Overview

Digital transformation for an inclusive and sustainable recovery post Covid-19

The *Latin American Economic Outlook 2020* analyses and provides policy messages to capitalise the digital transformation to foster inclusive and sustainable development in the region, in particular in the context of the current coronavirus (Covid-19) crisis. This overview summarises the main results and messages of the report. First, it examines the socio-economic impacts of the Covid-19 crisis in the region and how it exacerbates existing vulnerabilities. It also highlights the relevance of the digital transformation to overcome LAC's development traps. It then analyses the digital transformation's potential to: 1) improve productivity growth and diversification; 2) foster inclusiveness and well-being; and 3) strengthen public institutions and improve governance. Last, it explores how new international partnerships play an important role in reaping the benefits of the digital transformation.

Introduction

The *Latin American Economic Outlook 2020: Digital Transformation for Building Back Better* analyses and provides policy messages to capitalise the digital transformation to foster inclusive and sustainable development in the region, in particular in the context of the current coronavirus (Covid-19) crisis. Latin America and the Caribbean (LAC) are navigating challenging and unprecedented times. The coronavirus (Covid-19) pandemic is profoundly affecting socio-economic conditions in the region, accentuating an already complex scenario of significant structural weaknesses: low productivity, high inequality and informality, and deficient public services and institutions. The crisis comes at a time of high social aspirations and reinforces the need to transform the foundations of the region's development model, putting citizens' well-being at the centre.

The digital transformation brings new tools and opportunities for the region to cope with the current crisis and to overcome longer-term development challenges. It entails disruptions that are triggering innovations in business and consumption models, transforming production systems and value chains, reorganising economic sectors, generating new dynamics in the world of work, creating smart goods and services, and introducing new conditions of competitiveness (ECLAC, 2016, 2018; OECD, 2017a, 2017b). Digital tools can also support access to better services, including health and education. Finally, they can be instrumental in improving the functioning of states, by facilitating more credible, effective, inclusive and innovative institutions, which may address citizens' demands and rising social discontent.

LAC countries must undertake significant investments and implement ambitious policies to make the most of the digital transformation for all. The digital transformation relies on the degree of adoption of previous information and communications technology (ICT), such as broadband access or Internet use. Ensuring that all people can access, use and benefit from new technologies requires a comprehensive, innovative and co-ordinated policy effort. Related public policy co-ordination demands strategic planning: comprehensive frameworks provided by strong national development plans (NDPs) that are closely aligned with the more specific digital agendas (DAs).

The coronavirus (Covid-19) crisis may have boosted momentum to undertake the reforms necessary to ensure the benefits of the digital transformation for all. Technologies have been instrumental in mitigating some impacts, for instance, by supporting telework and e-commerce activities. However, the importance of bridging digital divides has become even more evident across families, students, workers and firms.

The *Latin American Economic Outlook 2020* (LEO 2020) explores how the digital transformation can foster development and promote greater well-being for all in LAC. The report first examines the socio-economic impacts of the Covid-19 crisis in the region and how it exacerbates existing vulnerabilities, and highlights the relevance of the digital transformation to overcome LAC's development traps (Chapter 1). It then analyses the digital transformation's potential to: 1) improve productivity growth and diversification (Chapter 2); 2) foster inclusiveness and well-being (Chapter 3); and 3) strengthen public institutions and improve governance (Chapter 4). Last, it explores how new international partnerships play an important role in reaping the benefits of the digital transformation by building multilateral platforms for knowledge exchange on an equal footing, strengthening national institutions' capacities, and promoting co-operation under whole-of-government partnership frameworks (Chapter 5). A specific analysis on Caribbean countries (Chapter 6) and country notes for 14 LAC economies are covered in the report.

The coronavirus (Covid-19) crisis hits the region at a time of deep structural weaknesses

The economic impact of the coronavirus (Covid-19) crisis is deep and will complicate the macroeconomic outlook for LAC in the next years. Since 2014, the region has experienced the weakest period of growth since 1950 and exhibited lower growth than the OECD average, with almost no expansion of the economy in 2019. This suggests that its potential growth was already low. The crisis is bringing internal and external shocks. National health measures are having a major impact on economic activity and, consequently, on social conditions, while a sharp decline in global demand, considerable reduction in commodity prices, financial volatility and additional impacts associated with lower investment, contraction of tourism and potential decrease in remittances compound a complex scenario. Overall, economic growth will decline by more than 9% in 2020 (ECLAC, 2020a; CAF, 2020a).

The contraction of activity caused by the pandemic is having a dramatic socio-economic impact, affecting the most vulnerable groups. Close to 60% of workers in LAC are informal. Many are self-employed in a subsistence, daily living economy and at risk of slipping back into poverty. Before the crisis, close to 40% of total workers were not protected by any safety net (i.e. without labour-based social insurance and main social assistance schemes) (Figure 1, Panel A). This risks increasing poverty and inequality levels, already on hold since 2014. Within firms, the crisis will be particularly difficult for micro and small firms, which do not have the capacity to absorb the shock: 2.7 million mostly microenterprises are likely to close, entailing the loss of 8.5 million jobs (Figure 1, Panel B).

Figure 1. **Workers without a safety net and firms likely to close owing to the coronavirus (Covid-19) crisis in selected Latin American countries**

Panel A. Workers without labour-based social insurance and main social assistance schemes (%)

Panel B. Firms likely to close as a result of the coronavirus (Covid-19) crisis, by size (%)
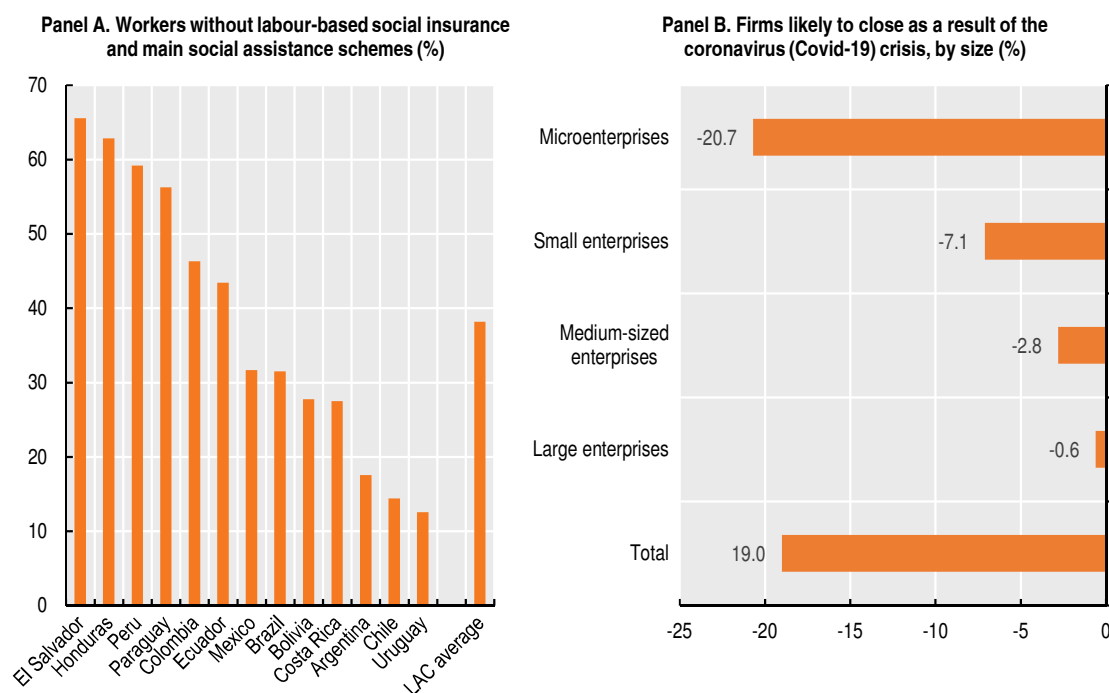
Sources: Basto-Aguirre, Nieto-Parra and Vázquez (2020), "Informality in Latin America in the post COVID-19 era: Towards a more formal 'new normal'?", www.lacea.org/vox/?q=blog/informality_latam_postcovid19; and ECLAC (2020b), "Sectors and businesses facing COVID-19: Emergency and reactivation", https://repositorio.cepal.org/bitstream/handle/11362/45736/5/S2000437_en.pdf.

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Governments have made significant and rapid efforts since the beginning of lockdown measures to respond to the most vulnerable populations and firms. To reach informal workers and households, most countries have expanded unconditional cash transfers. Actions to support firms include direct transfers, credit guarantees, and moratoria on payment of taxes, utilities or social security contributions.

However, interventions are constrained by limited fiscal space, and national-level actions are not enough. Co-ordinated global-level actions are needed to rebuild economies and promote inclusion. Fiscally, such interventions include public debt management and increased tax transparency. Regarding public debt, there is no unique solution to managing it due to country differences in initial fiscal conditions, type of foreign creditors and financial capacity to tap into capital markets. These heterogeneities across countries demand several policy actions in response to the coronavirus (Covid-19) crisis at both national and international level.

Beyond the immediate impacts of the coronavirus (Covid-19) crisis, the region must orient policy efforts towards overcoming structural challenges. Development traps, which involve circular, self-reinforcing dynamics that limit countries' capacity to advance, are the result of longstanding weaknesses and new challenges arising from progress towards higher income status. The *Latin American Economic Outlook 2019: Development in Transition* identified four development traps: low productivity, social vulnerability, institutional weakness and environmental sustainability (OECD et al., 2019). Regarding the latter, the digital transformation should contribute to achieving a "fair" transition to sustainable low carbon growth that goes hand-in-hand with social justice.

The digital transformation has emerged as a profound global trend that offers challenges and opportunities which, if accompanied by effective policies, can contribute to overcoming LAC's development traps. While efforts are underway, seizing the opportunities requires new policy approaches and complementary investments.

The OECD's Going Digital project identifies seven key policy dimensions to make the digital transformation benefit growth and well-being: 1) enhance access to digital technologies; 2) strengthen their effective use; 3) enable digital innovation; 4) ensure quality jobs for all; 5) promote social prosperity; 6) strengthen trust; and 7) foster open markets (OECD, 2019a). Action in these areas will help overcome LAC's development traps (OECD, 2019b).

Policy efforts for going digital must move beyond a sectoral approach, as it is a multi-dimensional process with implications in various areas. The cross-border nature of some of its challenges and opportunities demands greater international co-ordination. Setting up mechanisms for political dialogue at the regional level, fostering agreements in areas that demand international regulatory coherence and encouraging co-operation are essential. The Regional Digital Agenda of Latin America and the Caribbean (eLAC), co-ordinated by ECLAC since 2000, has gained relevance.

The digital transformation can boost productivity growth

The region has experienced a high and increasing productivity gap with respect to developed economies in the last decades. Aggregate labour productivity shows reduced and persistently low productivity growth from 1950 onwards. Productivity growth is the core engine of sustained economic progress, but LAC's gross domestic product (GDP) growth is mainly explained by labour force expansion, with little contribution from productivity growth (Figure 2).

Figure 2. **Contribution of employment and productivity to GDP growth in selected countries and regions, 2000-19 (percentages)**
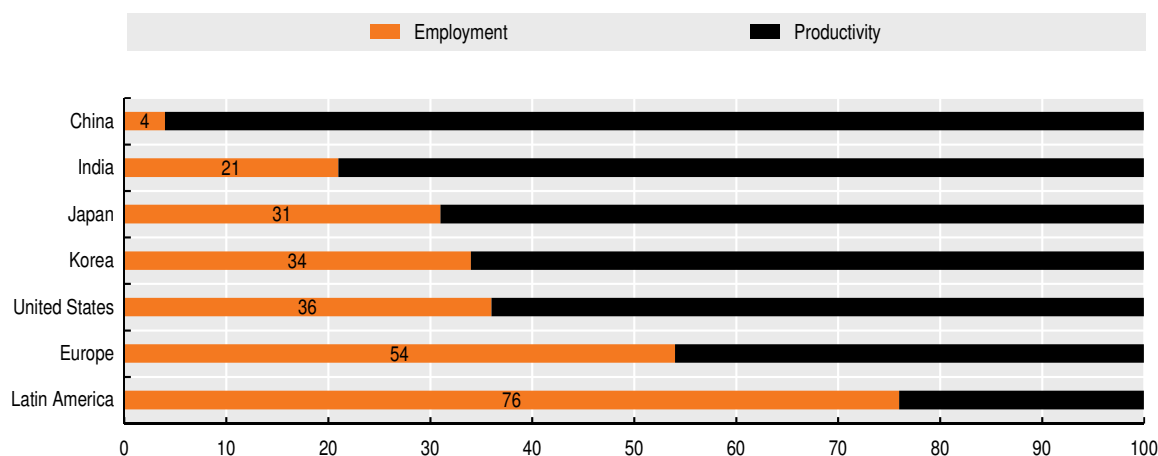
Note: Simple average of the 17 LAC countries covered by the Conference Board.
Source: Own calculations based on Conference Board (2020), *Total Economy Database* (database), www.conference-board.org/data/economydatabase.

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Most Latin American countries' competitiveness is largely based on abundant natural resources or low-skilled labour. The result is a poorly diversified production structure, entailing low value added and an export specialisation concentrated in goods with low technological content. As with the commodity boom, this type of structure can provide periods of rapid growth but not sustained productivity growth. Achieving the latter requires the incorporation of technology and production diversification towards dynamic sectors, both in technology and in terms of international demand (ECLAC, 2012; OECD et al., 2019).

Promoting the digital transformation of production

LAC must take advantage of the digital transformation and promote production transformation to escape the productivity trap. Some countries are incorporating policies to boost the development of emerging technologies, such as advanced robotics and artificial intelligence (AI), to improve productivity. Such efforts include Brazil's National Internet of Things Plan, Colombia's Fourth Industrial Revolution Centre, operated by the Ruta N Corporation in Medellin, and Uruguay's digital manufacturing laboratory. Challenges remain, especially in productive application of digital technologies, development of digital entrepreneurship and business heterogeneity. A large share of smaller businesses have difficulties adopting new technologies. Furthermore, despite the rapid pace of technological change and its potential to improve efficiency, aggregate productivity growth, including in LAC, has slowed over the past decade, giving rise to a productivity paradox (OECD, 2017a, 2017b).

The diffusion and impact of digital technologies on productivity in LAC are not automatic and depend on indispensable elements, including proper access to and diffusion of digital technologies, healthy business dynamism, small and medium-sized enterprise engagement in digital transformation, and adequate competition in the digital economy. Developing a holistic digital ecosystem is essential to facilitate adoption by firms (CAF, 2017). LAC has seen an important expansion of the Internet. In 2018, 68% of the population used the Internet regularly – almost twice the share in 2010, although

lagging behind the OECD average of 84% (Figure 3). Access, connectivity and connection quality vary among and within countries. Moreover, despite sustained improvement in connection speeds, the region remains well below the world average, limiting the digital services and apps available.

Figure 3. **Percentage of Internet users in selected Latin American and Caribbean countries, 2010 and 2018 (or latest available year)**
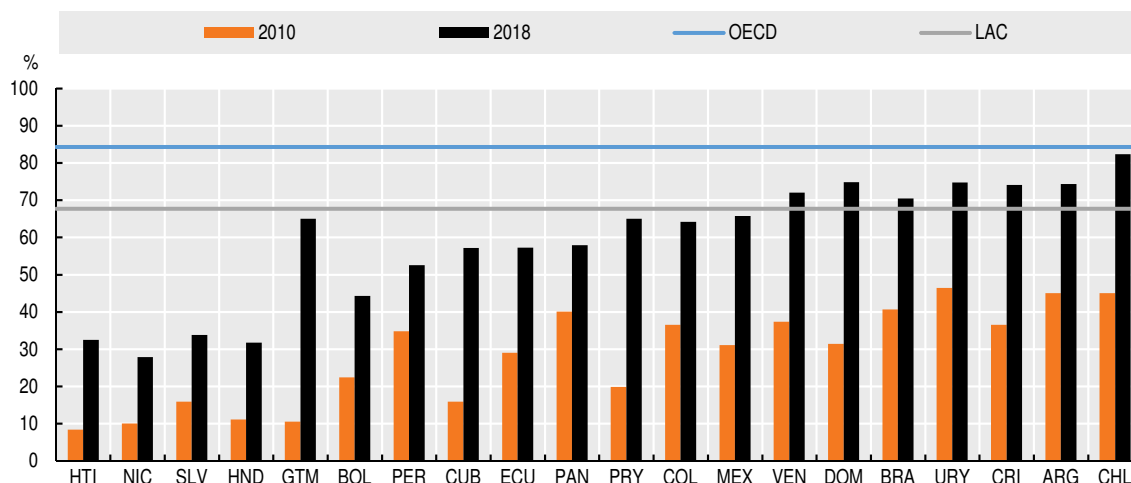
Notes: The indicator can include estimates and proportion of Internet users based on national household survey results. Figures reflect total population or individuals aged 5 or older. If neither were available (i.e. target population reflects a more limited age group), an estimation for the entire population was produced.
Source: Own calculations based on data from ITU (2020), *World Telecommunication/ICT Indicators Database 2020* (database), International Telecommunication Union, Geneva, https://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx (accessed on 21 August 2020).
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Successful digital transformation strategies for productivity rely on a broader range of interventions and sectors than ICT alone. Transport connectivity and skills are critical enabling elements in the digital era in which LAC lags behind the OECD. Digital skills development policies should be aligned with broader industrial and technological policies to ensure that workforce abilities match those required by priority sectors. Adoption and adaptation of digital technologies involve an array of functions and professions, each with distinct education and skills requirements. Despite ample degree and postgraduate programmes, LAC lags in high-level training programmes (mainly PhDs), which has an impact on research and development (R&D). Investing in appropriate skills and narrowing the gap relative to countries at the technological frontier will be essential for LAC to leverage digital technologies. Furthermore, transport connectivity is fundamental to make the most of digital transformation. Thanks to digital platforms, e-commerce can expand markets and improve efficiency. Improving transport infrastructure and logistics should promote further competitiveness, including in the expansion of e-commerce.

Digital technologies are not independent from the sector, organisation structure and other context-specific aspects in which they operate. Technological solutions and policies must be adapted to individual sectors and types of production units, in particular small and medium-sized enterprises (SMEs), to address the unique characteristics that influence their functionality. In particular, as the Covid-19 recalls, in a region where productivity disparities are considerable according to the size of the firm, the digital transformation brings an opportunity but also a risk of reinforcing disparities. With appropriate policies, digital technologies could help close the productivity gap with bigger firms. Despite

advances in recent years, low adoption of even basic technologies, especially among small firms, shows that space remains for further policy intervention. For instance, in some countries of the region, the productivity gap between small and large companies that own their own website is higher than 30 percentage points.

The region entered into the Covid-19 crisis with relatively few companies using digitalisation in their everyday operations (Figure 4). Therefore, greater digitalisation should be a feature of the post-pandemic economy (CAF, 2020b; ECLAC, 2020b). Digital technologies will be key to new operating models: companies will have to adopt technologies to process large amounts of information to improve decision processes, which may redefine business models. Industry should incorporate greater use of robotics to improve efficiency and increase the use of artificial intelligence (AI) tools (CAF et al., 2020). Digital transformation may also affect business model operations through changes in the sale and delivery of goods and services or interactions with suppliers (ECLAC, 2020b).

Figure 4. **Latin America: Digitalisation of the supply chain, 2018**
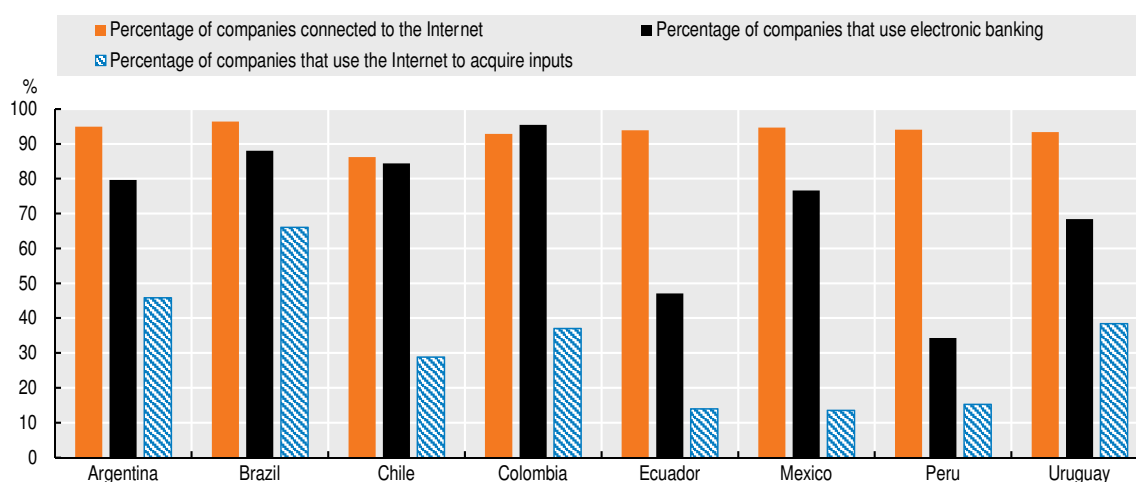
Source: CAF (2020b), "El estado de la digitalización de América Latina frente a la pandemia del COVID-19", https://scioteca.caf.com/bitstream/handle/123456789/1540/El_estado_de_la_digitalizacion_de_America_Latina_frente_a_la_pandemia_del_COVID-19.pdf?sequence=1.
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The region is in a better place to take advantage of the digital transformation, mainly because of increased access to networks and devices. However, it is necessary to ensure the key enabling elements of a virtuous digital ecosystem, such as quality infrastructure, digital skills for all and consistent legal frameworks that promote investment and innovation. There is significant space to promote R&D, new business models and adjustments of productive value chains through digitalisation. Past experiences show that such policies' impact depends on a strategic vision, e.g. including them in NDPs, ensuring interinstitutional co-ordination and building public-private co-operation.

The digital transformation can improve well-being through social inclusion of families, workers and students

The digital transformation influences households' quality of life, jobs and learning. New technologies offer many opportunities for accessing better public services, improving health and education, creating jobs, and bringing previously under-represented groups into the labour market and closer to public policies. The digital transformation can also

help improve the quality of jobs and skills: dangerous or repetitive tasks in particular can be automated. The coronavirus (Covid-19) crisis evidenced that technologies allow some segments of the population to choose where and when to work more freely, which can improve work-life balance, and for work environments to be made safer and healthier.

The Covid-19 crisis also highlights the digital divide in the region as an urgent concern, as poor and vulnerable workers without the access and skills to benefit from digital tools are being left behind. Those unable to exploit the new digital tools are likely to be more affected by the health, economic and social consequences of the crisis, potentially widening socio-economic inequalities. In particular, workers with no access to new technologies or skills are more prone to short- and long-term economic and other losses, for instance, because they have no opportunity to telework or sell goods on line, while their children may be unable to continue their education remotely.

Ensuring households benefit from the digital transformation

Despite strong improvements in Internet access and use, digital gaps among households by income, age and territory remain. Internet access in LAC is still strongly linked to household income. On average, there is almost a 40-percentage point gap between the percentage of the total population that uses Internet in the richest quintile (75%) and the poorest (37%). This gap in OECD countries is on average below 25 percentage points. Internet use in LAC is significantly higher among individuals aged 15-34 (over 60%) than those aged 65-74 (18%) and those over age 74 (8%). The number and share of urban users exceed figures for rural areas – by up to four times in some countries.

While the digital divide remains, in most countries Internet access and use are better distributed across income groups than income, pensions and some public services. (Figure 5).

Figure 5. **Distribution of Internet access, Internet use and other services by income decile in selected Latin American countries, 2017 or last available year**
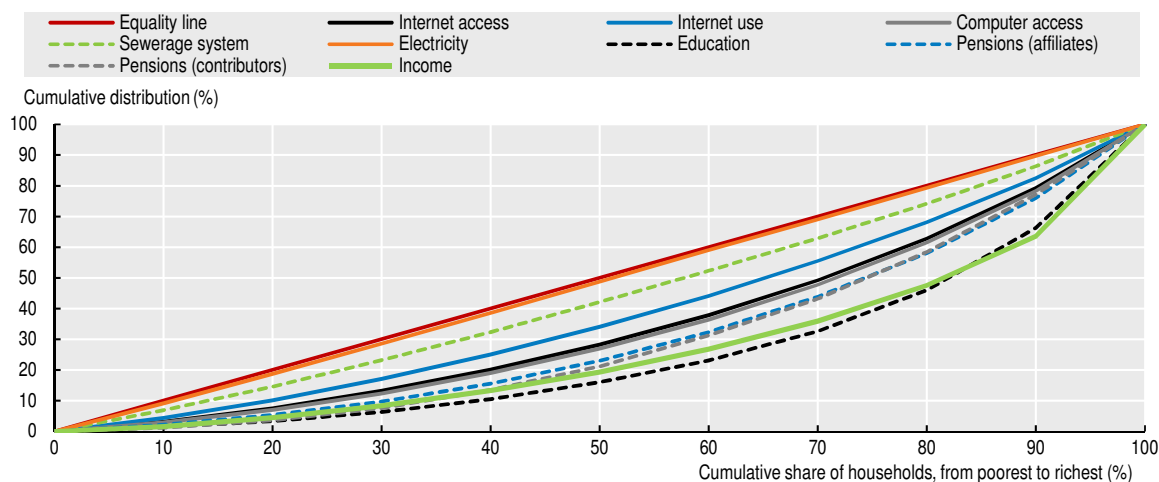
Note: Simple average by decile for selected LAC countries. See Figure 3.1 for detailed methodology.
Source: Own calculations based on ORBA/ECLAC (2019), *Household Survey Data Bank* (database), www.cepal.org/es/observatorio-regional-de-banda-ancha.
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Getting ready for the future of work and skills

Few people, particularly women, have the skills to profit from ICT for everyday life. The Survey of Adult Skills, a product of the OECD Programme for the International

Assessment of Adult Competencies (PIAAC), provides information on how often individuals perform ICT-related tasks. Chile participated in PIAAC Round 2 (2015) and Ecuador, Mexico and Peru in PIAAC Round 3 (2017-18). Less than half of Latin Americans aged 15-65 covered by the survey had used a computer or had sufficient experience to use one for basic professional tasks. The most common Internet use tasks, performed at least once per week, were gathering information (73%) and email (69%). Fewer than 10% of workers used ICT for more advanced tasks, such as computer programming. Individuals with tertiary education used these tools more frequently than those with less education. Finally, men were more likely than women to use ICT to conduct transactions or work with spreadsheets.

Based on occupational estimates, 16% of LAC jobs are at high risk of automation, from 5% in Bolivia to 29% in Uruguay (ECLAC, 2019). Furthermore, by taking into consideration the replacement of tasks within occupations, on average, 25% of jobs in Chile, Ecuador, Mexico and Peru are at high risk of automation, and 35% may experience substantial changes in tasks and how they are carried out (OECD, 2019c). Jobs are at high risk of automation if at least 70% of their tasks are likely to be automated. Jobs are at risk of significant change if 50% to 70% of their tasks are likely to be automated (Nedelkoska and Quintini, 2018).

While some jobs will disappear, change or be created with the digital transformation, very few LAC employees have proficiency with or use digital tools at work: only one-third of LAC workers used ICT at work on a weekly basis, compared with more than half in Europe (OECD, 2018a).

Managing the transition of workers in declining industries and regions into new job opportunities, and moving towards wider, more inclusive social protection systems, remain key challenges. The future of work will depend on policy decisions (OECD, 2019c). Social protection provision should be reshaped to ensure better coverage, including for workers in non-standard employment, such as the gig economy, where temporary or free-lance contracts are the norm, and zero-hour contracts.

The coronavirus (Covid-19) crisis highlights that policies and institutions must ensure that the digital transformation does not harm certain type of workers. Some workers face multiple barriers to training. Those with low skills, in jobs at high risk of automation or who lose their jobs are often reluctant to retrain or unable to identify relevant learning activities. Even well-informed, motivated workers face barriers, such as lack of time, money or skills to start specific training. This is particularly the case for informal workers in the region. Employers are also more likely to invest in training higher skilled workers, expecting a higher return on investment.

New forms of work in the platform economy may offer opportunities for formalisation in LAC. The digitalisation of transactions could reduce costs and improve monitoring of economic activity. To capitalise on the opportunities, labour and tax policies must ensure adequate tax and social protection mechanisms.

Closing the digital divide for a better and more inclusive education

Using digital tools is linked to better school performance. Students with higher proficiency in the OECD Programme for International Student Assessment (PISA) 2018 had started using digital devices at a younger age. Starting to use ICT before age 9 was significantly associated with higher scores than starting after age 12. Digitalisation over the last decade has influenced how students learn, do homework, interact with peers and spend leisure time. Internet use at school among students aged 15 in LAC more than doubled between 2012 and 2018 to over one hour on a typical school day.

ICT use inequalities also relate to gender and geography. Urban students in LAC are almost 25% more likely to engage in social media and more than 20% more likely to chat than their rural counterparts. The difference in OECD countries is marginal. Gender differences start early in schools and affect future professional development. While a similar share of boys (34%) and girls (35%) reported that they expected to work in a science-related occupation, they tended to select different fields, with girls more prone to select health-related professions, and boys more prone to select ICT, and science and engineer professions.

Schools in LAC promote equity in access to and use of ICT in countries where household connectivity is not universal. Access is especially low for students from poor households. For instance, in 2018 less than 14% of poor students in primary education had a computer connected to Internet at home, compared to more than 80% of affluent students with the same education level (Figure 6). Moreover, more than 5% of students had access to the Internet and other digital technology exclusively through school. Finally, higher connection to Internet is also needed in schools in LAC. For instance, in 2018 some 95% of school computers in the OECD area were Internet connected, compared with 74% in LAC.

Figure 6. **Share of students enrolled in primary education with an Internet connected computer at home by income group, 2018 or last available year**
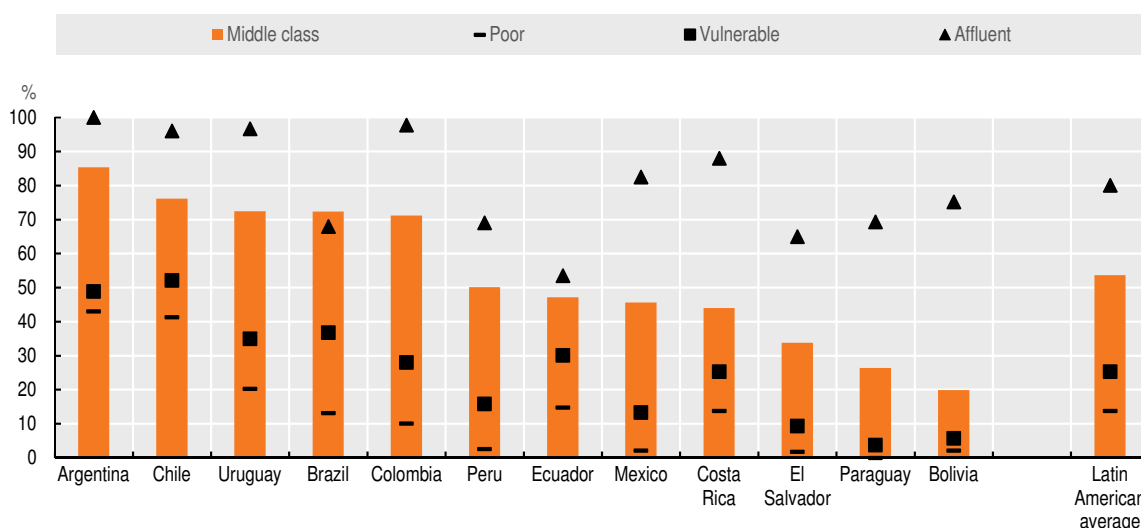

Note: The regional average is a simple average. Poor are those living with less than USD 5.5 per capita per day (purchasing power parity [PPP] 2011). Vulnerable, those living with USD 5.5 to USD 13 per capita per day (PPP 2011). Middle-class, those living with USD 13 to USD 70 per capita per day (PPP 2011). And affluent, those living with more than USD 70 per capita per day (PPP 2011).
Source: Basto-Aguirre, Cerutti and Nieto-Parra (2020).
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Only a few schools in Latin America were sufficiently prepared for digital learning before the coronavirus (Covid-19) pandemic. Students aged 15 attending advantaged schools in the region were more likely to have access to an effective online learning support platform, compared with those attending disadvantaged schools (Figure 7). Unpreparedness may amplify socio-economic gaps in education. On average, 58% of 15-year-olds in the region attended schools whose principals considered that teachers had the necessary technical and pedagogical skills to integrate digital devices into the curricula. This highlights the vast training needs that lie ahead for education systems, and the significant discrepancy in digital teaching capacity between socio-economically advantaged and disadvantaged schools.

Figure 7. **Availability of an effective online learning support platform by school socio-economic status in selected Latin American countries**

Percentage of students in schools whose principals agreed or strongly agreed that an effective online learning support platform was available, PISA 2018
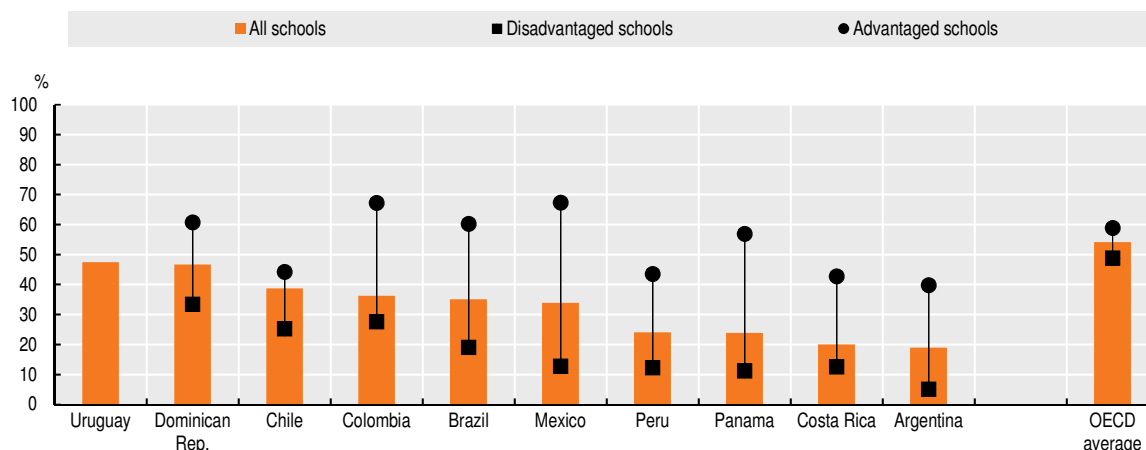
Note: Socio-economically disadvantaged (advantaged) schools are those in which the average socio-economic status of students is in the bottom (top) quarter of the PISA ESCS among all schools in the country/economy. Countries/economies are ranked in descending order of percentage of schools with an effective online learning support platform. The difference between disadvantaged and advantaged schools in Uruguay is not statistically significant.
Source: OECD (2018b), *PISA 2018 Database* (database), www.oecd.org/pisa/data/2018database/.
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The coronavirus (Covid-19) crisis made inclusive digital transformation a top priority, to temper negative effects and accelerate inclusive economic recovery. The need to embrace digital transformation beneficial to all is a main lesson of the crisis and may be an opportunity for countries to prioritise it in DAs. To avoid amplifying existing inequalities and ensure that technology benefits all, countries should extend both access and skills among schools, students, households and workers. Policy actions should quickly and effectively articulate digital transformation processes as key enablers of social welfare.

The digital transformation of public institutions can improve governance and rebuild trust

The expansion of LAC's middle class since the beginning of the century brought rising social aspirations, and the coronavirus (Covid-19) pandemic is likely to increase demands for stronger public institutions and better quality public services. Despite improvements in public governance in past years, institutions are failing to respond adequately. Across most LAC countries, distrust and low satisfaction have been deepening, and social discontent is growing, creating an institutional development trap (OECD et al., 2019). The extent to which the pandemic deepens social discontent and changes citizen aspirations is yet to be seen, but public institutions have been under unprecedented pressure and will need to respond to evolving social demands and extraordinary policy challenges.

The digital transformation presents new challenges but also significant opportunities to strengthen the social contract and better respond to rapidly changing public demands. It can help improve governance and the functioning of public institutions and move towards digital governments in three respects. First, there is a need for new rules and institutions to govern the digital transformation, including in areas such as digital security, data protection and governance, and new ethical considerations. Second, digital technologies can profoundly transform public institutions and make them more credible, effective, inclusive and innovative. Third, efforts to transform into digital economies

and societies must be co-ordinated; a strategic approach to the digital transformation involves developing DAs closely linked with broader NDPs.

Adapting the rules of the game to govern the digital transformation

Governing the digital transformation is a crucial public policy issue. Changes to institutions, regulations and markets are needed to ensure the fair and equitable advancement of the digital transformation. Governments face new regulatory challenges, not only in managing issues arising from the digital transformation but also in ensuring that it benefits all (OECD, 2019b).

Regulatory frameworks must be adapted to address competition challenges from the increasing convergence of networks and services in the digital economy. A stable, predictable framework fosters long-term investment in broadband infrastructure and digital innovation. At the same time, innovation-friendly regulation is needed to facilitate new industries and digitally intensive firms. Frameworks must also help protect consumers. In designing regulations, responsibilities must be clear, avoiding overlap and giving institutions specific tools to enforce decisions.

Sufficient safeguards to protect sensitive sectors and citizens from digital security incidents and strengthen trust in the digital ecosystem are key. As individuals, governments and firms become more digitally open, security incidents are increasingly frequent and risk causing social and economic harm. Security risks can cause: disruption of operations and essential services, such as water, energy, public health and safety; direct financial loss; lawsuits; reputational damage; loss of competitiveness, e.g. through disclosure of trade secrets; loss of personal data; and consumer distrust (OECD, 2015). Private and public organisations should take digital security into account in their risk management and not treat it as a specific, technical risk that merits a separate response. LAC countries are moving towards strategic, long-term plans for digital security: in 2019, 13 Latin American countries had a national digital security strategy (IDB/OEA, 2020).

Data have emerged not only as key economic assets but also critical inputs for effective frontline responses to the spread of the coronavirus (Covid-19). There is a need for stronger regulation of data governance, privacy, value and exchange across borders. During the pandemic, privacy enforcement authorities have played a key role in applying new or existing privacy and data protection frameworks to ensure trustworthy, fast and secure data management. Data protection frameworks have evolved significantly in recent times and have influenced regulatory frameworks in LAC. Most LAC countries have data protection frameworks with shared characteristics. Most differences are explained by date of adoption and, to some extent, the influence of various international models. International harmonisation should be supported to promote a framework that encourages information exchange while safeguarding citizens' rights.

Governance of the digital transformation must incorporate ethical dimensions and react to new challenges. The growing use of AI apps raises concerns related to human values, fairness, human determination, privacy, safety and accountability, among others. Data on which algorithms train can be erroneous, biased, insufficient or not updated (Buenadicha Sánchez et al., 2019), underlining the need for more robust, safe, secure and transparent AI systems with clear accountability mechanisms (OECD, 2019d).

Social media platforms have enhanced the facility and rapidity with which mass disinformation (fake news) spreads. Exposure to disinformation is negatively correlated with trust in government (OECD, 2019e). Disinformation has other negative social effects: the spread of fake news about the coronavirus (Covid-19) risks encouraging behaviours that negatively affect public health.

Transforming governments: Towards more credible, efficient, inclusive and innovative public institutions

LAC countries are at different stages of the digital transformation of governments. The United Nations (UN) E-Government Development Index (EGDI) is the most comprehensive measure of e-government development world wide. Latin American countries fall into two groups. Argentina, Brazil, Chile and Uruguay are among the top 50 performers of the 193 countries surveyed in the 2018 edition, performing slightly below the OECD average (Figure 8, Panel A). Nicaragua (129), Belize (132), Cuba (134) and Haiti (263) appear among the worst performers (UN, 2019). The greatest challenges for LAC countries are in the dimensions of communications infrastructure and human capital, according to the evolution of the EGDI sub-indices in 2014-18 (Figure 8, Panel B).

Figure 8. **United Nations E-Government Development Index (EGDI) and its evolution**

Panel A. EGDI in LAC countries and OECD, 2018

Panel B. EGDI evolution by component in LAC countries
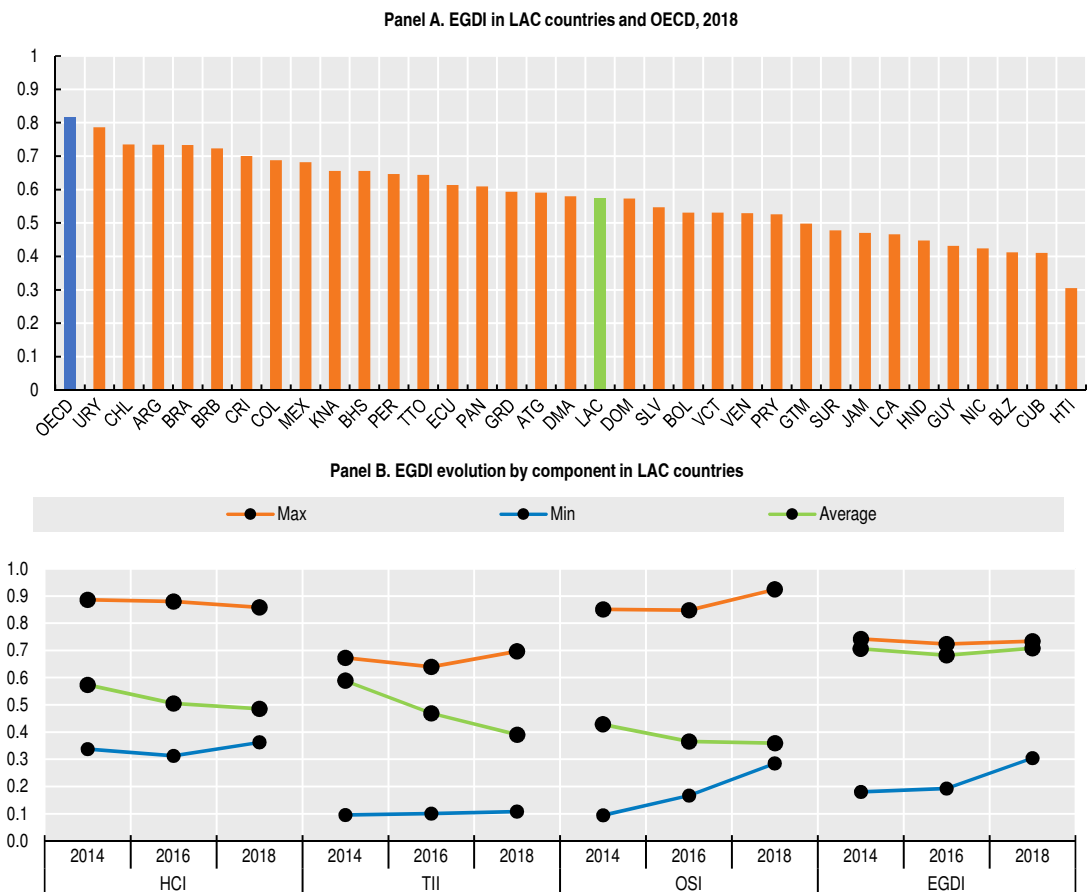
Notes: The UN E-government Development Index (EGDI) is a composite index of the Online Service Index (OSI), Communications Infrastructure Index (TII) and Human Capital Index (HCI). It ranges from 0 (least developed) to 1 (most developed). Simple averages for the OECD area and LAC.

Source: Own calculations based on UN (2019), *UN e-Government Knowledge Database* (database), https://publicadministration.un.org/egovkb/en-us/Data-Center.

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To improve public governance, governments can use digital tools to become more credible, efficient, inclusive and innovative. Governments are evolving from e-governments to digital governments. E-government uses ICT, particularly the Internet, as a tool to achieve better government (OECD, 2014). It allows for little interaction with citizens, and management practices remain hierarchical. Digital government relies

on a digital government ecosystem comprised of government actors, non-government organisations, businesses, associations and individuals who support the production of and access to data, services and content through interactions with government. The shift towards digital government is expected to bring greater transparency and openness on the part of governments, and a more collaborative, user-driven and proactive approach that recognises data as strategic assets.

Digital technologies can improve the trustworthiness of public institutions and therefore increase their credibility. In 2018, 26% of the population reported having confidence in the national government, down from 45% in 2008 (Gallup, 2019). The perception of corruption is a main driver of mistrust in public institutions: in 2018, 79% of the population believed corruption was widespread in their governments (Latinobarómetro, 2018); 53% believed corruption had increased in the previous 12 months (Pring and Vrushi, 2019). Trust is a cornerstone of public governance and critical for the success of public policy. Without it, citizens disengage from civic duties and find few incentives to participate in politics and pay taxes. If well managed, the digital transformation can help governments regain trust by harnessing the opportunities of open government data, creating a culture of transparency, integrity and social accountability.

Digital technologies have the potential to curb corruption in the misuse of public funds. Colombia's *MapaRegalías* platform shows the origin and destination of financial resources obtained from the exploitation of natural resources, and has helped identify numerous irregularities (Santiso, 2018). The creation of central purchasing bodies as centres of procurement expertise, and the development of e-procurement solutions (e.g. *Chilecompra* and *Colombia Compra Eficiente*), are transforming traditional practices in LAC. Brazil's Observatory for Public Expenditure tracks procurement expenditure data, cross-checking it with other government databases to identify atypical situations that, while not *a priori* evidence of irregularities, warrant examination.

Social media can be a powerful tool to support citizen trust. Particularly in the context of a crisis, such as the coronavirus (Covid-19) pandemic, governments must ensure that clear and trustworthy communication reaches the greatest number. Social media can provide an important platform to inform citizens about the risks and evolution of the crisis and the measures adopted to counter it. It can be especially effective in LAC, given the high use of social media.

By making public services more efficient with new technologies, governments can improve citizens' experience and cut transaction times and in-person costs. LAC's bureaucratic system is complex, illustrated by the average time it takes to carry out a government transaction, such as getting a birth certificate, paying a fine or obtaining a licence. It takes around 5.4 hours to complete a transaction in LAC, although variation among countries is high, ranging from more than 11 hours, on average, in Bolivia to less than 3 hours in Chile for an equivalent transaction (Latinobarómetro, 2017; Roseth, Reyes and Santiso, 2018). Digital channels for processing transactions could eliminate in-person time and costs.

The digital transformation of governments can also support more inclusive public services through open data policies, more interactions with stakeholders (e-consultation) and citizen involvement in decision-making processes (e-decision making). It can help governments provide more inclusive public services by reaching the more disadvantaged segments or remote areas with access challenges. Education is one area in which digital technologies can expand the reach of services. E-learning has undergone an extraordinary transformation in recent years. E-health also has strong potential. E-consultations during

the coronavirus (Covid-19) pandemic have played a crucial role in stemming the spread of the virus and reducing the burden on emergency rooms.

The digital transformation can help governments be more innovative in public policy design, delivery and evaluation, improving the policy-making process, for instance thanks to the use of Big Data or GovTechs. Technology and the digitalisation of societies and governments are generating massive amounts of data, which can be important assets to spur innovation and develop better informed and targeted public policies and services. Many countries are using smartphone-generated geolocated and proximity data to map the geographical distribution and evolution of the coronavirus (Covid-19) or monitor compliance with lockdown measures. Making the most of the digital transformation requires a change within public administration from an information-centred to a data-driven, innovative approach that includes digital technologies and data in public policy design from the outset.

Strategies for digital transformation in national development plans and digital agendas

The digital transformation englobes a series of public policies that need to be included under a co-ordinated approach, as the National Development Plans (NDPs), with a direct link with digital agendas. A text-mining exercise of the relative frequency of six digitalisation topics in LAC NDPs was carried out to determine their main focuses: 1) access to and use of the Internet and digital technologies; 2) communication infrastructure; 3) future of work (i.e. policy concerning changes in the labour market due to new technologies); 4) digital government; 5) digital economy; and 6) regional integration. A mix of quantitative and qualitative results emerges (Figure 9).

Access and use, communication infrastructure and future of work are most represented in LAC NDPs. A growing number of plans recognise Internet access as a basic household service, alongside water, electricity and telephone. Regarding the future of work, NDPs focus on skills upgrading over encouraging new and more flexible working arrangements. Attention to developing the digital economy remains low, with few proposals to foster online commerce, open banking or financial technology companies. Regional integration is important for the majority of countries, but most focus on energy, border and commercial integration. Few countries advocate for digital integration in their NDPs as part of their broader objective to develop an innovative, competitive economy.

DAs are another key public policy tool to navigate and co-ordinate the digital transformation in the long term. Most LAC countries have developed DAs, with varying characteristics (Figure 10), which propose cross-sectoral programmes to achieve policy objectives involved in the digitalisation of the economy and society. DAs encompass a range of policies, involving not only ICT ministries but also institutions in charge of finance, education, industry and public administration.

The Regional Digital Agenda of Latin America and the Caribbean (eLAC) has served as a space for co-operation among regional DAs, where governments share experiences and best practices and discuss a common vision for use of digital technologies as development tools. The forum set out a series of regional goals that serve as a guide for the development of national policies. The DAs of Argentina, Brazil, Colombia, Costa Rica, the Dominican Republic, Honduras, Mexico, Panama and Peru explicitly indicate the articulation of national policy objectives in line with those set at eLAC2020.

Figure 9. **Intensity of digitalisation topics in national development plans (NDPs), selected Latin American and Caribbean countries, 2019**

	Access and use	Communication infrastructure	Future of work	Digital government	Digital economy	Regional integration
Argentina						
Bolivia						
Brazil						
Chile						
Colombia						
Costa Rica						
Dominican Rep.						
Ecuador						
El Salvador						
Guatemala						
Honduras						
Mexico						
Panama						
Paraguay						
Peru						
Uruguay						

Note: This figure was obtained by compiling a list of keywords for each topic; intensity of topic was calculated based on relative frequency. See Annex 4.A1 of Chapter 4 for detailed methodology.
Source: Own elaboration based on latest NDPs (end of 2019).
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Figure 10. **Institutional characteristics of national digital agendas (DAs), selected Latin American and Caribbean countries, 2020**

	Specialised ICT Ministry	Explicit objectives in the DA	Public consultation for the elaboration of the DA	Inter-governmental co-ordination committee or commission for the DA	Multi-stakeholder co-ordination for monitoring the DA	Goals and/ or indicators for monitoring the DA	Explicit budget in the DA
Argentina							
Bolivia							
Brazil							
Colombia							
Chile							
Costa Rica							
Mexico							
Dominican Rep.							
Ecuador							
Honduras							
Panama							
Paraguay							
Peru							
Uruguay							

Note: Colour intensity indicates the intensity with which the DA includes the characteristic in its institutional design.
Source: Own elaboration based on latest national DAs (January 2020).
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New international partnerships can facilitate development in the digital age

As digitalisation creates both opportunities and challenges that transcend borders, international co-operation, co-ordination and new partnerships are a key dimension to make the most of digital transformation at local, national and international levels.

LEO 2019 called for a shift towards renewed international co-operation to facilitate sustainable development. Co-operation in LAC's digital transformation, particularly in light of the highly transversal impact of digital tools, could help support countries to overcome development traps and advance their development.

The coronavirus (Covid-19) crisis has accentuated the importance of international co-operation and digital tools. Co-ordinating policies at the international level to promote digitalisation for all is essential. Traditional models of international co-operation have not met expectations. A renewed model could facilitate LAC countries' development strategies. Examples in the digital sector already show the way.

International co-operation can help LAC countries build domestic digital capacities to face their often interrelated development traps. The most effective initiatives follow a multi-dimensional approach to development, tackling several challenges at once. The BELLA Programme and the European Union-Brazil Partnership for Scientific and Technological Cooperation not only build LAC's productive or social inclusiveness capacities through digital tools but also allow countries to close the gap between their priorities and international matters (BELLA, 2019). Triangular co-operation initiatives, such as the Environmental Technology Centre in Peru, illustrate how new tools can help build capacities to face development challenges (GIZ, 2014).
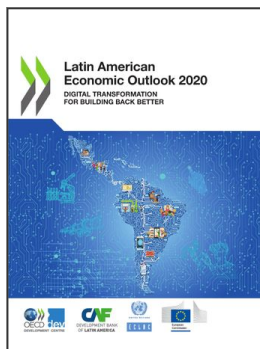
Regional integration can also help realise LAC's digital potential. A regional digital market could advance development by helping countries enhance communication infrastructure and expand trade, severely affected by the coronavirus (Covid-19) crisis. LAC's digital regulatory frameworks and regional and sub-regional co-operation efforts are often not harmonised. Regional co-operation initiatives, such as the ECLAC Digital Agenda for Latin America and the Caribbean 2020 (eLAC2020), could prove useful for multiple stakeholders and countries to articulate frameworks and levels of digital development, exchange experiences and set up policy dialogues (ECLAC, 2018). In addition to boosting LAC's digital development, it could help align national strategies with international standards and promote the region's voice on international platforms, allowing LAC countries to participate on an equal footing. There are good examples from other regions and interregional partnerships. The European Union's digital strategy provides a useful, concrete example of how to build an integrated regional platform and create common regulation for technological innovations while positioning itself as a key partner for co-operation, reinforcing its position in the multilateral system (European Commission, 2019).

International co-operation is essential to overcome challenges that transcend borders, as the taxation issues brought on by the digitalisation of the economy. On an equal footing basis, LAC countries should greatly benefit from further co-operation with other economies, and the LAC region has also an important role to play in reaching consensus solutions through effective multilateral co-operation.

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