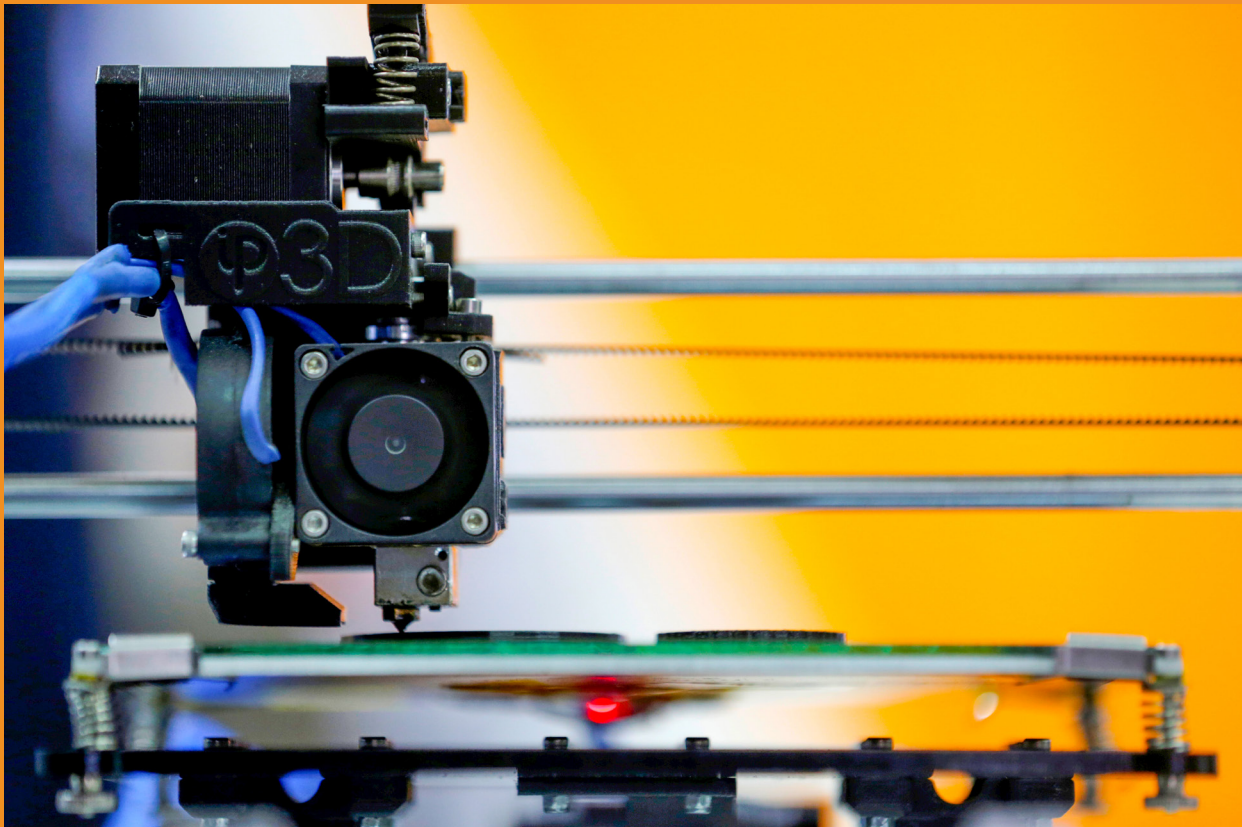


OPPORTUNITY #2:

Accelerating Digitalization and Innovation



Boosting training programs for new technologies – like the 3D printer on display here at the Colombia 4.0 tech conference – will help LAC take advantage of increasing digitalization and innovation. Image credit: REUTERS/Luisa Gonzalez

Introducing the Opportunity

A second major private-sector-led opportunity for accelerating growth in LAC is digitalization and innovation. In our interviews with IDB partners, senior executives in LAC—from Google and Millicom to Coca-Cola and Bayer—pointed to digitalization as a key lever for leapfrogging regional development across different economic sectors, through productivity and innovation gains.³⁰

LAC has made considerable progress in accelerating digitalization and amplifying its transformational impact. Internet penetration has never been higher, particularly among youth populations where nearly 90 percent of those 15–24 are online.³¹ By 2021, LAC was already the fastest-growing regional e-commerce market and the fastest growing for venture funding at a global scale.³² Six LAC countries were listed among the sixteen “digital sprinters”—a set of emerging markets with the potential to sprint toward economic development by pursuing ambitious digital transformation—for a 2020 Google report.³³ Two of them, Chile and Mexico, are at the forefront of global standard setting in digital-intensive trade negotiations and agreements, respectively through the Digital Economy Partnership Agreement (DEPA) and United States-Mexico-Canada Trade Agreement (USMCA).³⁴

Despite overall advances toward digitalization, however, LAC’s digital potential is still constrained by a lack of at least three enablers: **infrastructure, skills, and adoption (respectively, recommendations A, B, and C below)**.

The deployment and adoption of broadband in LAC over the last fifteen years have evolved at an accelerated pace, but half of the population remains disconnected. For example, while 87 percent of the region’s population lives within a fourth-generation (4G) signal range, actual usage and penetration remain at 37 percent.³⁵ As the ABD notes, “4G adoption, digital payment usage, and broadband quality remain much lower than they are in Organisation for Economic Co-operation and Development (OECD) countries.”³⁶ Improving **infrastructure (recommendation A below)** to close the digital-connectivity gap with OECD countries would create more than fifteen million jobs, boost regional GDP by 7.7 percent, and increase productivity by 6.3 percent.³⁷

In terms of **skills (recommendation B below)**, adults in LAC who do not pass the basic ICT test represent up to 75 percent in the countries measured, with the OECD average being 28 percent.³⁸ Moreover, only 5–15 percent of adults in most LAC countries possess medium or strong computer and problem-solving skills in technology-rich environments, compared with 29.7 percent in OECD countries.³⁹ Some companies, such as telecommunications giant Millicom, see digital skills as both a source of growth and an obstacle to overcome for the region.⁴⁰ Enhancing digital literacy among LAC populations would enable the region to better adapt to, compete in, and reap the benefits of an increasingly digital global labor market.⁴¹

30 Eleonora Rabinovich, interview by Pepe Zhang, *Experts of the Americas*, forthcoming; Karim Lesina, interview by Pepe Zhang, *Experts of the Americas*, forthcoming; Angela Zuluaga, interview by Pepe Zhang, *Experts of the Americas*, forthcoming; Helga Flores Trejo, interview by Pepe Zhang, *Experts of the Americas*, forthcoming.

31 “Number of Internet Users in Selected Latin American Countries as of January 2022,” Statista, August 12, 2022, <https://www.statista.com/statistics/186919/number-of-internet-users-in-latin-american-countries>; “The State of the World’s Children 2017: Children in a Digital World,” United Nations Children’s Fund, December 6, 2017, https://www.unicef.org/media/48581/file/SOWC_2017_ENG.pdf.

32 “The Rise of E-Commerce in Latin America,” Fidelity International, last visited August 1, 2022, [https://news.crunchbase.com/startups/latin-america-venture-growth-startups-2021-monthly-recap](https://www.fidelity.com.sg/articles/analysis-and-research/2021-03-22-the-rise-of-e-commerce-in-latin-america-1616387364368#:~:text=In%202020%2C%20Latin%20America%20became%20penetration%20levels%20remain%20low; Joanna Glasner, “Here’s What’s Driving Latin America’s Rank As The World’s Fastest-Growing Region For Venture Funding,” <i>Crunchbase News</i>, January 21, 2022, <a href=).

33 “The Digital Sprinters: Driving Growth in Emerging Markets,” Google, November 16, 2020, https://blog.google/documents/94/The_Digital_Sprinters_FINAL.pdf.

34 “DEPA: Digital Economy Partnership Agreement,” Under Secretariat for International Economic Relations, Republic of Chile, last visited August 1, 2022, [http://www.sice.oas.org/Trade/USMCA/English/19DigitalTrade.pdf](https://www.subrei.gob.cl/en/landings/depa; “Chapter 19: Digital Trade” in <i>United States-Mexico-Canada Free Trade Agreement (USMCA)</i>, <a href=).

35 World Bank, “Narrowing Latin America’s Digital Divide” (PowerPoint presentation, the Woodrow Wilson Center, May 10, 2021), https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/Franz%20Drees_%20Digital%20Inclusion%20May%202021_final.pptx.

36 “Policy Recommendations, IX Summit of the Americas,” 29.

37 Antonio García Zaballón, Enrique Iglesias Rodríguez, and Pau Puig Gabarró, “Informe anual del Índice de Desarrollo de la Banda Ancha,” Inter-American Development Bank, 2021, <https://publications.iadb.org/publications/spanish/document/Informe-anual-del-Indice-de-Desarrollo-de-la-Banda-Ancha-IDBA-2020-Brecha-digital-en-América-Latina-y-el-Caribe.pdf>.

38 Andreas Schleicher, “Skills Matter—Additional Results from the Survey of Adult Skills,” (slideshare presentation, Organisation for Economic Co-operation and Development, November 18, 2019), <https://www.slideshare.net/OECD/edu/skills-matter-additional-results-from-the-survey-of-adult-skills>.

39 According to the OECD, problem solving in technology-rich environments “involves using digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks.” See: PIAAC Expert Group on Problem Solving in Technology-Rich Environments, “PIAAC Problem Solving in Technology-Rich Environments: A Conceptual Framework,” *OECD Education Working Papers* 36 (2009), 15, <https://www.oecd-ilibrary.org/docserver/220262483674.pdf?expires=1674672681&id=id&accname=guest&checksum=C57C3516C8D6AB73C7D0A62992338D53>. *Latin American Economic Outlook 2020: Digital Transformation for Building Back Better* (Paris: OECD Publishing, September 24, 2020), chapter 3, <https://www.oecd-ilibrary.org/sites/e7a00fd6-en/index.html?itemId=/content/component/e7a00fd6-en>.

40 Karim Lesina, interview by Pepe Zhang, *Experts of the Americas*, forthcoming.

41 Stephanie Carretero Gomez, “Skills for Life: Digital Skills,” Inter-American Development Bank, 2021, <https://publications.iadb.org/publications/english/document/Skills-for-Life-Digital-Skills.pdf>.

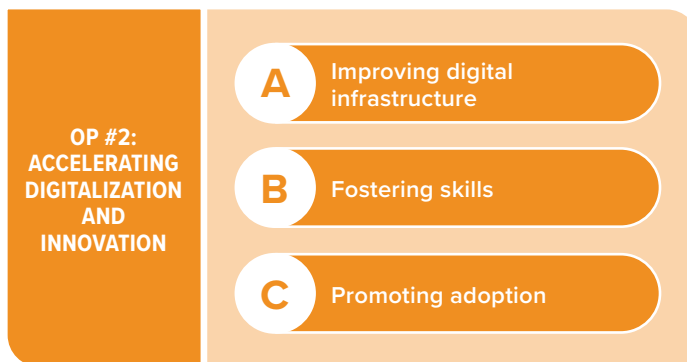
BOX 4: Additional Survey Insight: Optimists versus Pessimists

Breaking down the survey responses by regional optimism and pessimism reveals two important findings regarding skills. First, optimists see LAC’s labor force—an imperfect proxy for skills—in a much more positive light than do pessimists (see the second-from-right category in Box 3 Figure 5 a few pages ago), considering it the second-most-attractive factor for the region. Maintaining labor competitiveness will, therefore, be key to

ensuring such optimism. Second, optimists are less impressed by LAC’s attitude toward digitalization and innovation—an imperfect proxy for digital skills—than they are by its overall labor force. This suggests a distinction between the perceived level of skills and digital skills in the region, calling for greater development of digital skills.

Finally, lagging **digital adoption (recommendation C below)** by citizens, companies, and governments is holding the region back. According to a 2022 national survey on digital transformation in Peru, for example, only 27 percent of formal businesses had adopted at least one advanced technology.⁴² This coincided with our survey finding: of the survey respondents who saw LAC’s attitude toward digitalization and innovation as an attractive quality, 95 percent responded that greater access and capacity to adopt digital technologies is still needed to drive economic recovery. Consistent with this view, NTT Data, a global innovator in information technology (IT) and business services, noted education, healthcare, transportation, and public safety as sectors in which further digitalization could be critical for LAC’s development.⁴³

Recommendations for the Private Sector



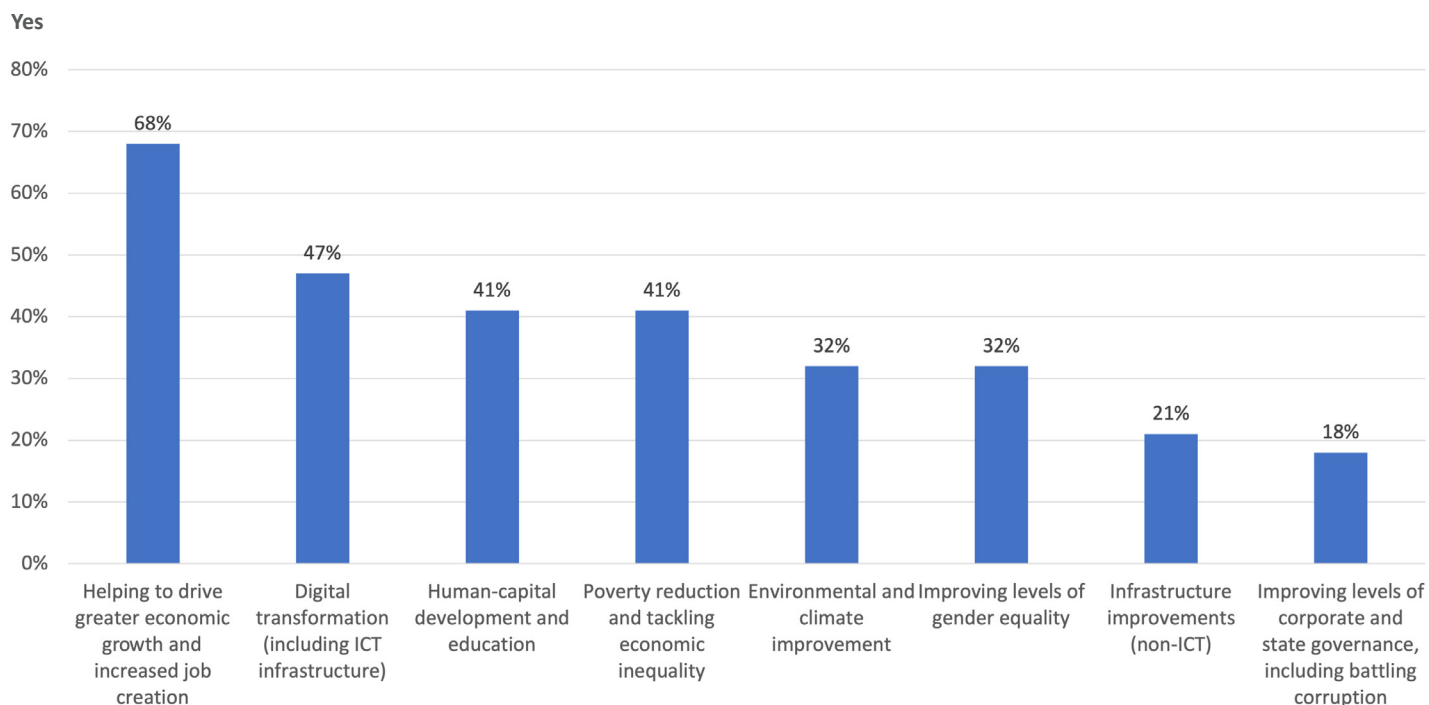
When asked about areas where they see themselves making an important social impact, 47 percent of surveyed services firms selected “digital transformation,” making it the second most impactful area only after “economic growth and job creation” (as shown below in Figure 7). Indeed, the private sector can unlock the three enablers (**infrastructure, skills, and adoption**), thus helping the region materialize its digital friendliness into better digital outcomes. In particular, firms in three services industries (financial, telecommunications, and information technology) consider digital transformation a vital part of their responsibility and contribution to society.

42 Rafael Novella and David Ross, “Talento Digital en el Perú 2022,” Es Hoy, Inter-American Development Bank, and MIDE Development, July 2022, <https://publications.iadb.org/publications/spanish/document/Talento-digital-en-el-Peru-2022-que-demanda-el-mercado-laboral-resultados-de-una-muestra-de-empresas-lideres.pdf>.

43 Alejandro Moran Marco, interview by Pepe Zhang, *Experts of the Americas*, forthcoming.

Figure 7. Service industry respondents’ views of their social impact.

Do you see your company making an important social impact in any of these areas?
(Service industries respondents only)



SOURCE: Atlantic Council survey 2022

A. IMPROVING DIGITAL INFRASTRUCTURE

The private sector can play a critical role in improving the connectivity and affordability of LAC’s **digital infrastructure**—not only operationally (as ICT product and service providers), but also financially (as investors).

Operationally, private-sector initiatives like Microsoft’s Airband Initiative or Telefonica’s Internet Para Todos partnership with IDB Invest can expand Internet access in underserved communities or areas otherwise unattractive due to limited economies of scale.⁴⁴ Through Internet Para Todos, for example, Telefonica shares its network with smaller telecommunications operators, reducing

overall entry barriers into remote areas.⁴⁵ Going forward, a national connectivity plan—including specific regulations and legislations on spectrum, infrastructure sharing, and universal service funds—will be central to enticing private-sector operators to permanently provide such coverage.⁴⁶ Beyond enhancing connectivity, these public-private-multilateral actions also generate positive externalities in numerous areas, including education, and have the potential to reduce inequality and trigger innovation, which this report will explore in detail in Opportunity #4.

Financially, unlike other types of infrastructure in LAC, much of the telecommunications sector has relied mostly on private investment, and will continue to do so.⁴⁷ The region needs \$68.5

44 “Broadband Connects Students, Teachers, and New Opportunities in Rural Colombia,” Microsoft, no date, <https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE4WZ5n>; “Internet Para Todos: Helping Latin America Log On,” Inter-American Development Bank, last visited January 25, 2022, <https://www.iadb.org/en/improvinglives/internet-para-todos-helping-latin-america-log>.

45 “Telefónica, Facebook, IDB Invest and CAF Create Internet para Todos Peru to Expand Internet Connectivity in Latin America,” IDB Invest News and Media, Inter-American Development Bank, February 25, 2019, <https://idbinvest.org/en/news-media/telefonica-facebook-idb-invest-and-caf-create-internet-para-todos-peru-expand-internet>.

46 “Policy Recommendations, IX Summit of the Americas,” 33, recommendation 11.

47 Angel Melguizo, Eduardo Salido, and Welby Leaman, “A Faster Path to Digital Transformation in Latin America,” *OECD Development Matters* (blog), March 2, 2022, <https://oecd-development-matters.org/2022/03/02/a-faster-path-to-digital-transformation-in-latin-america>.

billion in private-sector investments in mobile and fixed broadband to close the digital-connectivity gap with OECD members.⁴⁸ Per ABD recommendations, here again, an enabling environment characterized by “balanced and flexible regulatory frameworks that remove artificial barriers of the deployment and use of infrastructure” will help incentivize private operators and financiers.⁴⁹ Adding to this point, an empirical analysis covering fifteen LAC countries showed that a combination of good regulations and good institutions could have boosted overall investment in the region’s telecommunications sector by 13.5 percent between 2007 and 2017.⁵⁰

B. FOSTERING SKILLS

Skills are crucial to innovation, operation expansion, job creation, and improved productivity—and, thus, unleashing broader business and economic growth. Consequently, as technology and business models evolve, many private-sector actors have anchored **upskilling, reskilling, and workforce development** as core business principles.

To fill the growing demand for tech-skilled workers, Mercado Libre and Globant launched an accelerated two-year program that trains people to become certified developers.⁵¹ Program graduates are expected to quickly join companies like Mercado Libre. Similarly, in partnership with IDB and IDB Lab, Google.org is helping two thousand vulnerable, low-income youth in Brazil and Panama access meaningful employment opportunities in IT. Using a four-month training model that combines Google’s IT certification program, a soft-skills curriculum, and job-placement services, the program delivers lessons on technical support, customer service, and cybersecurity. Employer-led training in this mold would not only expand the talent pool of digitally-savvy future employees for hiring companies, but also offer a practical pathway to new professional opportunities for thousands in LAC.

MNCs are also well placed to increase skills competencies by cultivating a thriving environment for startups.⁵² For example, Google for Startups Accelerator Brazil has offered more than two hundred and fifty technology startups (six of which are now unicorns) knowledge sharing, training, and strategic support to scale up their businesses.⁵³ In empowering emerging businesses, MNCs can spur innovation, competition, and additional development gains. Consistent with ABD recommendations, governments should foster environments conducive to innovation through increased expenditure in public research and development.

C. PROMOTING ADOPTION

While improved **digital infrastructure and skills** will help drive adoption, the region needs to further broaden and deepen such **digital adoption** to make it truly transformational. The private sector should lead by example, internally and externally.

Internally, technology companies like NTT Data and Millicom drive adoption within their businesses, which employ more than thirty-two thousand people in LAC and are natural leaders in this space.⁵⁴ Even companies operating in traditionally less digitized sectors are undertaking ambitious internal digital transformation. Bayer, employing more than fourteen thousand people in LAC, is leveraging advances in digitalization to accelerate drug discovery and improve drug development.⁵⁵

Externally, MNCs can drive digital adoption through their influential role in their respective entrepreneurial ecosystems. To stimulate consumer adoption, the Coca-Cola Company piloted a digitally enabled business-to-consumer (B2C) Coca-Cola En Tu Hogar platform for home delivery.⁵⁶ Likewise, MNCs can also use business-to-business (B2B) channels to spur digital adoption among suppliers—for example, by sourcing from local providers of digital solutions. Such efforts can be further amplified to benefit smaller firms, if MNCs set, strengthen, or synergize their digital

48 “Closing Digital Gap Could Create up to 15 Million Jobs in Latin America and the Caribbean,” Inter-American Development Bank, press release, June 23, 2021, <https://www.iadb.org/en/news/closing-digital-gap-could-create-15-million-jobs-latin-america-and-caribbean>.

49 “Policy Recommendations, IX Summit of the Americas,” 33, recommendation 11.

50 Juan Jung and Ángel Melguizo, “Rules, Institutions, or Both? Estimating the Drivers of Telecommunication Investment in Latin America,” Social Science Research Network, October 2, 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3697301.

51 “Certified Tech Developer,” MercadoLibre, last visited January 25, 2023, <https://www.sustentabilidadmercadolibre.com/en/iniciativas/certified-tech-developer>.

52 Luis Felipe López-Calva, “Finding Unicorns: Investing in innovation-led growth in LAC,” *UNDP Latin America and the Caribbean* (blog), June 30, 2022, <https://www.undp.org/latin-america/blog/finding-unicorns-investing-innovation-led-growth-lac>.

53 “Latino Founders,” Google for Startups, last visited January 25, 2023, <https://startup.google.com/accelerator/latino-founders>; Isabela Fleischmann, “After Five Years in Brazil, Google for Startups Has 265 High-Growth Companies in Its Local Network,” *Latin America Business Stories*, August 23, 2021, <https://labsnews.com/en/articles/business/in-five-years-of-operation-in-brazil-google-for-startups-has-265-companies-in-its-network/>.

54 “About,” Millicom, last visited January 25, 2022, <https://www.millicom.com/our-company/about>. Millicom employs about twenty thousand people. See also: Karim Lesina, interview by Pepe Zhang, *Experts of the Americas*, forthcoming. NTT Data employs 12,338. See: Alejandro Moran Marco, interview by Pepe Zhang, *Experts of the Americas*, forthcoming.

55 “Bayer: An Internationally Operating Company,” Bayer, last visited January 25, 2023, <https://www.bayer.com/en/worldwide/bayer-worldwide>; “Digitalization in Drug Discovery,” Bayer, last visited January 25, 2023, <https://www.bayer.com/en/pharma/digitalization-drug-discovery>.

56 “How Coca-Cola Is Pivoting Its Innovation and Commercial Strategies in the COVID-19 Era,” Coca-Cola, June 18, 2020, <https://www.coca-colacompany.com/news/how-coca-cola-is-pivoting-its-innovation-and-commercial-strategies-in-the-covid-19-era>.

transformation strategies with governments, national development banks, and other institutions that support SME development.

Finally, private firms can work alongside governments and contribute know-how to accelerate a “whole-of-society” digitalization effort through regulatory enhancements. Coordinated public- and private-sector actions to adopt data-protection rules, technology-enabled fraud-prevention tools, regulatory frameworks, and privacy best practices will make digital transactions safer and more attractive for users.⁵⁷ To achieve this in a complex, fast-evolving technological environment, timely input of private companies from MNCs to SMEs—as producers and consumers of digital goods and services—is indispensable, as the ABD suggests.⁵⁸

Partnership Examples

The following partnerships serve as helpful models for how private firms can take action to foster digitalization—for example, through the **skills and adoption enablers (recommendations B and C)** above.

In one example, IDB joined forces with Fundación Universia—a platform promoted by Banco Santander—to encourage innovation and digital transformation in universities. When COVID-19 unexpectedly disrupted university classes and underscored the extent to which LAC universities lagged on digital transformation, IDB and Fundación Universia quickly launched a small, private online course on strategy and digital transformation for university deans. Leveraging resources from Banco Santander and Fundación Universia’s experience working in higher education, the partners designed and delivered three editions of the course and helped dozens of participants make sense of a complex array of ways to improve digitalization at their schools.

The power of multi-actor partnerships in accelerating innovation and digitalization can also be seen in fAir LAC—an IDB Group-led network that taps the resources and expertise of academia, government, civil society, industry, and the entrepreneurial sector to promote the ethical use of artificial intelligence (AI).⁵⁹ While AI opens promising economic opportunities, it risks provoking strong societal backlash and missed developmental opportunities if deployed with biases or poor regulations. Through fAir LAC, IDB and its partners have carried out diverse projects, including efforts to thoroughly map AI initiatives in LAC’s public sector, the joint development of the first Spanish-language massive open online course (MOOC) on the ethical use of AI, and the creation of a self-assessment tool and webinar series for entrepreneurs. fAir LAC partners include Agesic, Google, Intel, Instituto Laura Fresatto, Innpulsa, Microsoft, Northeastern University, Tecnológico de Monterrey, Telefónica, the OECD, and the World Economic Forum. Further, in collaboration with nine additional private-sector partners (Accenture, AWS, Globant, Google, Microsoft, NTT Data Foundation, ORACLE, Red Hat, and SONDA), fAirLAC also launched an open innovation challenge to identify AI solutions that reduce gender bias and discrimination in health, education, financial inclusion, and other areas.

Additional examples of how partnerships with the private sector can advance digitalization in LAC include the following.

- *Big Data Without Mysteries*, a MOOC jointly developed by Telefónica and IDB that highlights the importance of digitalization and has registered nearly eighty thousand participants since 2019.
- A corporate impact-venturing project, launched by IDB Lab and Wayra (part of Telefónica’s open innovation family), to scale social- and environmental-impact startups. Wayra contributed \$850,000 to the project and an additional \$1 million in expertise and in-kind support.
- IDB Group’s LACChain initiative, which taps the expertise and resources of more than fifty partners, including Alastria, Citigroup, ConsenSys, everis NTT Data, Garrigues, and Red Clara, to accelerate the development and deployment of blockchain solutions in LAC.

57 “Policy Recommendations, IX Summit of the Americas,” 37–38, recommendations 15 and 16.

58 Ibid., 28, recommendation 8.

59 “Gender and Artificial Intelligence Challenge,” Inter-American Development Bank, December 1, 2022, <https://convocatorias.iadb.org/en/bid-lab/gender-and-artificial-intelligence-challenge>.