

# Regional good practices

Accelerating innovation, entrepreneurship  
and digital transformation in  
the Americas region



**Regional good practices:  
Accelerating innovation,  
entrepreneurship and  
digital transformation in  
the Americas region**



## DISCLAIMER

*The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of ITU concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.*

*The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by ITU in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.*

*All reasonable precautions have been taken by ITU to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader.*

*The opinions, findings and conclusions expressed in this publication do not necessarily reflect the views of ITU or its membership.*

## ISBN

978-92-61-33811-4 (Electronic version)

978-92-61-33821-3 (EPUB version)

978-92-61-33831-2 (Mobi version)



**Please consider the environment before printing this report.**

© ITU 2021

Some rights reserved. This work is licensed to the public through a Creative Commons Attribution-Non-Commercial-Share Alike 3.0 IGO license (CC BY-NC-SA 3.0 IGO).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited. In any use of this work, there should be no suggestion that ITU endorse any specific organization, products or services. The unauthorized use of the ITU names or logos is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the International Telecommunication Union (ITU). ITU is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition". For more information, please visit <https://creativecommons.org/licenses/by-nc-sa/3.0/igo/>

# Acknowledgements

The *Regional good practices report: Accelerating innovation, entrepreneurship and digital transformation in the Americas region* has been prepared by the ITU Regional Office for the Americas Region and the Telecommunication Development Bureau (BDT) Digital Ecosystem Thematic Priority of the International Telecommunication Union (ITU).

ITU appreciates the cooperation of the companies, organizations and agencies that provided information about the good practices that are included in this report.

# Foreword

While there are signs that vaccination campaigns could bring a light of optimism to the fight against the COVID pandemic, one of the greatest lessons it has left is the need to accelerate efforts to bridge the digital divide.

If we want to live in a more equitable world, the differences in access and use of the resources available on the Internet must be reduced until they disappear. The impact that the pandemic has had on social and economic development, particularly in populations with fewer resources, needs a repair that requires full availability of information and communication technology resources for all.

The ability to innovate plays a very relevant role in the pursuit of development. In Latin America, we have seen how, in recent years, a growing number of companies using ICT have entered the select world of “unicorns” with a corporate valuation exceeding USD 1 000 million each. There are no excuses. These companies were born and grew up in the same area where great business ideas do not reach their full potential due to ignorance of the available resources.

This situation reflects something that ITU has been witnessing, there is a growing gap in digital innovation in many countries. The role of ICT-centric innovation ecosystems is critical to fostering digital transformation that leads to economic inclusion and sustainable growth.

Hence the importance of building an environment that, through the fluid interaction of stakeholders, enables innovation based on best practices. This is the way to make local development prosper in the countries and, consequently, in the entire region. I am confident that the resources and ideas shared in this report will inspire innovation stakeholders of the Americas region to advance their efforts to create integrated and prosperous digital innovation ecosystems.



A handwritten signature in black ink, consisting of a large, stylized 'D' followed by 'Bogdan-Martin'.

Doreen Bogdan-Martin  
Director, ITU Telecommunication Development Bureau

# Executive summary

In 2020, the COVID-19 pandemic highlighted the importance of digital technologies in enabling economic growth, entrepreneurship, digital inclusion and the capacity to respond quickly to new challenges in a time of unprecedented crisis. It has revealed the shortcomings of many systems, but also accelerated the pace of digital transformation of economies at large.

Many countries are struggling to close the digital divide and become innovation-driven economies. Despite investments in ICT ecosystems, the existing gap is growing, as digital ecosystem stakeholders are unable to adapt to fast changing technologies. The intertwined role of entrepreneurship, innovation and technology is fuelling a paradigm that requires new thinking and insights. It is imperative to understand this paradigm at the global and regional levels, and to have the capacity to act at the national level.

Digital technologies applied in areas of health, education, commerce and labour have had a leading role in the fight against COVID-19. In the Americas region, the use of teleworking solutions shot up by 324 per cent and e-commerce/delivery services grew by more than 150 per cent<sup>1</sup>. However, despite the promising boost in economy due to the digital technologies uptake, the overall impact in the post-pandemic era economy is still uncertain.

On top of this, connectivity alone gives access to the benefits created by those digital technologies and many countries in the region have taken efforts to improve access to telecommunication services. To help this path, ITU has launched the [Global Network Resiliency Platform](#) (#REG4COVID). This is where regulators, policy makers and other interested stakeholders can share innovative ways to harness the full power and potential of ICTs during this crisis and to prepare for the medium and long-term recovery.

The Americas region is facing different realities regarding the evolution of innovation performances. On one hand, countries that have been building a more robust innovation environment have stabilized or even performed above expectation despite the crisis. On the other hand, countries that do not have a healthy innovation ecosystem are struggling. In the aftermath, although some countries have relatively high rankings in certain aspects of innovation, entrepreneurship and technology, overall the region is currently performing below its potential.

ITU research on innovation shows that there is a growing digital innovation divide in many countries. ICT-centric innovation ecosystems have a critical role to play in fostering digital transformation that leads to economic inclusion, positive externalities and sustainable growth for communities, cities and countries. This ecosystem of entrepreneurs, entrepreneurial support organizations, academics, public and private sector stakeholders and financiers struggles to provide the necessary ingredients to fuel a positive digital transformation in society. Many practices in their ecosystems need renewal.

---

<sup>1</sup> ECLAC Special Series COVID-19 report

The Americas region faces some significant challenges: brain drain, insufficient resources, lack of adequate training and education in ICT-centric innovation and – in some cases– insufficient infrastructure. At the same time, the region has many good practices and examples tackling and overcoming those challenges that can be used to accelerate digital transformation and serve as a basis for better policies in countries where gaps have been identified. By replicating and amplifying good practices, countries can strengthen their digital innovation ecosystems and become global leaders. It is therefore imperative to share regional and global knowledge, expertise and experience.

The introduction of this report summarizes key findings and lays out the report objectives. This section also provides an overview of the role of innovation in sustainable economic and social development, background information about ITU work on digital innovation, the key challenges to innovation in the Americas region and steps that Member States can take to turn their countries into thriving digital innovation ecosystems. The growing digital innovation divide is introduced in this section as is the need to strengthen digital innovation ecosystems in the region.

Section 2 provides regional context by providing innovation policy monitors for the engines growth and digital transformation enablers. This section sets the stage for a comparative analysis among countries using existing indices and provides insights on the current status of the enabling environment for innovation capacity at the regional level.

Section 3 highlights good practices from the Americas region. It provides a snapshot of 15 practices, giving the reader an idea of whether or not a given practice is relevant or applicable to their own ecosystem challenges and goals. Case studies may demonstrate one, two or all three of the building blocks of ICT-centric innovation (guiding innovation dynamics, building innovation capacity and integrating ICT innovation into key sectors).

Appendix A explains the methodology and defines terms used in the report to help readers understand the research and analysis process. Understanding the research methodology is key to deciphering the relative rankings of countries' innovation capacity. This appendix also explains the key building blocks needed to accelerate transformation: innovation dynamics, innovation capacity and ICT innovation in key sectors.

Appendix B provides full samples case studies from the practices identified in the report. Each practice demonstrates how a barrier has been successfully addressed and its potential to be turned into a working good practice in any ecosystem.

# Table of contents

Acknowledgements .....	iii
Foreword .....	iv
Executive summary .....	v
List of tables and figures .....	viii
<b>1 Introduction.....</b>	<b>1</b>
<b>2 ICT-centric innovation: Americas region .....</b>	<b>5</b>
2.1 Engines of growth .....	5
2.2 ICT-centric innovation performance.....	7
2.3 ICT-centric policy and strategy.....	10
2.4 Enablers of digital transformation .....	25
<b>3 Good practices accelerating digital transformation .....</b>	<b>36</b>
3.1 Accelerate Okanagan (Canada).....	36
3.2 Ayitic Goes Global (Haiti).....	36
3.3 AZ TechCelerator (United States) .....	37
3.4 BrazilLAB (Brazil).....	37
3.5 Carao Ventures (Costa Rica) .....	38
3.6 CPqD (Brazil).....	38
3.7 Globant Ventures and Parabolt (Argentina).....	38
3.8 IdeaLab Jamaica (Jamaica).....	39
3.9 iNNpulsia Colombia (Colombia).....	39
3.10 NXTP (Argentina) .....	40
3.11 Startup Peru (Peru).....	40
3.12 TEN Habitat (Barbados).....	40
<b>Appendix A - Methodology .....</b>	<b>41</b>
A.1 Research goals and methods .....	41
A.2 Monitoring ICT-centric ecosystems .....	41
A.3 Monitoring the enablers of digital transformation .....	43
A.4 Monitoring the ecosystem maturity map .....	44
A.5 Monitoring good practices .....	46



<b>Appendix B - Full case study samples</b> .....	<b>51</b>
B.1 Accelerate Okanagan (Canada).....	51
B.2 Ayitic Goes Global (Haiti).....	53
B.3 AZ TechCelerator (United States).....	54
B.4 BrazilLAB (Brazil).....	56
B.5 Carao Ventures (Costa Rica).....	58
B.6 CPqD (Brazil).....	59
B.7 Globant Ventures and Parabolt (Argentina).....	61
B.8 IdeaLab (Jamaica).....	62
B.9 iNNPulsa Colombia (Colombia).....	64
B.10 NXTP (Argentina).....	66
B.11 Startup Peru (Peru).....	67
B.12 TEN Habitat (Barbados).....	69

## List of tables and figures

### Tables

Table 1: Key engine of growth indicators.....	5
Table 2: ICT-centric innovation performance.....	8
Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region.....	11
Table 4: Mapping capital and resource availability.....	30
Table 5: Mapping entrepreneurial culture and communities.....	32
Table 6: Mapping entrepreneurship-driven ICT-centric innovation policy.....	33

### Figures

Figure A.1: The three engines of growth.....	42
Figure A.2: The entrepreneurial lifecycle.....	45
Figure A.3: Colour-coded ecosystem maturity map for country A.....	45
Figure A.4: The good practice canvas.....	47
Figure B.1: Snapshot of the programme stack.....	52

# 1 Introduction

This report provides an overview of the comparative innovation capacity of the Americas region through ICT-centric innovation policy monitors and insights on how good practice can strengthen capacity to integrate ICT innovation into national development agendas.

Overall, the Americas region has shown divergent scenarios in reaching the full potential of the innovation ecosystem. Few countries have a traditionally strong innovation system, and most performances in one or all three engines of growth must improve for the region to become a real actor on the global stage. Canada and the United States of America perform well, while emerging economies such as Argentina, Brazil or Mexico are struggling on the technological, entrepreneurial or innovation ecosystems, and others such as Haiti need further support to turn the country into a thriving digital innovation ecosystem.

To understand these discrepancies, the report introduces two ICT centric innovation monitors: the three engines of growth monitor and the digital transformation enablers monitor.

The report notes that there are many good practices in the region fuelling the entrepreneurial journey. Each practice presented in the report was analysed based on its impact in a third ICT-centric innovation policy monitor, the ecosystem maturity map monitor. Each stakeholder group, at each of the five stages of the entrepreneurial journey, is assessed by its level of engagement to assess the maturity of the ecosystem. For example, the first stage of the journey for entrepreneurs is entrepreneurial interest, while for the public sector, it is having a vision and strategy. The monitor enables stakeholders to visualize the maturity of the ICT-centric innovation ecosystem and identify which practices to keep, which must be improved and which to replace.

Many of the traditional national innovation agencies responsible for guiding innovation dynamics can benefit from expanding their mandate to include building innovation capacity and integration of ICT innovation into key sectors; otherwise, they will be restricted to relying on other ecosystem stakeholders.

The importance and relevance of isolating good practices to replicate or scale up – as well as knowing which bad practices to replace – to create a thriving and mature ICT-centric ecosystem is supported throughout this report. However, understanding digital innovation and learning about the importance of good practices is only the first step in the innovation journey.

Vibrant ecosystems that are the envy of other countries require a culture where stakeholders organically leverage existing resources and continuously update their policies and programmes to remain competitive. Building an innovation culture at the country level is a journey. Ecosystems go through stages of development, and in these stages, every stakeholder has actions they must take and roles they must play.

To get a holistic assessment of a community or country's capacity to innovate with ICTs, further engagement is necessary, especially to be able to map its context. This report does not, for example, offer an analysis of the ecosystem maturity map monitor, nor does it offer country-level details on the ecosystem maturity map.

The ITU digital innovation framework can offer the tools first highlighted in the 2017 report on good practices<sup>1</sup> and updated in the 2020 *Bridging the Digital Innovation Divide: A toolkit for developing sustainable ICT-centric ecosystem projects*<sup>2</sup>. Publications such as this report enable ITU to share its expertise with ecosystem builders. Interested stakeholders can request technical assistance to develop a national profile (see South Africa's for [ICT-Centric Innovation Ecosystem Snapshot](#)<sup>3</sup> as an example) or map two of the policy monitors at the country level, either through holistic country review (see [Moldova's ICT-centric Innovation Ecosystem](#)<sup>4</sup>), or a Digital Innovation Profile (see [Montenegro: ICT Centric Innovation Ecosystem Snapshot](#)<sup>5</sup>).

Stakeholders can also engage in capacity-building courses, such as the Ecosystems 101 series<sup>6</sup>, where they receive training and certification on the ITU digital innovation framework. This work also builds from good practices and collaboration efforts presented at the Global Innovation Forum<sup>7</sup>, and in particular from the 2020 Regional Innovation Forum<sup>8</sup>. It also draws from many "power stories" from the winners of the ITU Innovation Challenges<sup>9</sup>.

It should be noted that some information provided may be outdated as practices and current data are difficult to come by through desktop research. Despite attempts to conduct surveys on good practices, response rates were insufficient to capture all relevant practices for the region. Additional qualitative and quantitative research could be conducted to complement the information in this report; however, this is out of the scope of this report.

This report is a starting point for regional stakeholders to understand the dynamics of ICT-centric innovation. For technical assistance from ITU in developing a thriving ICT-centric innovation ecosystem in your country, please contact [itubrasilia@itu.int](mailto:itubrasilia@itu.int).

## Background

In the digital age, technology use and innovation are ubiquitous. However, countries and regions with limited capabilities struggle and require support to be competitive in the global market. Entrepreneurs who find opportunities worth exploring must undertake a journey to turn these opportunities into businesses and deliver products and services to the market. A successful journey results in entrepreneurs delivering problem-solving innovations to their communities and in regional or global markets. But this success depends on many enabling building blocks: talent, infrastructure, capital, market, culture, policies and an overarching vision and strategy alignment that provides the key ingredients of robust and vibrant digital innovation ecosystems.

In many regions, innovators are still struggling. The ingredients needed to facilitate this journey are often missing. Without the required support, they are unable to compete on a regional scale, let alone globally, contributing to a growing digital divide both within and between countries.

---

<sup>1</sup> ITU's first toolkit on the subject, *Bridging the digital innovation divide: A toolkit for strengthening ICT centric ecosystems* is available at [https://www.itu.int/en/ITU-D/Innovation/Documents/Publications/Policy\\_Toolkit\\_-\\_Innovation\\_D012A0000D13301PDFE.pdf](https://www.itu.int/en/ITU-D/Innovation/Documents/Publications/Policy_Toolkit_-_Innovation_D012A0000D13301PDFE.pdf)

<sup>2</sup> The report is available at [https://www.itu.int/dms\\_pub/itu-d/opb/inno/D-INNO-TOOLKIT.2-2020-PDF-E.pdf](https://www.itu.int/dms_pub/itu-d/opb/inno/D-INNO-TOOLKIT.2-2020-PDF-E.pdf)

<sup>3</sup> <https://www.itu.int/en/ITU-D/Innovation/Documents/Publications/Brochure%E2%80%933DIP%20South%20Africa.pdf>

<sup>4</sup> <https://www.oecd-ilibrary.org/docserver/pub-810fd87d-en.pdf?expires=1588179691&id=id&accname=ocid54015561&checksum=F57F3808A2FB7FC11B5CC250C9E229F2>

<sup>5</sup> [https://www.itu.int/dms\\_pub/itu-d/opb/inno/D-INNO-PROFILE.MONTENEGRO-2020-PDF-E.pdf](https://www.itu.int/dms_pub/itu-d/opb/inno/D-INNO-PROFILE.MONTENEGRO-2020-PDF-E.pdf)

<sup>6</sup> <https://academy.itu.int/index.php/training-courses/full-catalogue/ecosystemes-de-linnovation-101-principes-fondamentaux-de-la-construction-decosystemes-concurrentiels>

<sup>7</sup> <https://www.itu.int/en/ITU-D/Innovation/Pages/2020-ITU-Global-Innovation-Forum.aspx>

<sup>8</sup> <https://app.swapcard.com/event/global-innovation-forum/planning/UGxhbm5pbmdfMjEyOTA2>

<sup>9</sup> <https://www.itu.int/en/ITU-D/Innovation/Pages/2020-ITU-Innovation-Challenges--Winning-Ideas%21.aspx>

To close this gap, it is necessary to provide stakeholders such as policy-makers, private sector executives and entrepreneurs with evidence-based guidance relevant to their regions, enabling them to design innovation policies and programmes for their organizations and countries.

Digital innovation is essential for a country to stay competitive in the global market. The ITU digital innovation ecosystems thematic priority identifies and amplifies relevant good practices to build countries' capabilities to become thriving members of the emerging knowledge economy.

## Objectives

ITU membership priorities (detailed below) make it important to provide evidence-based guidance for each region on measuring their innovation capacity and changing its direction.

This report provides these insights as well as good practices which can be modified and replicated by champions in their own communities to help mainstream vibrant digital innovation ecosystems conducive to an accelerated digital transformation of society.

This report builds on the first such regional report, *Accelerating digital transformation good practices for developing, driving and accelerating ICT-centric innovation ecosystems in Europe*, which was published in 2018<sup>10</sup>. It focused on good practices from the Europe region which can be examined, replicated and adapted to local contexts to develop thriving digital innovation ecosystems. Based on this previous report and enhancements to the ITU digital innovation framework, the *Regional good practices: Accelerating innovation, entrepreneurship and digital transformation in the Americas region* is part of a series that will focus on good practices from each ITU region. Sharing and implementing good practices is crucial to improving the performance and productivity of entrepreneurship-driven innovation.

This report offers an overview of the opportunities inherent in accelerating digital transformation. It provides an understanding of the critical enablers and linkages needed to foster ICT-centric innovation in the Americas region and examines good practices that can serve as a basis for strengthening digital innovation ecosystems. It also promotes regional and international cooperation, and partnerships in building ICT-centric innovation ecosystems.

## Mandate

With innovation increasingly prioritized by policy-makers, and due to the outcomes of the 2017 World Telecommunication Development Conference and the 2018 ITU Plenipotentiary Conference, the Telecommunication Development Bureau (BDT) has embraced innovation as one of the priorities of the ITU Development Sector (ITU-D).

At the ITU 2018 Plenipotentiary Conference (PP-18) in Dubai, ITU membership established the Connect 2030 Agenda for Global Telecommunication/ICT Development; a shared global vision for the sustainable development of the telecommunication/ICT sector. Through this agenda, technological advances contribute to accelerating the achievement of the Sustainable Development Goals (SDGs) by 2030. [Goal 4](#), in particular, is to "Enable innovation in

---

<sup>10</sup> <https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2018/WSIS/Accelerating%20Digital%20Transformation.pdf>

telecommunications/ICT in support of the digital transformation of society”<sup>11</sup>. Target 4.1 is for all countries to have policies and strategies that foster digital innovation by 2023.

The BDT objectives, defined at WTDC, include strengthening ITU-D membership capabilities to integrate ICT innovation into their national development agendas and promote a culture of innovation. This mandate was [further developed at WTDC-17](#), with an additional goal of developing “strategies to promote innovation initiatives, including through public, private and public-private partnerships”<sup>12</sup>. Relevant regional initiatives have been incorporated for each region.

In particular for the Americas region, it is within the framework of the [ITU Americas Regional Initiative 5](#), related to developing the digital economy, smart cities and the Internet of Things; and promoting innovation adopted by the World Telecommunication Development Conference 2017 (WTDC-17), Buenos Aires.

---

<sup>11</sup> <https://www.itu.int/en/mediacentre/backgrounders/Pages/connect-2030-agenda.aspx#:~:text=The%20'Connect%202030%20Agenda%20for>

<sup>12</sup> [https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC17/Documents/WTDC17\\_final\\_report\\_en.pdf](https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC17/Documents/WTDC17_final_report_en.pdf)

## 2 ICT-centric innovation: Americas region

The Americas region comprises 35 ITU Member States: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia (Plurinational State of), Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, United States of America, Uruguay, and Venezuela.

### 2.1 Engines of growth

The Americas region has the potential to develop and synchronize the innovation ecosystem, the entrepreneurial ecosystem and the technology ecosystem. However, without coordinated and comprehensive intervention to develop these three engines of growth, some countries are at risk of further widening the digital innovation divide.

International indices exist that measure aspects of an ICT-centric innovation ecosystem:

- the [ICT Development Index \(IDI\)](#), published by ITU<sup>13</sup>;
- the [Global Innovation Index](#)<sup>14</sup> published annually by Cornell and the World Intellectual Property Organization (WIPO);
- the [Global Competitiveness Index](#)<sup>15</sup> published annually by the World Economic Forum (WEF);
- the [Global Entrepreneurship Index](#)<sup>16</sup> published annually by the Global Entrepreneurship Development Institute.

While each index noted above is useful for measuring individual engines of growth and aspects of the engines of growth in an ICT-centric innovation ecosystem, they do not measure the ecosystem as a whole. Table 1 extrapolates data from these published indices in order to assess the digital innovation ecosystems in the Americas region.

**Table 1: Key engine of growth indicators**

Country	ITU ICT Development Index 2017 Rank	Global Innovation Index 2019 Rank	Global Competitiveness Index 2019 Rank	Global Entrepreneurship Index 2019 Rank
Antigua and Barbuda	76/176	-	-	-
Argentina	51/176	73/129	83/141	85/137
Bahamas	57/176	-	-	-
Barbados	34/176	-	77/141	55/137

<sup>13</sup> <https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis/methodology.aspx>

<sup>14</sup> <https://www.globalinnovationindex.org/Home>

<sup>15</sup> [http://www3.weforum.org/docs/WEF\\_TheGlobalCompetitivenessReport2019.pdf](http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf)

<sup>16</sup> <https://thegedi.org/global-entrepreneurship-and-development-index/>

Table 1: Key engine of growth indicators (continued)

Country	ITU ICT Development Index 2017 Rank	Global Innovation Index 2019 Rank	Global Competitiveness Index 2019 Rank	Global Entrepreneurship Index 2019 Rank
Belize	120/176	-	-	63/137
Bolivia (Plurinational State of)	112/176	110/129	107/141	97/137
Brazil	66/176	66/129	71/141	98/137
Canada	29/176	17/129	14/141	3/137
Chile	56/176	51/129	33/141	19/137
Colombia	84/176	67/129	57/141	47/137
Costa Rica	60/176	55/129	62/141	56/137
Cuba	137/176	-	-	-
Dominica	77/176	-	-	-
Dominican Rep.	106/176	87/129	78/141	82/137
Ecuador	97/176	99/129	90/141	96/137
El Salvador	119/176	108/129	103/141	114/137
Grenada	73/176	-	-	-
Guatemala	125/176	107/129	98/141	108/137
Guyana	124/176	-	-	116/137
Haiti	168/176	-	138/141	-
Honduras	129/176	104/129	101/141	107/137
Jamaica	98/176	81/129	80/141	89/137
Mexico	87/176	56/129	48/141	75/137
Nicaragua	130/176	120/129	109/141	122/137
Paraguay	94/176	75/129	66/141	70/137
Paraguay	113/176	95/129	97/141	106/137
Peru	96/176	69/129	65/141	67/137
Saint Kitts and Nevis	37/176	-	-	-
Saint Lucia	104/176	-	-	-
Suriname	82/176	-	-	-
Suriname	88/176	-	-	-
Trinidad and Tobago	68/176	91/129	79/141	81/137

**Table 1: Key engine of growth indicators (continued)**

Country	ITU ICT Development Index 2017 Rank	Global Innovation Index 2019 Rank	Global Competitiveness Index 2019 Rank	Global Entrepreneurship Index 2019 Rank
United States of America	16/176	3/129	2/141	1/137
Uruguay	42/176	62/129	54/141	51/137
Venezuela	86/176	-	133/141	126/137

Source: Key engine of growth indicators (adapted from ITU Development Index, Global Innovation Index, Global Competitiveness Index, Global Entrepreneurship Index)

Each index rankings are calculated to provide a snapshot assessment of the engines of growth:

- **ITU Development Index:** Countries that rank between 1 and 44 have a strong performance (green); 45 to 132 indicate insufficient performance (yellow); and 133 to 176 indicate poor performance (red).
- **Global Innovation Index:** Countries that rank between 1 and 32 have a strong performance (green); 33 to 96 indicate insufficient performance (yellow); and 97 to 129 indicate poor performance (red).
- **Global Competitiveness Index:** Countries that rank between 1 and 35 have a strong performance (green); 36 to 105 indicate insufficient performance (yellow); and 106 to 141 indicate poor performance (red).
- **Global Entrepreneurship Index:** Countries that rank between 1 and 34 have a strong performance (green); 35 to 102 indicate insufficient performance (yellow); and 103 to 137 indicate poor performance (red).

The published indices are used as a proxy for the engines of growth. The entrepreneurial ecosystem is represented by the Global Entrepreneurship Index, the technology ecosystem is represented by the ITU ICT Development Index, and the innovation ecosystem is represented by the Global Innovation Index.

Using the data presented above and the colour-coding scheme, the performance for the three engines of growth is presented in Table 2.

## 2.2 ICT-centric innovation performance

The information in Table 2 demonstrates the performance of the three engines of growth in countries in the Americas region:

- Green indicates strong performance and presence of good practices. The threshold was set for a country in the top quartile (top 25 per cent) based on the overall index ranking.
- Yellow indicates insufficient performance but presence of some good practices. The threshold was set as a country within the middle quartiles of the ranking (between 26 and 75 per cent).
- Red indicates poor performance with no or very few good practices. The threshold was set as a country falling within the bottom quartile (bottom 25 per cent).



Regional good practices: Accelerating innovation, entrepreneurship and digital transformation in the Americas region

Table 2 indicates the presence of some good practice, but constant investment, effort, and growth in innovation performance, such as that shown by Canada and the United States of America, is not reflected in many countries in the region, which have underperforming engines of growth and struggle with other ecosystem indices.

**Table 2: ICT-centric innovation performance**

Country	Income Level (Global Innovation Index 2019)	Entrepreneurial ecosystem performance (Global Entrepreneurship Index 2019)	Technology ecosystem performance (ITU Development Index 2017)	Innovation ecosystem performance (Global Competitiveness Index 2019)
Antigua and Barbuda	-	-	Yellow	-
Argentina	High income	Yellow		
Bahamas	-	-	Yellow	-
Barbados	-	Yellow	Green	-
Belize	-	Yellow		-
Bolivia (Plurinational State of)	Lower-middle income	Red	Yellow	Red
Brazil	Upper-Middle income	Green	Yellow	
Canada	High income	Green		
Chile	High income	Green	Yellow	
Colombia	Upper-Middle income	Yellow		
Costa Rica	Upper-middle income	Yellow		
Cuba	-	-	Red	-
Dominica	-	-	Yellow	-
Dominican Rep.	Upper-middle income	Yellow		
Ecuador	Upper-middle income	Yellow		Red

Table 2: ICT-centric innovation performance (continued)

Country	Income Level (Global Innovation Index 2019)	Entrepreneurial ecosystem performance (Global Entrepreneurship Index 2019)	Technology ecosystem performance (ITU Development Index 2017)	Innovation ecosystem performance (Global Competitiveness Index 2019)
El Salvador	Lower-middle income	Red	Yellow	Red
Grenada	-	-	Yellow	-
Guatemala	Upper-middle income	Red	Yellow	Red
Guyana	-	Red	Yellow	-
Haiti	-	-	Red	-
Honduras	Lower-middle income	Red	Yellow	Red
Jamaica	Upper-Middle income	Yellow		
Mexico	Upper-Middle income	Yellow		
Nicaragua	Lower-middle income	Red	Yellow	Red
Paraguay	High income	Yellow		
Paraguay	Upper-middle income	Red	Yellow	
Peru	Upper-middle income	Yellow		
Saint Kitts and Nevis	-	-	Green	-
Saint Lucia	-	-	Yellow	-
Suriname	-	-	Yellow	-
Suriname	-	-	Yellow	-
Trinidad and Tobago	High income	Yellow		

**Table 2: ICT-centric innovation performance (continued)**

Country	Income Level (Global Innovation Index 2019)	Entrepreneurial ecosystem performance (Global Entrepreneurship Index 2019)	Technology ecosystem performance (ITU Development Index 2017)	Innovation ecosystem performance (Global Competitiveness Index 2019)
United States of America	High income	Green		
Uruguay	High income	Yellow	Green	Yellow
Venezuela	-	Red	Yellow	-

Source: Adapted from ITU IDI, Global Innovation Index, Global Competitiveness Index, Global Entrepreneurship Index

### 2.3 ICT-centric policy and strategy

Having separate policies on innovation, entrepreneurship, and technology, while a start, is not enough to enable a digital innovation ecosystem. To enable the digital transformation of economies and ensure global competitiveness, policies need to simultaneously impact all three ecosystems. It is necessary to assess existing policy implementation and comprehensiveness for the three engines of growth, as well as how they complement one another to understand the degree to which a country has prioritized ICT-centric innovation, and how effectively it can enable the ICT-centric innovation ecosystem.

Policies are needed that specifically target ICT-centric innovation. For example, an entrepreneurship policy may enable start-ups and SMEs in specific sectors but overlook technology entrepreneurship; while a technology policy may focus solely on State technology development but fail to consider the role of start-ups in driving innovation.

Table 3 assesses existing ICT-centric innovation strategies and policies relevant to innovation, entrepreneurship, and entrepreneurial ecosystems based on desk research.

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Antigua and Barbuda	The Business Development Act, 2007 (No. 24 of 2007) <sup>17</sup>	x		
	Business Licence Act (of 1994) <sup>18</sup>	x		
	Business Registration Act (of 1981) <sup>19</sup>	x		
	The Telecommunication Act <sup>20</sup>		x	
	National Science Innovation Park <sup>21</sup>		x	
	Digital Assets Business Act (No. 16 of 2020) <sup>22</sup>			x
Argentina	Law for Entrepreneurship (Law n. 27,349, of 2016) <sup>23</sup>	x		
	Law of Small and Medium Entrepreneurship (n. 24,467, adopted 1995) <sup>24</sup>	x		
	National Plan for Digital Inclusion <sup>25</sup>		x	
	National Plan for Telecommunications and Connectivity <sup>26</sup>		x	
	Digital Agenda (Decree 996/2018) <sup>27</sup>		x	
	National Plan for Digital Transformation <sup>28</sup>			x

<sup>17</sup> <http://laws.gov.ag/wp-content/uploads/2019/02/a2007-24.pdf>

<sup>18</sup> <http://laws.gov.ag/wp-content/uploads/2018/08/a1994-17.pdf>

<sup>19</sup> <http://laws.gov.ag/wp-content/uploads/2018/08/cap-64.pdf>

<sup>20</sup> <http://laws.gov.ag/wp-content/uploads/2018/08/cap-423.pdf>

<sup>21</sup> <http://absip.gov.ag/>

<sup>22</sup> <http://laws.gov.ag/wp-content/uploads/2020/07/No.-16-of-2020-Digital-Assets-Business-Act-2020.pdf>

<sup>23</sup> <https://www.produccion.gob.ar/wp-content/uploads/2016/11/leydeemprededores/LeyEmprededores.pdf>

<sup>24</sup> <https://www.argentina.gob.ar/normativa/nacional/ley-24467-15932/actualizacion>

<sup>25</sup> <https://www.argentina.gob.ar/jefatura/innovacion-publica/inclusiondigital>

<sup>26</sup> <https://www.caserosada.gob.ar/informacion/que-estamos-diciendo/43857-plan-nacional-de-telecomunicaciones-y-conectividad> and [https://www.enacom.gob.ar/multimedia/normativas/2010/Decreto%201552\\_10.pdf](https://www.enacom.gob.ar/multimedia/normativas/2010/Decreto%201552_10.pdf)

<sup>27</sup> <http://servicios.infoleg.gob.ar/infolegInternet/anexos/315000-319999/318677/res138.pdf>

<sup>28</sup> <https://www.argentina.gob.ar/obras-publicas/secretaria-gestion/transformacion-digital>

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Bahamas	Business Licence Bill (of 2010) <sup>29</sup>	x		
	Micro, Small and Medium Enterprise Policy <sup>30</sup>	x		
	Government Statement on Small Business Development <sup>31</sup>	x		x
Barbados	Small Business Development Act (No. 23 of 1999, last update 2002) (Cap. 318C). <sup>32</sup>	x		
	National Policy Framework for the development of Micro, Small, and Medium-Sized Enterprises (2016) <sup>33</sup>	x		
	Ministry of Small Business, Entrepreneurship and Commerce - Working Guide To Starting A Small Business (MSBEC) <sup>34</sup>	x		
	National Information and Communication Technologies Plan <sup>35</sup>		x	
Belize	National Micro, Small and Medium Enterprise Policy for Belize (of 2008) <sup>36</sup>	x		
	Fiscal Incentives Act (n. 26, of 2019) <sup>37</sup>			x
	COVID-2019 MSME SUPPORT PROGRAM <sup>38</sup>			x
	Horizon 2030 - National Development Framework for Development of Belize <sup>39</sup>	x	x	x
	National Entrepreneurship Strategy <sup>40</sup>	x		

<sup>29</sup> <https://www.bahamas.gov.bs/wps/wcm/connect/2281cbff-606a-4926-96ae-50d603be553f/businesslicen cebill2010.pdf?MOD=AJPERES&CACHEID=2281cbff-606a-4926-96ae-50d603be553f>

<sup>30</sup> <http://www.accessaccelerator.org/wp-content/uploads/2019/01/SME-Policy.pdf>

<sup>31</sup> <https://www.bahamaslocal.com/newsitem/206861/Small%20Business%20Development%20Centre%20SBDC%20Confirmed%20Two%20New%20Hires.html>

<sup>32</sup> <https://commerce.gov.bb/wp-content/uploads/2020/07/Small-Business-Development-Act-Cap.-318C.pdf>

<sup>33</sup> <https://commerce.gov.bb/wp-content/uploads/2020/05/National-MSME-Policy-as-approved-by-Cabinet-and-laid-in-House-of-Parliament.pdf>

<sup>34</sup> <https://www.gov.bb/Ministries/small-business-commerce> and <https://commerce.gov.bb/wp-content/uploads/2020/07/Starting-a-Small-Business-2020.pdf>

<sup>35</sup> [https://www.blp.org.bb/wp-content/uploads/2017/07/bb\\_National ICT Strategic Plan\\_Final\\_2010.pdf](https://www.blp.org.bb/wp-content/uploads/2017/07/bb_National ICT Strategic Plan_Final_2010.pdf)

<sup>36</sup> [http://www.sice.oas.org/SME\\_CH/BLZ/BLZ\\_Revised\\_Small\\_Medium\\_Enterprise\\_e.pdf](http://www.sice.oas.org/SME_CH/BLZ/BLZ_Revised_Small_Medium_Enterprise_e.pdf)

<sup>37</sup> <https://www.nationalassembly.gov.bz/wp-content/uploads/2020/01/Act-No.-26-of-2019-Fiscal-Incentives-Amendment-Act-2019.pdf>

<sup>38</sup> <https://www.covid19.bz/belizemsp/>

<sup>39</sup> [https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Belize%20National%20Development%20Framework%202010%202030\\_0.pdf](https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Belize%20National%20Development%20Framework%202010%202030_0.pdf)

<sup>40</sup> [https://www.belizeinvest.org.bz/uploads/6/4/9/6/64967361/national\\_entrepreneurship\\_strategy\\_-\\_august\\_2014.pdf](https://www.belizeinvest.org.bz/uploads/6/4/9/6/64967361/national_entrepreneurship_strategy_-_august_2014.pdf)

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Bolivia (Plurinational State of)	Micro, Small and Medium-Sized Enterprises Law (n. 947, of 2017) <sup>41</sup>	x	x	x
	Regulation for MSMEs Decree N° 3564, of 2018 <sup>42</sup>	x		
	Special Decree for Support to Micro, Small and Medium-Sized Enterprises (Decree 4216, of 2020) <sup>43</sup>	x		
	Economic and Social Development Plan <sup>44</sup>			x
	Digital Agenda 2025 <sup>45</sup>		x	
	Plan for digitalization of MSMEs to E-Commerce (of 2020) <sup>46</sup>			x

<sup>41</sup> [https://www.lexivox.org/norms/BO-L-N947.html?dcmi\\_identifier=BO-L-N947&format=html](https://www.lexivox.org/norms/BO-L-N947.html?dcmi_identifier=BO-L-N947&format=html)

<sup>42</sup> [https://www.lexivox.org/norms/BO-DS-N3564.html?dcmi\\_identifier=BO-DS-N3564&format=html](https://www.lexivox.org/norms/BO-DS-N3564.html?dcmi_identifier=BO-DS-N3564&format=html)

<sup>43</sup> [https://www.asfi.gob.bo/images/MARCO\\_NORMATIVO/SERV\\_FINAN\\_/D.S.\\_4216.pdf](https://www.asfi.gob.bo/images/MARCO_NORMATIVO/SERV_FINAN_/D.S._4216.pdf)

<sup>44</sup> [http://vpc.planificacion.gob.bo/uploads/PDES\\_INGLES.pdf](http://vpc.planificacion.gob.bo/uploads/PDES_INGLES.pdf)

<sup>45</sup> <https://digital.gob.bo/2019/05/agenda-digital-2025/>

<sup>46</sup> <https://comunicacion.gob.bo/?q=20200921/30686>

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Brazil	Law for Micro and Small Business (Law 123, of 2006, last updated in 2019) <sup>47</sup>	x		
	Startup and Innovative Entrepreneurship Draft Bill (PLP249/2020) <sup>48</sup>	x		x
	National Strategy for Digital Transformation: E-Digital (2018) <sup>49</sup>		x	
	IoT National Plan (Decree 9857, of 2019) <sup>50</sup>		x	
	Innovation, Scientific and Technological Research Law (n. 10,973, of 2004) <sup>51</sup>			x
	Tax Incentives to support Innovation , also known as "Goodwill Law" (Law n. 11,196, of 2005) <sup>52</sup>			x
	Regulatory Framework for Innovation, Science and Technology (Law n. 13,243, of 2016) <sup>53</sup>			x
Innovation, Technology and Science Ordinance (Decree n. 9,283, of 2018) <sup>54</sup>	x	x	x	

<sup>47</sup> [http://www.planalto.gov.br/ccivil\\_03/leis/lcp/lcp123.htm](http://www.planalto.gov.br/ccivil_03/leis/lcp/lcp123.htm)

<sup>48</sup> <https://www.camara.leg.br/proposicoesWeb/fichadetramitacao?idProposicao=2264491>

<sup>49</sup> <https://www.gov.br/mcti/pt-br/centrais-de-conteudo/comunicados-mcti/estrategia-digital-brasileira/estrategiadigital.pdf>

<sup>50</sup> [http://www.planalto.gov.br/ccivil\\_03/ Ato2019-2022/2019/Decreto/D9854.htm](http://www.planalto.gov.br/ccivil_03/ Ato2019-2022/2019/Decreto/D9854.htm)

<sup>51</sup> [http://www.planalto.gov.br/ccivil\\_03/ ato2004-2006/2004/lei/l10.973.htm](http://www.planalto.gov.br/ccivil_03/ ato2004-2006/2004/lei/l10.973.htm)

<sup>52</sup> [http://www.planalto.gov.br/ccivil\\_03/ Ato2004-2006/2005/Lei/L11196.htm](http://www.planalto.gov.br/ccivil_03/ Ato2004-2006/2005/Lei/L11196.htm)

<sup>53</sup> [http://www.planalto.gov.br/ccivil\\_03/ ato2015-2018/2016/lei/l13243.htm](http://www.planalto.gov.br/ccivil_03/ ato2015-2018/2016/lei/l13243.htm)

<sup>54</sup> [http://www.planalto.gov.br/ccivil\\_03/ ato2015-2018/2018/Decreto/D9283.htm](http://www.planalto.gov.br/ccivil_03/ ato2015-2018/2018/Decreto/D9283.htm)

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Canada	Canada's Digital Charter in Action: A Plan by Canadians, for Canadians <sup>55</sup>		x	
	Telecommunications Act (S.C. 1993, c. 38) <sup>56</sup>		x	
	Relief measures for Indigenous businesses during COVID-19 outbreak <sup>57</sup>	x		
	Canada's COVID-19 Economic Response Plan <sup>58</sup>	x		
	Canada Small Business Financing Act (S.C. 1998, c. 36) <sup>59</sup>	x		
	Startup Visa Program/Immigrant entrepreneurs <sup>60</sup>	x		
Chile	Law for Small Enterprises (Law n. 20,416 of 2010) <sup>61</sup>	x		
	Law simplifying the start of business (Decree n 45, of 2013) <sup>62</sup>	x		
	National Digital Agenda <sup>63</sup>		x	

<sup>55</sup> [https://www.ic.gc.ca/eic/site/062.nsf/eng/h\\_00109.html](https://www.ic.gc.ca/eic/site/062.nsf/eng/h_00109.html)

<sup>56</sup> <https://www.laws-lois.justice.gc.ca/eng/acts/T-3.4/>

<sup>57</sup> <https://www.sac-isc.gc.ca/eng/1588079295625/1588079326171>

<sup>58</sup> <https://www.canada.ca/en/department-finance/economic-response-plan.html>

<sup>59</sup> <https://www.laws-lois.justice.gc.ca/eng/acts/C-10.2/>

<sup>60</sup> <https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/start-visa.html>

<sup>61</sup> <https://www.bcn.cl/leychile/navegar?idNorma=1010668>

<sup>62</sup> <https://www.bcn.cl/leychile/navegar?idNorma=1049693>

<sup>63</sup> <http://www.agendadigital.gob.cl/#/seguimiento/medida/Centros-de-innovacion-digital-y-transferencia-tecnologica>



**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Colombia	Law for the support of Micro, Small and Medium Entrepreneurship (Law n. 905 of 2004) <sup>64</sup>	x		
	Law for the Support of Entrepreneurship (Law n. 2069, of 31 December 2020) <sup>65</sup>	x		
	Live Digital Plan <sup>66</sup>		x	
	National Plan for Development in Colombia: Equity Pact (Law n. 1995, of 2019) <sup>67</sup> .	x		
	MSMEs regional councils (Resolution n. 3205, of 2008) <sup>68</sup>	x		
	Innovation and Competition National Agenda 2019-2022 <sup>69</sup>			x
	ICT Plan: The Digital Future is for Everyone 2018-2022 <sup>70</sup>		x	
National Plan for Rural Connectivity <sup>71</sup>		x		
Costa Rica	Law for the support of Small and Medium Entrepreneurship (Law n. 8,262, of 2002) <sup>72</sup>	x		
	Ordinance for the support of Small and Medium Entrepreneurship (Decree n.39,295 of 2012) <sup>73</sup>	x		
	Ordinance for the support of Innovation and Technological Development in Small and Medium Entrepreneurship (Decree n.37,168 of 2012) <sup>74</sup>			x
	Digital Transformation Strategy 2018-2022 <sup>75</sup>		x	
National Policy to Entrepreneurship <sup>76</sup>	x			

<sup>64</sup> <https://leyes.congreso.gob.pe/Documentos/DecretosLegislativos/01086.pdf>

<sup>65</sup> <http://www.mipymes.gov.co/normatividad/leyes/ley-2069-del-31-de-diciembre-de-2020.aspx>

<sup>66</sup> <https://www.mintic.gov.co/portal/inicio/English-overview/Vive-Digital/>

<sup>67</sup> [http://www.secretariassenado.gov.co/senado/basedoc/ley\\_1955\\_2019.html](http://www.secretariassenado.gov.co/senado/basedoc/ley_1955_2019.html)

<sup>68</sup> <http://www.mipymes.gov.co/coordinacion-con-entidades-publico-privadas-para-a/sistema-nacional-de-apoyo-a-las-mipymes-1/resolucion-3205-de-2008-reglamento-crm.aspx>

<sup>69</sup> <http://www.colombiacompetitiva.gov.co/sneci/agenda-nacional-de-competitividad/agenda-nacional>

<sup>70</sup> [https://www.mintic.gov.co/portal/604/articles-101922\\_Plan\\_TIC.pdf](https://www.mintic.gov.co/portal/604/articles-101922_Plan_TIC.pdf)

<sup>71</sup> [https://www.mintic.gov.co/portal/604/articles-125867\\_PDF.pdf](https://www.mintic.gov.co/portal/604/articles-125867_PDF.pdf)

<sup>72</sup> [http://www.sice.oas.org/SME\\_CH/CRI/Ley\\_No\\_8262\\_s.pdf](http://www.sice.oas.org/SME_CH/CRI/Ley_No_8262_s.pdf)

<sup>73</sup> [http://www.sice.oas.org/SME\\_CH/CRI/Decr\\_No\\_39295\\_s.pdf](http://www.sice.oas.org/SME_CH/CRI/Decr_No_39295_s.pdf)

<sup>74</sup> [https://www.micit.go.cr/sites/default/files/reglamento\\_para\\_el\\_programa\\_de\\_fortalecimiento\\_para\\_la\\_innovacion\\_y\\_desarrollo\\_tecnologico\\_de\\_las\\_pyme.pdf](https://www.micit.go.cr/sites/default/files/reglamento_para_el_programa_de_fortalecimiento_para_la_innovacion_y_desarrollo_tecnologico_de_las_pyme.pdf)

<sup>75</sup> <https://www.micit.go.cr/sites/default/files/estrategia-tdhcrb.pdf>

<sup>76</sup> [https://www.pyme.go.cr/media/archivo/normativas/politica\\_fomento\\_alemprendimiento.pdf](https://www.pyme.go.cr/media/archivo/normativas/politica_fomento_alemprendimiento.pdf)

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Cuba	Ministerial Council for Scientific and Technological Park (Decree 363/2019) <sup>77</sup>		x	
	Creation and management of the National Authority for Innovation, Science and Technology (Resolution 286 of 2019) <sup>78</sup>		x	
	Innovation, Science and Technology Programs (Resolution 287/2019) <sup>79</sup>		x	
Dominica	Micro, Small & Medium Enterprise Policy (under Development) <sup>80</sup>	x		
	Companies Act of 1994 (last amendment 2019) <sup>81</sup>	x		
	Patents Act of 1999 <sup>82</sup>	x		
	Telecommunications Act of 2000 <sup>83</sup>		x	
	Telecommunication Regulations <sup>84</sup>		x	
	National Resilience Development Strategy 2030 of Dominica <sup>85</sup>			x

<sup>77</sup> <https://www.gacetaoficial.gob.cu/es/decreto-363-de-2019-de-consejo-de-ministros>

<sup>78</sup> <https://www.gacetaoficial.gob.cu/es/resolucion-286-de-2019-de-ministerio-de-ciencia-tecnologia-y-medio-ambiente>

<sup>79</sup> <https://www.gacetaoficial.gob.cu/es/resolucion-287-de-2019-de-ministerio-de-ciencia-tecnologia-y-medio-ambiente>

<sup>80</sup> <http://www.news.gov.dm/index.php/news/3703-micro-small-medium-enterprise-policy-under-development>

<sup>81</sup> <http://www.dominica.gov.dm/laws/1994/act21-1994.pdf>

<sup>82</sup> <http://www.dominica.gov.dm/laws/1999/act8-1999.pdf>

<sup>83</sup> <http://www.ntrcdom.org/attachments/article/105/Telecommunications%20Act%208%202000.pdf>

<sup>84</sup> <http://www.ntrcdom.org/index.php/en/laws-regulation/telecommunication-regulations>

<sup>85</sup> <https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Dominica%202030The%20National%20Resilience%20Development%20Strategy.pdf>

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Dominican Rep.	Competitiveness development for Micro, Small and Medium-Sized Enterprises (Law n. 488 of 2008) <sup>86</sup>	x		
	Reorganization of MSMEs, Industry and Commerce (Law n. 37 of 2017) <sup>87</sup>	x		
	Entrepreneurship Law (n. 688 of 2016) <sup>88</sup>	x		
	Telecommunications Act (Law No. 153 of 1998) <sup>89</sup>		x	
	Electronic Commerce, Documents, and Digital Signatures (Law No. 126 of 2002) <sup>90</sup>		x	
	Digital Republic Program (Decree 258, of 2016) <sup>91</sup>		x	
	2019 Year for Innovation and Competition (Decree 453-18) <sup>92</sup>			x
Ecuador	Telecommunications and ICT National Plan 2016-2021 <sup>93</sup>		x	
	Law to support the small and medium-sized enterprise (of 2011, last update 2014) <sup>94</sup>	x		
	Production, Commerce and Investment Code <sup>95</sup>			x

<sup>86</sup> [http://www.dgcp.gob.do/new\\_dgcp/documentos/fomen/Ley-488-08%20-%20MIPYMEs.pdf](http://www.dgcp.gob.do/new_dgcp/documentos/fomen/Ley-488-08%20-%20MIPYMEs.pdf)

<sup>87</sup> [https://www.micm.gob.do/images/pdf/transparencia/base-legal-de-la-institucion/leyes/Ley\\_No.37-17\\_Que\\_reorganiza\\_el\\_Ministerio\\_de\\_Industria\\_Comercio\\_y\\_Mipymes.pdf](https://www.micm.gob.do/images/pdf/transparencia/base-legal-de-la-institucion/leyes/Ley_No.37-17_Que_reorganiza_el_Ministerio_de_Industria_Comercio_y_Mipymes.pdf)

<sup>88</sup> <https://micm.gob.do/images/pdf/otros/Intro-Ley-688-16-y-Decreto-160-18.pdf>

<sup>89</sup> <https://indotel.gob.do/media/5132/ley-no-153-98.pdf>

<sup>90</sup> <https://indotel.gob.do/media/5129/ley-no-126-02-ingles.pdf>

<sup>91</sup> <https://republicadigital.gob.do/wp-content/themes/republica-digital/media/Decreto-258-16.pdf>

<sup>92</sup> <https://prodominicana.gob.do/AdmTransparencia/Documentos/Base%20Legal%20de%20la%20Institución/Decretos/2018/Decreto%20453-18%202019%20a@o%20de%20la%20innovacion%20y%20la%20Competitividad.pdf>

<sup>93</sup> <https://www.telecomunicaciones.gob.ec/wp-content/uploads/2016/08/Plan-de-Telecomunicaciones-y-TI.pdf>

<sup>94</sup> [http://www.pichincha.gob.ec/phocadownload/LOTAIP\\_Anejos/Lit\\_A/lit\\_a2/7\\_ley\\_organica\\_de\\_economia\\_popular\\_y\\_solidaria.pdf](http://www.pichincha.gob.ec/phocadownload/LOTAIP_Anejos/Lit_A/lit_a2/7_ley_organica_de_economia_popular_y_solidaria.pdf)

<sup>95</sup> <https://www.correosdeecuador.gob.ec/wp-content/uploads/downloads/2018/11/COPCI.pdf>

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
El Salvador	Law to support Small and Medium-Sized Enterprises (Decree 667 of 2014) <sup>96</sup>	x		
	Política Nacional de Emprendimiento (2014) <sup>97</sup>	x		
	National Development Plan: Production, Education and Safety <sup>98</sup>			x
	Digital Agenda 2020-2030 <sup>99</sup>		x	
Grenada	Digital Government For Resilience Project (Of 2019) <sup>100</sup>		x	
	Companies Act (Act n. 35, of 1994) <sup>101</sup>	x		
	National Sustainable Development Plan <sup>102</sup>	x	x	x
	ICT Strategy and Action Plan <sup>103</sup>		x	
Guatemala	Law to Support Micro, Small and Medium-Sized Enterprises (of 2019) <sup>104</sup>	x		
	Law for creation of Micro, Small and Medium Enterprises (Law n. 4,670, of 5 December 2013) <sup>105</sup>	x		
	Social and Economic Development Plan 2030 <sup>106</sup>		x	
Guyana	Access to Information Act of 2011 <sup>107</sup>	x		
	Small Business Act of 2004 <sup>108</sup>	x		
	Digital Governance Roadmap of 2018 <sup>109</sup>		x	

<sup>96</sup> <https://www.asamblea.gob.sv/sites/default/files/documents/decretos/3F7F7BD6-9F79-459F-8793-A059A8D79744.pdf>

<sup>97</sup> [http://www.sice.oas.org/SME\\_CH/SLV/Pol%C3%ADtica\\_Nacional\\_de\\_Emprendimiento\\_s.pdf](http://www.sice.oas.org/SME_CH/SLV/Pol%C3%ADtica_Nacional_de_Emprendimiento_s.pdf)

<sup>98</sup> <https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/ELSAL.pdf>

<sup>99</sup> <https://www.innovacion.gob.sv/downloads/Agenda%20Digital.pdf>

<sup>100</sup> <http://documents1.worldbank.org/curated/en/370621567389621226/pdf/Grenada-Digital-Government-for-Resilience-Project.pdf>

<sup>101</sup> <https://gov.gd/sites/caipo/files/docs/Documents/Cap58A-Companies%20Act%5B1%5D.pdf>

<sup>102</sup> <https://www.nationalplan2030.gd/>

<sup>103</sup> [https://gov.gd/sites/default/files/docs/Documents/ict/ICT\\_strategy\\_grenada.pdf](https://gov.gd/sites/default/files/docs/Documents/ict/ICT_strategy_grenada.pdf)

<sup>104</sup> <https://www.congreso.gob.gt/assets/uploads/comisiones/dictamenes/efb10-dictamen-favorable-5530.pdf>

<sup>105</sup> [https://www.congreso.gob.gt/assets/uploads/info\\_legislativo/iniciativas/Registro4670.pdf](https://www.congreso.gob.gt/assets/uploads/info_legislativo/iniciativas/Registro4670.pdf)

<sup>106</sup> <https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/GuatemalaPlanNacionaldeDesarrollo2032.pdf>

<sup>107</sup> [https://parliament.gov.gy/documents/acts/3650-act\\_no\\_21.pdf](https://parliament.gov.gy/documents/acts/3650-act_no_21.pdf)

<sup>108</sup> <https://www.business.gov.gy/wp-content/uploads/2019/05/Small-Business-Act-2004.pdf>

<sup>109</sup> [https://ndma.gov.gy/wp-content/uploads/2020/01/DigitalGovernanceRoadmap\\_20181025.pdf](https://ndma.gov.gy/wp-content/uploads/2020/01/DigitalGovernanceRoadmap_20181025.pdf)

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Haiti	Haiti Strategic Development Plan (this doc was published in 2012) <sup>110</sup>			x
	Observatoire Numérique <sup>111</sup>		x	
	Draft Bill for creation of Individual and Limited Responsibility Enterprises <sup>112</sup>	x		
Honduras	Law for the Support of Competition for Development of Micro, Small and Medium-Sized Enterprise (of 2012) <sup>113</sup>	x		
	Vision 2038 - National Plan 2010-2022 <sup>114</sup>			x
	Draft Bill - Entrepreneurship <sup>115</sup>	x		

<sup>110</sup> <https://observatorioplanificacion.cepal.org/en/plans/plan-strategique-de-developpement-dhaiti>

<sup>111</sup> <https://www.obsnumerique.org/>

<sup>112</sup> <http://www.sgcm.gouv.ht/wp-content/uploads/2017/03/Projet-de-loi-portant-cr ation-de-l'entreprise-individuelle- -responsabilit -limit e-et-refonte-du-droit-des-soci t s.pdf>

<sup>113</sup> [http://www.andi.hn/wp-content/uploads/2012/11/ley\\_del\\_fomento\\_para\\_las\\_mipyme.pdf](http://www.andi.hn/wp-content/uploads/2012/11/ley_del_fomento_para_las_mipyme.pdf)

<sup>114</sup> <https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/HondurasPlandeNacion20102022.pdf>

<sup>115</sup> <https://sde.gob.hn/2018/07/12/sde-propone-elevar-a-politica-publica-estrategia-nacional-de-emprendimiento/>

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Jamaica	Companies Act Of 2004 <sup>116</sup>	x		
	Microcredit Bill, Of 2019 <sup>117</sup>	x		
	Innovation Policy Platform <sup>118</sup>			x
	The Updated MSME & Entreprenep Policy (2018) <sup>119</sup>	x		
	ICT Sector Plan Vision 2030 <sup>120</sup>		x	
	Scientifica Research Council Act <sup>121</sup>			x
	Vision 2030 Jamaica National Development Plan <sup>122</sup>			x
	Telecommunications Act <sup>123</sup>		x	
	National Communication on Science and Technology <sup>124</sup>		x	

<sup>116</sup> <https://www.micaf.gov.jm/sites/default/files/pdfs/Companies%2520Act%2520b.pdf>

<sup>117</sup> <https://japarliament.gov.jm/attachments/article/339/The%20Microcredit%20Act>

<sup>118</sup> <https://www.innovationpolicyplatform.org/www.innovationpolicyplatform.org/content/jamaica/index.html>

<sup>119</sup> [https://drive.google.com/file/d/11q\\_LTWdVy13znU5h26Eret7FJv2jtump/view](https://drive.google.com/file/d/11q_LTWdVy13znU5h26Eret7FJv2jtump/view)

<sup>120</sup> <https://www.mset.gov.jm/wp-content/uploads/2019/09/ICT-Sector-Plan-Complete.pdf>

<sup>121</sup> <https://www.mset.gov.jm/wp-content/uploads/2019/06/Scientific-Research-Council-Act.pdf>

<sup>122</sup> [https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Jamaica\\_Vision\\_2030\\_Jamaica\\_NDP\\_Full\\_No\\_Cover\\_web.pdf](https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Jamaica_Vision_2030_Jamaica_NDP_Full_No_Cover_web.pdf)

<sup>123</sup> <https://moj.gov.jm/sites/default/files/laws/The%20Telecommunications%20Act.pdf>

<sup>124</sup> <https://moj.gov.jm/sites/default/files/laws/National%20Commision%20On%20Science%20and%20Technology%20%20pgs.1-13.pdf>

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Mexico	Law for the Competitiveness Development of Micro, Small and Medium Enterprises (Original text adopted in 2002, last update from 2019) <sup>125</sup>	x		
	National Development Plan 2019-2024 <sup>126</sup>			x
	National Development Strategy - Vision 2030 Agenda <sup>127</sup>			x
	Law for General Commercial Societies (of 2016, last updated 2018) which creates a simplified modality, easier procedures to register a company and lower costs <sup>128</sup>	x		
	Law for Fintechs (of 2018) which regulates innovative modalities as cryptocurrency <sup>129</sup>			x
Nicaragua	Human Development Strategy <sup>130</sup>			x
	Law for the Development, Support and Promotion of Micro, Small and Medium Enterprises (Law n. 645, of 2008) <sup>131</sup>	x		
Panama	Panama Autoridad Nacional para la Innovación Gubernamental <sup>132</sup>			x
	Law for the creation of the National Authority for Micro, Small and Medium Entrepreneurship (Law n. 72, of 2009) <sup>133</sup>	x		

<sup>125</sup> [http://www.diputados.gob.mx/LeyesBiblio/pdf/247\\_130819.pdf](http://www.diputados.gob.mx/LeyesBiblio/pdf/247_130819.pdf)

<sup>126</sup> <https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Plan%20Nacional%20de%20Desarrollo%20de%20M%C3%A9xico.pdf>

<sup>127</sup> <https://www.gob.mx/agenda2030/documentos/estrategia-nacional-de-la-implementacion-de-la-agenda-2030-para-el-desarrollo-sostenible-en-mexico>

<sup>128</sup> [http://www.diputados.gob.mx/LeyesBiblio/pdf/mov/Ley\\_General\\_de\\_Sociedades\\_Mercantiles.pdf](http://www.diputados.gob.mx/LeyesBiblio/pdf/mov/Ley_General_de_Sociedades_Mercantiles.pdf)

<sup>129</sup> <http://www.diputados.gob.mx/LeyesBiblio/ref/lritf.htm>

<sup>130</sup> <https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Nicaragua.EJES%20DEL%20PROGRAMA%20NACIONAL%20DE%20DESARROLLO%20HUMANO.pdf>

<sup>131</sup> [http://legislacion.asamblea.gob.ni/Normaweb.nsf/\(\\$All\)/EC29253DD104D7D30625741D005C6C8C?OpenDocument](http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/EC29253DD104D7D30625741D005C6C8C?OpenDocument)

<sup>132</sup> <https://ampyme.gob.pa>

<sup>133</sup> [https://www.gacetaoficial.gob.pa/pdfTemp/26404/GacetaNo\\_26404\\_20091111.pdf](https://www.gacetaoficial.gob.pa/pdfTemp/26404/GacetaNo_26404_20091111.pdf)

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Paraguay	Law for Support of Small and Medium-Sized Enterprises (of 2012) <sup>134</sup>	x		
	Law to Support the Entrepreneur Culture (Law n. 5669 of 2016) <sup>135</sup>	x		
	Creates the Entrepreneur Day (Law n. 5,635 of 2016) <sup>136</sup>	x		
	Strategic Plan for MSMEs 2018-2023 <sup>137</sup>	x		
	Telecommunications Plan <sup>138</sup>		x	
	National Development Plan Vision 2030 <sup>139</sup>			x
Peru	Law for the support and promotion of Small and Medium Entrepreneurship (Law n. 28,015, of 2003) <sup>140</sup>	x		
	Legislative Decree for the support, development, competitiveness and decent labour of Small and Medium Entrepreneurship (Decree 1086, of 2008) <sup>141</sup>	x		
	Digital Agenda 2021 <sup>142</sup>		x	
	Facilitates the business registration (Decree 1332) <sup>143</sup>	x		
	Assign the Minister of Production mandate to support MSMEs (Law n. 29,271) <sup>144</sup>	x		
	Innovate Peru Program <sup>145</sup>			x

<sup>134</sup> <http://www.mic.gov.py/mic/w/mipymes/sinamipymes.php>

<sup>135</sup> <https://www.bacn.gov.py/leyes-paraguayas/5239/de-fomento-de-la-cultura-emprendedora>

<sup>136</sup> <https://www.csj.gov.py/cache/lederes/G-135-14072016-L-5635-1.pdf>

<sup>137</sup> <http://www.mic.gov.py/mic/w/mic/pdf/PLAN%20ESTRATÉGICO%20DE%20MIPYMES%202018-2023.pdf>

<sup>138</sup> [https://www.conatel.gov.py/conatel/wp-content/uploads/2019/10/rd.244.2016pnt-2016\\_2020.pdf](https://www.conatel.gov.py/conatel/wp-content/uploads/2019/10/rd.244.2016pnt-2016_2020.pdf)

<sup>139</sup> [https://www.presidencia.gov.py/archivos/documentos/DECRETO2794\\_1qkqukk4.pdf](https://www.presidencia.gov.py/archivos/documentos/DECRETO2794_1qkqukk4.pdf)

<sup>140</sup> <http://www4.congreso.gob.pe/comisiones/2002/discapacidad/leyes/28015.htm>

<sup>141</sup> <https://leyes.congreso.gob.pe/Documentos/DecretosLegislativos/01086.pdf>

<sup>142</sup> <https://www.gob.pe/8258-presidencia-del-consejo-de-ministros-agenda-digital-al-bicentenario>

<sup>143</sup> <https://busquedas.elperuano.pe/normaslegales/decreto-legislativo-que-facilita-la-constitucion-de-empresas-decreto-legislativo-n-1332-1471011-4/>

<sup>144</sup> [http://www2.congreso.gob.pe/sicr/cendocbib/con2\\_uibd.nsf/CAA5C9EF8AA58819052577C200758BF2/\\$FILE/Ley\\_N°\\_29271.pdf](http://www2.congreso.gob.pe/sicr/cendocbib/con2_uibd.nsf/CAA5C9EF8AA58819052577C200758BF2/$FILE/Ley_N°_29271.pdf)

<sup>145</sup> <https://www.innovateperu.gob.pe>



**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
	Strategic Plan for Production Sector (2017-2021) <sup>146</sup>	x		
	Creation, implementation and management of the Innovation, Production and Technological Transfer Centers (Decree 1,228) <sup>147</sup>			x
Saint Kitts and Nevis	Small Business Act (as of 2009) <sup>148</sup>	x		
	Midterm Development Strategy <sup>149</sup>			x
Saint Lucia	Small Business Act, as of 2006 <sup>150</sup>	x		
	Freedom of Information Act <sup>151</sup>			x
Saint Vincent and the Grenadines	National ICT Strategy and Action Plan <sup>152</sup>		x	
Suriname	Policy Development Plan <sup>153</sup>			x
Trinidad and Tobago	Vision 2030 - National Development Strategy <sup>154</sup>			x
	Freedom of Information Act <sup>155</sup>	x		
	"JOBS Act" JumpStart our Business Startups Act <sup>156</sup>	x		
United States of America	Broadband Plan of 2010 <sup>157</sup>		x	
	Telecommunication Act <sup>158</sup>		x	
	Innovation Policy <sup>159</sup>			x

<sup>146</sup> [https://www.ceplan.gob.pe/documentos\\_/plan-estrategico-sectorial-multianual-pesem-produccion-2017-2021/](https://www.ceplan.gob.pe/documentos_/plan-estrategico-sectorial-multianual-pesem-produccion-2017-2021/)

<sup>147</sup> <http://www2.produce.gob.pe/dispositivos/publicaciones/ds004-2016-produce.pdf>

<sup>148</sup> <https://aglcskn.info/documents/Act02and09TOC/Ch%2020.61%20Small%20Business%20Development%20Act.pdf>

<sup>149</sup> <https://observatorioplanificacion.cepal.org/en/plans/medium-term-development-strategy-2020-2023-st-lucia>

<sup>150</sup> [http://www.sice.oas.org/SME\\_CH/LCA/Chap\\_13\\_19\\_rev31\\_Dec\\_2006\\_e.pdf](http://www.sice.oas.org/SME_CH/LCA/Chap_13_19_rev31_Dec_2006_e.pdf)

<sup>151</sup> [https://www.oas.org/es/sap/dgpe/ACCESO/docs/Santa\\_Lucia2009.pdf](https://www.oas.org/es/sap/dgpe/ACCESO/docs/Santa_Lucia2009.pdf)

<sup>152</sup> <https://www.gov.vc/images/PoliciesActsAndBills/SVGICTStrategyAndActionPlanFinal.pdf>

<sup>153</sup> <https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/SurinamePolicy-Development-Plan2017-2021-PartI.pdf>

<sup>154</sup> [https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Trinidad\\_y\\_Tobago\\_Vision\\_%202030\\_2016\\_2030\\_tiny.pdf](https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Trinidad_y_Tobago_Vision_%202030_2016_2030_tiny.pdf)

<sup>155</sup> <http://www.foia.gov.tt/about-the-act>

<sup>156</sup> <https://www.govtrack.us/congress/bills/112/hr3606/text>

<sup>157</sup> <https://www.fcc.gov/general/national-broadband-plan>

<sup>158</sup> <https://www.congress.gov/bill/116th-congress/house-bill/6624>

<sup>159</sup> <https://www.state.gov/innovation-policy/>

**Table 3: ICT-centric innovation ecosystem strategies and policies in the Americas region (continued)**

Country	Policy	Policy type (engine of growth)		
		Entrepreneurial	Technology	Innovation
Uruguay	Uruguay Digital <sup>160</sup>		x	
	SDGs Follow up (Resolution 988-2016) <sup>161</sup>			x
	Small and Medium-Sized Enterprises (Law n. 16,201) <sup>162</sup>	x		
	Development Strategy 2050 <sup>163</sup>			x
	Law for the creation of Industrial Park <sup>164</sup>			x
	Creation of Small, Medium and Hand-Made Enterprises Authority (Law n. 16,170) <sup>165</sup>	x		
Venezuela	Social and Economic Development Plan <sup>166</sup>			x

Table 3 shows that while some countries in the Americas region have policies impacting all three engines of growth, some policies that comprehensively enable the ICT-centric innovation ecosystem need to be strengthened to reflect their complementarity and ensure their holistic development. For a full assessment of country-level policies, Member States should request technical assistance from ITU.

## 2.4 Enablers of digital transformation

This section provides an overview of the current state of the seven enablers of digital transformation for the Americas region: vision and strategy, infrastructure and programmes, talent and champions, capital and resources, markets and networks, culture and communities, and regulation and policy.

Each enabler is one part of a whole and is crucial for successful innovation activities. The combined efficiency of the enablers will indicate the overall efficiency of the ecosystem. For countries interested in this deeper level of insight, qualitative interviews can be conducted to reflect a colour coded table of the enablers.

### 2.4.1 Vision and strategy

Countries within the Americas region have demonstrated a strong understanding of the directions in which they would like their ICT-centric innovation ecosystems to develop.

<sup>160</sup> <https://uruguaydigital.gub.uy>

<sup>161</sup> <https://observatorioplanificacion.cepal.org/en/node/459>

<sup>162</sup> <https://legislativo.parlamento.gub.uy/temporales/leytemp3914214.htm>

<sup>163</sup> [https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Estrategia\\_Desarrollo\\_2050.pdf](https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Estrategia_Desarrollo_2050.pdf)

<sup>164</sup> [http://www.sice.oas.org/SME\\_CH/URY/ley\\_no\\_17\\_547\\_parques\\_industriales\\_s.pdf](http://www.sice.oas.org/SME_CH/URY/ley_no_17_547_parques_industriales_s.pdf)

<sup>165</sup> [http://www.sice.oas.org/SME\\_CH/URY/ley\\_no\\_16\\_170\\_articulos\\_305\\_a\\_309\\_s.pdf](http://www.sice.oas.org/SME_CH/URY/ley_no_16_170_articulos_305_a_309_s.pdf)

<sup>166</sup> [https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Venezuela\\_Plan%20de%20la%20Patria%202019-2025%20%282019%29.pdf](https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Venezuela_Plan%20de%20la%20Patria%202019-2025%20%282019%29.pdf)

In the pre-pandemic context, the 2019 Global Innovation Index ranks only two countries above expectations for levels of development (Costa Rica and the United States). Nine are ranked in line with expectations for their level of development (Argentina, Brazil, Canada, Chile, Colombia, Jamaica, Mexico, Peru, and Uruguay). Ten countries are ranked below expectations for level of development: Bolivia (Plurinational State of), Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, and Trinidad and Tobago. Fourteen countries in the region are not ranked in the Global Innovation Index 2019: Antigua and Barbuda, Bahamas, Barbados, Belize, Cuba, Dominica, Grenada, Guyana, Haiti, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Venezuela.

These rankings demonstrate gaps in innovation capacity and ICT integration in key sectors, despite most countries in the region having a strategy or strategies to develop their ICT-centric innovation ecosystem performance.

This section is not an exhaustive list of ICT, technology and entrepreneurship strategies in the Americas region, but rather offers a selection of strategies that demonstrate government commitment to and vision for creating thriving ICT-centric ecosystems. While these strategies show that actors from the public sector have a clear vision and strategy, further examination, through stakeholder consultation and workshops, is needed to assess the level to which all stakeholder groups have bought into and are aligned with their country's strategy.

For example, in Costa Rica, support for entrepreneurship has been raised to generate economic growth and employment, and public, private, and academic institutions are in place to strengthen the national entrepreneurial ecosystem. The National Policy to Entrepreneurship<sup>167</sup> sets out the vision of entrepreneurship to create new projects and companies. It identifies access to technology and constant innovation as forces of change for entrepreneurship and is linked to other national priorities, such as projects seeking to solve social and environmental problems for people with lower incomes.

## 2.4.2 Infrastructure and programmes

The level of ICT infrastructure development is varied in the region, and overall it has room to improve. According to the ITU ICT Development Index 2017, five countries in the region score well in ICT infrastructure indicators (Barbados, Canada, Saint Kitts and Nevis, Saint Vincent and the Grenadines, the United States, and Uruguay), while two countries have much lower rankings (Cuba and Haiti), and 27 countries need further investment in existing ICT network infrastructure. Greater public and private sector investment will improve ICT access, skills and use across all countries in the region, but a lack of infrastructure in other sectors (such as electricity) hinders ICT access, use, and e-participation.

Similarly, the high Global Competitiveness Index rankings for Barbados, Canada, United States and Uruguay out of 141 countries listed, reinforces regional trends in availability of hard ICT infrastructure development. In addition, Cuba, Guatemala, Haiti, Honduras, Nicaragua and Venezuela have low rankings for ICT adoption, demonstrating low numbers of Internet users, mobile Internet penetration, fixed-broadband and fibre subscriptions.

The 2018 Global Entrepreneurship Index also shows that technology absorption is higher in Argentina, Barbados, Canada, Chile, Colombia, Mexico, the United States, and Uruguay.

<sup>167</sup> <https://www.pyme.go.cr/media/archivo/normativas/politicafomentoalemprendimiento.pdf>

The COVID-19 pandemic has accelerated growth in connectivity and good practices including hard infrastructure growth<sup>168</sup>. For example, the United States Federal Communications Commission (FCC) is working on multiple activities to ensure that citizens remain connected in this time of crisis. These include measures such as the Keep Americans Connected Pledge, which has been signed by over 800 companies and organizations to share the commitment not to terminate service to any residential or small business customers, to waive fees for residential and small business customers who are unable to pay their bills, and to open Wi-Fi hotspots.<sup>169</sup>

Soft infrastructure – such as knowledge-sharing mechanisms, including tech hubs, training resources and research institutions – is likewise showing higher levels of development. In addition to the high performance in Canada and the United States, nearly all countries in the region have some presence of soft infrastructure, albeit insufficient to take ICT-centric innovation ecosystems to the next level, which is demonstrated by the level of hard and soft skills exhibited by talent.

The innovation linkages pillar from the Global Innovation Index (GII) assesses university and industry collaboration, state of cluster development, R&D financial investment from abroad, joint-venture strategic alliances, and the number of patent families filed. Using this pillar as a proxy for soft infrastructure in 2019, thirteen countries recorded insufficient performance (Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay), while another six countries indicated poor performance (Bolivia (Plurinational State of), Ecuador, El Salvador, Guatemala, Honduras, Nicaragua). The 2020 Global Innovation Index suggests that most countries have lowered their rankings. From 35 countries, 14 in the region were not ranked.

Jamaica's Vision 2030 outlines a strategic roadmap to achieve an effective mid- and long-term National Innovation System. The plan recognizes that "innovation depends on complex interaction between knowledge, human and cultural assets", and it builds on science, technology and innovation capacities (labs and hubs) to transform the national economy and society, and ultimately increasing development. According to the plan, setting the path for an innovative culture boosts collaboration among different stakeholders, high-quality research and development, protection of intellectual property, and promotion of entrepreneurship.<sup>170</sup>

Countries in the Americas region need to create stronger linkages and investment incentives in the three engines of growth. This will ensure the development of soft infrastructure for cross pollination and the development of innovative solutions that can be taken to market and serve the needs of communities.

### 2.4.3 Talent and champions

The Americas region has a broad range of talent, but not all countries have demonstrated sufficient numbers of people possessing a skill level that would guarantee competitiveness on a global level. There are also limited opportunities for ICT-centric entrepreneurship, which make it difficult to incentivize talent to stay in their countries. Academic institutions, secondary and tertiary schools, and training centres are present, but they are not adequately training talent to enter the job market.

<sup>168</sup> <https://reg4covid.itu.int/> : Global Network Resiliency Platform (#REG4COVID)

<sup>169</sup> <https://www.itu.int/net4/ITU-D/CDS/REG4COVID/Display.asp?ID=50290>

<sup>170</sup> <https://www.mset.gov.jm/wp-content/uploads/2019/09/ICT-Sector-Plan-Complete.pdf>

There are three levels of development in this category:

- 1 Canada and the United States are highly ranked in both hard and soft skills.
- 2 Most of Latin America and Caribbean countries are placed in the middle of rankings for hard and soft skills<sup>171</sup>.
- 3 Some Latin America and the Caribbean countries show imbalance in talent levels, ranked low when it comes to soft skills, and middle of rankings for hard skills<sup>172</sup>.

Nonetheless, it is interesting to note that the Global Competitiveness Index and Global Entrepreneurship Index had some more granular results that indicate where a particular country is doing well, and where it might be lacking investment. For example, the Global Competitiveness Index for overall skills based on years of schooling, and skills of current and future workforce, ranked three countries in the region in the top quarter: Argentina, Canada and the United States. Similarly, the Global Entrepreneurship Index, measuring start-up skills, ranked Argentina, Canada, Chile, and the United States highly.

Of the 100 top clusters in the world (as ranked by the Global Innovation Index), 25 out of 100 clusters around the world are based in the United States, and among those the top 10 are San Francisco, Boston, New York and San Diego. Four out of those 100 clusters are in Canada: Toronto, Montreal, Vancouver and Ottawa. São Paulo, Brazil, has made it to the top 100, in 59<sup>th</sup> position, partly due to its high number of scientific publications.

According to the Global Innovation Index 2019, two low-income countries (Brazil and Mexico) have universities in the top 10: *Universidade de São Paulo* (USP) and *Universidad Nacional Autónoma de México* (UNAM).

Out of the seven regions defined in the Global Competitiveness Index (East Asia and the Pacific, Eurasia, Europe and North America, Latin America and the Caribbean, Middle East and North Africa, and South Asia, and sub-Saharan Africa), there is a clear gap in performance levels.

Regardless of the level of development, as a general action item to improve or to address the lack of sufficient talent, training in hard ICT skills, as well as soft skills in management, business planning and entrepreneurship should be introduced into all levels of education. This would ensure that when talent comes out of secondary schools, universities and vocational and training institutes, they are able to cater to the needs of the private sector as well as have the ability to develop their own innovative start-ups, which are then able to grow into SMEs and high-growth firms.

#### 2.4.4 Capital and resources

The Americas region has countries ranked from 2<sup>nd</sup> to 138<sup>th</sup> out of the 141 countries in the 2019 Global Competitiveness Index. While Canada (9<sup>th</sup>) and the United States (2<sup>nd</sup>) do well in SME financing and availability of venture capital (in the financial system pillar), there is a slight decrease in the ranking for global competitiveness compared to previous years. Chile ranks high in venture capital availability, confirming its healthy environment for innovation. However,

<sup>171</sup> According to the 2019 Global Innovation Index, Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago and Uruguay fall between 51 and 95 out of 129 countries when it comes to overall skills.

<sup>172</sup> Bolivia (Plurinational State of), Ecuador, El Salvador, Guatemala, Honduras and Nicaragua fall between 99 and 120 out of 129 countries in the Global Innovation Index 2019 when it comes to soft skills, while all are in the middle of rankings for hard skills, falling between 97 and 130 out of 176 countries in the ITU ICT Development Index 2017.

it is not surprising that inflation and natural and geopolitical events can also impact countries, such as Argentina, Barbados, Bolivia (Plurinational State of), El Salvador, Haiti, Trinidad and Tobago, and Venezuela (all ranked in the bottom quarter out of 141 countries), which all have low levels of venture capital and financing opportunities, making it difficult for start-ups to grow into SMEs and high-growth firms. Nevertheless, according to the Global Entrepreneurship Index, some countries had high or moderate levels of risk capital available (Argentina, Canada, Chile, Colombia, and the United States).

Overall, it is clear that the capital for investment in small businesses is insufficient. Even if they are able to obtain risk capital (from angel investors or venture capital), levels are very low. Without capital, innovators and entrepreneurs will find it nearly impossible to develop their ideas beyond the start-up stage, survive the valley of death, and become SMEs and high-growth firms. Investments from the private sector, both domestic and foreign, are crucial to enabling ICT-centric innovation to flourish.

In Colombia, for example, the Innovation and Competition National Agenda 2019-2022<sup>173</sup> commits to reducing bureaucracy for product and service entry into the market, to easing the path to starting a business, to gaining access to investment, to knowledge building, quality education and decent employment with public and private investment as part of the Pact for Science, Technology and Innovation. More recently, Colombia approved the Entrepreneurship Law<sup>174</sup>, a modern regulatory framework that facilitates new ventures and companies regardless of the size of the business, helping them to grow and encouraging them to create new jobs. Among its provisions, it also encourages new sources of financing such as a network of investment angels, microfinance, fintech companies, insurance for entrepreneurs and other innovative financing mechanisms.

Additional practices that countries can introduce to incentivize investment include tax holidays on investments, real-estate tax exemptions and free economic zones with minimal tax rates for investors.

Table 4 highlights capital and resource availability in the region using four sub-pillars presented in the Global Competitiveness Report<sup>175</sup>: 9.01 (domestic credit to the private sector as a per cent of GDP), 9.02 (financing for SMEs), 9.03 (venture capital availability) and 9.04 (market capitalization as a per cent of GDP).

---

<sup>173</sup> <http://www.colombiacompetitiva.gov.co/snci/agenda-nacional-de-competitividad/agenda-nacional>

<sup>174</sup> <http://www.mipymes.gov.co/normatividad/leyes/ley-2069-del-31-de-diciembre-de-2020.aspx>

<sup>175</sup> [http://www3.weforum.org/docs/WEF\\_TheGlobalCompetitivenessReport2019.pdf](http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf)

Table 4: Mapping capital and resource availability<sup>176</sup>

Country	Sub-pillar 9.01 - Domestic Credit to private sector (% of GDP)	Sub-pillar 9.02 - Financing SMEs (1-7 best)	Sub-pillar 9.03 - Venture capital availability (1-7 best)	Sub-pillar 9.04 - Market capitalization (% of GDP)
Argentina	128	132	118	92
Barbados	-	125	132	31
Bolivia (Pluri-national State of)	54	53	108	79
Brazil	52	103	74	52
Canada	4	27	27	9
Chile	24	47	35	20
Colombia	75	73	70	55
Costa Rica	58	98	96	108
Dominican Rep.	107	54	65	43
Ecuador	102	91	101	100
El Salvador	68	90	110	63
Guatemala	91	49	71	124
Haiti	119	141	137	125
Honduras	61	64	87	125
Jamaica	98	86	107	36
Mexico	92	85	58	56
Nicaragua	86	116	123	120
Panama	33	44	52	70
Paraguay	85	67	91	113
Peru	82	95	73	49
Trinidad and Tobago	88	110	119	22
United States of America	3	2	1	6
Uruguay	106	57	68	121
Venezuela	n/a	131	129	115

Source: Adapted from the Global Competitiveness Report 2019

<sup>176</sup> Antigua and Barbuda, Bahamas, Belize, Cuba, Dominica, Grenada, Guyana, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Suriname are not ranked. The Global Competitiveness Report ranks the economy of each country out of 141 countries. The table uses the ITU colour-coding system: Green indicates strong performance and presence of good practice. Yellow indicates insufficient performance but presence of some good practice. Red indicates poor performance and an absence of good practice.

Non-financial resources include other necessary elements, such as office space, mentorship, networking opportunities, and legal and business expertise. Start-ups need both financial and non-financial resources to be able to innovate in an ICT-centric innovation ecosystem.

### 2.4.5 Market and networks

All countries require ICT-centric innovation to solve problems related to sustainable development, however, domestic markets in the region are relatively underdeveloped and unsophisticated, despite a huge potential market. The Americas region has five countries in the top quartile for market size in the world: Argentina, Brazil, Canada, Mexico, and the United States, but this is not reflected in market sophistication, such as ease of obtaining credit, credit available to the private sector, market capitalization and ease of investment.

Table 4 shows that only Canada, Chile, and the United States rank high on credit availability for the private sector and market capitalization (scored as per cent of GDP). The remaining countries in the region fall in the second and third quartiles, demonstrating the need and potential for markets and entrepreneurs to align.

Similarly, networks and clusters exist in the region to ensure that innovators have the necessary resources to develop ideas and successfully undertake the entrepreneurial journey, but not at a level that helps develop its competitiveness.

In Canada, the Digital Charter<sup>177</sup>, issued by the Minister of Industry, is a good example of a national strategy. Since 2016, the Government of Canada has been developing a plan for economic growth that includes creating jobs, helping citizens gain skills for the future workforce and building innovation ecosystems for a nation of innovators. Through open consultations held in 2018 and 2019, a revised plan has been put together with a clear vision for a competitive, inclusive, digital and data-driven nation. This plan focuses on three areas: (i) skills and talent: preparing for the workplace of the future, (ii) unleashing innovation: supporting growth of competitive Canadian companies, and (iii) privacy and trust: making Canada a leader in the digital age.

### 2.4.6 Culture and communities

There is significant room for improvement when it comes to entrepreneurial culture and community in the Americas region.<sup>178</sup> For the most part, people are not able to identify opportunities for entrepreneurship and do not perceive the regulatory environment as supportive of entrepreneurship. Willingness to take risks is low across the region. The positive perception of entrepreneurship is not reflected in the proportion of individuals who undertake the entrepreneurial journey, demonstrating an opportunity to capitalize on the cultural perception of entrepreneurship in the Americas region. The majority of people who undertake the journey see entrepreneurship as a necessity, rather than entering entrepreneurship because they see it as a good opportunity.

Table 5 draws on raw data from the Global Entrepreneurship Index to present an overview of entrepreneurial culture in the region through the lens of pillars 1 (opportunity perception), 3 (risk

<sup>177</sup> [https://www.ic.gc.ca/eic/site/062.nsf/vwapj/Digitalcharter\\_Report\\_EN.pdf/\\$file/Digitalcharter\\_Report\\_EN.pdf](https://www.ic.gc.ca/eic/site/062.nsf/vwapj/Digitalcharter_Report_EN.pdf/$file/Digitalcharter_Report_EN.pdf)

<sup>178</sup> <https://thegedi.org/2019-global-entrepreneurship-index/>



acceptance), 5 (cultural support) and 6 (opportunity start-up). The top countries are Canada, Chile, and the United States, with the vast majority of the remaining countries in the region needing to improve elements of their entrepreneurial culture.

**Table 5: Mapping entrepreneurial culture and communities**

Country	Pillar 1	Pillar 3	Pillar 5	Pillar 6
	Opportunity Perception	Risk Acceptance	Cultural Support	Opportunity Startup
Argentina	0.146	0.019	0.182	0.181
Barbados	0.682	0.35	0.523	0.305
Belize	0.401	0.149	0.307	0.365
Bolivia (Pluri-national State of)	0.134	0.127	0.242	0.049
Brazil	0.352	0.174	0.371	0.11
Canada	0.981	0.708	0.975	0.999
Chile	0.821	1	0.628	0.633
Colombia	0.582	0.27	0.277	0.261
Costa Rica	0.432	0.333	0.508	0.404
Dominican Rep.	0.238	0.15	0.301	0.207
Ecuador	0.155	0.069	0.166	0.227
El Salvador	0.27	0.12	0.236	0.17
Guatemala	0.211	0.246	0.244	0.254
Guyana	0.287	0.028	0.246	0.287
Honduras	0.266	0.081	0.241	0.175
Jamaica	0.545	0.022	0.397	0.24
Mexico	0.434	0.409	0.104	0.287
Nicaragua	0.116	0.022	0.191	0.141
Panama	0.315	0.555	0.227	0.185
Paraguay	0.308	0.155	0.174	0.195
Peru	0.429	0.426	0.246	0.375
Trinidad and Tobago	0.556	0.761	0.275	0.383

Table 5: Mapping entrepreneurial culture and communities (continued)

Country	Pillar 1	Pillar 3	Pillar 5	Pillar 6
	Opportunity Perception	Risk Acceptance	Cultural Support	Opportunity Startup
United States	0.864	0.969	0.816	0.849
Uruguay	0.503	0.37	0.565	0.369
Venezuela	0.054	0.024	0.094	0.02

Source: Adapted from the 2018 Global Entrepreneurship Index raw data<sup>179</sup>

Improving the entrepreneurial culture will require incentivizing people to become entrepreneurs through favourable policies for start-ups, generous insolvency regulations to provide confidence in risk taking, subsidies and channels for start-ups to find investors, and a market that will allow innovators to sell their products and services.

## 2.4.7 Policy and regulation

Policies and regulations surrounding entrepreneurship and innovation in the region are mixed. Policies and regulations that protect intellectual property (making it easy and affordable to start a business and reduce risk in case of business failure) differ greatly from country to country, and within countries.

Table 6 provides a view of the policy and regulatory environment for entrepreneurship and innovation using Global Competitiveness Index 2019<sup>180</sup> ranks and colour-coded indicators to provide a snapshot of the environment for innovators in the region.

Table 6: Mapping entrepreneurship-driven ICT-centric innovation policy<sup>181</sup>

Country	Overall rank	Pillar 1: Institutions rank	Sub-pillar 1.15: Intellectual Property protection (1-7 best) rank	Pillar 11: Business dynamism rank	Sub-pillar 11.01: Cost of starting a business (% of GNI per capita) rank	Sub-pillar 11.02: Time to start a business (days) rank	Sub-pillar 11.04: Insolvency regulatory framework (0-16 best) rank	Sub-pillar 11.05: Attitudes towards entrepreneurial risk (1-7 best) rank
Argentina	83	88	85	80	62	65	69	69
Barbados	77	66	66	66	77	85	49	125
Bolivia (Plurinational State of)	107	134	138	126	129	131	112	106
Brazil	71	99	95	67	60	104	17	63
Canada	14	13	24	12	7	2	49	20
Chile	33	32	42	47	65	32	26	49
Colombia	57	92	92	49	92	65	65	81
Costa Rica	62	54	49	92	80	107	114	71

<sup>179</sup> [https://thegedi.org/wp-content/uploads/dlm\\_uploads/2017/11/GEI-2018-data.xlsx](https://thegedi.org/wp-content/uploads/dlm_uploads/2017/11/GEI-2018-data.xlsx) The table uses the ITU colour-coding system: Green indicates strong performance and presence of good practice. Yellow indicates insufficient performance but presence of some good practice. Red indicates poor performance and an absence of good practice.

<sup>180</sup> [http://www3.weforum.org/docs/WEF\\_TheGlobalCompetitivenessReport2019.pdf](http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf)

<sup>181</sup> The table uses the ITU colour-coding system: Green indicates strong performance and presence of good practice. Yellow indicates insufficient performance but presence of some good practice. Red indicates poor performance and an absence of good practice.

Table 6: Mapping entrepreneurship-driven ICT-centric innovation policy (continued)

Country	Overall rank	Pillar 1: Institutions rank	Sub-pillar 1.15: Intellectual Property protection (1-7 best) rank	Pillar 11: Business dynamism rank	Sub-pillar 11.01: Cost of starting a business (% of GNI per capita) rank	Sub-pillar 11.02: Time to start a business (days) rank	Sub-pillar 11.04: Insolvency regulatory framework (0-16 best) rank	Sub-pillar 11.05: Attitudes towards entrepreneurial risk (1-7 best) rank
Dominican Rep.	78	86	64	86	93	90	59	44
Ecuador	90	106	108	130	107	133	120	105
El Salvador	103	132	127	111	128	90	75	86
Guatemala	98	121	103	96	105	85	129	22
Haiti	138	139	139	141	140	138	135	139
Honduras	101	116	84	103	126	78	101	37
Jamaica	80	91	63	33	57	7	49	41
Mexico	48	98	67	41	102	52	38	65
Nicaragua	109	124	123	123	134	82	101	96
Panama	66	80	58	77	63	32	95	67
Paraguay	97	115	117	115	124	123	69	68
Peru	65	94	124	97	81	111	69	70
Trinidad and Tobago	79	102	102	87	16	63	49	123
United States of America	2	20	12	1	24	31	1	2
Uruguay	54	40	39	82	110	39	69	118
Venezuela	133	141	141	140	141	141	120	66

Source: Adapted from the 2019 Global Competitiveness Index

These indicators show that while some aspects of the regulatory and policy environment are strong, others need improvement for entrepreneurship to flourish.

Canada and the United States are strong in all four pillars, but differences even within them lie. While in Canada it is easy and cost effective to start a business, there are insufficient regulatory frameworks to be able to bounce back if a business fails. The United States has the opposite scenario, in which it is slightly more difficult and costly to start a business, but extremely effective in providing insolvency regulations.

Chile, Jamaica, and Panama also rank high in time to start a business. In fact, Chile was one of the pioneers in Latin America to adopt legislation (Decree n 45, of 2013) that simplifies the process to register a business, reducing the time needed to just one day in some cases. This legal approach has inspired an analogous solution in Mexico, which approved the General Commercial Societies law (of 2016, last updated 2018) to simplify the start of business with new modalities, faster registration procedures and lower costs.

While Table 6 shows variation in the ranking of insolvency regulations and cost and time needed to start a business, many of the remaining country rankings fall into the range of present, but insufficient. Among the 141 countries listed in this study worldwide, eight countries in the Americas region have ranked among the bottom quarter in three or more pillars: Bolivia (Plurinational State of), Ecuador, El Salvador, Haiti, Nicaragua, Paraguay, Peru and Venezuela.

Regional good practices: Accelerating innovation, entrepreneurship  
and digital transformation in the Americas region

Few countries have IP protection, and many have barriers of time and/or costs to start a business, and poor insolvency regulatory frameworks.

Improving policy and regulation for an enabling environment towards a healthy innovation ecosystem will require strengthening intellectual property protection laws, making it easier (and more accessible and affordable) to start a business, providing mechanisms that allow people to pursue entrepreneurship without risk of insurmountable damage in the event of business failure and ensuring that competition is possible.

## 3 Good practices accelerating digital transformation

This section highlights good practices that fuel digital transformation in the Americas region by providing a snapshot of each case study. Every chosen case impacts one or more building block of ICT-centric innovation, or type: innovation dynamics, innovation capacity and ICT innovation in key sectors.

For samples of full case studies, please see Appendix B.

### 3.1 Accelerate Okanagan (Canada)

Accelerate Okanagan is a not-for-profit organization that serves as a technology accelerator. Since 2012, it has given new and growing technology-driven businesses the mentorship, connections and community they need to thrive. Accelerate Okanagan works with a wide range of actors – aspiring entrepreneurs, start-ups, job seekers, career changers, companies looking to expand and grow, and companies with proven track records – all looking for the opportunities to learn and foster their successes. There are currently four programme stacks from idea to exit:

Startup Basics is focused on ideation to product validation.

- the BC Venture Acceleration Program ranges from product validation, through market validation to market penetration.
- W Venture and OKGN Angel Summit tackle the market validation, market penetration and market expansion phases.
- RevUp addresses the market expansion and exit or anchor phases.

This practice impacts all three building blocks of innovation:

- **innovation dynamics**, by providing community connections to learn best practices to raise capital with local investors;
- **innovation capacity**, by providing hands on support, mentorship, coaching, training, and peer-to-peer engagement, and the necessary skills to confidently address participant business challenges; and
- **ICT innovation key sectors**, by focussing on tech-enabled entrepreneurs who are committed to starting a company in sectors such as in biotech, agritech or advanced manufacturing sectors.

### 3.2 Ayitic Goes Global (Haiti)

Ayitic Goes Global is a multi-partnership programme, which includes the Latin America and Caribbean Network Information Centre (LACNIC), International Development Research Centre (IDRC), Ecole Supérieure d'Infotronique d'Haïti (ESIH), Caribbean Open Institute (COI), 3x3 Design (3x3), and the Slashroots Foundation. The Ayitic programme originally focused on strengthening Internet infrastructure by training local technicians on topics such as network management, security, wireless technology, IPv6 deployment. This initiative has been reshaped to drive Internet development from the point of view of demand - the growth of digital markets - and to promote inclusive access. It incorporates two new central objectives: to encourage

women's involvement in technology and to promote the development of employment opportunities in digital markets. It has reached more than 450 young Haitian women, enhancing their participation in the digital economy by addressing the ICT skills gap and local infrastructure. It has promoted the growth of a digital data-related job market in Haiti by teaching digital skills and facilitating access to remote job opportunities.

This practice impacts two of the building blocks of innovation:

- **innovation dynamics**, by establishing and scaling partnerships to strengthen the digital and data-related activities of this programme, focused on addressing the fragile state of Haiti's economy; and
- **innovation capacity**, by offering training and mentorship, building capacities among ICT professionals, in particular addressing the gender-related inclusion gap.

### 3.3 AZ TechCelerator (United States)

The AZ TechCelerator is a business incubator with a focus on technological innovation and entrepreneurship. This innovation centre has a 66 000 square foot campus based in the United States of America, and it is managed by the City Economic Development Department. It has an affiliated membership programme to help scalable technology and innovation companies accelerate to market with the support of affordable space, free and low-cost expertise, management and financing support, and the mutual support of other early stage growth companies. It also cultivates collaboration to boost community exchange for entrepreneurs and freelancers. Among its programmes, Startup Space is an app for entrepreneurs to connect start-ups with resources in their local communities so they can quickly find what they need to build their businesses.

This practice impacts **innovation capacity** by incubating start-ups and small businesses, providing mentorship, training, affordable space and multiple resources as needed by the entrepreneurship ventures.

### 3.4 BrazilLAB (Brazil)

BrazilLAB is a business to government (B2G) innovation hub for the public sector that finds solutions and connects entrepreneurs with government agencies. Its goal is to promote a culture of innovation in the public sector by supporting high-impact entrepreneurs working on solutions to challenges in society and bringing them together with public leaders open to innovation. It has already accelerated 81 start-ups and impacted 5 100 entrepreneurs in 27 cities. This impacts two of the building blocks of innovation:

- **innovation dynamics**, by providing a channel to engage in the search for solutions to public sector issues and local government challenges by engaging public sector managers from a network of municipalities in the innovation agenda and connecting entrepreneur-based solutions with high social impact and low cost. They also work in partnership with civil society organizations, such as Comunitas, a non-governmental organization (NGO) for corporate social investment, and CLP (Centre for Public Leadership)<sup>182</sup>, a non-partisan NGO to improve quality of public policies and promote change through effective management; and

<sup>182</sup> <http://www.clp.org.br/>

- **innovation capacity**, by providing acceleration programmes that includes mentorship, networking, access to public leaders, access to public sector leaders, access to media and dissemination, knowledge on challenges faced by municipalities, and investor rounds.

### 3.5 Carao Ventures (Costa Rica)

Carao Ventures is a venture capital firm based in San José, Costa Rica. It is focused on early-stage investment such as seed funds for start-up acceleration, particularly in the fields of software, biotechnology, education, and fintechs. In addition to funding, it also helps to create an acceleration programme tailored to each case, including operative and strategic resources, access to other entrepreneurs, and potential partnerships.

This practice impacts **innovation capacity** by providing acceleration to start-ups, including capital, hands-on support, strategic guidance for business growth, mentorship, and access to a network of professionals and other entrepreneurs.

### 3.6 CPqD (Brazil)

The CPqD (centre for research and development in telecommunications) foundation was established in 1976 as part of the R&D efforts of Telebras. Since 1998, CPqD is a private not-for-profit entity focusing on ICT innovation and has a broad range of initiatives. CPqD is one of the largest ICT R&D and innovation centres in Latin America region, with a wide range of initiatives aiming to create innovative ICT solutions, boost ICT innovation ecosystems, and accelerate the digital transformation processes contributing to the operational efficiency, better user experience, improved business models, safety and liability of products.

This practice impacts all three building blocks of innovation:

- **innovation dynamics**, by providing diverse technological, market and regulatory analysis and solutions, including a decision-making platform powered by machine learning, and exchanging best ICT-centric innovation policy-making practices with other stakeholders;
- **innovation capacity**, by providing mentorship, training and learning opportunities in ICTs, particularly in Internet of Things (IoT), artificial intelligence (AI), connectivity, blockchain and electrical mobility; and
- **ICT innovation in key sectors**, by supporting start-ups throughout the innovation journey, from ideation to implementation, in fields including telecommunication, agribusiness, finance, security, among others.

### 3.7 Globant Ventures and Parabol (Argentina)

Globant Ventures a start-up accelerator and Parabol is an innovation cluster. Both are part of the software company Globant Group.

Globant Venture is located in Buenos Aires. It was created in 2017 as a corporate accelerator investing in technology start-ups. It is focused on high-impact emerging technologies with sustainable value propositions, from the initial stages through the growth paths. The acceleration programme offers mentoring, training, coaching, a co-working space, and provides access to networks, opportunities and potential new investors. They have also been selected by the Argentina Federal Government (FONDCE) to co-invest in start-ups.

Parabolt is based in Buenos Aires and was created in 2018. It builds on the start-up way of thinking to transform innovative ideas into new products and scalable business, by driving innovation, developing valuable ecosystems, and creating disruptive technology. It operates in three main streams: as a corporate innovation accelerator, a start-up digital transformation accelerator, and an innovation ecosystem collaboration to accelerate and enhance tech solutions to benefit our users and customers.

Combined, Globlant Ventures and Parabolt impact all three pillars:

- **innovation dynamics**, by providing technology-driven solutions combined with the start-up adaptability culture to boost digital transformation and to bring innovation to corporations and entrepreneurs;
- **innovation capacity**, by providing mentorship, training and investment to start-ups focused on high impact technologies; and
- **ICT innovation in key sectors**, by supporting start-ups from ideation to growth and nurturing collaboration in the innovation ecosystem working with multiple actors to accelerate and enhance technology solutions.

### 3.8 IdeaLab Jamaica (Jamaica)

IdeaLab is a private business incubator based in Jamaica. It aims to fast track the growth of start-ups and small tech businesses. Besides the traditional support with affordable office space and business support services, it encourages entrepreneurship through collaboration in an environment that provides ideas to entrepreneurs by being able to freely share, explore and build on a simple idea. As a growth accelerator, and through its qualified network of professionals, its supporting process steps go from understanding the business, assessing its needs to identifying the funding opportunities and developing a growth strategy to accelerate performance.

This practice impacts **innovation dynamics** by providing an holistic set of services to support start-ups and small businesses looking for growth, through partnership and the sharing of ideas.

### 3.9 iNNpulsA Colombia (Colombia)

iNNpulsA Colombia is a government-led business accelerator that promotes innovation and entrepreneurship under the Ministry of Commerce, Industry and Tourism. It focuses on high impact projects, building on innovative processes and funding opportunities to scale business and boost economic development in Colombia.

This practice impacts **innovation capacity** by promoting an interconnected ecosystem and developing a culture of support for entrepreneurs, including financial support, diagnosis and work plan design, and exchange of experience and expertise to fill gaps of knowledge in the entrepreneurial process. The ALDEA programme provides access to experts (mentorship), access to financial investment, and a digital platform to connect with other key actors. Almost 300 businesses benefited from this programme. In addition, the HEROES FEST festival, organized by the Colombia Ministry of Commerce, Industry and Tourism, creates a dynamic network to connect leaders and entrepreneurs, at national and international level, to inspire, learn and develop ideas that boost productivity, economic development and digital transformation in Colombia. More than 40 000 people were impacted by the past five events. The EMPODERA programme is focused on inclusive leadership, including gender balance, by developing skills and building capacities for women entrepreneurs.



### 3.10 NXTP (Argentina)

NXTP is based in Buenos Aires and is a pioneer of the venture capital industry in Latin America. Currently focused on seed and series A rounds of investment, the core verticals are: B2B SaaS/enterprise software, logistics technology, fintech, Internet security, B2B marketplace, artificial intelligence and information services. Since 2011, NXTP has accelerated more than 400 start-ups, 202 investments and 150 co-investments, leading to 16 exits and 1 unicorn.

This practice impacts **innovation capacity** by providing acceleration services to start-ups, including capital, hands-on support, mentorship, networking and access to investors. In addition, NXTP Labs has created the Empreendedora LAC programme focused on empowering women entrepreneurs.

### 3.11 Startup Peru (Peru)

Startup Peru is a government-driven initiative that has served over 400 entrepreneurs, as part of the INNOVATE PERU programme under the Ministry of Production. It aims to boost new businesses that offer innovative services and products. The range of programmes goes from offering seed capital and building community collaboration, to providing scalable resources to innovative, dynamic or high-impact entrepreneurship. It is not a typical fund to develop technology or R&D, because it relies on business assessments of innovative ICT businesses with a potential for growth or minimum viable product (MVP).

This practice impacts **innovation capacity** by granting seed capital, technical advice expertise and resources to entrepreneurs or new small businesses to develop their business ideas based on innovation.

### 3.12 TEN Habitat (Barbados)

TEN Habitat is a creative non-profit start-up accelerator that matches natural habitat essential elements to the entrepreneurship habitat. Food is the mentorship and guidance for entrepreneurs to achieve business growth, water is the funding, space is the co-working space that serves as an innovation hub, and cover is the media coverage to share Caribbean entrepreneurial success stories. This practice impacts two of the building blocks of innovation:

- **innovation capacity**, by serving as an innovation hub that builds a supportive community in Barbados and in the Caribbean for sharing ideas and experience with other entrepreneurs and having access to investor networks. It also provides a hybrid acceleration programme from ideation to business growth that includes hands-on support, training, shared office space, mentorship, coaching;
- **ICT innovation in key sectors**, by launching a programme to help fight the COVID-19 pandemic, calling on innovators and entrepreneurs to generate industry transformation, to develop viable solutions, and to create rapid responses that solve problems revealed by the pandemic, including AI and big data, digital payment solutions, food security, future of education, (re-imagining) tourism, environmental resources management and healthcare systems.

## Appendix A - Methodology

This section describes the project research methodology. The first section explains the research goals and methods of the report. Each subsequent section explains: the necessary definitions to understand the report; namely the engines of growth, enablers of digital transformation, ecosystem maturity map, and good practices, and the data collection and analysis methods used for each section.

### A.1 Research goals and methods

The goals of this research were to: understand the state of the Americas region ICT-centric innovation ecosystem; understand the state of the ICT-centric innovation capacity based on the three engines of growth (technology ecosystem, entrepreneurial ecosystem and innovation ecosystem); provide a comparative ranking of the ICT-centric innovation ecosystems; and identify good practices from the Americas region that can be used to build sustainable digital innovation ecosystems with the ITU digital innovation framework.

This framework was first introduced in the ITU report *Bridging the digital innovation divide: A toolkit for strengthening ICT-centric ecosystems*<sup>183</sup>. It enables countries to understand their digital innovation ecosystem challenges, opportunities to create ICT start-ups, nurture talent, and develop specific guidelines and recommendations, initiatives, programmes, and projects to help create new jobs and new growth based on best practices.

This report was compiled primarily using desktop research and surveys. ITU collected evidence on the overall digital innovation ecosystem in the region using sources including peer-reviewed academic articles, books, government websites, government reports, intergovernmental and non-governmental agencies and the private sector, and national and regional newspapers. In some cases, surveys were used to collect additional information where possible, for example, on details of a good practice.

### A.2 Monitoring ICT-centric ecosystems

#### A.2.1 The three engines of growth

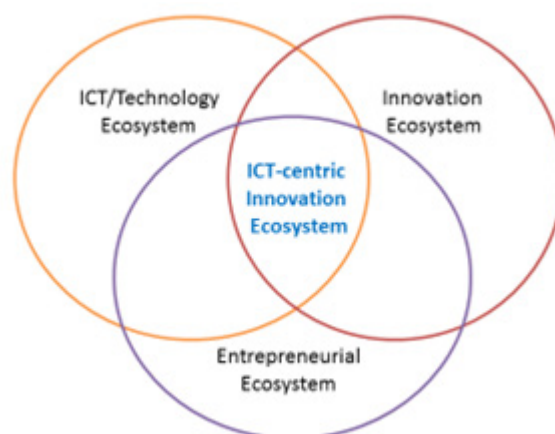
The three engines of growth are key to a country's digital transformation journey: the national innovation ecosystem, the entrepreneurial ecosystem and the technology ecosystem.

- **National innovation ecosystem:** The national innovation ecosystem – which includes research institutions, academia and public sector entities such as national innovation agencies and public sector financial institutions – plays an invaluable role in the national innovation journey, particularly in kick-starting innovation.
- **Entrepreneurial ecosystem:** This includes the entrepreneurs, their support systems and the organizations that initially nurture the formation of enterprises through the “valley of death” and subsequently nurture growth as SMEs. Often, tech start-ups that have the potential to become high-growth firms end up as SMEs because of the lack of a market or appropriate business models. These support networks enable them to achieve their full potential.

<sup>183</sup> [https://www.itu.int/en/ITU-D/Innovation/Documents/Publications/Policy\\_Toolkit-Innovation\\_D012A0000D13301PDFE.pdf](https://www.itu.int/en/ITU-D/Innovation/Documents/Publications/Policy_Toolkit-Innovation_D012A0000D13301PDFE.pdf)

- **Technology ecosystem:** The technology ecosystem includes high-growth technology companies and the ecosystems that support them. These include high-tech companies, their original equipment manufacturers, system integrators, firms in ICT sectors and business-to-business (B2B) technology platforms that support SMEs. These companies and their ecosystems are integrated into local or global value chains. This ecosystem development is critical to a country's ability to leverage technological innovation and to create high-growth industries and jobs.

Figure A.1: The three engines of growth



Source: ITU

A country's ICT-centric ecosystem is where the three engines of growth intersect. In an immature ecosystem, the three engines of growth lack synergy: ecosystem stakeholders operate in silos and do not align their initiatives toward a common vision. By contrast, in a mature ecosystem, members of the three engines of growth understand their roles and perform them individually while also working together to create policies and initiatives that enable a thriving digital innovation environment. Understanding and assessing the ecosystem makes it possible to identify the enablers needed to achieve the national vision. Enablers include programmes, policies and initiatives that foster digital transformation.

## A.2.2 Data collection and analysis

With this understanding, data were collected by consulting published global indices, which can serve as a proxy for the three engines of growth. The indices are published by reputable academic institutions, international organizations and non-profit organizations<sup>184</sup>.

The Global Innovation Index measures and ranks efforts and success in innovation. The ITU ICT Development Index measures ICT infrastructure and access, level of ICT use in society and the impact of efficient and effective ICT use.

The Global Competitiveness Index is published in the WEF Global Competitiveness Report. This index measures 12 pillars that the organization has identified as essential to national competitiveness; namely: institutions; infrastructure; ICT adoption; macroeconomic stability;

<sup>184</sup> As mentioned previously, the indices are: (a) the ICT Development Index (IDI), published by ITU; (b) the Global Innovation Index published annually by Cornell and the World Intellectual Property Organization (WIPO); (c) the Global Competitiveness index published annually by the World Economic Forum (WEF) and the (d) Global Entrepreneurship Index published annually by the Global Entrepreneurship Development Institute.

health; skills; product market; labour market; financial system; market size; business dynamism, and innovation capability.

The Global Entrepreneurship Index measures 14 entrepreneurship-enabling pillars: opportunity perception; start-up skills; risk acceptance; networking; cultural support; entrepreneurship by choice (rather than necessity); technology absorption; human capital; competition; product innovation; process innovation; high growth; internationalization and risk capital.

ITU analysed and colour coded the information from these major indices to create the ICT-centric innovation performance monitor. The monitor provides a comparative assessment of the ecosystem performance according to the three engines of growth both within and between countries in the region. The monitor can be used to reflect a set threshold for action by decision-makers.

## A.3 Monitoring the enablers of digital transformation

### A.3.1 The seven enablers of digital transformation

The ITU toolkit, *Bridging the digital innovation divide: A toolkit for strengthening ICT-centric ecosystems*, introduces the ecosystem canvas to help stakeholders understand the environment that innovators and entrepreneurs face when undertaking the journey to bring their ideas to market. The ecosystem canvas has seven pillars, each of which is a crucial component of an ICT-centric innovation ecosystem.

The pillars are:

- **Vision and strategy:** This pillar focuses on how the ecosystem is currently performing, what vision the stakeholders have, how the vision will perform, and what needs to be done to take the ecosystem from its current state to its ideal future state.
- **Infrastructure and programmes:** This pillar includes both hard infrastructure (such as connectivity, roads, electricity and public transportation) and soft infrastructure (such as knowledge-sharing mechanisms such as tech hubs, training resources and research institutions). Programmes can take advantage of this infrastructure to support the ecosystem.
- **Talent and champions:** Talent is the ecosystem human capital, who should possess hard skills such as engineering and programming, as well as soft skills such as management, communications and administration. A champion plays a leadership role in the ecosystem by initiating change, building cornerstone institutions and encouraging the contributions of new actors.
- **Capital and resources:** Start-ups cannot succeed without capital and resources. In the early stages, they need risk capital (such as from angel investors). As they mature, VC and private equity funds help them grow. The majority of this funding should come from private investors. To complement the work of financing start-ups directly, support networks and other ecosystem-building programmes need resources to operate successfully.
- **Markets and networks:** Start-ups need markets to serve. It is important for innovators and entrepreneurs to understand the depth of market needs, in addition to local, regional, and international access. Governments are often a significant purchaser of products and services, and a source of contracts for up-and-coming enterprises. Transparent public procurement processes are useful for start-ups. Networks and clusters are also needed in ecosystems to ensure that innovators have access to the resources and connections they need.
- **Culture and communities:** An innovative, entrepreneurial culture has key values such as risk-taking, an appreciation for failure, and a willingness to iterate and learn. These

values create a blueprint for behaviour across ecosystem stakeholder groups, exhibited by communities of innovators and champions through events and activities.

- **Regulation and policy:** Supportive policies and regulations can provide fertile ground for the efforts of entrepreneurs and innovators, while poorly developed policies can stifle innovation. There are a number of areas of policy and regulation that are critical to the success of the innovation ecosystem, including taxation, trade policy, intellectual property law, financial regulation and business regulation.

Within a country, these pillars provide the necessary ingredients to nurture digital entrepreneurship and innovation, looking at a more granular level when the three engines growth come together.

### A.3.2 Data collection and analysis

For this report, desktop research was conducted using this framework to examine what is happening in an ecosystem and identify problems and possible solutions. The pillar framework identifies country performance in each of the seven pillars, contributing to an understanding of their individual performance and their performance relative to the region.

A complementary quantitative and qualitative approach can also be used to obtain the information needed for this framework. However, due to the complexity of collecting this data for all countries, this report is limited to desktop research.

Any country interested in a comprehensive analysis of its ecosystem should request technical assistance from ITU to develop a profile of its digital innovation ecosystem.

## A.4 Monitoring the ecosystem maturity map

Once there is an understanding of global and regional performance indicators, and an understanding of the enablers and indicators of digital transformation, it is crucial to understand the entrepreneurial lifecycle, which helps explain how innovation can move from ideas to creating small and medium businesses, high-growth firms and, ultimately, world-class exports.

### A.4.1 The framework

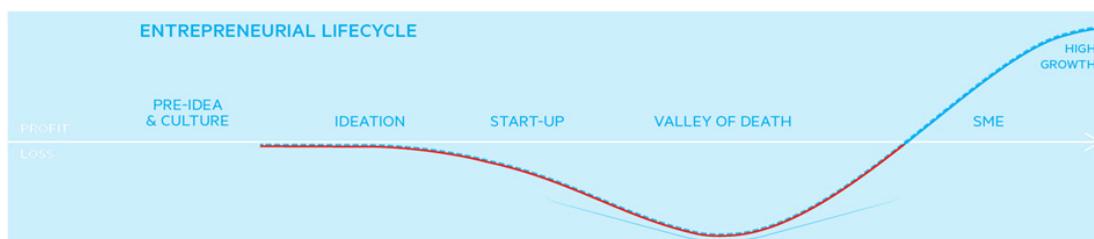
Harvard economist Clay Christiansen, while studying the theory of disruptive innovation by companies, realized that the traditional ways in which companies deliver products and services to serve market can be ineffective in creating competitive solutions and lasting companies<sup>185</sup>. If a product or service does not answer a need or desire, it is unlikely to sell, no matter how innovative it is.

In the context of the innovation journey, 90 per cent of small and medium businesses fail because they cannot sustainably deliver the right products and services to market. Yet they are expected to be the engine for job creation and to grow into mature firms.

The entrepreneurial lifecycle shown below describes what must be done to create growth and economic inclusion. Therefore, to be competitive, an innovation-driven economy entails the nurturing of innovators on the journey of developing ideas into businesses.

<sup>185</sup> <https://hbr.org/2005/12/marketing-malpractice-the-cause-and-the-cure>

Figure A.2: The entrepreneurial lifecycle



Source: ITU

This does not change from country to country, or from community to community. However, the approach used can change based on the context (such as opportunities) and stakeholder actions. For example, in Silicon Valley, financiers have a strong appetite for high growth and collaboration, which means that they will support innovators much longer through the valley of death until they can figure out a strong global business model that creates high-growth firms<sup>186</sup>. In locations with fewer resources and less collaboration, stakeholder actions may end up creating barely sustainable innovations which never grow. Without access to the right resources and collaboration, innovators will lack appropriate talent to create strong businesses.

ITU has developed the ecosystem maturity map (also known as the stakeholder interface canvas) adapted from the valley of death curve. This tool maps the roles and actions of stakeholders at each stage of the start-up lifecycle. Once the map is complete, it offers guidance on how relevant a practice may be to a country or community. Failure to focus ecosystem interventions on the right element can waste valuable ICT investment and offer no relief to the competitiveness of an ICT ecosystem.

Figure A.3 represents a colour-coded version of the ecosystem maturity map for country A.

Figure A.3: Colour-coded ecosystem maturity map for country A

Entrepreneurship Phase	Pre-Idea	Ideation	Startup	The "Valley of Death"	SME
Entrepreneurs	Entrepreneurial Interest	Engage with problems	Develop Business Models	Build Collaboration	Expand
Finance	Research Funding	Seed Funding	Angel Investment	Venture Capital	Business Finance & Loans
Entrepreneurial Support	Entrepreneurial Events	Hackathons & Competitions	Co-working & Support	Incubators & Accelerators	Business Association
Private Sector	Success Stories	Research Programs	Lab programs	B2B & Support Services	Skill Training Programs
Academia	Entrepreneur Community	Basic Research	Spin Offs	Soft skill trainings	Human capital
Public Sector	Vision & Strategy	IP & R&D Support	Tax Support	Public Procurement	Trade Policy

Source: ITU

In this country A ICT-centric ecosystem, most stakeholders are not sufficiently performing the necessary roles to enable a thriving ecosystem. While the entrepreneurial support networks are performing well, entrepreneurs, academia and the public sector must significantly improve their work in each stage of the entrepreneurial lifecycle. The private sector and the finance sector have some practices that are working, but for the most part, they are in significant need

<sup>186</sup> Blitz-scaling book, Reid Hoffman, founder, LinkedIn

of improvement if country A is to develop a competitive ecosystem with world-class firms and high-growth exports.

For more information about this canvas, download the Ecosystem Maturity Map<sup>187</sup>.

## A.4.2 Data collection and analysis

Due to time constraints, the ICT-centric innovation policy monitor introduced in section 2 has only been done at the country level due to the extensive level of engagement with stakeholders required to determine the maturity level of an ecosystem.

However, for the purposes of this report, it is necessary to understand how good practice impacts each of the micro-jobs to be done. For detailed, country-level information, Member States are invited to contact ITU to develop a digital innovation profile for their country.

## A.5 Monitoring good practices

### A.5.1 Why use good practices?

Good practice is a proven practice that yields evidence-based impact and successful results and can be scaled up and replicated. Good practices are needed to help:

- develop flagship projects,
- comparatively assess the strengths and weaknesses of a practice, and
- undertake evidence-based policy or programme development.

Good practice enables actors to effortlessly add value to their ecosystem initiatives. However, because of differences in every ecosystem and every project, good practice cannot be blindly replicated.

ITU has developed the good practice canvas, a framework for understanding the blueprint of any practice. Practices examined through the canvas can then be replicated in other ecosystem projects, where they can add value and increase their chances of succeeding.

---

<sup>187</sup> <https://www.itu.int/en/ITU-D/Innovation/Documents/Ecosystem%20Maturity%20Tool.pdf>

## A.5.2 Good practice canvas

Figure A.4: The good practice canvas

The Good Practice Canvas is a structured form for documenting innovation practices. It is divided into several sections:

- PRACTICE:** A vertical header on the left side.
- TYPE:** A vertical header on the right side, with three categories: Guiding Innovation Dynamics, Building Innovation Capacity, and Integration of ICT into Key Sectors.
- GOVERNANCE:** A large box containing sub-sections for:
  - Name / Organization
  - Country
  - Tagline, 1-3 sentence description
  - Organic structure
  - Management & Institutional framework
  - Competencies
- KEY ACTIVITIES:** A large box containing sub-sections for:
  - Mechanisms
  - Processes
  - Activities
  - Events
- GOALS:** A large box containing sub-sections for:
  - Objective
  - Target stakeholders
  - Desired outcomes for ecosystem
- RESOURCES:** A large box containing sub-sections for:
  - Financial
  - Non-financial
  - Sources
  - Partners
- ACHIEVEMENTS:** A large box containing sub-sections for:
  - Results
  - Evidence of Impact
  - Sustainability
  - Replicability

Source: ITU

This tool, composed of seven core pillars, helps the user extract the blueprint of working practices (including key function breakdowns of these practices, along with their corresponding key performance indicators and success stories). The result is a promising blueprint that will enable stakeholders to choose specific building blocks of a good practice that they would like to adopt, replicate and share. The seven pillars of the good practice canvas are explained below:

- **Practice:** A short description of a practice, the country or city where it is used, a tagline for a practice (if any) and an elevator pitch, or one- to three-sentence description.
- **Type:** This refers to the building blocks of ICT-centric innovation: guiding innovation dynamics, building innovation capacity, and integrating ICT innovation in key sectors.
- **Goals:** This refers to specific objectives of the practice, including target stakeholders and the desired outcome for the ecosystem.
- **Key activities:** This pillar refers to events, related initiatives, processes and other activities to offer insights into the operating processes of adopted practice.
- **Governance:** This pillar asks for relevant information about organizational structure (such as flat or hierarchical), management (leadership structure and long-term driver or vision) and institutional frameworks (such as NGOs, government agencies, etc.), and the competencies (skills and functional roles) required to carry out the practice.
- **Resources:** This refers to critical elements such as financial and non-financial resources such as human capital, equipment and processes. Additionally, an understanding of key partnerships of the practice is also helpful as many non-financial resources are derived from partnerships. Furthermore, knowing the funding sources for a specific practice is useful when replicating it, as it can help identify suitable stakeholder groups that can provide the required resource.



- **Achievements:** This is where the practice is evaluated based on the following criteria:
  - replicability, or how easily it can be copied to a different context;
  - scalability, or the practice scope in achieving its goals; and
  - evidence of impact on the ecosystem, or the effectiveness of the practice in achieving its goals and results, which refers to outcomes based on key performance indicators (KPIs) set by the practice.

### A.5.3 Types of good practices

As mentioned throughout this report, good practices are organized around three key types that denote how they impact the overall ecosystem: guiding innovation dynamics, building innovation capacity, and integrating ICT innovation into key sectors. To have a competitive ecosystem, it is necessary to have a combination of all these practices.

#### A.5.3.1 Guiding innovation dynamics

- Is innovation on the map? How supportive of innovation is the general environment?

This first category, **guiding innovation dynamics**, refers to practices that enable digital innovation to exist. They support the general innovation environment.

Innovators need a suitable business environment, enabling policies and key programmes to develop appropriate technology solutions. Generally, many policies exist that promote entrepreneurship for non-digital innovators or sectors, and existing practices may need to be updated while new policies are developed to close the gaps.

A dynamic innovation environment requires coherent regulatory and organizational settings that guide, facilitate and promote innovation culture, mindset, projects and programmes. Countries need a clear roadmap, vision and strategy, and key initiatives; created through “enabling policies, regulations, and rules balancing the old analogue and the new digital economy”<sup>188</sup>.

Each stakeholder in the ecosystem must be able to benefit from their country’s environment and work together rather than in silos. Entrepreneurs, for example, must have the means and knowledge to create appropriate solutions for their communities.

Good practices guide innovation dynamics and balance stakeholder collaboration and market forces in a way that drive innovation, public-private partnerships and access to international markets. For example, policies such as reducing the cost of investment, and fiscal and financial policies can attract international start-ups, while start-up visas can attract talent. Start-up policies for growth could include tax incentives and funding incentives.

Often, practices have a regulatory basis to guide innovation dynamics, but they may not be effective, inclusive nor operational. The practices may be missing mechanisms for execution, creating competition instead of synergies through collaboration. Traditional innovation agencies are an example of these types of practice because they mostly operate in the innovation ecosystem – one of the engines of growth. Newer organizations are needed to tackle the problems of coordination, trust and cooperation that currently confront lagging ecosystems.

<sup>188</sup> <https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2018/WSIS/Accelerating%20Digital%20Transformation.pdf>

These agencies need to work across the three engines of growth to nurture cross-stakeholder collaboration.

### **A.5.3.2 Building innovation capacity**

- Are innovators equipped with the right tools, skills, know-how and resources to succeed?

The second type of good practice is **building innovation capacity**. This type of practice enables a sufficiently well-developed infrastructure and talent pool with access to resources in the ecosystem to solve problems in their community. They equip innovators with the right tools, skills, spaces and resources to succeed.

There is a need to provide adequate, skills and knowledge as well programmes that encourage success. In globalized digital economies, access to skills and know-how has been democratized with the many online courses aimed at unlimited participation and open access via the Internet (MOOCs) from reputable organizations, for example. Yet many communities struggle to access knowledge and resources. Lack of access to decent skills development initiatives and content that enable innovators, as well as the absence of spaces and programmes, inhibit the innovation capacity of entrepreneurs, especially in developing countries.

Innovation hubs, tech parks, lab programmes and other similar arrangements involving multiple stakeholders have sprung up around the world during the past few years to address the growing needs of innovation ecosystems. Whether formal or informal, innovation infrastructure, which is essential for building innovation ecosystem capacity, are usually clustered around higher-education institutions. When domestic capacity is insufficient, access to regional or global networks and resources becomes necessary.

Lastly, innovators need a continuum of funds to bootstrap and develop their ideas. Without these resources, much of the ecosystem struggles. Collaborative models with academic institutions, and among entrepreneurial support institutions and private sector companies, are essential for developing capacity and ensuring talent is well equipped.

### **A.5.3.3 Integrating ICT innovation into key sectors**

- Is ICT innovation integrated across key sectors?

The third and final category is good practices that help **integrate ICT innovation into key sectors** so that start-ups and SMEs can realize their full potential and scale up beyond their niche, enabling transformation across other industries.

Ecosystems must focus on national development priorities and make linkages to other ecosystems. Without this focus and linkages, innovators will struggle with entry and scale-up to unlock opportunities. One place where they can find quick alignment is in the public sector. This is particularly important for start-ups, who can take advantage of government demand. This helps innovators with product testing, validation, establishing credibility and growing, while also helping the government digitalize its services.

Innovative entrepreneurial ICT ventures realize their full potential when they can tap into other industries beyond ICT. This is where the potential for digital transformation is greatest. Here, collaboration with the private sector plays a vital role. By partnering with start-ups, corporations benefit from new ideas, circumvent corporate red tape to test new innovations, rapidly create

prototypes and benefit from the flexibility of entrepreneurial culture. At the same time, start-ups benefit from this partnership by accessing resources and infrastructure.

Another example is a cluster development initiative in which the ICT sector can drive innovation in non-ICT sectors. Cluster focus in a sector can help SMEs and large businesses digitally transform their value chains by enhancing their ability to create and deliver value in the marketplace. Here, the linkages between ecosystems and global networks of collaboration are important.

#### **A.5.4 Data collection and analysis**

Good practices were identified through available knowledge, desk research and networking. Data on each practice were collected through desk research, interviews with the practice owners and/or surveys; and analysed according to the pillars of the canvas. Using the Good Practice Canvas (introduced in 4.5.2), the pillars of each practice are presented in the full case studies.

## Appendix B - Full case study samples

This section provides good practice case studies in the Americas region that highlight the pillars of the good practice canvas<sup>189</sup> by providing:

- an overview of the practice, including its goals and target stakeholders;
- the type of case study;
- its governance structure;
- its partners and resources;
- its achievements.

To access all case studies in their entirety, please contact the ITU Digital Ecosystems Thematic priority at [itubrasilia@itu.int](mailto:itubrasilia@itu.int).

### B.1 Accelerate Okanagan<sup>190</sup> (Canada)

Accelerate Okanagan is a not-for-profit organization that serves as a technology accelerator. Since 2012, it has given new and growing technology-driven businesses the mentorship, hands on support, peer to peer engagement, connections, and community they need to thrive and to learn best practices to successfully raise capital with local investors. One of the most utilized programmes is focused on technology-enabled entrepreneurs who are committed to starting a company and working on a minimum viable product, in particular at think biotech, agritech or advanced manufacturing.

#### Type

This practice impacts all three building blocks of innovation: innovation dynamics, innovation capacity and ICT innovation key sectors.

#### Goal(s)

The Accelerate Okanagan mission is to help increase the number of technology companies that start and grow in the Okanagan region in the Canadian province of British Columbia. It recognizes the importance of support for entrepreneurs through mentorship, coaching, and community building for businesses and entrepreneurs at all stages of growth.

#### Target stakeholders

Accelerate Okanagan works with a wide range of actors: students, aspiring entrepreneurs, job seekers and start-ups, career changers, and private companies.

#### Governance

Accelerate Okanagan was established in 2012. It is led by a CEO who leads a team of 10 staff members. Its board is composed of 13 members with diverse backgrounds. It has a membership programme divided in two categories: technology companies (up to CAD 350) and technology supporters (up to CAD 500).

---

<sup>189</sup> In a few of the case studies, detailed information was not available on some good practice canvas pillars.

<sup>190</sup> <https://www.accelerateokanagan.com>

## Resources and partners

Accelerate Okanagan is supported by public funding, membership fees and corporate partnerships (partners, sponsors, and patrons).

Core financial support comes from:

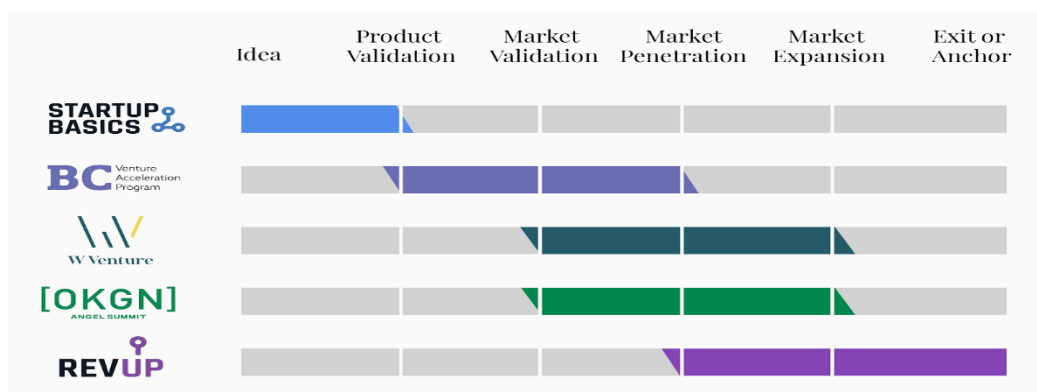
- the National Research Council Canada Industrial Research Assistance Program (NRC-IRAP);
- Innovate BC which is a Crown agency with a mandate to help strengthen entrepreneurship development, increase company growth, and support job creation, ensuring the benefits of technology and innovation are felt around the province, including rural, northern, and indigenous communities;
- the Western Economic Diversification Canada which is the federal department that promotes economic growth in Western Canada, and the Province of British Columbia.

Among its long list of partners, it is worth mentioning: BDO, Central Okanagan Economic Development Commission, Interior Savings, KPMG Kelowna, Lawson Lundell LLP, Okanagan College, Prospera Credit Union, Pushor Mitchell, University of British Columbia (Okanagan Campus), Canadian Securities Exchange, Crowe Mackay, Farris Vaughan Wills & Murphy LLP, and Community Futures North Okanagan.

## Activities and events

There are currently four programme stacks from idea to exit or anchor (Figure B.1). Startup Basics is focused on ideation to product validation. BC Venture Acceleration Program ranges from product validation, going through all market validation, to market penetration. W Venture and OKGN Angel Summit focus on market validation, market penetration and market expansion phases. RevUp addresses market expansion and exit or anchor phases.

Figure B.1: Snapshot of the programme stack



Source: Accelerate Okanagan

In spite of the level of experience from the entrepreneurs or the stage of company development, the Accelerate Okanagan has a diverse team of mentors, composed of peers, professionals, service providers, and executives in residence (EIRs) who are accomplished entrepreneurs ready to give back to the community that supported their success.

## Achievements

The 2017 Economic Impact Study commissioned by Accelerate Okanagan and the Central Okanagan Economic Development Commission (COEDC) indicates that the direct and indirect economic impact of OKGNtech within the Okanagan reached around CAD 1.67 billion, with almost 13 000 jobs impacted, and a yearly growth of 15 per cent for the past five years. According to this study, the Okanagan is the fastest growing technology and innovation hub in Canada.

### Impact on the entrepreneurial lifecycle

Accelerate Okanagan has instilled good practices in boosting entrepreneur interest, organizing events, sharing success stories, build collaboration, engaging with problems, developing business models, providing seed funding, angel investment and venture capital, expansion, incubators and accelerators, co-working, and B2B and support services.

## B.2 Ayitic Goes Global<sup>191</sup> (Haiti)

The name ayitic is a combination of “Ayiti” (the country's name in Haitian Creole) and “TIC” (French for ICT). The Ayitic Goes Global programme is a multi-partnership effort that was originally focused on strengthening Internet infrastructure by training local technicians on topics such as network management, security, wireless technology, IPv6 deployment. It has since been reshaped to drive Internet development from the point of view of demand – the growth of digital markets – and to promote inclusive access, particularly to encourage women's involvement in technology and to build employment opportunities in digital markets. It has promoted the growth of a digital data-related job market in Haiti by teaching digital skills and facilitating access to job opportunities.

### Type

This practice impacts two building blocks of innovation: innovation dynamics and innovation capacity.

### Goal(s)

The Ayitic Goes Global goal is to improve the enabling conditions for young women to find employment in the digital economy in Haiti by addressing skills and infrastructure challenges.

### Target stakeholders

Ayitic Goes Global is currently targeting women entrepreneurs.

### Governance

Ayitic Goes Global is led by local technical community members, and supported by a team of 13 people composed of partners and experts in the LAC region.

<sup>191</sup> <https://www.ayitic.net/pt/index.html>

## Resources and partners

The Ayitic Goes Global programme is a partnership that includes the Latin America and Caribbean Network Information Centre (LACNIC), the International Development Research Centre (IDRC), the Ecole Supérieure d'Infotronique d'Haiti (ESIH), the Caribbean Open Institute (COI), 3x3 Design (3x3), and the Slashroots Foundation.

It has received grant funds from Latin America and Caribbean Network Information Centre (LACNIC) and International Development Research Centre (IDRC).

## Activities and events

The project works in three major components:

- 1 Training for women: Training women to develop their digital skills.
- 2 Employability: Securing for employment opportunities for women in the digital economy.
- 3 Internet development: Building capacities among ICT professionals and encouraging local leadership to promote Internet Development.

Overall, the Ayitic Goes Global programme is establishing and scaling partnerships to strengthen digital and data-related activities and focused on addressing the fragile state of the Haiti economy. It offers training and mentorship, building capacities among ICT professionals, addressing the gender-related inclusion gap. The online training focuses on skills development such as data entry, social media management, search engine optimization (SEO), database administration, app testing, and KoBoToolbox training.

## Achievements

The Ayitic Goes Global programme has reached more than 450 women, enhancing their participation in the digital economy by addressing their ICT skills gap and local infrastructure challenges. Activities from 2017 to 2019 include:

- building digital skills with 358 women trained;
- access to employment including internships and jobs confirmed;
- strengthening the Internet with 163 network management and Internet security technicians trained.

### Impact on the entrepreneurial lifecycle

AYITICs has instilled good practices in sharing success stories, research and laboratory programmes, skills trainings and human capital.

## B.3 AZ TechCelerator<sup>192</sup> (United States)

The AZ TechCelerator is a business incubator with a focus on technological innovation and entrepreneurship, helping scalable technology and innovation companies accelerate to market with the support of affordable space, free and low-cost expertise, management and financing support, and the mutual support of other early-stage growth companies.

<sup>192</sup> <https://www.aztechcelerator.com>

## Type

This practice impacts innovation capacity.

## Goal(s)

AZ TechCelerator is an innovation hub designed to provide resources for entrepreneurs that are growing their business or launching new product commercialization by offering mentors, training, affordable space, and resources to nurture creativity, refine business plans and cultivate entrepreneur and professional network exchange.

## Target stakeholders

It has an affiliated membership programme, and the space is designed to cultivate collaboration among entrepreneurs and freelancers. Preferred candidates are small technology companies, such as those with a focus in life science, medical devices, healthcare innovation, information technology, renewable energy/sustainability, defence or other product innovations.

## Governance

AZ TechCelerator is managed by the Economic Development Department, Arizona. The Affiliate Membership programme provides additional office amenities for professionals who do not need an office space. The affiliates benefit from a business address, conference rooms, community meetings, and educational workshops.

## Resources and partners

Currently there are 13 AZ TechCelerator tenants: Arizona Cyber Warfare Range, Care Patrol, CPR Solutions, Efficient Thermal Energy, GroceryBit Inc, HealthBotsLab, Korwave, MagQu LLC, Phoenix Overwatch, ReSuture, Smiles by Delivery, Surprise Care and To My Surprise Shuttle. In addition, a mentor, No Boundaries Marketing, is available to simplify marketing and advertising for small to medium sized businesses. The partners and sponsors are 5-HT Digital Hub Chemistry & Health, APS, America's SBDC Arizona, Score and SherBrooke InnoPole.

## Activities and events

AZ TechCelerator programmes include:

- Startup Space: This is an app built for entrepreneurs to connect start-ups with resources in their local communities so they can quickly find what they need and get back to building their businesses.
- Small Business Assistance programme: This helps start-ups navigate city regulatory processes, local network, location support, business education, and even market research.
- Business Incubator programme: This offers mentors, training, affordable space and a multitude of resources according to each entrepreneurship venture.
- Beehive Coworking Space: This space is designed for freelancers and professionals working from home to get a different scenery and an opportunity to meet like-minded peers.
- Global Concierge Services: Provides assistance in navigating issues such as international patents, work visas, local business licences, incorporation in the United States and other international related matters.



In addition, AZ TechCelerator has four pre-recorded webinars to help start-ups navigate the current business environment in Surprise, Arizona.

## Achievements

In 2018, AZ TechCelerator received the Innovation Award from the West Valley Excellence with its Global Concierge programme.

According to the City of Surprise Economic Development Department 2019 Annual Report<sup>193</sup>, the AZ TechCelerator won the Golden Prospector Award for its updated website design, and the Hometown Heroes Award for Business Heroes – Entrepreneurs.

### Impact on the entrepreneurial lifecycle

AZ TechCelerator has instilled good practices in boosting entrepreneur interest, events and community, engaging with problems, developing business models, co-working, and B2B and support services.

## B.4 BrazilLAB<sup>194</sup> (Brazil)

BrazilLAB is a business-to-government (B2G) innovation hub for the public sector that accelerates solutions and connects entrepreneurs with public management. Its mission is to be a govtech hub that stimulates innovation inside the government generating positive impact in Brazil by providing a channel to engage in the search for solutions to public sector problems.

### Type

This practice represents two of the building blocks of innovation: innovation dynamics and innovation capacity.

### Goal(s)

BrazilLAB goals aim to be a reference for the innovation and government agenda, and to promote a positive environment towards innovation culture in the public sector by supporting high-impact entrepreneurs who are working on solutions for the complex societal challenges to connect with public leaders open to innovation.

### Target stakeholders

The core target is to engage a network of municipality managers in the innovation agenda and connect low cost and high social impact solutions to local challenges, and to promote an efficient ecosystem by stimulating innovation, exchange, and dialogue between academics, private sector, entrepreneurs and the public sector.

<sup>193</sup> <https://www.surpriseaz.gov/DocumentCenter/View/45190/Economic-Development-2019-Annual-Report>

<sup>194</sup> <https://brazillab.org.br>

## Governance

BrazilLAB is a not-for-profit association in Sao Jose dos Campos, Brazil. It has three types of membership: founders, contributors and collaborators.<sup>195</sup> Currently, the organization is led by the Founder and CEO.

Apart from the staff team, its governance structure includes three additional groups: a Counsellors Board, composed of five outstanding business-related professionals who are committed to help define guidelines and strategic objectives; an Ambassadors Group of eight people who believe in the govtech agenda and engage in a maximizing its reach and impact; and a Mentors group, which has almost 80 people with experience ranging from government, private and third sector to guide entrepreneurs.

## Resources and partners

BrazilLAB is funded by contributor members and sponsors. Some of the key partnerships are with civil society, such as Comunitas<sup>196</sup>, a Brazilian NGO for corporate social investment and Centre for Public Leadership (CLP)<sup>197</sup>, a nonpartisan NGO for practical tools to improve quality of public policies and promote change through effective management. They have also established partnerships with six local governments from Sao Paulo, Belo Horizonte, Curitiba, Guarulhos, Santo André and Sao José do Campos.

## Activities and events

BrazilLAB issues a GovTech Label, which is an independent private certification for start-ups that are ready to engage in providing products and services to the government. Certified start-ups can join a wide network of start-ups and connect with public sector managers at municipal, regional and national levels.

For start-ups, the BrazilLAB main activity is the accelerator programme inspired from international initiatives such as Solve/MIT and MayorsChallenge/Bloomberg Philanthropies. The accelerator programme has four modules and entrepreneurs receive specialized mentoring, gain access to experts and public leaders, find opportunities to participate in rounds with investors and publicize their solutions through media exposure. The recently created COVID-19 Task Force provides up to six months of support for start-ups addressing the challenges of production inclusivity, digitalization, and education.

## Achievements

BrazilLAB has already accelerated 81 start-ups, impacting 5 100 entrepreneurs in 27 cities in the country. In 2020, despite the COVID-19 pandemic, it concluded three acceleration cycles, two demo days, and accelerated 58 start-ups and small and medium enterprises.<sup>198</sup> In 2018, BrazilLAB received certification from "Selo Doar" for its management and transparency processes.

<sup>195</sup> <https://brazillab.org.br/app/www/files/EstatutoSocial.pdf>

<sup>196</sup> <http://comunitas.org/>

<sup>197</sup> <http://www.clp.org.br/>

<sup>198</sup> <https://brazillab.org.br/noticias/conheca-as-58-startups-e-pmes-aceleradas-pelo-brazillab-no-ano-de-2020>

## Impact on the entrepreneurial lifecycle

BrazillAB has instilled good practices in boosting entrepreneur interest, building community, engaging with problems, seed funding, and public procurement.

### B.5 Carao Ventures<sup>199</sup> (Costa Rica)

Carao Ventures is a venture capital firm based in San José, Costa Rica, that invests in high potential start-ups, and accelerates and supports early-stage projects. It is one of the pioneers in early-stage investment for the Central America region, focusing on the fields of software, biotechnology, education and fintechs. In addition to funding, it helps to create tailored acceleration programmes, including operative and strategic resources, access to other entrepreneurs and potential partnerships.

#### Type

This impacts one building block of innovation: innovation capacity.

#### Goal(s)

Carao Ventures offers entrepreneurs in Latin America the same resources and opportunities that entrepreneurs in more developed markets have available to create and advance their start-ups. It is focused on early-stage investment such as seed funding for start-up acceleration.

#### Target stakeholders

Carao Ventures collaborates with a wide range of stakeholders from the innovation ecosystem, with a particular focus on entrepreneurs, investors, the private sector and industry.

#### Governance

Carao Ventures was founded in 2012 as a private venture capital firm by an experienced team of business development and venture capital management professionals. Currently its governance is organized in a board of five members, and seven staff members.<sup>200</sup>

#### Resources and partners

Carao Ventures is maintained by private investments. Since 2012, it has accumulated 18 investments totalling over USD 11million.

#### Activities and events

Carao Ventures invests in various phases of early-stage start-ups – both tech and non-tech companies – by providing capital, hands-on support, strategic guidance for business growth, mentorship, and access to a network of professionals and other entrepreneurs.

<sup>199</sup> <http://www.caraov.com>

<sup>200</sup> <http://www.caraov.com/team>

There are currently 10 companies listed in its portfolio<sup>201</sup>: BildTEK (construction system), Belleli Educacion (educational platform), SlideBean (cloud-based software), Junar (digital transformation, government data), Speratum (biotechnology), Singularities (artificial intelligence), Huli (medical offices, hospitals, clinics), LeafGrow (digital marketing), GoPass (digital payment) and Thrive (skincare brand).

Currently, Carao Ventures has also put together concrete actions in the fight against COVID-19 from its venture companies<sup>202</sup>.

## Achievements

Carao Ventures has reached more than 2 000 innovators, developed partnerships with 11 start-ups and had one successful exit with GoPato.

### Impact on the entrepreneurial lifecycle

Carao Ventures has instilled good practices in boosting entrepreneurial interest, building community, developing business models and seed funding.

## B.6 CPqD (Brazil)

The CPqD (Center for Research and Development in Telecommunications) is an ICT innovation accelerator. CPqD is one of the largest ICT research, design, and innovation centres in the Latin America region.

### Type

This practice impacts all three building blocks of innovation: innovation dynamics, innovation capacity and ICT innovation in key sectors.

### Goal(s)

CPqD goals are divided into three axes:

- **technology:** boosting R&D efforts to leverage the development of transformational ICT technologies;
- **innovation:** supporting every step of the innovation journey - from idea to implementation - for an innovation process with more technology and less risk;
- **solutions:** accelerating digital transformation for its customers and clients, taking advantage of the full potential of their innovations with higher efficiency and compliance.

### Target stakeholders

CPqD collaborates with a wide range of stakeholders from the innovation ecosystem: entrepreneurs, investors, the private sector/industry, governments and academia.

<sup>201</sup> <http://www.caraov.com/portfolio>

<sup>202</sup> <http://www.caraov.com/blog/2020/4/13/para-grandes-retos-grandes-soluciones-acciones-concretas-planteadas-por-empresas-del-portafolio-de-carao-ventures-en-respuesta-a-covid-19>

## Governance

CPqD was established in 1976 as the R&D department of Telebras. In the telecommunication privatization efforts, Federal Law number 9,472, of 1997<sup>203</sup> set the guidelines for telecommunication authorities, including the Telebras privatization. In 1998, CPqD became a private not-for-profit foundation focusing on ICT innovation. In 2017<sup>204</sup>, three governing bodies were appointed: Executive Board, Fiscal Council and Advisor Council (which includes private and public sector representatives).

## Resources and partners

CPqD is maintained by its own resources with support from public and private funds for science, technology and innovation. Key partners include the National Development Bank (BNDES), the Brazilian Company for Research and Innovation (EMBRAPPII), the Financing Research and Innovation (FINEP), and the Fund for Telecommunications Technological Development (FUNTELL).

## Activities and events

CPqD has a wide range of activities, such as IoT, sensors, traceability, computing quality, voice interaction, electric mobility and future technological challenges, including:

- Open innovation: CPqD supports digital transformation solutions for business through the open innovation approach. Going beyond technological cooperation, it is also working on the complete innovation journey and building the innovation ecosystem with academia, start-ups, hubs, accelerators, government and companies.
- EMBRAPPII CPqD Unit: Brazilian Company for Research and Innovation Industry (EMBRAPPII) is a federal government company. Since 2014, CPqD is recognized by the federal government to promote and support technological cooperation among companies and certified innovation centres. Particularly digital transformation related to connectivity, IoT, AI, blockchain, information security, sensor grids and electric mobility.
- Financial support: CPqD is able to provide multiple sources of funding to entrepreneurs, such as EMBRAPPII (software industry, start-ups, MyMES), FINEP (automobile, health, agriculture industry), Informatics Law (ICT products manufacturers), Law "for good" (incentives to research, design, and innovation in energy-related industry).
- Services and solutions: CPqD core business is to offer value to its clients such as DOJO, an open source platform funded by FUNTELL, which focuses on data integration, processing and storing, and machine learning and AI.

## Achievements

The EMBRAPPII CPqD Unit has been involved in more than 60 innovation projects, applying its skills in hardware and software, merging new communications, and improving the efficiency and safety of products and services.

In 2019, CPqD had its first industrial design granted by the National Institute of Industrial Property in Brazil. Over the past four decades, it has filed 364 patent requests, 173 international patent requests filed, and 1 749 software registrations.

<sup>203</sup> LEI N° 9.472, DE 16 DE JULHO DE 1997. [http://www.planalto.gov.br/ccivil\\_03/leis/19472.htm](http://www.planalto.gov.br/ccivil_03/leis/19472.htm)

<sup>204</sup> [https://www.cpqd.com.br/wp-content/uploads/2018/04/Estatuto-Social-OUT\\_2017.pdf](https://www.cpqd.com.br/wp-content/uploads/2018/04/Estatuto-Social-OUT_2017.pdf)

### Impact on the entrepreneurial lifecycle

CPqD has instilled good practices organizing entrepreneurial events; nurturing entrepreneurial community; providing research, design and innovation programmes; developing business models; building collaboration; incubators and accelerators; and skill training programmes.

## B.7 Globant Ventures and Parabol (Argentina)

Globant<sup>205</sup> Ventures and Parabol<sup>206</sup> are respectively a start-up accelerator and an innovation cluster in Buenos Aires. They provide support to start-ups from ideation to growth, nurturing collaboration in the innovation ecosystem by working with multiple actors to accelerate and enhance technology solutions. One of the key components is to develop technology-driven solutions combined with start-up adaptability culture to boost digital transformation and to bring innovation to corporations and entrepreneurs.

### Type

Combined, Globant Ventures and Parabol impact all three building blocks of innovation: innovation dynamics, innovation capacity, and ICT innovation in key sectors.

### Goal(s)

Globant Ventures aims to support high-impact emerging technologies with sustainable value propositions and sound management teams, from the initial stages through the growth paths.

Parabol aims to build on the start-up way of thinking to transform innovative ideas into new products and scalable business, by driving innovation, developing valuable ecosystems, and creating disruptive technology.

### Target stakeholders

Globant Ventures looks for start-ups in early-stage/growth. Parabol looks for both start-ups and established companies that want to innovate and reinvent their business approaches.

### Governance

Globant Ventures and Parabol were created, respectively, in 2017 and 2018, and are part of Globant, a corporate accelerator investing in technology start-ups. Its governance structure is divided into four main groups: Investment Committee, Executive Committee, Mentors and Staff, which represents about 30 people.

<sup>205</sup> <https://www.globantventures.com>

<sup>206</sup> <https://parabol.net>

## Resources and partners

Globant Ventures and ParabolT are supported by investment from Globant. Globant Ventures has also been selected by the Argentina Federal Government (FONDCE) in order to co-invest in start-ups. Among their key partners are Endeavor<sup>207</sup>, EY<sup>208</sup>, Ministerio de Desarrollo Productivo de Argentina<sup>209</sup>, and Marval O'Farrell Mairal<sup>210</sup>.

## Activities and events

Globant Ventures has an acceleration programme that offers mentoring, training, coaching and a co-working space. It also provides access to networks, opportunities and potential new investors. Globant Ventures accompanies innovators during the growth stage for six to nine months, with investments of up to USD 400 000, and offices facilities in 34 cities.

ParabolT works in three main streams, as a corporate innovation accelerator, a start-up digital transformation accelerator, and in innovation ecosystem collaboration to accelerate and enhance technology solutions to benefit users and customers.

## Achievements

Globant Ventures has already accelerated six start-ups: Robin<sup>211</sup>, CamONapp<sup>212</sup>, AvanCargo<sup>213</sup>, The Eye<sup>214</sup>, Drixit Technologies<sup>215</sup> and Woocar<sup>216</sup>.

ParabolT has listed some successful innovation projects<sup>217</sup> with big companies such as Novartis, DHL, Google, Groupe Renault, Nestle, YPF, Metrogas, Equifax, Grupo Hi-Tec, Camara Argentina de la Construcción, YZA Farmacias and La Segunda Grupo Asegurador.

### Impact on the entrepreneurial lifecycle

Globant Ventures and ParabolT have instilled good practices in boosting entrepreneurial interest, building community, sharing success stories, serving as incubators and accelerators, developing business models, offering seed capital and providing co-working facilities.

## B.8 IdeaLab<sup>218</sup> (Jamaica)

IdeaLab is a private business incubator based in Jamaica. Its vision is to inspire, motivate and encourage entrepreneurship through collaboration. Besides the traditional support with affordable office space and business support services, it encourages entrepreneurship through

<sup>207</sup> <https://www.endeavor.org.ar>

<sup>208</sup> [https://www.ey.com/es\\_ar](https://www.ey.com/es_ar)

<sup>209</sup> <https://www.argentina.gob.ar/produccion>

<sup>210</sup> <https://www.marval.com>

<sup>211</sup> <https://www.robintests.com>

<sup>212</sup> <https://camonapp.com>

<sup>213</sup> <https://avancargo.com>

<sup>214</sup> <https://theeye.io>

<sup>215</sup> <https://drixit.com/en/>

<sup>216</sup> <https://www.woocar.io>

<sup>217</sup> <https://parabol.net/en/index.html#Proyectos>

<sup>218</sup> <https://www.idealabja.com/about>

collaboration in an environment that provides ideas to entrepreneurs by being able to freely share, explore and build on a simple idea. As a growth accelerator, and through its network of professionals, its supporting process steps go from understanding the business, assessing its needs to identifying funding opportunities, and developing a growth strategy to accelerate performance.

## Type

This practice impacts innovation capacity.

## Goal(s)

IdeaLab aims to provide a holistic set of services to support and fast track the growth of start-ups and small businesses, through partnership and the sharing of ideas.

## Target stakeholders

IdeaLab collaborates with entrepreneurs and innovators from small businesses.

## Governance

IdeaLab has two co-founders, an experienced business development professional and technology landscape expert, who run the hub. It is also supported by a diverse group of six advisors.

## Resources and partners

IdeaLab is maintained by its services revenue from long-term office rental, meeting room facilities and accelerator programmes. Partners include service providers, mentors and funders.

## Activities and events

IdeaLab offers a wide range of support services for entrepreneurs, such as legal services (contracts, MOUs, sales agreements), business coaching, accounting services, grant writing, project proposals, sales management, marketing planning, social media strategy, design and execution. As a growth accelerator, it is also focused on engaging with the problem, understanding the business, assessing its needs, identifying the sources of funding, and developing a business model and growth strategy to accelerate performance. This process puts customers and entrepreneurs at the centre of a network of qualified professionals.

Among its dedicated office services, IdeaLab can accommodate a range of business needs, from small to big office facilities, which includes meeting facilities and amenities such as connectivity to fast Internet, a business address, events, a receptionist, community, virtual mailboxes and printing.

## Achievements

IdeaLab is listed in the Jamaica Startup Ecosystem Canvas.<sup>219</sup>

---

<sup>219</sup> <https://fi.co/insight/jamaica-startup-resource-list-250-accelerators-incubators-investors-and-more>



## Impact on the entrepreneurial lifecycle

IdeaLab has instilled good practices in raising entrepreneurial interest, organizing events, building community, engaging with stakeholders to solve problems, developing business models, incubators and accelerators, co-working, and B2B and support services.

## B.9 iNNPulsa Colombia<sup>220</sup> (Colombia)

iNNpulsa Colombia is a government-led business accelerator that promotes innovation and entrepreneurship. It focuses on high impact projects, building on innovative processes and funding opportunities to scale business and boost economic development in Colombia.

### Type

This practice impacts one building block: innovation capacity.

### Goal(s)

iNNpulsa Colombia aims to integrate, invest and inspire the entrepreneurship and innovation ecosystem in all regions of Colombia, by supporting entrepreneurs to accelerate their ventures and to implement innovative processes.

### Target stakeholders

iNNpulsa Colombia is designed for a specific segment of the entrepreneurship and innovation ecosystems, focussing on early-stage ventures and companies with growth potential. It does not work with businesses at seed or ideation stages, which are covered by other government programmes.

### Governance

iNNpulsa Colombia is an autonomous government agency for entrepreneurship and innovation established under the Ministry of Commerce, Industry and Tourism that centralizes and executes different programmes, tools and resources for entrepreneurship and business innovation.

iNNPulsa Colombia was established in February 2012 under the Ministry of Commerce, Industry and Tourism. Recent legislation (Law 2069, of 31 December 2020) abrogates previous legislation (Law 590/2000, Law 1450/2011 and Law 1753/2015) and establishes an institutional framework that supports entrepreneurship, growth, consolidation and sustainability of companies, to increase social welfare and generate equity<sup>221</sup>.

<sup>220</sup> [www.innpulsacolombia.com](http://www.innpulsacolombia.com) (in Spanish)

<sup>221</sup> [https://innpulsacolombia.com/sites/default/files/documentos-recursos-pdf/LEY%202069%20DEL%2031%20DE%20DICIEMBRE%20DE%202020\\_compressed.pdf](https://innpulsacolombia.com/sites/default/files/documentos-recursos-pdf/LEY%202069%20DEL%2031%20DE%20DICIEMBRE%20DE%202020_compressed.pdf)

## Resources and partners

iNNpalsa Colombia brings together government resources including the merger of the Modernization and Innovation Funds for Micro, Small and Medium Enterprises, and the Development Unit, and it coordinates the National Fund for Agrobusiness (FINAGRO). Under Article 46 of Law 2069, iNNpalsa Colombia resources are from the national budget, resources contributed by government companies and entities or by individuals through agreements or transfers, tax-deductible donations, resources for national or international cooperation, financial returns on resources, dividends that are decreed in favour of the Nation by the General Assembly of Shareholders of the Foreign Trade Bank (Bancóldex), with prior authorization from CONPES, and other obtained or assigned resources.

iNNpalsa Colombia will coordinate the CEmprende initiative, which uses entrepreneurship centres to facilitate connections between entrepreneurs, academics, private companies, public sector representatives and society at large.

## Activities and events/achievements

The range of iNNpalsa Colombia programmes include:

- the ALDEA programme, which provides access to experts (mentorship), access to financial investment, and a digital platform to connect with other key actors;
- HEROES FEST, which is a festival organized by the Colombian Ministry of Commerce, Industry and Tourism to create a dynamic network of leaders and entrepreneurs, at national and international levels that will inspire, exchange and develop their ideas to boost productivity, economic development and digital transformation in Colombia; and
- EMPODERA programme, which is focused on inclusive leadership, ensuring gender balance, by developing skills and building capacities for women entrepreneurs.

Moreover, Article 48 of Law 2069 of 2020 (Entrepreneurship Law) set out a wide range of possible activities for iNNpalsa Colombia to carry out, including activities:

- 1 to promote entrepreneurship, business innovation, growth, formalization and business development of micro, small and medium enterprises (MSMEs) in accordance with the policy defined by the Ministry of Commerce, Industry and Tourism;
- 2 to execute government entity programmes for entrepreneurship and business innovation, and business development with an emphasis on entrepreneurship and business innovation, in accordance with technical guidelines, having the technical, legal, administrative structure and financial necessary to guarantee the fulfilment of its goals and objectives;
- 3 to design, structure and implement initiatives for the financing of early-stage innovative ventures and companies or organizations of the solidarity economy with an innovative character, through risk capital mechanisms, seed capital and investment vehicles;
- 4 to promote inclusive economic development in regions and PDET (territorial approach to development programme) municipalities with an emphasis on entrepreneurship and business innovation, of the country's young population, victims of violence, ethnic groups, and other populations in situations of vulnerability and of special constitutional protection;
- 5 to promote the establishment of independent investment management companies, with public, private or mixed capital, to manage direct or subordinated loans, capitalization and direct investment models funded with resources from the autonomous heritage, as well as other public contributions, private investment and multilateral resources; and
- 6 to lead the public innovation laboratory with a govtech approach, which favours government collaboration with entrepreneurs who use data intelligence and emerging

technologies to promote products and services that solve public problems and accelerate the digital transformation of the State.

### Achievements

- Almost 300 businesses have benefited from the ALDEA programme.
- More than 40 000 people were impacted by the past five events of the HEROES FEST.
- About 86 women have been covered by the EMPODERA programme.

### Impact on the entrepreneurial lifecycle

iNNpulsia Colombia has instilled good practices in boosting entrepreneur interest, organizing events, building community, sharing success stories, developing business models, and offering skill training programmes.

## B.10 NXTP<sup>222</sup> (Argentina)

NXTP is a corporate accelerator based in Buenos Aires, Argentina. It is a pioneer of the venture capital industry focused on providing capital, hands-on support, mentorship, networking and access to investors.

### Type

This practice impacts one building block of innovation: innovation capacity.

### Goal(s)

NXTP aims to facilitate open innovation and to leverage the entrepreneurial ecosystem in the region.

### Target stakeholders

NXTP collaborates with a wide range of stakeholders from the innovation ecosystem: entrepreneurs, financiers, the private sector, industry, government and academia.

### Governance

NXTP Ventures was founded in 2011 as a private corporate accelerator, and one of the pioneers in early-stage venture capital in the region. Now under the umbrella as NXTP Corporate Partners, there are several initiatives from start-up acceleration to entrepreneurial community network platforms and rounds of venture capital investment.

NXTP holds a Company B certificate and is signatory of the Principles for Responsible Investment (PRI).

There is a long list of clients, with some big companies such as BNP Pariba, Novartis, Banco Patagonia, ENEL, Scotiabank, Brinks, ICBC, IBM, Prosegur, Microsoft, Nestle and Natura.

<sup>222</sup> <https://www.nxtp.co/startups/>

## Resources and partners

NXTP is maintained by private investment funds, has accumulated over USD 100 million and is supported by the Inter-American Development Bank. NXTP have partners on a variety of programmes, such as, for example, the recent partnership with Co-Work<sup>223</sup> that expands its entrepreneurial network activities. NXTP is also part of the network Mujer Emprendedora Latin America y Caribe.

## Activities and events

NXTP offers hands-on expertise and provides access to Latin American/global mentor and investor networks and extensive corporate relationships. There are over 40 innovation programmes and 15 companies listed in the Argentina portfolio<sup>224</sup>. Currently NXTP is focused on seed and series A rounds of investment, and core verticals are: B2B software-as-a-service/enterprise software, logistics technology, fintech, Internet security, B2B marketplace, and artificial intelligence/information services. In addition, NXTP Labs provides an *Emprendedora LAC* programme focused on empowering women entrepreneurs. Recently, NXTP launched its Innovation Network open innovation platform, in partnership with Co-Work.

## Achievements

Since 2011, NXTP has accelerated more than 400 start-ups, made 202 investments and 150 co-investments, 16 exits and 1 unicorn.

### Impact on the entrepreneurial lifecycle

NXTP has instilled good practices in boosting entrepreneurial interest, organizing entrepreneurial events, building community, sharing success stories, engaging with problems, developing business models, incubators and accelerators, providing seed funding and venture capital, and co-working facilities.

## B.11 Startup Peru<sup>225</sup> (Peru)

Startup Peru is a government-driven accelerator programme under the Ministry of Production, as part of the National Program for Innovation to Competition and Productivity (Innovate Peru) that includes seed capital and scalability for innovative, dynamic and high-impact entrepreneurs. It was launched in 2012 following the success of Startup Chile.

### Type

This practice impacts innovation capacity.

<sup>223</sup> <https://www.nxtp.co/2021/01/20/alianza-estrategica-entre-nxtp-corporate-partners-y-co-work-latam/>

<sup>224</sup> <https://nxtp.vc/portfolio/>

<sup>225</sup> <https://www.start-up.pe>

## Goal(s)

Startup Peru aims to help new businesses that offer innovative services and products. The range of programmes offers seed capital, building community collaboration and providing scalable resources to innovative, dynamic or high impact entrepreneurs. It focuses on businesses with a potential for growth.

## Target stakeholders

Startup Peru targets two types of entrepreneurs: innovative start-ups with a minimum viable product (MVP) and dynamic start-ups already in the market that have an innovative technological solution.

## Governance

Startup Peru has been incorporated under Innovate Peru, in particular connected to the Innovation for Competition Project (FINCYT II) and the Science, Technology and Innovation Fund (FOMITEC). Innovate Peru was created on July 24, 2014, by Supreme Decree n. 003-2014-PRODUCE as an executive unit of the Ministry of Production, with economic, administrative, financial and technical autonomy.

The FINCYT II programme was created to better coordinate the activities between academic, scientific and business communities. It is managed by a council led by the Ministry of Production with 10 members representing the Ministry of Economy and Finance; the Ministry of Foreign Affairs and Tourism; the Ministry of Agriculture, the National Council for Science, Technology and Innovation (CONCYTEC); regional authorities, academia and the private sector, such as the National Industry Association and the Lima Chamber of Commerce.

FOMITEC has five instruments. One is managed by the Ministry of Production for Dynamic and High Impact Entrepreneurship to provide seed capital for early-stage start-ups. The other four are managed by CONCYTEC focusing on centres of excellence, research networks, innovation in health, agriculture and environmental issues, and human resources qualification (PhD grants related to ICT research).

## Resources and partners

Startup Peru combines resources from FOMITEC and the Innovation for Competition Project (FINCYT II). FINCYT II is funded by the government and by the InterAmerican Development Bank (IDB). The overall fund available is over USD 100 million.

The community and partners are start-ups, incubators, business accelerators, and venture capital investors.

## Activities and events

Currently there are two main activities being sponsored by Startup Peru:

- A call for Innovative Entrepreneurs: co-investment for a 12-month project to validate an idea for a new business model or a new product, service or commerce, with a minimum viable product (MVP).

- A call for Dynamic Entrepreneurs: co-investment for a start-up with a high impact potential. It is focused on developing a new business model, improving products or services or business processes.

## Achievements

Startup Peru has supported more than 400 entrepreneurs. It has treated over 7 000 applications. The umbrella programme, Innovate Peru, has already accelerated more than 3 400 entrepreneurial projects, and invested over USD 13 million.

### Impact on the entrepreneurial lifecycle

Startup Peru has instilled good practices in organizing entrepreneur events, developing business models, providing seed funding and building community.

## B.12 TEN Habitat<sup>226</sup> (Barbados)

The Entrepreneurial Network (TEN) Habitat is a creative non-profit start-up accelerator providing funding and mentorship and guidance for entrepreneurs, co-working space that serves as an innovation hub, and media coverage to share entrepreneurial success stories in the Caribbean.

### Type

This practice impacts two of building blocks of innovation: innovation capacity and ICT innovation in key sectors.

### Goal(s)

TEN Habitat aims to nurture innovators to grow and expand.

### Target stakeholders

TEN Habitat collaborates with a wide range of stakeholders from the innovation ecosystem: entrepreneurs, financiers, the private sector, industry, government, and academia.

### Governance

TEN Habitat is a non-profit organization relaunched in 2015 from the 2009 Entrepreneurial Network initiative<sup>227</sup>. It is run by five team members.

### Resources and partners

TEN Habitat is maintained by membership fees, the InterAmerican Development Bank, the European Union, the CIBC First Caribbean International Bank, OMIN Multilateral Investment Fund and AGORA partnerships.

<sup>226</sup> <https://www.tenhabitat.com>

<sup>227</sup> <https://givebackbarbados.com/directory/ten-habitat/>

Several partnerships are working to connect a global network of start-up communities, accelerators, experienced entrepreneurs, domain experts, facilitators, trainers, and collaborators. Key partners include Communitech<sup>228</sup>, GAN<sup>229</sup> and Passion Incubator<sup>230</sup>.

## Activities and events

TEN Habitat serves as an innovation hub that builds a supportive community, sharing ideas and experience with other entrepreneurs, and having access to investor networks<sup>231</sup>. It runs an entrepreneur-focused co-working space and provides hands-on support, mentorship and coaching from ideation to business growth. It also offers an innovative Coding Academy that equips non-coders with advanced software development skills. It also has a Kids Code programme preparing younger talents.

The Caribbean Startup Summit<sup>232</sup> is an annual TEN Habitat flagship event that brings together a global team of start-up experts, founders and entrepreneur resource providers to help empower start-ups in the region.

More recently, TEN Habitat launched the RISE<sup>233</sup> programme to help fight the COVID-19 pandemic, by calling innovators and entrepreneurs to generate industry transformation and develop viable solutions and create rapid responses that solve the problems revealed by the pandemic. Solutions come from areas such as artificial intelligence and big data, digital payment solutions, food security, future of education, re-imagining tourism, environmental resources management, and healthcare systems.

## Achievements

TEN Habitat is a pioneer in the Caribbean and has been successfully accomplishing its goals.

### Infobox

#### Impact on the entrepreneurial lifecycle

TEN Habitat has instilled good practices in entrepreneurial interest, entrepreneurial events, community, engaging with problems, developing business models, co-working and support services, lab programs, skills training, and incubators and accelerators.

<sup>228</sup> <https://www.communitech.ca>

<sup>229</sup> <https://www.gan.co>

<sup>230</sup> <https://www.passionincubator.ng>

<sup>231</sup> <https://givebackbarbados.com/directory/ten-habitat/>

<sup>232</sup> <https://www.caribbeanstartupsummit.com>

<sup>233</sup> <https://www.tenhabitat.com/projects>

**Office of the Director**  
**International Telecommunication Union (ITU)**  
**Telecommunication Development Bureau (BDT)**  
Place des Nations  
CH-1211 Geneva 20  
Switzerland

Email: [bdttdirector@itu.int](mailto:bdttdirector@itu.int)  
Tel.: +41 22 730 5035/5435  
Fax: +41 22 730 5484

#### Digital Networks and Society (DNS)

Email: [bdt-dns@itu.int](mailto:bdt-dns@itu.int)  
Tel.: +41 22 730 5421  
Fax: +41 22 730 5484

#### Digital Knowledge Hub Department (DKH)

Email: [bdt-dkh@itu.int](mailto:bdt-dkh@itu.int)  
Tel.: +41 22 730 5900  
Fax: +41 22 730 5484

**Office of Deputy Director and Regional Presence**  
**Field Operations Coordination Department (DDR)**  
Place des Nations  
CH-1211 Geneva 20  
Switzerland

Email: [bdtdeputydir@itu.int](mailto:bdtdeputydir@itu.int)  
Tel.: +41 22 730 5131  
Fax: +41 22 730 5484

#### Partnerships for Digital Development Department (PDD)

Email: [bdt-pdd@itu.int](mailto:bdt-pdd@itu.int)  
Tel.: +41 22 730 5447  
Fax: +41 22 730 5484

## Africa

### Ethiopia

**International Telecommunication Union (ITU) Regional Office**  
Gambia Road  
Leghar Ethio Telecom Bldg. 3<sup>rd</sup> floor  
P.O. Box 60 005  
Addis Ababa  
Ethiopia

Email: [itu-ro-africa@itu.int](mailto:itu-ro-africa@itu.int)  
Tel.: +251 11 551 4977  
Tel.: +251 11 551 4855  
Tel.: +251 11 551 8328  
Fax: +251 11 551 7299

### Cameroon

**Union internationale des télécommunications (UIT)**  
**Bureau de zone**  
Immeuble CAMPOST, 3<sup>e</sup> étage  
Boulevard du 20 mai  
Boîte postale 11017  
Yaoundé  
Cameroon

Email: [itu-yaounde@itu.int](mailto:itu-yaounde@itu.int)  
Tel.: + 237 22 22 9292  
Tel.: + 237 22 22 9291  
Fax: + 237 22 22 9297

### Senegal

**Union internationale des télécommunications (UIT)**  
**Bureau de zone**  
8, Route des Almadies  
Immeuble Rokhaya, 3<sup>e</sup> étage  
Boîte postale 29471  
Dakar - Yoff  
Senegal

Email: [itu-dakar@itu.int](mailto:itu-dakar@itu.int)  
Tel.: +221 33 859 7010  
Tel.: +221 33 859 7021  
Fax: +221 33 868 6386

### Zimbabwe

**International Telecommunication Union (ITU) Area Office**  
TelOne Centre for Learning  
Corner Samora Machel and Hampton Road  
P.O. Box BE 792  
Belvedere Harare  
Zimbabwe

Email: [itu-harare@itu.int](mailto:itu-harare@itu.int)  
Tel.: +263 4 77 5939  
Tel.: +263 4 77 5941  
Fax: +263 4 77 1257

## Americas

### Brazil

**União Internacional de Telecomunicações (UIT)**  
**Escritório Regional**  
SAUS Quadra 6 Ed. Luis Eduardo  
Magalhães,  
Bloco "E", 10<sup>o</sup> andar, Ala Sul  
(Anatel)  
CEP 70070-940 Brasília - DF  
Brazil

Email: [itubrasilia@itu.int](mailto:itubrasilia@itu.int)  
Tel.: +55 61 2312 2730-1  
Tel.: +55 61 2312 2733-5  
Fax: +55 61 2312 2738

### Barbados

**International Telecommunication Union (ITU) Area Office**  
United Nations House  
Marine Gardens  
Hastings, Christ Church  
P.O. Box 1047  
Bridgetown  
Barbados

Email: [itubridgetown@itu.int](mailto:itubridgetown@itu.int)  
Tel.: +1 246 431 0343  
Fax: +1 246 437 7403

### Chile

**Unión Internacional de Telecomunicaciones (UIT)**  
**Oficina de Representación de Área**  
Merced 753, Piso 4  
Santiago de Chile  
Chile

Email: [itusantiago@itu.int](mailto:itusantiago@itu.int)  
Tel.: +56 2 632 6134/6147  
Fax: +56 2 632 6154

### Honduras

**Unión Internacional de Telecomunicaciones (UIT)**  
**Oficina de Representación de Área**  
Colonia Altos de Miramontes  
Calle principal, Edificio No. 1583  
Frente a Santos y Cía  
Apartado Postal 976  
Tegucigalpa  
Honduras

Email: [itutegucigalpa@itu.int](mailto:itutegucigalpa@itu.int)  
Tel.: +504 2235 5470  
Fax: +504 2235 5471

## Arab States

### Egypt

**International Telecommunication Union (ITU) Regional Office**  
Smart Village, Building B 147,  
3<sup>rd</sup> floor  
Km 28 Cairo  
Alexandria Desert Road  
Giza Governorate  
Cairo  
Egypt

Email: [itu-ro-arabstates@itu.int](mailto:itu-ro-arabstates@itu.int)  
Tel.: +202 3537 1777  
Fax: +202 3537 1888

## Asia-Pacific

### Thailand

**International Telecommunication Union (ITU) Regional Office**  
Thailand Post Training Center  
5<sup>th</sup> floor  
111 Chaengwattana Road  
Laksi  
Bangkok 10210  
Thailand

*Mailing address:*  
P.O. Box 178, Laksi Post Office  
Laksi, Bangkok 10210, Thailand

Email: [ituasiapacificregion@itu.int](mailto:ituasiapacificregion@itu.int)  
Tel.: +66 2 575 0055  
Fax: +66 2 575 3507

### Indonesia

**International Telecommunication Union (ITU) Area Office**  
Sapta Pesona Building  
13<sup>th</sup> floor  
Jl. Merdan Merdeka Barat No. 17  
Jakarta 10110  
Indonesia

*Mailing address:*  
c/o UNDP – P.O. Box 2338  
Jakarta 10110, Indonesia

Email: [ituasiapacificregion@itu.int](mailto:ituasiapacificregion@itu.int)  
Tel.: +62 21 381 3572  
Tel.: +62 21 380 2322/2324  
Fax: +62 21 389 5521

## CIS

### Russian Federation

**International Telecommunication Union (ITU) Regional Office**  
4, Building 1  
Sergiy Radonezhsky Str.  
Moscow 105120  
Russian Federation

Email: [itumoscow@itu.int](mailto:itumoscow@itu.int)  
Tel.: +7 495 926 6070

## Europe

### Switzerland

**International Telecommunication Union (ITU) Office for Europe**  
Place des Nations  
CH-1211 Geneva 20  
Switzerland

Email: [euregion@itu.int](mailto:euregion@itu.int)  
Tel.: +41 22 730 5467  
Fax: +41 22 730 5484



International Telecommunication Union  
Telecommunication Development Bureau  
Place des Nations  
CH-1211 Geneva 20  
Switzerland

ISBN 978-92-61-33811-4



9 789261 338114

Published in Switzerland  
Geneva, 2021

Photo credits: Shutterstock