

# THE DIGITAL SPRINTERS: THE CASE OF COLOMBIA

“ COLOMBIA COULD UNLOCK AN ADDITIONAL USD114 BILLION OF ECONOMIC IMPACT FOR 2030 THROUGH SUPPORTIVE POLICIES THAT ENABLE FULL UTILIZATION OF DIGITAL TECHNOLOGIES. ”

Globally, there has been a large increase in policy focus on the digital transformation of economy, society and government. This has led to significant uptakes in internet penetration (as evidenced by rising internet use). For example, from 2010 until 2018 Colombia has successfully brought an additional 27 percent of its population online.<sup>1</sup> Initiatives likely to have contributed to this include the Colombian government's national "Vive Digital" plan launched in 2010, which involved increasing national broadband connectivity through measures such as creating community internet centers or subsidies.<sup>2</sup> While the government awarded further spectrum bands in 2019 which will likely widen the coverage of 4G connectivity, especially in rural areas, more than providing access to the internet may likely be required going forward to fully leverage digital technologies for economic development.<sup>3</sup> Colombia could capture a potential annual (year-on-year) economic impact of up to **USD114 billion in 2030** through supportive policies that enable full utilization of digital technologies.<sup>4</sup> Given the

need to rebuild economies following the impact of COVID-19, the importance of capturing this potential digital dividend becomes ever more crucial. This research by economic strategy firm AlphaBeta (commissioned by Google) aims to understand how emerging economies can fully utilize digital technologies to achieve gains in economic development. The report focuses on 16 important emerging economies (which we dub the "Digital Sprinters"). These economies are Argentina, Brazil, Chile, Colombia, Egypt, Israel, Kenya, Mexico, Nigeria, Peru, Saudi Arabia, South Africa, Russia, Turkey, the United Arab Emirates and Ukraine. Together, these "Digital Sprinters" account for 13 percent of GDP, 16 percent of population and 19 percent of internet users globally.

Based on this research, a number of insights across the Digital Sprinters emerged, that are of relevance to Colombia and are summarized in this document. More details can be found in the full report.<sup>5</sup>

1. Based on World Bank, World Development Indicators.

2. Ministry of Information Technology and Communications (2015), "Colombia's Internet Advantage".

Available at: <https://www.mintic.gov.co/portal/inicial/Sala-de-Prensa/MinTIC-en-los-Medios/9243:Colombia-s-Internet-Advantage>

3. Telecomlead (2019), "Colombia spectrum auction winners are Claro and Tigo".

Available at: <https://www.telecomlead.com/latest-news/colombia-spectrum-auction-winners-are-claro-and-tigo-93499>

4. These estimates refer to the value generated by 39 technology applications across 10 sectors in 2030, quantified based on a "Full adoption" scenario (i.e. 100 percent adoption). This implies that these ten sectors will become "Digital leaders" with significant leap-frogging. A "Full adoption" scenario is unlikely to be realistic but useful as a thought experiment and to frame the total opportunity.

Estimates do not represent GDP or market size (revenue), but rather a combination of economic impacts such as productivity gains, increased revenues and cost savings. The relevant technology applications by sector and their sources of value (e.g. reduced wastage in production, enhanced consumer offerings) were identified based on a detailed review of the academic literature. The exact sizing methodology is unique to each of the 39 technology applications, but estimates use a series of international and country-specific case studies for each technology application to quantify estimates. Across the 39 estimations economic indicators sourced from international organizations such as the World Bank, International Labor Organization, OECD and national statistics offices were used.

Detailed data sources and estimation methodologies for each of the 39 applications are listed in the Appendix to the main report, linked here <https://alphabeta.com/our-research/the-digital-sprinters-capturing-a-us34-trillion-through-innovative-public-policy/>

5. This research was prepared by AlphaBeta for Google. All information in this summary and the main report was derived from AlphaBeta analysis using both proprietary and publicly available research, data and information. Google does not endorse any estimates.

In Colombia, as in most of the Digital Sprinters, fast growth in internet penetration has not translated into a faster pace of economic growth.

Historically, economic growth in Colombia has not kept pace with internet adoption. For example, since 2013, Colombia's internet population has grown by 6.1 percent annually, but real GDP has only increased by 2.7 percent annually.<sup>6</sup> Labor productivity has also only risen by 1.2 percent annually during this same period.

If digital technologies could be fully leveraged, it could transform economic development in Colombia.

The research identifies eight groups of digital technologies with significant potential to enhance economic development. In the hypothetical scenario where applications based on the eight digital technologies in ten sectors are fully adopted, the combined annual economic impact in Colombia could reach up to **USD 114 billion in 2030**, which is about 22 percent of the country's estimated GDP in 2030 (see Exhibit 1). About 44 percent of the **potential benefits of digital technologies accrue to traditional sectors, namely resources, infrastructure, and agriculture.**

12 policy levers linked to four strategic imperatives are crucial to go beyond digital penetration and capture the digital benefits linked to economic development.

A review of impactful, innovative and practical digital policies identified a number of important levers for capturing the digital-led economic development opportunity (see Exhibit 2).

It is unlikely that all 12 policy levers will be directly applicable to the Colombian context. For example, Colombia is already working extensively on some levers such as providing digital government services as part of its Digital Citizenship program.<sup>7</sup> However, a number of innovative policy levers could be considered.

#### POLICY LEVER 1:

##### DEVELOP DIGITAL TRANSFORMATION (INNOVATION) CENTERS AND MODEL (LEARNING) FACTORIES

Colombian government is already active in fostering healthy start-up and innovation ecosystems, for example offering incubator and accelerator programs, access to partners financing and co-working spaces as part of the "Cemprende" program.<sup>8</sup> Since 2019 the government in alliance with the local chambers of commerce have also implemented 18 Digital Transformation Centers across the country to support and engage MSMEs' digital transformation and MinTIC have planned to invest COP 8 billion (approximately USD 2.43 million) to finance up to 24 Centers for Business Digital Transformation (Centros de Transformación Digital Empresarial, CTDE) by end of 2020.<sup>9</sup> Also in 2019, WEF launched the Colombian chapter of the Center for the fourth Industrial Revolution.<sup>10</sup> Successfully implementing such initiatives requires strong industry engagement to ensure they see the benefits of the collaboration, a rigorous approach in identifying the key technologies and sectors to focus on, and must use clear frameworks governing the use of the intellectual property generated.

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#### POLICY LEVER 2:

##### CREATE ONE STOP-SHOPS FOR OPEN DATA

Open data—machine-readable data that is made available to others—has generated a great deal of excitement around the world for its potential to drive innovation through Research and Development (R&D) in the private and academic sectors. One of the key complexities of using existing open data is that it can be housed in multiple locations. Having a single portal to access information can play a crucial role in disseminating data. Colombia, for example, operates an open data resources portal ("Datos Abiertos Colombia") that provides access to an array of government data from over 1200 public agencies, developer support and special sub-portals for niche data from government entities.<sup>11</sup>

#### POLICY LEVER 3:

##### REPURPOSE EXISTING PUBLIC INFRASTRUCTURE TO PROVIDE DIGITAL ACCESS

While Colombia's ICT Plan, 'El Futuro Digital es de Todos' will go towards addressing remaining connectivity gaps (in particular the urban vs. rural gap) in the country,<sup>12</sup> public infrastructure can be repurposed to provide further access for underserved communities. For example, Biblionet is a national program which tackled Romania's "broadband divide" between urban and rural areas by providing hardware, software and IT support for 2280 public libraries which have well established infrastructure and geographical coverage.<sup>13</sup>

6. Based on World Bank, World Development Indicators.

7. ITU (2018), Digital Citizenship. Available at: <https://www.itu.int/net4/wsis/archive/stocktaking/Project/Details?projectId=1515553831>

8. INNpalsa Colombia (2019), Cemprende. Available at: <https://innpalsacolombia.com/cemprende/>

9. OECD (2019), OECD Reviews of Digital Transformation: Going Digital in Colombia.

Available at: <https://www.oecd-ilibrary.org/docserver/781185b1-en.pdf?expires=1597820132&id=id&accname=guest&checksum=87E4DAFC2F0972150158C179F68F6985>

10. WEF (2019), Centre for the Fourth Industrial Revolution. Available at: <https://www.weforum.org/centre-for-the-fourth-industrial-revolution/affiliate-centres>

11. See Datos Abiertos Colombia. Available at: <https://www.datos.gov.co/en/>

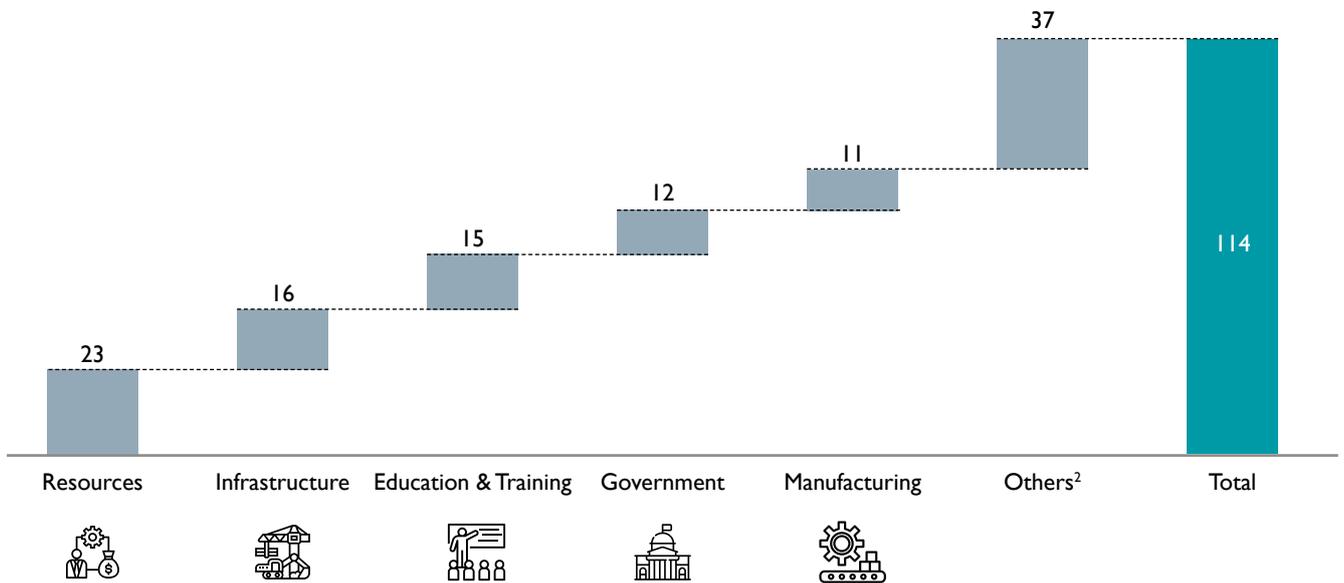
12. MinTIC (2020), El Gobierno Nacional presenta su Plan TIC 2018-2022: 'El Futuro Digital es de Todos' (Plazo para comentarios cerrado).

Available at: <https://mintic.gov.co/portall/inicio/Sala-de-Prensa/Noticias/101922:El-Gobierno-Nacional-presenta-su-Plan-TIC-2018-2022-El-Futuro-Digital-es-de-Todos-Plazo-para-comentarios-cerrado>

13. European Union (2018) "Biblionet", Shaping Europe's digital future – Projects. Available at: <https://ec.europa.eu/digital-single-market/en/content/biblionet>

## EXHIBIT 1: THE VALUE OF DIGITAL TECHNOLOGIES

## POTENTIAL ANNUAL ECONOMIC IMPACT IN THE FULL ADOPTION SCENARIO

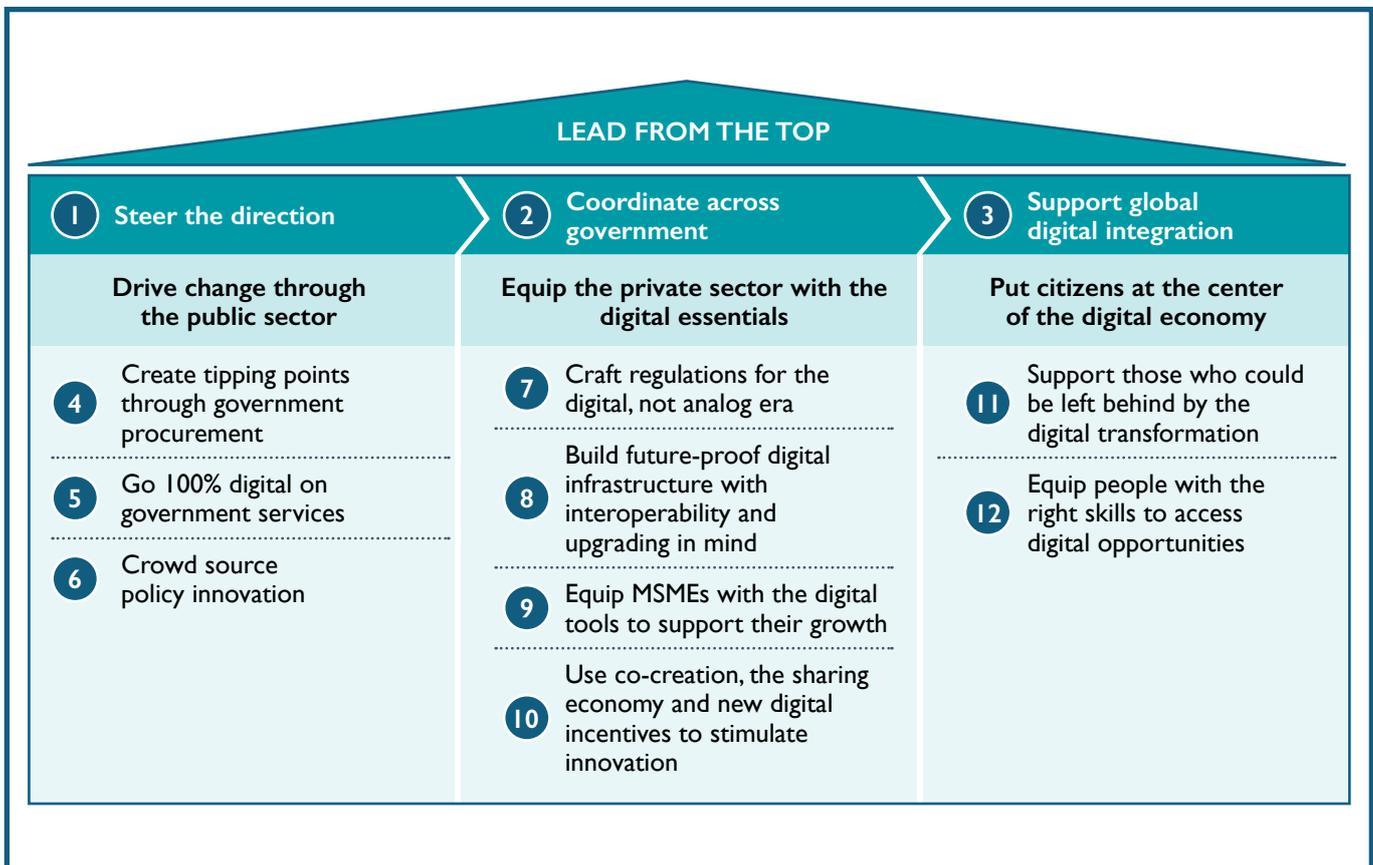
USD BILLION, 2030 (HIGH-END ESTIMATES)<sup>1</sup>

1. These estimates do not represent GDP or market size (revenue), but rather economic impact, including GDP increments, productivity gains, cost savings, time savings, increased revenues, increased wages and increased tax collection.

2. Others include Agriculture & Food; Consumer, Retail & Hospitality; Financial Services; Health, and Mobility.

SOURCE: AlphaBeta analysis

## EXHIBIT 2: POLICIES TO CAPTURE THE VALUE OF DIGITAL TECHNOLOGIES



It is unlikely that all 12 policy levers will be directly applicable to the Colombian context. For example, Colombia is already working extensively on some levers such as providing digital government services as part of its Digital Citizenship program.<sup>7</sup> However, a number of innovative policy levers could be considered.

#### **POLICY LEVEL 4:**

##### **ESTABLISH PLATFORMS TO INTERACT AND CROWD-SOURCE INNOVATION**

Innovations to improve government services can come from anyone and anywhere; governments should engage and empower citizens to participate in this process. For example, Moscow city's crowd sourcing platform "Active Citizen" uses blockchain technology to collect feedback from citizens and run online votes on questions related to urban planning in order to build trust amongst citizens and combat voter fraud.<sup>14</sup> Tam Development, a Saudi Arab-based startup, has proven that such crowd-sourced innovation can be scaled, co-creating 50 local and regional ground-up programs with 20 government entities in the Arab region.<sup>15</sup>

#### **POLICY LEVEL 7:**

##### **COOPERATE ON STANDARDS**

Standards are crucial to not only ensure some minimum safeguards for safety and security, but also to ease the ability to transact. Adopting international legal security standards assists governments in the development of their own security frameworks and provides comfort and reassurance to organizations. It also decreases the barriers for domestic firms to export, as their security standards are likely to already comply with international markets. For example, Australia's Information Security Registered Assessors Program (IRAP) and South Korea's Cloud Security Assurance Program (CiSAP) have set up security frameworks for the public cloud that follow international best practice frameworks.<sup>18</sup>

#### **POLICY LEVEL 5:**

##### **LEVERAGE CLOUD COMPUTING FOR EFFICIENCY GAINS ACROSS THE GOVERNMENT**

Cloud technology, in particular cloud storage and cloud computing power, is an enabling technology that could be utilized for different applications. Cloud computing technologies across government could lead to significant efficiency gains and cost savings for governments' ICT budgets. Cloud computing has also been leveraged in the planning and running of cities, often referred to as Smart Cities. For example, Rio de Janeiro has begun to implement smart solutions to improve urban planning and operations.<sup>16</sup>

#### **POLICY LEVEL 8:**

##### **LEVERAGE DIGITAL SERVICES FOR ACCESS TO ECONOMIC NECESSITIES**

Providing a tangible service (such as access to energy) that requires customers to sign up for and start using a digital platform (for example e-money, i.e. mobile money and prepaid cards) can demonstratively drive digital inclusion. Nigeria's pay-as-you-go solar scheme provides one such example. Another is from the Ivory Coast where in 2011 the Ministry of National and Technical Education (MENET) began collaborating with mobile money and digital payment providers to digitalize annual school registration fee payments.<sup>19</sup>

#### **POLICY LEVEL 6:**

##### **INCREASE CURRICULUM RESPONSIVENESS**

The inability of educational curriculums to keep pace with the evolving digital skill needs could be a key challenge in creating a skilled workforce. While Colombia has engaged in a number of efforts such as the APPS.co program, curriculum responsiveness still requires further strengthening. This requires ongoing dialogue between industry, government and education institutions. As an example, the Singapore government had set up a dedicated unit to reach out to firms and educate them about worker reskilling needs and opportunities under the government's skills training courses.<sup>17</sup>

#### **POLICY LEVEL 9:**

##### **INTRODUCE DIGITAL BOOTCAMPS**

Short-term, focused education courses, which are run by employers can be crucial to fill in necessary skill gaps. Where attempts at such bootcamp-based interventions can fall short is when national (or international) programs fail to focus on the local job market context and opportunities. Multinational tech companies can partner with governments and local industry. For example, In Indonesia, Google runs "Bangkit" – an academy developed in collaboration with local unicorns Go-Jek, Tokopedia and Traveloka to train and produce high-caliber digital talent for Indonesian technology companies and start-ups.<sup>20</sup>

14. Bloomberg (2017), "Can the Blockchain Tame Moscow's Wild Politics?" Available at: <https://www.bloomberg.com/news/articles/2017-12-22/moscow-s-active-citizen-app-goes-on-the-blockchain>

15. TAM, Available at: <https://tamhub.com/>

16. IDB (2018), Cloud Computing: Opportunities and Challenges for Sustainable Economic Development in Latin America and the Caribbean.

Available at <https://publications.iadb.org/en/cloud-computing-opportunities-and-challenges-sustainable-economic-development-latin-america-and>

17. Mokhtar (2018), "SkillsFuture Singapore to deepen skills of training and adult education providers", Today.

Available at: <https://www.todayonline.com/singapore/skillsfuture-singapore-deepen-skills-training-and-adult-education-providers>

18. BCG (2019), Ascent to the cloud – How six key APAC economies can lift-off. Available at: [http://image-src.bcg.com/Images/Ascent\\_to\\_the\\_Cloud\\_Report\\_21Oct\\_tcm9-231826.pdf](http://image-src.bcg.com/Images/Ascent_to_the_Cloud_Report_21Oct_tcm9-231826.pdf)

19. GSMA (2017), Embracing the Digital Revolution – Policies for Building the Digital Economy.

Available at: [https://www.gsma.com/publicpolicy/wp-content/uploads/2017/02/GSMA\\_DigitalTransformationReport2017\\_Web.pdf](https://www.gsma.com/publicpolicy/wp-content/uploads/2017/02/GSMA_DigitalTransformationReport2017_Web.pdf)

20. Google Indonesia (2020), "Bangkit", Events. Available at: <https://events.withgoogle.com/bangkit/>

FOR MORE DETAILED INFORMATION ON THE RESEARCH,  
PLEASE REFER TO THE FULL REPORT AT:

<https://alphabetabeta.com/our-research/the-digital-sprinters-capturing-a-us34-trillion-through-innovative-public-policy/>

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