THE DIGITAL SPRINTERS: THE CASE OF PERU

> PERU COULD UNLOCK AN ADDITIONAL USD76 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 Peru has already brought an additional 18 percent of its population online, increasing the share of the population using the internet from 34.7 percent to 52.5 percent.[1] Projects likely to have contributed to this include the Peruvian government's "National Fibre Optical Backbone Network" started in 2013 which involved partnerships with private operators to expand the geographical coverage of fiber optics infrastructure, complemented by a further 21 regional broadband projects.[2] While Peru still requires significant investments into broadband infrastructure (e.g. the Ministry of Transport and Communications has pointed out that approximately 14 thousand more antennas are needed to optimize telecommunications services in the country), going forward more than providing access to the internet may likely be required to fully leverage digital technologies for economic development.[3] Peru could capture a potential annual (year-on-year) economic impact of up to ***USD76 billion in 2030*** *through supportive policies that enable full utilization of digital technologies.[4] 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 take advantage of 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 Peru and are summarized in this document. More details can be found in the full report.[5]

1. Based on World Bank, World Development Indicators.
2. Oxford Business Group (2019), "Operators invest in broadband network infrastructure in Peru". Available at: https://oxfordbusinessgroup.com/analysis/system-reboot-national-broadband-network-undergoes-reassessment-while-private-operators-ramp
3. Gestion (2020), "MTC aclara que no existen antenas con tecnología 5G en el Perú e insta a no dejarse influenciar". Available at: https://gestion.pe/peru/coronavirus-peru-mtc-aclara-que-no-existen-antenas-con-tecnologia-5g-en-el-peru-e-insta-a-no-dejarse-influenciar-covid-19-nndc-noticia/
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 Peru, 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 Peru has not kept pace with internet adoption. For example, since 2013, Peru's internet population has grown by 7.6 percent annually, but real GDP has only increased by 3.2 percent annually.[6] Labor productivity has also only risen by 1.3 percent annually during this same period.

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

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 Peru could reach up to ***USD76 billion in 2030***, which is about 22 percent of the country's estimated GDP in 2030 (see Exhibit 1). About 55 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).

In 2020, the President created the National Digital Transformation System, approved by Emergency Decree No. 006-2020.[7] The System establishes a number of principles that are closely aligned with the levers outlined by the research: (i) to develop people-centred digital services, aligned with levers #3, #4 and #11; (ii) to cooperate and collaborate for digital transformation aligned with levers #2,#3 and #10, (iii) promote acquisitions in digital technologies, as outlined by levers #4 and #5; and (iv) to ensure inclusion in digital technologies, aligned with levers #11 and #12. It is therefore unlikely that all 12 policy levers will provide new insights for the digital transformation in Peru.

However, based on the sectors with the largest estimated digital economic potential for Peru in 2030 (i.e. resources, infrastructure and manufacturing), a number of innovative policy levers and best practice examples could be considered under the National Digital Transformation System.

POLICY LEVER A:

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.[8] 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.[9] Projects have included initiatives to improve livestock information in real-time, a mobile app to promote good agricultural practices, and digitizing government services (e.g. driving license). Peru has launched a similar effort in the Government and the Digital Transformation Laboratory which It is a co-creation space for academia, civil society, the public and private sectors, and citizens, to participate in the design, re-design and digitization of public services and the digital transformation of government.[10]

POLICY LEVER B:

BUILD SANDBOXES, NOT CASTLES

Regulatory sandboxes refer to a regulatory approach that allows companies to conduct time-bound testing of innovative products in the real world. Regulatory sandboxes are useful policy tools to understand the policy implications of introducing certain products while continuing to promote technological innovation.[11] From a private sector perspective, sandboxes reduce the costs of production and time-to-market. Russia has been a global leader with sandbox approaches in the financial sector (in particular on blockchain). Peru has taken steps in this direction under the current COVID-19 pandemic. The government has approved standards applicable to public entities in order to increase the rate at which technologies and electronic means to provide services can be deployed.[12, 13]

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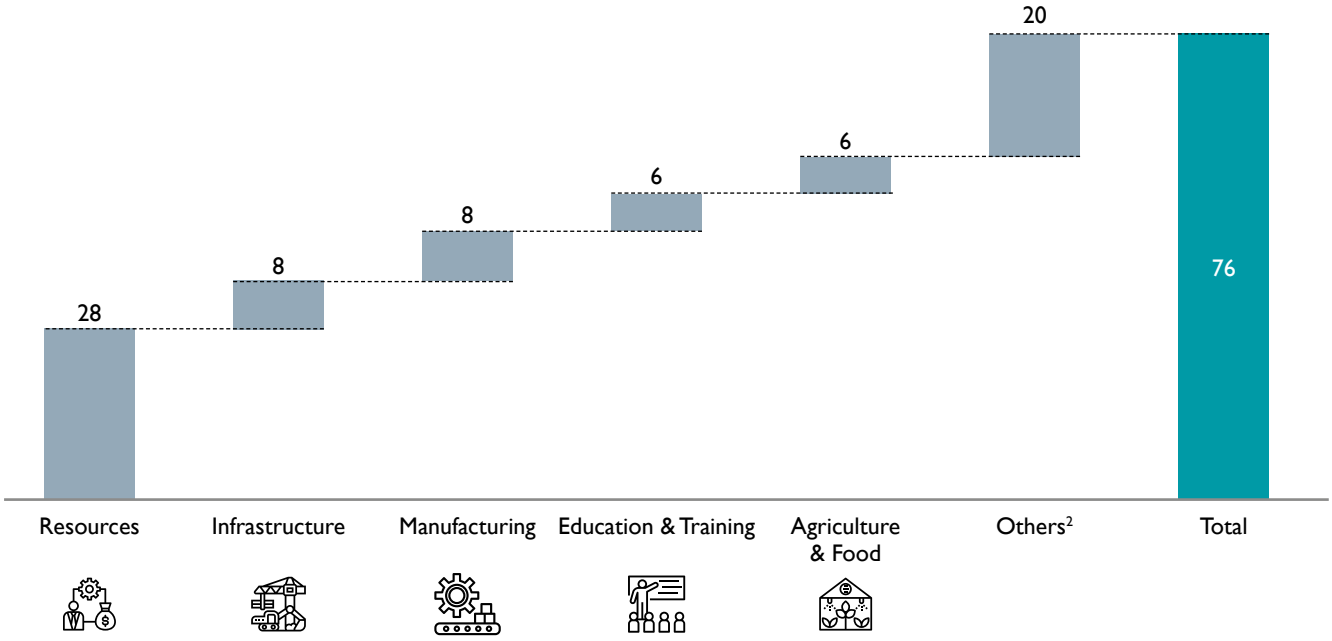
6. Based on World Bank, World Development Indicators.
7. El Peruano (2020), Decreto De Urgencia – No 006-2020.
Available at: https://busquedas.elperuano.pe/normaslegales/decreto-de-urgencia-que-crea-el-sistema-nacional-de-transfor-decreto-de-urgencia-n-006-2020-1844001-11/
8. Bloomberg (2017), "Can the 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
9. TAM, Available at: https://tamhub.com/
10. Presidencia del Consejo de Ministros (2019), Laboratorio de Gobierno y Transformación Digital.
Available at: https://www.gob.pe/8256-presidencia-del-consejo-de-ministros-laboratorio-de-gobierno-y-transformacion-digital
11. Financial Conduct Authority, "Regulatory Sandboxes." Available at: https://www.fca.org.uk/firms/innovation/regulatory-sandbox
12. El Peruano (2020), Decreto Legislativo – N° 1497.
Available at: https://busquedas.elperuano.pe/normaslegales/decreto-legislativo-que-establece-medidas-para-promover-y-fa-decreto-legislativo-n-1497-1866211-4/
13. Presidencia del Consejo de Ministros (2020), Resolución Ministerial N° 103-2020-PCM. Available at: https://www.gob.pe/institucion/pcm/normas-legales/554199-103-2020-pcm

EXHIBIT 1: THE VALUE OF DIGITAL TECHNOLOGIES

POTENTIAL ANNUAL ECONOMIC IMPACT IN THE FULL ADOPTION SCENARIO

USD BILLION, 2030 (HIGH-END ESTIMATES)[1]



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 Consumer, Retail & Hospitality; Financial Services; Government; Health, and Mobility.
SOURCE: AlphaBeta analysis

EXHIBIT 2: POLICIES TO CAPTURE THE VALUE OF DIGITAL TECHNOLOGIES

LEAD FROM THE TOP

1 Steer the direction	2 Coordinate across government	3 Support global digital integration
Drive change through the public sector	**Equip the private sector with the digital essentials**	**Put citizens at the center of the digital economy**
4 Create tipping points through government procurement	7 Craft regulations for the digital, not analog era	11 Support those who could be left behind by the digital transformation
5 Go 100% digital on government services	8 Build future-proof digital infrastructure with interoperability and upgrading in mind	12 Equip people with the right skills to access digital opportunities
6 Crowd source policy innovation	9 Equip MSMEs with the digital tools to support their growth	
	10 Use co-creation, the sharing economy and new digital incentives to stimulate innovation	

However, based on the sectors with the largest estimated digital economic potential for Peru in 2030 (i.e. resources, infrastructure and manufacturing), a number of innovative policy levers and best practice examples could be considered under the National Digital Transformation System.

POLICY LEVER C:

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

The Peruvian government taken a number of steps to promote innovation including: (i) Capital Fund for Innovative Enterprises (FCEI) to promote startups in various areas such as fintech, e-commerce, agriculture, education, among others; (ii) National Council for Science, Technology and Technological Innovation - CONCYTEC, to finance innovative projects in the fight against COVID-19;[14] and (iii) National Innovation Program for Competitiveness and Productivity (Innóvate Perú) of the Ministry of Production to develop and improve the medium and small companies' productivity and competitiveness.[15] Digital transformation (innovation) centers and model (learning) factories could make a potentially impactful addition to these, especially under effort number (iii). These refer to physical places where entrepreneurs, business owners, researchers and innovators can come to try their hands at new technologies and digital applications. Successfully implementing such initiatives requires strong industry engagement to ensure stakeholders see the benefits of the collaboration, adopting a rigorous approach to identifying the key technologies and sectors to focus (not neglecting traditional sectors such as textile manufacturing), and ensuring there are clear frameworks governing the use of the intellectual property generated. Examples of such initiatives include Chile's Digital Extension Centers and Germany's Mittelstand 4.0 Competence Centers.

POLICY LEVER D:

REPURPOSE EXISTING PUBLIC INFRASTRUCTURE TO PROVIDE DIGITAL ACCESS

Public infrastructure can be repurposed to provide access to the internet for underserved communities. This requires a network of public infrastructure (e.g. public buildings, transport, utilities or ICT infrastructure) that can be leveraged for people to access the internet. One example is Biblionet which is a national program that tackled Romania's "broadband divide" between urban and rural areas by providing hardware, software and IT support for 2280 public libraries with well-established infrastructure and geographical coverage.[16]

POLICY LEVER E:

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 not only assists governments in the development of their own security frameworks, but also provides comfort and reassurance to organizations. Further, it decreases the barriers for domestic firms to export their operations abroad as their security standards are likely to already comply with international markets. For example, Australia's Information Security Registered Assessors Program (IRAP), Singapore's Multi-Tier Cloud Security Standards (MTCS), and South Korea's Cloud Security Assurance Program (CiSAP) have set up security frameworks for the public cloud that follow international best practice frameworks such as the ISO 27000 series.[17]

POLICY LEVER F:

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. Peru's government, as an example, has used the cloud to increase citizen engagement by developing a cloud-native app that located the nearest polling station for voters. Some research has attributed a reduction of nearly 60 percent in voter absenteeism in 2016 compared to the 2011 presidential elections. Peru has already adopted optional Cloud Services Guidelines for public entities.[18]

POLICY LEVER G:

ENCOURAGE A SHARING ECONOMY FOR NON-SERVICES SECTORS

Sharing of fixed assets (e.g. equipment, warehouses) that reduces fixed costs by transforming them into ongoing variable costs is enabled by digital technologies such as the Internet of Things. However, much of the innovation to date has been in service sectors (e.g. car sharing, home sharing), with limited traction in traditional sectors such as manufacturing and agriculture. An example is Hello Tractor which works with smallholder farmers in Africa by aggregating smallholder farmers' requests for tractor service on behalf of tractor owners, while providing enhanced security through remote asset tracking and virtual monitoring.[19]

14. Presidencia del Consejo de Ministros (2020), Resolución De Presidencia - N° 039-2020-CONCYTEC-P.
Available at: https://busquedas.elperuano.pe/normaslegales/aprueban-transferencias-financieras-a-favor-de-entidades-pub-resolucion-n-039-2020-concytec-p-1866343-11/
15. Presidencia del Consejo de Ministros (2020), Resolución De Coordinacion Ejecutiva - N° 286-2020-Produce/InnovatePeru.
Available at: https://busquedas.elperuano.pe/normaslegales/aprueban-otorgamiento-de-subvenciones-a-favor-de-personas-na-resolucion-n-286-2020-produceinnovateperu-1867836-11/
16. European Union (2018) "Biblionet", Shaping Europe's digital future – Projects. Available at: https://ec.europa.eu/digital-single-market/en/content/biblionet
17. 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
18. Presidencia del Consejo Ministros (2018). Lineamientos para el Uso de Servicios en la Nube para entidades de la Administración Pública del Estado Peruano.
Available at: https://www.peru.gob.pe/normas/docs/Lineamientos_Nube.PDF
19. Hello Tractor, Available at: https://www.hellotractor.com/about-us/

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