divided into structural and regional pacts. A Digital Transformation Pact identifies two main work streams. First, it addresses the issue of digital inclusion, with the aim of increasing access to and use of ICT for all, in line with the United Nations 2030 Sustainable Development Goals, and the empowerment of citizens and households in a digital environment. Second, it addresses issues of transparency and efficiency to promote the development of a digital society and industry 4.0. It aims to promote the digital transformation in three dimensions: public administration, economic sectors and provinces. Through this stream, the government targets 34 high-impact government services to be made available on line.

The ICT plan, Colombia's national digital strategy (DA), is based on four axes: the ICT environment, digital social inclusion, empowerment of citizens and households in a digital environment, and digital sectoral transformations (OECD, 2019b). In 2019, the government passed a law to modernise the ICT sector by aligning agents' and authorities' incentives, updating the sector's institutional framework with a single regulator and a focus on investments to close the digital divide. It also adopted the National 5G Policy to facilitate adoption nationwide. Other relevant policies include the National Policy for Digital Transformation and Artificial Intelligence and the National Policy on the Exploitation of Data. Colombia is also developing a national policy on trust and digital security and a national policy to promote innovation in education practices. To respond to the coronavirus (Covid-19) crisis on aspects related to telecommunications, the government issued a decree to guarantee the maintenance and operation of telecommunications services. It provides the necessary and exceptional conditions to ensure that users, especially the most vulnerable, will not have services restricted, even if they have difficulties with payment, by extending invoices for 30 days. The decree provides authorisation to prioritise access to the content and apps of health services, emergency care, government, and labour or education information (CAF, 2020).

In terms of international co-operation, Colombia has South-South alliances with more than 90 countries in Africa, Asia, Latin America and the South Pacific. Projects supported by Colombia include online government programmes in the Dominican Republic and Guatemala. The *Saber Hacer Colombia* initiative, managed by the Presidential Agency for International Cooperation, collects good practices to replicate, including in the digital field, as part of the international co-operation Colombia offers.

The European Union (EU) is Colombia's largest source of foreign investment, supporting themes ranging from emerging technologies to climate resilience. Colombia recently engaged in co-operation with the EU on innovation, Colombia's rich cultural assets, and creative industries – the so-called orange (OECD, 2019b), green and circular economies. Colombia also works with the EU in the BELLA (Building the Europe Link with Latin America) project, where the aim is to provide for the long-term interconnectivity needs of European and Latin American research and education networks.

	Digital indicators - Colombia[1]					
Enhancing access	**Colombia**		**LAC**[2]		**OECD**[3]	
	2008	**2018**	**2008**	**2018**	**2008**	**2018**
Fixed broadband subscriptions (per 100 inhabitants)[4]	4.0	13.5	4.1	13.9	22.7	32.9
Active mobile-broadband subscriptions (per 100 inhabitants)[4]	0.35	52.3	0.53	73.5	19.4	103.6
	2015	**2018**	**2015**	**2018**	**2015**	**2018**
Proportion of population covered by at least 3G network[5]	100.0	100.0	86.1	94.6	98.2	98.8
	2008	**2017**	**2008**	**2017**	**2008**	**2007**
Fixed broadband speed (in Mbit/s)[4]	0.71	5.0	0.58	5.1	2.2	27.7

Strengthening their effective use	**Colombia**		**LAC**		**OECD**	
	2008	**2018**	**2008**	**2018**	**2008**	**2018**
E-Government Development Index (EGDI)[6]	0.53	0.69	0.52	0.65	0.72	0.82
Share of Internet users (% of population)[4]	25.6	64.1	25.3	67.7	65.0	84.3
	2015	**2019**	**2015**	**2019**	**2015**	**2019**
UNCTAD B2C E-Commerce Index[7]	44.6	60.5	46.4	51.5	73.9	85.0
	2017		**2017**		**2017**	
Share of individuals engaging in online shopping[8]	14.9		14.8		N/A	

Enabling digital innovation	**Colombia**		**LAC**		**OECD**	
	2008	**2018**	**2008**	**2018**	**2008**	**2018**
High-technology exports (% of manufactured exports)[9]	4.0	7.3	9.3	8.6	15.6	15.1
Share of ICT service imports, as % of total trade in services[7]	3.62	5.33	3.1	3.9	4.6	6.7
	2012	**2016**	**2012**	**2016**	**2012**	**2016**
ICT patent applications filed under the Patent Cooperation Treaty (per million people)[10]	0.13	0.26	0.14	0.34	30.9	38.2
	2006	**2016**	**2006**	**2016**	**2006**	**2016**
R&D expenditures, as % of GDP[11]	0.15	0.27	0.35	0.42	1.7	1.9
	2019		**2019**		**2019**	
OECD OURdata Index[12]	0.88		0.43		0.61	

Ensuring quality jobs for all	**Colombia**		**LAC**		**OECD**	
	2006-15		**2006-15**		**2006-15**	
Contributions to changes in total employment, by digital intensity of sectors, 2006-16[13]	N/A		6.9		4.8	
	2018		**2018**		**2018**	
Share of informal employment to total employment[14]	61.4		54.9		N/A	
	2007	**2017**	**2007**	**2017**	**2007**	**2017**
Tertiary gross enrolment rate (%)[9]	33.7	56.4	37.5	60.5	66.6	74.3
	2016		**2016**		**2016**	
Tertiary graduates by field (%) - Education[11]	8.2		16.0		9.8	
Tertiary graduates by field (%) - Health[11]	6.8		13.8		14.5	
Tertiary graduates by field (%) - Engineering[11]	16.7		12.5		14.6	

Promoting an inclusive digital society	**Colombia**		**LAC**		**OECD**	
	2015	**2016**	**2015**	**2016**	**2015**	**2016**
E-waste generated, kilograms per inhabitant[15]	5.5	5.6	6.9	7.2	17.7	17.7
	2015	**2018**	**2015**	**2018**	**2015**	**2018**
Number of students per computer[16]	1.6	1.1	2.4	1.6	1.8	1.1
	2018		**2018**		**2018**	
Percentage of women scoring at Level 2 or 3 in problem solving in technology-rich environments[17]	N/A		7.7		27.7	

Strengthening trust	**Colombia**		**LAC**		**OECD**	
	2020		**2020**		**2020**	
CAF GovTech Index[18]	5.1		4.4		N/A	
	2016	**2018**	**2016**	**2018**	**2016**	**2018**
Global Cybersecurity Index (ITU)[19]	0.59	0.57	0.36	0.43	0.56	0.79
	2018	**2019**	**2018**	**2019**	**2018**	**2019**
E-commerce safety (%)[20]	80.0	57.8	72.0	63.1	61.7	58.3
Trust in online privacy (%)[20]	70.0	56.0	52.8	54.9	41.7	45.6

Fostering market openness	**Colombia**		**LAC**		**OECD**	
	2015	**2019**	**2015**	**2019**	**2015**	**2019**
OECD Digital Services Trade Restrictiveness Index[13]	0.30	0.30	0.24	0.24	0.13	0.15
	2018		**2018**		**2018**	
OECD FDI RRI[13]	0.03		0.07		0.06	

Sources, footnotes and technical details can be found at the end of the country notes.

Technical notes

1. The table as best as possible follows the seven key areas identified in the OECD Going Digital project: 1) enhancing access to digital technologies; 2) strengthening their effective use; 3) enabling digital innovation; 4) ensuring quality jobs for all; 5) promoting an inclusive digital society; 6) strengthening trust; and 7) fostering market openness (OECD, 2019a). Indicators are chosen depending on data availability for LAC countries. Potential bias exists from the way components have been aggregated on index indicators.

2. LAC average is a simple average. Composition of countries depends on availability of country data. Each average includes as many LAC countries as possible.

3. OECD average is a simple average that includes all OECD member countries as of May 2020.

4. Data from ITU (2020), *World Telecommunication/ICT Indicators Database 2020* (database). Fixed broadband speed in Mbit/s refers to the advertised maximum theoretical download speed guaranteed to users associated with a fixed broadband Internet monthly subscription.

5. Data from UN Statistics Division, UN Global SDG Database (database). Data for 2015 and 2018 or latest available year.

6. Data from UN E-government Knowledgebase (2019), *Data Center* (database). The E-Government Development Index is a composite indicator that consists of three indexes (Online Service Index, Telecommunication Infrastructure Index and Human Capital Index), which are equally weighted. It ranges from 0 to 1, with 1 being the most developed.

7. Data from UNCTAD (2020), *UNCTADSTAT* (database). The UNCTAD B2C E-commerce Index measures an economy's preparedness to support online shopping. It ranges from 0 to 100, with 100 being the highest support.

8. Own calculations based on data from Latinobarómetro (2019), *Libros de Códigos por País/Año* (database). Data for 2017. Data from public opinion surveys using randomly selected, nationally representative samples.

9. Data from World Bank (2020a), *World Bank DataBank* (database).

10. Data from World Bank (2020b), *TCdata360*. Data for 2012 and 2016 or latest available year.

11. Data from UNESCO (2019), *UNESCO Institute for Statistics* (database). R&D Expenditures, as % of GDP data from 2006 and 2016 or latest available year.

12. Data from OECD (2020a), *OECD.Stat* (database); and OECD (2020b). The OECD OURdata Index assesses governments' efforts to implement open data in three critical areas: openness, usefulness and re-usability of government data. It ranges from 0 to 1, with 1 being the highest score.

13. Data from OECD (2020a), *OECD.Stat* (database). The OECD Digital Services Trade Restrictiveness Index identifies, catalogues and quantifies barriers that affect trade in digitally enabled services across 46 countries. It ranges from 0 to 1, with 1 being the most restrictive. The Foreign Direct Investment Regulatory Restrictiveness Index (FDI RRI) measures four types of statutory restrictions on foreign direct investment: 1) foreign equity restrictions; 2) screening and prior approval requirements; 3) rules for key personnel; and 4) other restrictions on the operation of foreign enterprises. The FDI RRI is a composite index, which ranges from 0 to 1, with 1 being the most restrictive.

14. Data from ILOSTAT, data from 2018 or latest available year.

15. Data from the Global E-waste Statistics Partnership.

16. OECD calculations based on OECD (2020c), *Programme for International Student Assessment* (database). Data for 2015 and 2018.

17. Data from the OECD (2019d), *Survey of Adult Skills (2018)*. Percentages for problem solving in technology-rich environments are computed so that the sum of percentages for the following mutually exhaustive categories equals 100%: opted out of the computer-based assessment; no computer experience; failed ICT core test; below Level 1, at Level 1, at Level 2 and at Level 3.

18. Data from CAF (2020), *The GovTech Index 2020: Unlocking the Potential of GovTech Ecosystems in Latin America, Spain and Portugal*. The GovTech Index 2020 measures the maturity of the GovTech ecosystem. It is based on 28 indicators across 7 dimensions, which on aggregate form 3 equally weighted pillars: start-up industry, government policies and procurement systems.

19. The Global Cybersecurity Index measures countries' commitment to cybersecurity at a global level. It has five pillars: 1) legal measures; 2) technical measures; 3) organisational measures; 4) capacity building; and 5) co-operation. It ranges from 0 to 1, with 1 being the highest level of cybersecurity.

20. Data from The Economist Intelligence Unit (2019), *EIU Inclusive Internet Index* (database). Indicators present perceived e-commerce safety and trust in online privacy among randomly sampled individuals in selected countries. It ranges from 0% to 100%, with 100% indicating absolute confidence in e-commerce safety and trust in online privacy.

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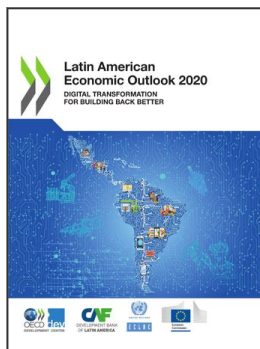
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