

Digital Economy Strategy in Colombia: An Analysis and Recommendations

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Colombia faces significant political, social, and economic hurdles in building its digital economy, yet its progress toward developing a robust strategy deserves recognition. It has an opportunity to be a trailblazer and regional role model.

KEY TAKEAWAYS

- Colombia's unique context of natural resource dependency, internal conflict, human rights considerations, and recent admission to the OECD indicates the critical importance of a well-executed digital strategy for the future success of the country.
- Though Colombian policymakers have taken many promising steps toward planning a robust digital economy strategy, implementation remains a challenge.
- An analysis of the pillars of Colombia's digital economy—domestic innovation, digital trade, and digital security—shows it can be a leader in Latin America. It should keep prioritizing digitalization at the highest levels of government.

INTRODUCTION

Several simple statistics serve as proof of the unquestioned impact of the Internet and digitalization: Almost 60 percent of the world's population uses the Internet, with around 300 million new users coming online annually. On average, people spend six to seven hours a day on the Internet, incorporating it directly into their everyday lives.¹

Digital development is, therefore, crucial for countries looking to improve productivity, increase standards of living, and improve their global competitiveness. Internet access and digital connectivity offer considerable potential for economic development. However, though connectivity is a global phenomenon, its realization is highly uneven across national lines. While some nations accelerate innovation by providing connectivity at shocking speeds, other countries struggle to catch up. Today, the United States and China lead the way in digital innovation and digital market capitalization. Combined, these nations account for 90 percent of the market capitalization value of the 70 largest digital platforms, compared with Europe's 4 percent and Latin America's and Africa's combined 1 percent.²

Promisingly, future projections indicate greater parity in digital innovation, with an estimated 50 percent of Latin American gross domestic product (GDP) to be digitalized by 2022.³ The Colombian government has taken steps toward this objective, beginning in 2010 with the initiation of three digital development programs: Plan Vive Digital, Plan Vive Digital para la Gente, and Plan TIC. The latter laid out a goal of increasing connectivity throughout Colombia as part of a broader plan to use digital technologies to increase productivity, competition, and innovation, thereby strengthening Colombia's position in the contest for foreign investment and global economic opportunities. As of 2019, around 75.3 percent of Colombian citizens had access to the Internet, the majority of whom lived in urban centers.⁴ However, these plans have not resulted in immediate success or smooth implementation.

The digital economy brings a multitude of opportunities and challenges. It is crucial to analyze the size of this economy, evaluate best digital practices as countries develop different strategies, and understand and react appropriately to new metrics. Countless reports address the issues of digital innovation, digital trade, and digital security, but these topics are rarely considered in the same publication. The interrelated nature of these issues warrants a more holistic approach. This report offers a new perspective, one which combines quantitative data from global indices with a qualitative evaluation of Colombia's unique opportunities and challenges. This study delivers a comprehensive analysis of the impact and potential of information and communications technology (ICT) and the digital economy on the lives of citizens across discrete communities. The value of this report is not exclusive to Colombia; similar countries such as Bolivia, Ecuador, and Peru, which maintain resource-based economies, diverse populations, and isolated communities within complex geographies, can also benefit from this analysis.

GLOBAL, REGIONAL, AND LOCAL CONTEXTS FOR COLOMBIA'S DIGITAL ECONOMY STRATEGY

Latin America's Approach to Digital Strategy

Latin America, like other regions of the world, stands to benefit from a digital economy strategy that stimulates sustainable economic growth. However, despite the gains to be won from

bolstering its digital economy, the region as a whole has failed to achieve across varied indicators of success in connectivity, digital economy, and cybersecurity. Still, some countries and even multinational organizations, such as the Pacific Alliance (PA), stand out as leaders in developing comprehensive and effective digital economy strategies. While the region lags behind others in terms of developing an integrated and effective regional digital policy, what some of its member countries have done is promising, and points the way toward an emerging Latin American digital economy.

Several metrics underscore the overall weak digital position of Latin America relative to other regions. The Network Readiness Index (NRI) is a global benchmark frequently used to evaluate countries' ICT environments. Excluding the United States and Canada, the Americas do not impress under this index. While Chile earns the region's top rank of 42nd out of 121 economies, Latin America's three-largest economies—Brazil, Mexico, and Argentina—rank 59th, 57th, and 58th, respectively.⁵ In part, this underwhelming result is due to a lack of “preparedness for future technologies.” On this specific measure, these three countries rank 95th, 80th, and 103rd, respectively.⁶

The Global Cybersecurity Index (GCI) offers another illustration of the considerable reforms required in Latin America. This index considers not only a country's legal framework for cybersecurity but also its effort to build domestic capacity in defense against cybercrime.⁷ Out of 175 countries and territories considered (excluding the United States and Canada), Uruguay leads the Americas at the 51st position. Costa Rica assumes the median position among countries in the Americas at the 115th rank, meaning the region as a whole has a lower median position than any other region except Africa.⁸ Latin America's weak GCI scores are due in part to a lack of professional training in cybersecurity. Less than half of the region's national governments offer professional cybersecurity training.⁹

Latin America's Digital Economy Leaders and Stragglers

Clearly, Latin America needs to prioritize establishing the institutional and regulatory frameworks required to capture the advantages of the 21st century digital economy. When regional trends are disaggregated, however, some nations consistently lead in efforts to modernize their digital economy strategies and connect their populations. Meanwhile, others continually fall behind.

Chile is one such leader in the region across connectivity and cybersecurity metrics. As of 2016, 83 percent of Chileans were Internet users, according to the International Telecommunications Union (ITU). This was the highest percentage of the 17 Latin American countries reviewed in a report titled “Digital Trade in Latin America: Mapping Issues and Approaches.”¹⁰ Furthermore, Aguerre cited Greenleaf's review of data privacy laws, underscoring Chile's 1999 privacy law, later updated in 2012, which stands out as the first of its kind in the region.¹¹ Chile also recorded an average download speed of over 91 megabits per second (Mbps) in March of 2020, the fastest in the region.¹²

But where Chile has surged ahead, Bolivia has faltered. Only 40 percent of Bolivians were Internet users in 2016.¹³ Those who did have access to the Internet lacked protection and were likely frustrated by insufficient download speeds. Greenleaf does not identify any data privacy law active in Bolivia, and the country's average download speed was under 20 Mbps in March

2020, less than one-quarter that of Chile.¹⁴ Unfortunately, Bolivia is far from the only Latin American nation to trail in these metrics.

Latin America, like other regions of the world, stands to benefit from a digital economy strategy that stimulates sustainable economic growth.

The challenge facing Latin American nations in developing effective digital policy is significant. Nevertheless, multilateral organizations have made progress in the implementation of effective digital policy, offering individual nations a roadmap. The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) offers potential for multilateral organization via a collaborative vehicle to aid peer nations with their digital economy strategies. Chile, Mexico, and Peru are all members of the partnership. CPTPP includes liberalizing provisions for e-commerce, financial services, cross-border trade in services, and data flows.¹⁵ For its part, Mexico has joined the United States-Mexico-Canada Agreement (USMCA), which contains first-of-its-kind rules pertaining to digital trade and e-commerce.¹⁶ Regional cooperation has not been limited to digital trade liberalization. For instance, the Andean community recently released a joint policy for information security.¹⁷

Evaluated by the NRI or GCI, neither Latin America nor any of its component states have emerged as global leaders in terms of developing a digital economy strategy. Nevertheless, these metrics serve as helpful indicators of the disparities within the region. Chile's evident leadership in digital innovation, along with its status as a member of CPTPP, will render it a role model for crafting effective digital economy policy if other Latin American nations can be motivated to follow suit.

Regional Social Issues and Governance

A well-executed digital economy strategy offers opportunities to mitigate and improve inequalities and social divides in Latin America. Unfortunately, the region still possesses stark inequalities and divides along class, race, and urban-rural lines. Connectivity and digitalization bring opportunities to Latin America that can advance provision of public services, increase transparency, and improve citizen welfare overall. Labor, education, and health care are the three areas of Latin American policy that could most benefit from increased connectivity and digitalization.

Economic Informality, Labor, and Education

Latin America is known for high rates of informal employment across the region. With roughly 55 percent of Latin America's population employed in the informal sector, many citizens of the region work as street vendors, construction workers, day laborers, or other roles outside of the rules and legislation of the formal economy. Most informal workers do not have "safety nets" like employees of the formal sector do. As informal labor often correlates with high rates of poverty, employees in informal sectors face numerous challenges to improving their economic status. Under these conditions, digitalization offers significant benefits, and some notable challenges, to the informal and formal labor force in Latin America.

Digital financial services represent one of the most concrete benefits of Latin America's digital economy. Financial inclusion is a significant issue for vulnerable populations, including women, the elderly, Indigenous Peoples, and refugees. Decades of currency instability and financial

institution collapses have left many Latin Americans wary of traditional bank services, while others lack the resources or education to navigate complex and unclear banking procedures. Just 54 percent of adults in Latin America have access to a financial account, according to the World Bank's Global Findex 2017.¹⁸ Rather than dealing with the stress and bother of having to keep track of cash payments, digital financial services allow individuals to manage their own finances through a bank, mobile app, or other digital means.

In addition to a high number of informal workers, Latin America has a large body of workers underemployed in highly repetitive or manual tasks. These repetitive, task-based jobs are at the highest risk of obsolescence to the coming wave of digital automation and computer-based processes.¹⁹ For this reason, preparing Latin America's labor force to meet the demands of the future job market is paramount, and such a task will rely heavily on a mix of public and private sector initiatives. Universities and private companies have already launched partnerships throughout the region to provide training and professional development for individuals, often with the intention of recruiting for in-country offices of multinational companies. For example, Intel provides STEM (science, technology, engineering, and mathematics) workshops and educational opportunities for Costa Rican students at the primary, secondary, and higher education levels.²⁰ Internet access and connectivity provide a similar opportunity to Latin America's citizens, who can use online courses and digital skills training to develop their professional horizons beyond opportunities that are at risk of obsolescence due to automation and digitization.

Only 45 percent of Latin America's population has access to services provided by digital connectivity.

Perhaps one of the most basic and useful benefits of increased connectivity for Latin Americans is access to information. Information in the hands of an individual user improves personal agency and social inclusion, and provides a window into opportunities beyond one's immediate surroundings. In more practical educational terms, digital access to information provides students and teachers a greater range of educational tools from more sources. However, one complicating factor in the proliferation of digital educational tools is the practical matter of consistent Internet connectivity and access to digital devices. As classrooms around the world have progressed to rely on online educational tools such as BlackBoard, Canvas, and Google Classroom, many schools in Latin America remain far behind. The "digital divide" is even more pronounced when students are assigned to do schoolwork from home, as has been the case during the COVID-19 pandemic of 2020. Many homes, especially in rural areas, are simply not equipped with the proper technological equipment and reliable Internet access.²¹ Students without connectivity face dramatic barriers to both their ability to complete schoolwork and access necessary information and training.

Health Care

Latin American health care stands to benefit greatly from digital innovation and disruption, as the region is home to many public and private health care systems. Within public systems, patients benefit from the free or low-cost health care provided by government subsidies. However, these public health care systems are often bureaucratic, under-staffed, and under-resourced. Patient care and medical facilities are limited by low budgets and high demand. Digitalization offers incredible opportunities for Latin America's health care system under these conditions. Health care records can be digitized for both better record-keeping and patient

management of their own health care needs. Similarly, mobile applications and Internet portals provide opportunities for patients to manage their health online, obviating the need to meet with their health care provider in person. Reducing the burden on health care systems via digitalization would result in more efficient use of government funds for public health.

Online platforms provide additional telehealth benefits for localities with consistent and reliable Internet access, such that patients can receive physician advice and care through video or voice calls. This is significant under conditions of the COVID-19 crisis, during which Latin America's health care systems have been overwhelmed by patient needs, and many patients cannot easily access health care facilities due to lockdown.²² In response, many governments are releasing mobile applications for epidemiology, public health, and preventative health care.²³ For instance, Colombia's Ministry of Information Communication Technology (MinTIC) partnered with the Ministry of Health to develop and release the "CoronApp," which allows users to receive information about the pandemic, check their symptoms, and learn what public services offer treatment options.²⁴ Similar applications are available in countries throughout Latin America. In short, digitization and connectivity offer significant potential benefits for both public health management and provision of public health services in Latin America.

As the previous paragraphs illustrate, digital connectivity offers substantial opportunities to improve social welfare for Latin America's citizens.

Colombia's Context

Many of the social divides and inequalities recognized in other Latin American countries are present in Colombia, too. The nation rests at the center of a paradox: Though Colombia is one of the oldest democracies in the region, it witnessed the end of a 50-year-long internal conflict only 4 years ago. Adding to the complicated implementation of the Peace Agreement, Colombia has also witnessed the influx of a considerable refugee population—in 2019, Colombia reported 1.3 million Venezuelan migrants within its borders.²⁵

In 2016, Colombia entered a new era of its modern history when the government and the FARC (Revolutionary Armed Forces of Colombia) agreed to a peace deal. The intricate peace process following the agreement is a country-wide concern that envelops every sector, including the digital sector. MinTIC, for example, is recognized in Points 1, 2, and 6 of the Peace Agreement. These points bind MinTIC to support the Integral Rural Reform by providing faster and more accessible Internet to support political participation and the implementation of the Peace Agreement.²⁶ ICT actually facilitated much of the peace deal, and engaged populations beyond the government. For example, several communities produced their own websites and social media accounts to help disseminate information about their memories and experiences, such as the initiative *Asociación de Cabildos, Indígenas del Norte de Cauca* led by the tribe Nasa Paez.²⁷

In the years since the Peace Agreement, Colombia has reported more than 1,000 human rights defenders injured or killed, making it the most dangerous place in the world for human rights advocates.²⁸ The majority of the assaults in Colombia are concentrated in rural areas, where access to the Internet and basic digital services is unreliable or nonexistent. Better ICT connectivity would improve the safety of human rights defenders, especially in remote areas. If rural areas were better connected to information and institutions, more timely response could improve what is currently a grave situation. As Amnesty International has noted, receiving

immediate knowledge about assaults against human rights defenders and certain human rights violations is crucial for proper response and better advocacy for defenders.²⁹

In addition to protecting Colombians vulnerable to human rights violations, connectivity and technology can also help address the ongoing Venezuelan migrant crisis. Migrants of the 21st century have different needs than those of past eras—they need a smartphone and access to the Internet. As recent research and interviews with Venezuelan migrants show, smartphones are often as important as food or water, as they provide a connection to family and facilitate interaction with host governments. They also help extensively with trip planning, finding employment or shelter, managing money, connecting with nearby communities and organizations, and accessing educational or language resources.³⁰ These tools also support communication between migrants themselves, potentially saving lives and money. ICT becomes even more important in the next stage of migration—integration in other countries, as migrants can use digital tools to engage with their new society through social, economic, and political activities online. On the whole, Colombia could benefit from integrating more ICT services in its response to the Venezuelan migrant crisis, because digital services facilitate inclusion of migrants in society and ease their integration, which decreases the social and economic burden the migrant crisis represents for the state.

THREE KEY PILLARS FOR COLOMBIA'S DIGITAL ECONOMY STRATEGY

Colombia has a long history of developing digital policies; however, it has often struggled historically to move beyond the planning stage into the realization of policy. Economic development and domestic innovation, digital trade, and cybersecurity represent the three key pillars addressed within Colombia's ICT/digital economy strategy. The following sections elaborate on Colombia's plans for these three key components of its digital economy strategy, and comments on their effectiveness to date.

Pillar One: Economic Development and Domestic Innovation

At the advent of the digital boom, some expected digital technology to represent a panacea to the challenges of economic development. While applying digital technologies to social and economic challenges has proven more difficult than some originally expected—and while connectivity and digital technologies don't represent a "silver bullet"—they nonetheless are indispensable in helping close inequality gaps, achieving better living standards, and bolstering economic productivity. But government coordination is necessary for technology and digital tools to be more useful than divisive. In the case of Colombia, the challenge is to address both economic and social development because one without the other will not be successful.³¹

A disconnect between different Colombian government bodies and the government and citizens has decreased the effectiveness of the government's initiatives to digitalize the economy.

If continuously supported, Colombian citizens can benefit from connectivity and its related opportunities, Colombian businesses can benefit from access to global markets and more-sustainable practices, and the Colombian government itself can benefit from more efficient processes. Lastly, Colombian citizens can benefit from being more integrated, connected, and informed about politics, security, mobility, and the environment. Those are only a few of the benefits Colombia's government and its citizens can enjoy if ICT deployment is effectively

managed among different stakeholders. Additionally, while the Colombian government has done a laudable job with regard to ICT policy development, it needs to enhance communication channels with constituents in order to implement ICT policy more effectively. So far, the disconnect between different Colombian government bodies, in addition to between the government and citizens, has decreased the effectiveness of the government's initiatives to digitalize the economy.

Colombia's National Council for Economic and Social Policy, CONPES, has the highest mandate to make Colombia's plans for economic and social policies. CONPES develops documents for every aspect of development in Colombia, and provides an effective navigation tool for individual institutions and stakeholders to make action plans. Colombia's various governmental ministries (e.g., education, health, transportation, etc.) have also done a laudable job of making their sectoral development plans public, visible, and trackable online.

MinTIC is one of the most important players in the development of Colombia's digital ecosystem. Since 2010, it has created so-called sectoral four-year plans in coordination with the National Planning Department, with a specific focus on ICT development. Plan Vive Digital was the first such plan, which covered the years 2010 to 2014. Its major goals were to stimulate the common use of the Internet and create employment in ICT to reduce poverty and unemployment while increasing competitiveness. Overall, the program was partially effective. It was followed by Plan Vive Digital para la Gente 2014–2018. Its major goals aimed to shape Colombia as a global leader in underserved communities' use of smartphone applications, and to create a more transparent and efficient government through the use of digital tools.

Both plans placed a heavy emphasis on developing human capital (i.e., the digital skills of Colombian citizens and workers) to bolster individual employability and broaden Colombia's economic and industrial competitiveness. While that was certainly positive, neither civil society organizations nor a wide spectrum of communities were included in the plans, which diminished the potential impact of the program's initiatives. Evidence of such omission was highlighted in the evaluation of the connectivity projects. The "top-down approach" confirmed the theory that innovation and development policies concentrated only on economic growth or employment leave large social dynamics out of the picture, which creates obstacles for the programs to be successful.

In the current plan, Plan TIC 2018–2022, Colombia's major ICT goals changed to feature the inclusion of all citizens. The goals include providing Internet access to 100 percent of the Colombian population, exercising social digital inclusion, and providing secure and responsible practices for the use of the Internet while digitizing the government's activities. Lastly, the government added digital transformation to its National Development Plans, underlining its importance to the development of the country overall.³²

To support inclusion and better connectivity, more actors participated in the decision-making process—including some small and medium enterprise (SME) associations and other government agencies such as SENA (National Training Service), DNP (National Planning Department), and INNPulsa. Nonetheless, the plan still lacks sufficient involvement from civil-society organizations (CSOs), universities, or other research centers, resulting in a disconnect between the plans of the government and its citizens.

The Colombian government has created many meaningful initiatives and tries to support the country on its way to a more productive and impactful digital economy. Yet, there is space for improvement. As noted, though well-planned, Colombia's digital development programs are often implemented without proper consideration of inclusiveness measures, which unfortunately decreases the programs' effectiveness from what might otherwise be the case.

MSMEs and Connectivity

Micro-, small-, and medium-sized enterprises (MSMEs) represent an important component of the Colombian economy. In 2018, the Colombian National Administrative Department of Statistics (DANE) reported that MSMEs accounted for 35 percent of GDP, 80 percent of formal employment, and 90 percent of the country's formal productive sector. Therefore, it is crucial to support those enterprises in their growth and prosperity. Productivity is the key to income growth, and ICT adoption is a significant contributor to productivity growth.³³ Yet, Colombian MSMEs lack the know-how, human capital, and financial capital to invest in digitizing their supply chains or operations, or even to initiate a basic online presence.

Increased digital access can produce significant economic and wealth impacts. One study found improved Internet access can lead to as much as a 25 percent increase in productivity, and could lift 160 million people out of poverty.³⁴ Likewise, several studies demonstrate evidence of a correlation between connectivity and GDP per capita. One such study finds that each increase of 1 Mbps translates into a 1.6 percent increase in GDP per capita.³⁵ Thus, connectivity is correlated with measures of a country's ability to innovate, and contrary to common beliefs, industrial digitization decreases unemployment.³⁶ These were some of the drivers for the Colombian government's focus on affordable and widespread Internet access in its current development plan. Yet one glaring measure that does not correlate with connectivity is the Gini Index. Thus, even though Colombia's GDP would grow as well as its performance on innovation indices, the positive outcomes would not affect the people who would benefit the most. Therefore, the Colombian government needs to apply more inclusive tools so that greater connectivity does not unwittingly widen the digital divide.

Inclusive measures will be especially necessary in the future, as Colombia is on track to have the third-largest population in Latin America to have adopted smartphones by 2025.³⁷ Other variables such as the decrease in price for Internet subscriptions must continue for the Internet and its services to become accessible for everybody. So far, the Inter-American Development Bank (IADB) has reported that Colombians with the lowest-reported income have to spend more than 10 percent of their monthly salary for Internet subscriptions.³⁸ The cost of the Internet indeed creates a barrier for the Colombian population, and it is high even by Latin American standards—OECD found Internet costs are three times higher in Colombia than in Chile or Mexico.³⁹

Increased digital access can produce significant economic and wealth impacts, with each increase of 1 Mbps translating into a 1.6 percent increase in GDP per capita.

Lastly, accessibility to the Internet with functional speeds is crucial. While Colombia's mountainous geography understandably makes it impractical to bring fiber optic cable or 5G speeds to every household, the reliability of Internet connections in the rural areas of Colombia is

often so low that it negates the benefits the Internet can bring. Moreover, just 52 percent of Colombia's citizens had access to the Internet as of 2016, the majority of whom lived in urban centers.⁴⁰ In 2019, this number improved to 75.3 percent.⁴¹ Nonetheless, users and businesses in small cities and rural areas need Internet services to be viable, reliable, and useful in order to take full advantage of it.

In conclusion, the Colombian private sector faces several challenges such as access to steady and fast Internet as well as the availability of sufficient human ICT capital. All of those challenges are somewhat addressed by the government's sectoral plans, but though the plans are partially effective, this problem is just too big and complex to be fixed with a few programs. The legacy of disconnection between society and the government is too deep. Therefore, the argument presented here is that Colombia's government needs to incorporate more voices from the various private sector actors, and from CSOs, to address the issues more effectively.

Digital Government

Gobierno de Línea (digital government) is one of the tools the Colombian government has, at least initially, successfully deployed in its strategy to digitize communication channels with constituents. For example, the government established a web page that lists available services and continues to digitize services such as electronic licenses and registers for citizens. The Colombian government's online services perform comparably to those of many developed countries; only the effectiveness and usage of the services fall short.⁴² The technology to support digital government is in place in Colombia, but greater uptake and use are required. Additionally, the state must support the improvement of the traceability and transversality of the data handled between official entities, and avoid redundancies in procedures.

CSOs and business associations offer the Colombian government a key to effective digital engagement with citizens. These organizations can translate government policy into the indigenous languages of their community when Spanish is not the primary language, and highlight to their neighbors the opportunities offered through digital engagement with the Colombian state. Such engagement with CSOs is necessary for a broad public understanding of what the Internet can provide, and of how the Colombian government implements programs to improve the living standards of its citizens.

An effective digital strategy requires coordination and cooperation with all relevant stakeholders. This includes the private sector. For example, OECD's report "Broadband Policies for Latin America and the Caribbean" notes that even though MinTIC has increased its efforts to improve Internet coverage, the last-mile connection, which is so important for SMEs and municipalities, remains a challenge. Along these lines, OECD recommended that Colombia increase coverage obligations for its telecom providers, ideally achieving greater regional inclusion.⁴³ The OECD report also underscores the importance of ICT and connectivity to tackle the informality.

ICT can be a powerful enabler of Colombian economic growth, especially for MSMEs, and can play an important role in facilitating the digital delivery of government services. To reach its true potential, however, Colombia will need to design its digital economy strategies with a wider range of stakeholders and enablers in mind.

Pillar Two: Digital Trade

As laid out in the prior section, an effective digital strategy stands to grow Colombia's economy, increase equity, and set the country on a path to sustainable 21st-century development. The reforms undertaken to secure these gains cannot, however, ignore the economic and political forces beyond the country's borders. Digital trade is the natural extension of domestic digital development. This trade maximizes the benefits of the digital economy for firms and households by connecting each to the broadest possible range of global markets.

Comprehensive digital trade policies can integrate Colombia into the expanding global digital economy, delivering benefits across economic sectors and socioeconomic demographics for decades to come.

Colombian policymakers and regulators ought to define digital trade in the broadest possible terms. Digital trade encompasses the exchange of personal data across national borders for processing. It also includes e-commerce, electronic payments, and trade in digitally deliverable services (DDS) made possible by such transfers. Comprehensive digital trade reform and policies, including but not limited to these considerations, can integrate Colombia into the expanding global digital economy, delivering benefits across economic sectors and socioeconomic demographics for decades to come.

Colombia's lackluster economic development over the past 20 years underscores the importance of an ambitious digital development and digital trade policy. GDP growth has stalled in the country since its 2011 peak.⁴⁴ Additionally, Colombia faces a continued struggle to diversify and increase the value added of its exports. The digital economy presents to Colombia an opportunity for export diversification, both in value-added manufacturing and services. For instance, the digital economy has allowed for the reorganization of global value chains (GVCs).⁴⁵ As of 2016, 56 percent of global trade in goods and 73 percent of global trade in services were in intermediate form.⁴⁶ Developing countries with the fastest-growing rates of GVC participation have GDP per capita growth rates 2 percent above average.⁴⁷ Liberalizing the flow of data across borders can allow Colombia to participate in the provision of back-office tasks and other DDS.⁴⁸ DDS represent a disproportionately large share of Colombia's value added in exports, but have not grown significantly in the past 15 years as a portion of Colombian exports.⁴⁹ If Colombia can invest in digital infrastructure and provide sufficient human capital, Colombian value-added exports could rise, resulting in higher incomes and standards of living.

The following sections examine in further detail Colombia's policies toward trade in financial services, digital trade interoperability, and ICT tariffs.

Trade in Financial Services

Fintech offers entrepreneurs and policymakers alike an opportunity to expand financial service access to marginalized demographics.⁵⁰ Advancing technology allows such services to reach communities traditionally impenetrable due to geographic or economic isolation. As only one-third of Colombians have ever sent or received a digital payment, there is significant opportunity for Colombian economic growth should the nation foster fintech and associated services.⁵¹ Since scholars such as Aguerre have identified Latin America's lack of financial institutions as a cause

of the region's lagging e-commerce growth, the promotion of cross-border trade in financial services offers Colombia a significant opportunity to capitalize on its e-commerce potential.⁵²

Among the positive steps already taken by policymakers is Colombia's announced desire to join CPTPP. This is significant, as CPTPP clauses promote digital trade liberalization for member countries, offering a blueprint for Colombia and much of the world on this subject. Of significance, the cross-border trade in services provisions include the free flow of payments for services.⁵³ Chapter 11 covers trade in financial services and includes clauses allowing for the transfer and processing of financial data.⁵⁴ This provision makes possible the trade of digital payment services among CPTPP members. As Colombia is not a party to CPTPP, the treaty's provisions are not yet Colombian commitments. Nevertheless, Colombia's public desire to join the treaty underscores the vision of Colombian policymakers for a liberalized digital trade policy that encompasses financial services and e-commerce. Furthermore, the Pacific Alliance, of which Colombia is a member, has incorporated numerous CPTPP provisions.⁵⁵

Despite the hope for liberalized financial services trade spurred by policymakers' desire to join CPTPP, Colombia has failed to promote such trade up to the present day. The country's General Agreement on Trade in Services (GATS) commitments illustrate this fact. In Colombia's first schedule of GATS commitments, released in 1994, the country exempted itself from commitments on cross-border trade in financial services, an exemption that has yet to be reversed.⁵⁶ A 2016 OECD study of Colombia's financial services legal framework highlights that only resident financial institutions are authorized to provide investment services domestically.⁵⁷

The ramifications of such limitations on financial services trade weigh on the promotion of e-commerce and financial inclusion. In addition to constraining e-commerce activity, limitations on financial services trade constrain efforts to achieve last-mile financial connectivity by reducing the number of service providers accessible to traditionally isolated populations. This consequence runs directly counter to the Colombian government's policy efforts to connect vulnerable populations to government subsidies through mobile applications.⁵⁸ Liberalization of financial services offers the opportunity to harness digital connectivity in connecting traditionally isolated households with loans, savings accounts, and digital payments, as well as connecting firms with access to digital financial services.

Interoperability in Digital Policy

Interoperability is the capacity of one jurisdiction's infrastructure and regulatory processes to operate efficiently with those of other jurisdictions. This quality is critical to promoting the digital exchanges requisite in digital content, financial services, and e-commerce trade, among other exchanges.

Colombia has succeeded, to an extent, in promoting interoperability. Beginning in 2012, Colombia executed its advanced wireless services and 2.6 GHz 4G auction, mandating that buyers adhere to international spectrum usage trends.⁵⁹ In this case, adherence to international usage trends is critical to the efficient transfer of data across national boundaries, whether between firms, governments, consumers, family members, or any combination thereof.

Chapter 14 of CPTPP, covering e-commerce, prohibits data localization, a policy that severely limits interoperability.⁶⁰ Data localization requirements demand the domestic storage of personal data. These and other CPTPP clauses require signatories to remove barriers to interoperability,

better preparing their economies to participate in global digital exchanges. Colombia's desire to join CPTPP, therefore, again bodes well for the country's creation of a digital economy that is more integrated with those of global counterparts.

In a blow to interoperability, Colombia has established certain legal and regulatory requirements that must be met by foreign countries before firms in those nations may receive the personal data of Colombians.

Data localization measures are not stringent in Colombia at present, but interviews with stakeholders working in the region underscore that the topic is not settled in the eyes of businesses and related advocacy organizations.⁶¹ Data localization requirements disrupt GVCs, requiring firms to store and process certain data domestically. Such requirements raise compliance costs for domestic firms.⁶² Further, they can slow or disrupt entirely the domestic deployment of financial services and other traded goods and services by institutions abroad. In short, data localization can isolate the Colombian digital economy to the detriment of the country's economic stakeholders. While such stringent laws are not currently in place, their potential implementation would undoubtedly weaken investment in Colombia's digital economy.

In a blow to interoperability, Colombia has established certain legal and regulatory requirements that must be met by foreign countries before firms in those nations may receive the personal data of Colombian consumers, application users, and so on.⁶³ These are known as adequacy requirements. When foreign countries do not meet Colombian standards, firms must receive the consent of consumers before sending their information across borders to these countries.⁶⁴ Thus, adequacy requirements reduce the interoperability of a country's data flows. The limitation of efficient Colombian data transfers to only a portion of the globe prevents maximized integration of Colombian firms within GVCs, and impedes Colombian citizens from accessing the highest-quality goods and services abroad.

The protection of Colombians' personal data is a lofty goal the government is right to pursue, but the institutional framework of Colombian data protection needs to allow for effective digital trade around the globe. A better policy aimed at achieving this goal would be a "duty of care" standard. A duty of care standard holds companies that transfer data abroad accountable for the protection of that data, but does not depend on the laws of the country in which the receiving firm is located.

Tariffs on ICT Infrastructure

Customs reforms related to digital trade must define such trade as broadly as possible, encompassing not only the transfer of data across national boundaries but also trade in the infrastructure required to produce, process, and transfer this data. Connecting as many actors as possible to the Internet is imperative. In the face of the COVID-19 pandemic, it is clear that the capacity to participate in e-commerce activity is critical to the resilience of national and local economies. One-quarter of Latin Americans now buy goods and services online, with the number of Internet shoppers in the region growing by 20 million between 2014 and 2017.⁶⁵ Colombia has undertaken reforms to ensure it is not left behind in this growing digital economy, cutting the cost of ICT infrastructure to consumers and service providers.

In January 2020, Colombia's Commission for Communications Regulation (CRC) reduced tariff caps on such infrastructure through Resolution 5890.⁶⁶ Specifically, the Commission reduced tariff caps on electrical infrastructure when purchased by telecom providers.⁶⁷ CRC took this action in an effort to encourage telecom providers to increase connectivity through the expanded deployment of electrical infrastructure across the country.⁶⁸ This move is significant for the Colombian economy, particularly considering the positive correlation of broadband access with GDP growth, job growth, and household income.⁶⁹

Colombia also joined the Information Technology Agreement (ITA) in 2012, becoming the 74th nation to do so.⁷⁰ Under the ITA, members agree to eliminate tariffs on computers, monitors, set-top boxes, and more.⁷¹ By 2015, global trade in ITA-covered ICT goods reached \$1.7 trillion worldwide.⁷²

Despite the significant reform of Resolution 5890, and participation in the ITA, Colombia has come up short in reducing tariffs on inputs to ICT infrastructure not covered by the ITA. The results of this shortcoming may have significant economic impact. Scholars find a strong correlation between a country's Network Readiness Index (NRI) score, based in part on the level of ICT investment within the country, and its Global Competitiveness Index score.⁷³ This does not bode well for Colombian exporters, as the country has remained stagnant in its NRI ranking over the past several years.⁷⁴

Though CRC has recently made strides in reducing tariffs on electrical infrastructure when purchased by telecom providers, Colombia's connectivity is hampered by the consequences of prior tariff caps as well as tariffs that remain on goods needed at non-telecom firms. Non-telecom firms are still subject to tariff caps now at times 300 percent greater than telecom firms.⁷⁵ The result is reduced deployment and lower connectivity. A full one-third of the population lacked any form of Internet access as of 2018.⁷⁶ Those who did have access were hampered by unimpressive download speeds. In 2019, OECD identified Colombia as having the lowest fixed broadband and mobile penetration in the organization, posing a significant barrier to connecting firms and consumers across national borders.⁷⁷ A regulatory environment that reduces the cost of ICT infrastructure to some sectors but not all does not take full advantage of the opportunity to connect economic actors to the digital economy.

Other duties and taxes further limit Colombia's integration with the global digital economy. Imported handsets face a custom duty of 5 percent.⁷⁸ Furthermore, if handsets, imported or not, cost more than \$240, the country's standard 19 percent value-added tax (VAT) applies.⁷⁹ VAT exemption limits raise the cost of the most advanced handset technology for Colombian users. Further, the VAT exemption limit delays the adoption of the most advanced handsets, in turn slowing the availability of the most advanced mobile financial services, e-commerce platforms, and similar offerings for Colombian users. Moreover, import tariffs on handsets distort competition, passing along higher prices and lower-quality technology to users. As of late 2018, only 33 percent of Latin Americans owned Internet-connected smartphones.⁸⁰ Colombia should work to connect every economic actor to this key technology, while being mindful of important digital security ramifications of widespread Internet access.

Pillar Three: Digital Security

Cybersecurity, often referred to interchangeably as "digital security," is a dynamic, multidimensional element of any nation's digital economy strategy. By nature, it involves

stakeholders in national defense, national security, law enforcement, and private sector companies, as well as international Internet governance leaders. The individual (or business) is, of course, a key player as the end user of most ICT goods and services.

If Colombia wants to advance as a bastion of free trade and foreign investment, digital security issues must be at the top of the digital strategy agenda as connectivity rates increase domestically. While digital security and ICT governance are not yet at the top of MinTIC's priority list, the cybersecurity implications of new and emerging technologies will only grow as more Colombians come online. Colombia can advance its digital security initiatives through cyber-skills education at a national level, and continued cybersecurity collaboration at a regional and international level. Domestically, Colombia's digital security initiatives should also incorporate civil society perspectives to ensure engagement of all relevant stakeholders.

This section considers the state of digital security and extent of cybercrime in Colombia, examines key Colombian digital security policies, and offers several key takeaways to enhance Colombian digital security.

Digital Security and Cybercrime in Colombia

Cyberattacks in Colombia are on the rise as more devices and access points join networks in the country. Cybercrime in Colombia is primarily motivated by financial gain.⁸¹ Between 2018 and 2019, there was a 54 percent increase in cybercrime in Colombia, and the first quarter of 2020 indicated a continued increase.⁸² Nearly 90 percent of cyberattacks in Colombia are due to social engineering, wherein cyber criminals use human behavioral factors as a tool to increase the probability of a breach.⁸³ The most common forms of information system breaches in Colombia are phishing (42 percent), identity theft (28 percent), distribution of malware (14 percent), and payment-system fraud (16 percent).⁸⁴ A recent study shows that impersonation of websites to capture personal data and misuse or violation of personal data are cybercrimes showing the most growth in Colombia.⁸⁵

Ensuring capable cybersecurity will be vital if Colombia's digital economy is to flourish, and so it must be considered an essential component of Colombia's digital economy strategy.

While the government plays a key role in handling digital security initiatives, Colombian companies must also dedicate budget and personnel to managing digital security. The majority of large companies (70 percent) say their company is prepared to handle a digital security incident, whereas only 54 percent of small companies in Colombia say the same.⁸⁶ Medium-sized businesses claim only 48 percent readiness. The Colombian think tank TicTac estimates that 60 percent of SMEs in Colombia would not be able to sustain their business six months following a major cyberattack.⁸⁷ Additionally, TicTac's review of Colombian enterprises in 2020 shows that 65.5 percent have not implemented effective or appropriate measures to guarantee the security and safe handling of personal data.⁸⁸ Given that Colombia emphasizes economic development and foreign investment, private companies, as much as public sector entities, should be prepared for digital security threats. Dedicating personnel and financial resources toward cyber-readiness thus should not be overlooked by private companies.

Colombia's Plan TIC 2018–2022 outlines the actions MinTIC plans to take before 2022 to improve Colombia's digital security. MinTIC's primary goal is to ensure 90 percent of public

entities identify and evaluate security risks to their organization by that time.⁸⁹ Personal data protection, transparency, and access to public information are particular priorities.⁹⁰ MinTIC will also work with the Ministry of Defense to protect critical national infrastructure. MinTIC's digital security work is motivated by a desire to improve implementation of public service offerings, as well as to bring Colombia's digital security capacity and capability up to global standards. As with the rest of MinTIC's work, the overarching goal is to promote economic development and allow for full development of the Fourth Industrial Revolution within Colombia.⁹¹

Colombia's Digital Security Policies

With two iterations of its digital security policies, Colombia is one of the most advanced countries in the region in terms of cybersecurity. Colombia manages its own digital security policies through a series of CONPES public policies, as well as relevant laws and regulations in the legal system. This section offers a brief overview and analysis of CONPES 3701, 3854, and 3995, MinTIC's three primary plans for digital security.

CONPES 3701 (2011)—Cybersecurity and Cyber Defense

CONPES 3701 is Colombia's first official cybersecurity strategy, which identifies the Colombian system's weaknesses as well as regional and international precedents for effective management of threats to information systems. This CONPES document notes cyberattacks against Estonia and the United States, as well as the Mariposa Botnet, as particularly significant incidents spurring the push for development of Colombia's own cybersecurity strategy. It also highlights the 2011 attack by "hacktivist" Anonymous against several Colombian government websites. The 2007 Estonian attack drove several Colombian authorities to start the conversation about instituting Colombia's own national cybersecurity and cyber-defense policy. Following workshops with the Organization of American States' cybersecurity division, MinDefensa began management of Colombia's cybersecurity. Further, CONPES 3701 proposed the establishment of a cross-ministry advisory body for cybersecurity. This body also includes the director of ColCERT, the Colombian coordination response mechanism to cybersecurity threats, which this CONPES also created. Creating ColCERT, the Colombian Computer Emergency Response Team, was an important step toward regional and global collaboration in cybersecurity. As of the date of publication of CONPES 3701, 13 other Latin American countries had their own Computer Emergency Response Team (CERT) entities, out of the 55 countries worldwide that have CERTs. ColCERT is responsible not only for emergency response, but also training, support, information sharing, and development of Colombia's cybersecurity capacity. The creation of ColCERT, which falls under Colombia's Ministry of Defense, was a positive move toward enhancing Colombia's cyber-readiness, because government-established CERTs around the world work as a network to protect from cyberthreats. CONPES 3701 also outlines entities in the national police and military bodies that work to protect Colombia's citizens from cybersecurity threats.⁹²

CONPES 3854 (2016)—National Policy of Digital Security

CONPES 3854 notes that cybersecurity efforts in Colombia had previously focused on national defense, national security, and the fight against cybercrime. Institutionalization of these processes was the principal achievement since the release of CONPES 3701. However, given the importance of ICT systems for economic and social development, Colombia added risk management as part of its digital security activities under CONPES 3854, with the understanding that digital security risks affect socioeconomic development. The dramatic increase in use of ICT by Colombian citizens makes digital risk management necessary in order

to protect social and economic conditions in a more connected world. Following OECD guidelines, cyber defense and cybercrime are defined as technical problems, whereas risk management is a social and economic problem.⁹³ CONPES 3854 outlines five fundamental principles and five strategic dimensions for digital risk management, per OECD guidelines. In addition to the principles of collaboration and training, CONPES 3854 is notable for its inclusion of shared responsibility and human rights, including freedom of expression and protection of intellectual property. Further, the policy highlights that limiting cybersecurity management to defense sectors reduces the ability to effectively detect and manage risks.⁹⁴ Despite the advances of CONPES 3854, Colombia has not participated in international digital security agreements, nor does it have an effective national mechanism to coordinate digital security collaboration in-country.⁹⁵

CONPES 3995 (2020)—National Policy of Digital Security and Trust

CONPES 3995, released in July 2020, lays out a framework to strengthen digital trust and improve digital security so Colombia is better prepared for the emerging technologies that comprise the Fourth Industrial Revolution. External reports indicate that Colombia is in a “moderate to weak state” against the threat of cyberattacks, especially in advanced technology sectors.⁹⁶ The goal of this CONPES is to strengthen Colombia’s national governance framework to prepare, anticipate, and protect against cyberthreats. Presently, Colombia’s efforts to address cybersecurity policies are dispersed and duplicated across its government actors, weakening Colombia’s cybersecurity stance. This dispersion will be remedied by 2022 as part of this CONPES document.⁹⁷ This CONPES mentions that previous policies and strategies have focused on the national government, but more work is needed to strengthen digital trust for citizens and social leaders.⁹⁸ Moreover, CONPES 3995 remarks on the digital skills gap between men and women, and indicates that improving digital skills for women is an important step on the path to gender parity and economic inclusion. The digital security measures outlined in CONPES 3995 were initially recommended in CONPES 3975 (2019), the National Policy for Digital Transformation and Artificial Intelligence.⁹⁹ CONPES 3995 aims to strengthen Colombia’s digital security capacities and reduce vulnerabilities through strategies, work plans, and guides to improve digital security across public and private sector entities.

Evaluation of Colombia’s Digital Security

Despite the promising evolution of Colombia’s digital security policy, three core areas are missing at the national governance level: incorporation of the geopolitical framework, international cooperation, and human rights considerations. By nature, cyber- and Internet governance require collaboration with both neighboring states and international partners. There exists a significant opportunity for Colombia to lead on regional cyber governance, despite market and trade fragmentation in Latin America and the Caribbean. An August 2020 report from TicTac mentions that establishing a “security culture” would benefit Colombian entities and enterprises in their quest to establish information security practices, and it would also benefit the government to approach digitalization initiatives with a security culture mindset.¹⁰⁰

Colombia has an opportunity to be a leader in developing “best practices” for other countries in Latin America and the Caribbean seeking to implement their own digital economy strategies.

Colombia also needs to improve monitoring and management of cybersecurity. Colombia has planned and developed the right policies, but frameworks for implementing or managing the outcomes set forth in these policies are limited or nonexistent. For Colombia to move forward, government officials and policymakers should strategize realistic implementation of the policies they put in place through various CONPES and other relevant documents.

Digital Security Takeaways

Digital security is a critical pillar of digital strategy initiatives. It is not a matter of whether information systems will be attacked, but when.¹⁰¹ In its digital strategy initiatives, Colombia must not let digital security take a back seat to other important issues such as network connectivity and domestic innovation. While ICT and cyber governance are not currently urgent issues, the security implications of these technologies will only increase as more Colombians come online, and connectivity increases throughout the country. Colombia will struggle to attract the foreign investment it desires, especially in the tech sector, without demonstrating it can provide a robust digital security environment. If Colombia wants to be known as a digitally advanced country, then digital security issues must be at the top of the country’s digital economy strategy agenda.

POLICY RECOMMENDATIONS

Colombia should better organize and lead its digitalization efforts by including more stakeholders into decision-making processes in order to improve the effectiveness of its efforts.

- If the Colombian government includes stakeholders such as research centers, academia, private sector (MSMEs and international enterprises) actors, civil society organizations, and citizens themselves, it will achieve better engagement with its programs and initiatives, as these stakeholders will bridge the divide between government and citizens. So far, Colombia has increased the number of stakeholders to include ministries and some private sector representatives, but greater inclusion is required to achieve effective ICT and innovation policies.

Colombia should introduce specific policies to ensure digital development is more inclusive.

- This should include measures such as improved, clearer regulation of the price of the Internet in different parts of the country, and increased funds to support digital innovation in public services. Colombia should continue with projects designed to advance connectivity, such as Kioskos Digitales, and narrow down the number of projects that do not run impact analyses.

Colombia should improve coordination and communication with the local, regional, and central government agencies to provide its citizens and the private sector with coherent information about ICT regulations and opportunities.

- The Colombian government should narrow down the number of agencies that have a similar agenda in order to streamline policymaking and implementation; and it should

become more transparent and communicative. For example, the Colombian government should provide transversal and traceable data, open data sources, and open innovation hubs so regional and local governments have a chance to properly implement current policies, the private sector has clear guidelines on how to operate, and civil society organizations have the necessary information to engage more citizens in using digital services the government is already providing.

Colombia should liberalize trade in financial services and employ tools to deregulate fintech services.

- Colombia ought to remove its GATS exemptions on cross-border financial services trade and join CPTPP, without exemptions within Chapter 11. Further, Colombia's government should reform domestic financial services policy to reflect these changes. These reforms will spur access to financial services for Colombian users and firms. Further, by joining CPTPP, Colombian financial service providers will have access to new markets in which to provide their services.

Colombia should adopt an interoperable framework for data transfers, including a duty of care standard for data privacy. It should also reject data localization policies.

- These institutional reforms will provide domestic and foreign firms with confidence in Colombia's data transfer framework. A duty of care standard for data transfers would protect the personal data of Colombians and permit the integration of the Colombian economy into GVCs and markets spanning the globe. Colombia should also adopt CPTPP's rejection of data localization. While Colombia does not currently demand stringent data localization, there exists significant uncertainty surrounding the future of this policy as political leaders are replaced and leading interest groups rise and fall.

Colombia should continue to slash tariffs and VATs on ICT goods and expand the definition of such infrastructure and the importers to which these reductions apply.

- Colombia has recently made strides in reducing tariffs on electrical infrastructure when purchased by telecom providers. This important undertaking is required to connect Colombians to ICT. Colombia must, however, continue to reduce the costs of imported ICT infrastructure, defining these goods in even broader terms and reducing costs to all economic sectors.

Digital security is not part of the collective "digital conscience" in Colombia. As Colombia develops as a leader in both digital trade and development, it must further promote cyber issues and cyber skills in digital education initiatives.

- Generally speaking, Colombia does not emphasize best digital security practices within its population. 2020's CONPES 3995 is a step in the right direction. For Colombia to move forward in its work toward a cohesive digital economy, all stakeholders must be appropriately skilled in identifying and mitigating digital threats. This means educating students at secondary schools and higher education institutions, as well as the broader population, through targeted advertising campaigns and public service announcements.

Colombia needs to increase awareness of digital security as a state issue by increasing coordination across all relevant parties. This involves not only public and private entities, but also individual citizens.

- Colombia correctly identifies developing a digital economy strategy as a state issue, not just a government issue, in its development of various *Planes Digital* and subsequent CONPES public policies. However, digital security standards need to be concretely defined and prioritized not just within MinTIC or MinDefensa, but also through skill-building initiatives in the Ministry of Education, Ministry of Health, and other governmental bodies.

Colombia needs to participate in international fora and governance meetings for Internet and digital security issues, especially given its new status as an OECD country.

- The Internet may have been invented in the Global North, but the Global South now boasts a great majority of Internet users. Latin American countries need a larger presence in international discussions and fora addressing the development of the global digital economy. Colombia's comparative advantage in Internet governance discussions is its prioritization of ICT and digital issues, given the urgent human rights and development issues on the governmental agenda. In ICT governance discussions, Colombia can take lessons learned from other developed countries and apply them to its own developing digital economy. Colombia should prioritize participation in ICT governance discussions as often as possible.

CONCLUSION

Digital connectivity is strongly tied to economic development throughout the world. As Colombia strives for economic growth and foreign investment, it has correctly identified the need for increased Internet access and digital connectivity for citizens, businesses, and public entities. However, the implementation of digital economy strategy is not without its challenges in Colombia, including the obstacles of social inequality, adequate financial resources, geographic isolation, and in-country conflict. Recent years have seen a continued increase in Internet access for Colombian citizens, though Colombia lags behind in digital education and conscientization relative to its OECD counterparts. Colombia has put many digital development plans in place, though with varied rates of success. The same is true of Colombia's efforts to promote digital security. As more Colombians come online, the need for proper digital security protocols grows in importance, as does the need for state collaboration and cooperation with regional and international Internet and cyber-governance bodies. On a global level, digital trade could provide for economic integration as Colombia moves away from natural-resource dependency and expands its exports of valued-added goods and services.

Colombia has taken many of the right steps toward the realization of the three pillars of a modern digital economy strategy, but it faces obstacles of inadequate stakeholder buy-in and appropriate organizational capacity when it comes to policy implementation. Nevertheless, as the country faces significant political, social, and economic hurdles, its progress toward developing a robust strategy deserves recognition. Colombia should continue to make every effort to prioritize digital economy policies as it moves toward inclusive economic development, which will be especially important in the midst of economic recession alongside a global pandemic. It stands to gain the

status of a role model and a trailblazer in a region where most others struggle to adjust to the requirements of the knowledge and information economy. Colombia has an opportunity to be a leader of “best practices” for other countries in Latin America and the Caribbean that seek to develop and implement their own digital economy strategies.

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