



EUROPEAN CENTER FOR  
DIGITAL COMPETITIVENESS

BY ESCP BUSINESS SCHOOL

# DIGITAL RISER REPORT 2020



## » Preface

The Covid-19 pandemic has highlighted the importance of digital technologies. Companies with a digital business model have been able to navigate through the lockdown without significant revenue loss, or even sustained growth. At the same time, companies relying on digital infrastructures and processes have been able to keep operating smoothly.

We are in the middle of a digital revolution that is very likely being accelerated by the Covid-19 pandemic. The way that governments manage and navigate this transition will significantly determine how competitive and prosperous their countries will be in the decades ahead. With new technologies such as 3D printing, Augmented and Virtual Reality, Sensors, Artificial Intelligence, Quantum Computing and Robotics, all of which have the potential to disrupt nearly any industry, we will see new growth, new opportunities and a better future. However, we might also see regions that are less able to navigate through such complex transitions and might thus miss these opportunities.

To drive this essential transformation, two dimensions are of particular importance: the mindset and the ecosystem of each country. Only if both of these dimensions are sufficiently developed and enable digital and technological progress can successful transformation occur. And since all countries are working on improving these areas, the speed and effectiveness of implementation are very important, in order to be ahead in this transition. Thus, we analyse this speed and effectiveness in the Digital Riser Ranking.

Based on data from the World Economic Forum, we analysed how much progress countries have made relative to their global peers in the last three years. The ranking offers a dynamic perspective on the fast-moving field of digital transformation and shows how much can be gained and lost in a relatively short time frame. It also shows that every country can make significant progress independently of the starting point.

In addition, we carefully studied the top three Digital Risers in every region and developed a playbook of best practice case studies. This playbook showcases which policies work in driving digital transformation forward, and it aims to enable governments to learn from each other as well as to benchmark and potentially adapt their strategies for the future.

We hope that this study inspires a broader debate about the necessity for quick and determined actions around the digital and innovation policies necessary to create countries' future competitiveness. Also, we hope that it fosters learning and exchange around the world on the best practices for successful policies in the digital domain.



Prof. Dr. Philip Meissner



Dr. Christian Poensgen

## » Executive Summary

In the post-Covid-19 world, digital technologies will play a major role – whether it is in video conferencing, redesigning supply chains or finding more efficient ways to organise processes in companies and governments. In this study, we look at how governments have managed and navigated the transition driven by digital technologies between 2017 and 2019.

We have analysed two factors: how much progress countries have made relative to their global peers in the last three years, and the best practices of the top Digital Risers 2020 in ten country groups. As such, we highlight developments and initiatives that may inform political decision-makers around the world on which practices to implement, based on what has proven successful in their region and beyond.

### The top Digital Risers in major regions indicate that digital incumbents face new, dynamic competitors

- › France, Saudi Arabia and the Philippines are among the top Digital Risers worldwide. These countries may not be the first examples that come to mind when it comes to digital, but their underlying policies implemented in the last three years show a strong and comprehensive push towards digital transformation, which has created significant results.
- › While countries such as the United States, Sweden or Singapore are often perceived as digital champions, our findings indicate that they are not necessarily dynamic Digital Risers. Only Singapore has managed to improve its relative position in the last three years. In contrast, the United States and Sweden have actually lost ground over the same period.
- › When analysing the two digital superpowers, namely the United States and China, our analysis shows that China has gained in digital competitiveness (+50) while the United States has lost strength in the last three years (-33). For both nations, the main driver for this development is found in the ecosystem dimension of the ranking.

### The top Digital Risers around the world have invested in talent and made innovation and entrepreneurship very feasible for companies

- › Indonesia and the Dominican Republic, for example, have invested significantly in digital education. Indonesia started a digital talent scholarship programme to provide certifications to 20,000 digital talents, whilst the Dominican Republic started the “One Computer” initiative to give every child access to a laptop at school.
- › Other success factors pertinent to Digital Risers include their ability to attract international talent, and so countries such as the Philippines, with their start-up visa programme, and Indonesia, France and Latvia represent particular success stories in this regard.
- › Digital Risers have made it easy, quick and cheap to start companies. Azerbaijan, for instance, has reduced the time to start a company, from over 3 days to less than 1 day, and Latvia has introduced special tax and funding regimes to support young companies.

### The top Digital Risers have followed comprehensive, swiftly-implemented plans along a long-term vision

- › Most Digital Risers have shared a deliberate and comprehensive government programme with top-level support, such as La French Tech in France, or the ICT Strategy 2023 and Saudi Vision 2030, respectively, in Saudi Arabia.
- › Start-ups have been a key focus area of Digital Risers. Their growth has been supported by large-scale initiatives, for example the J-Startup Program in Japan or the 1000 start-ups movement in Indonesia.
- › Digital Risers have invested in technology and start-ups. France, for example, has set up a new 5 billion Euro fund, and Armenia now supports start-ups with up to 50,000€.

## » Methodology

The Digital Riser Report analyses and ranks the changes that countries around the globe have seen in their digital competitiveness over the last three years. It builds upon data from the Global Competitiveness Report, which is published by the World Economic Forum (WEF) every year.

Based on our research, we define a country’s digital competitiveness into two main dimensions: its ecosystem and its mindset. For both dimensions, the Digital Riser Report includes five items from the Global Competitiveness Report. For the ecosystem and mindset dimensions, respectively, these items are:

### Ecosystem

- › Venture capital availability
- › Cost to start a business
- › Time to start a business
- › Ease of hiring foreign labour
- › Skillset of graduates

### Mindset

- › Digital skills among active population
- › Attitudes towards entrepreneurial risk
- › Diversity of workforce
- › Mobile-broadband subscriptions
- › Companies embracing disruptive ideas

To compare the progress of 140 countries regarding their digital ecosystem, mindset and overall competitiveness, we assigned equal weight to all of the ten items by looking at absolute, accumulated change in ranks for each country between 2017 and 2019 in the Global Competitiveness Report.

As an example, France – which was the G7’s top Digital Riser – over the last three years has seen an accumulated increase of 95 ranks over the ten items:

<b>Ecosystem</b>	Change in ranks between 2017 and 2019:
Venture capital availability	+16
Cost to start a business	-1
Time to start a business	-1
Ease of hiring foreign labour	+22
Skillset of graduates	+2
<hr/>	
<b>Mindset</b>	
Digital skills among active population	+4
Attitudes towards entrepreneurial risk	+33
Diversity of workforce	+10
Mobile-broadband subscriptions	-4
Companies embracing disruptive ideas	+14
<hr/>	
<b>Accumulated change in digital competitiveness (over all ten items):</b>	<b>+95</b>

To ensure the comparability of results relative to a comparative baseline, we clustered all countries into nine groups. These include the Group of Seven, the Group of Twenty and the seven WEF regional groups.

Apart from the ranking itself, the Digital Riser Report also analyses the policies followed by the top Digital Riser countries. These offer an explorative overview of what those countries did to earn their top position in our ranking.

# » At a Glance: The Digital Riser Ranking 2020

## G7

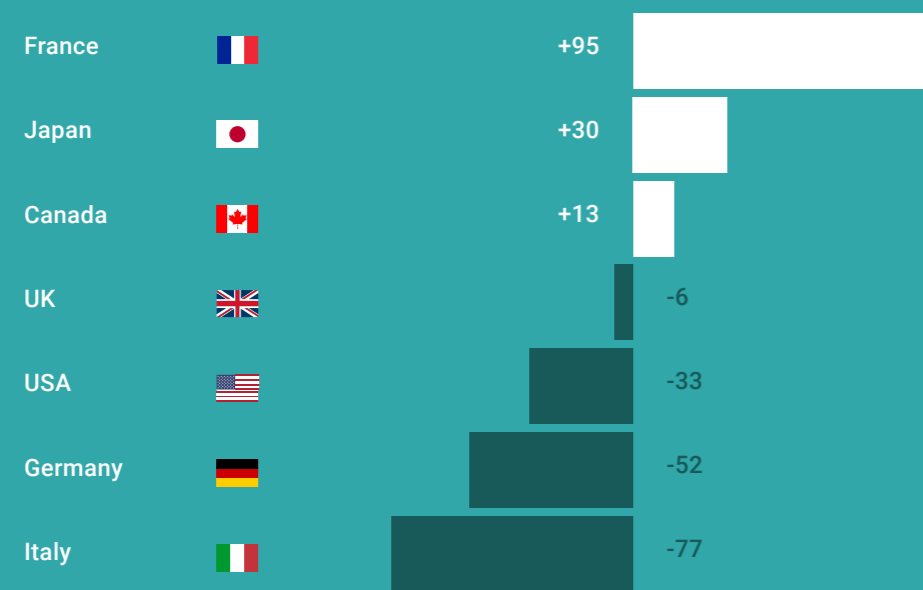
- +
- 1. France
  - 2. Japan
  - 3. Canada
- 
- 4. UK
  - 5. USA
  - 6. Germany
  - 7. Italy

## G20

- +
- 1. Saudi Arabia
  - 2. France
  - 3. Indonesia
  - 4. China
  - 5. Argentina
  - 6. Japan
  - 7. Canada
  - 8. Korea, Rep.
- 
- 9. Australia
  - 10. Russia
  - 11. UK
  - 12. Mexico
  - 13. USA
  - 14. South Africa
  - 15. Brazil
  - 16. Germany
  - 17. Italy
  - 18. India
  - 19. Turkey <sup>1)</sup>
  - 20. EU <sup>2)</sup>



<sup>1)</sup> Turkey is not included due to a lack of data on three out of the five mindset items.  
<sup>2)</sup> The EU is not included since it is a collection of countries.

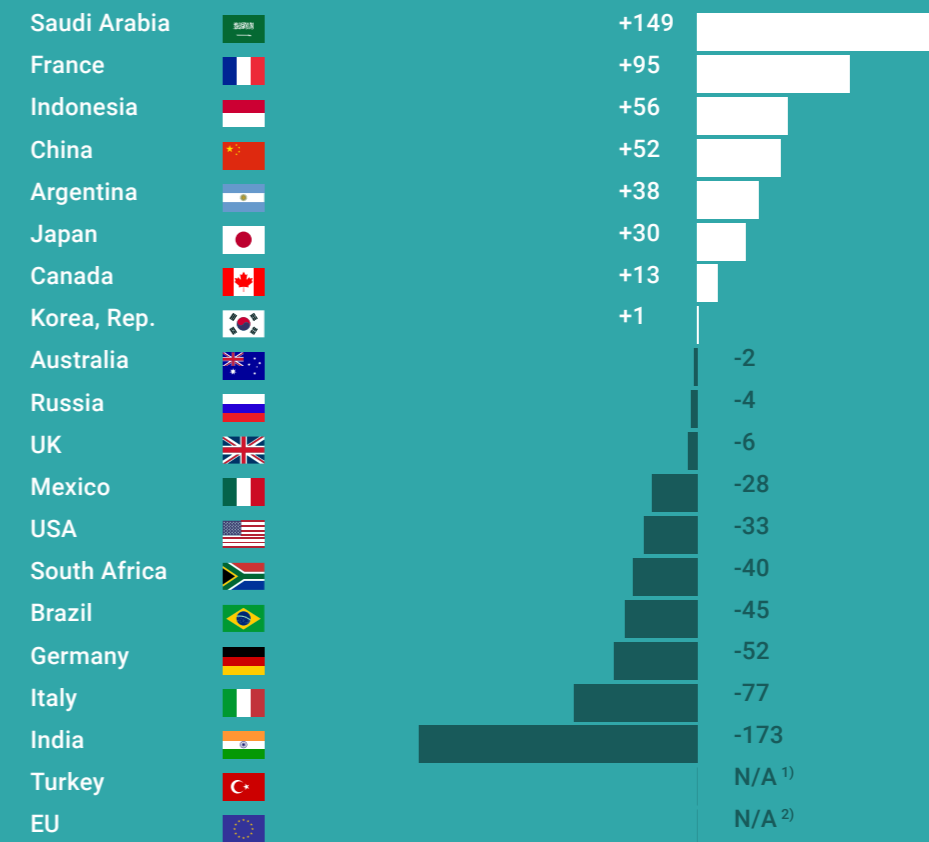


## G7

Within the Group of Seven, France was the top Digital Riser over the last three years, while Italy and Germany fell significantly behind. Surprisingly, the digital powerhouse United States dropped in terms of its relative competitive position. When breaking down the result in the ecosystem and mindset dimensions, France improved the most in both. While Germany's decline was mainly driven by a decrease in the ecosystem dimension, Italy scored low in the mindset dimension. France's outperformance can be mainly explained by the launch of a start-up fund of 5 billion euros as well as the launch of its lighthouse initiative "La French Tech". Additionally, the advent of a new president in 2017, who ran on a platform to lower taxes, called France a "start-up nation," and announced the goal of 25 French unicorns by 2025, has helped to make France a top Digital Riser.

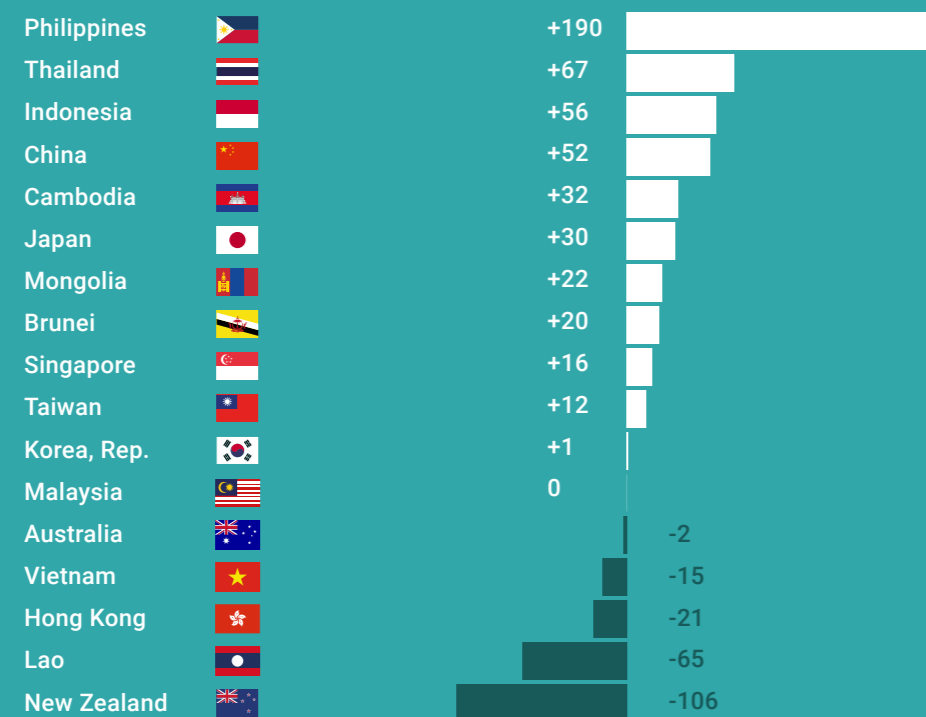
## G20

Within the Group of Twenty, Saudi Arabia was the top Digital Riser, while India and Italy fell significantly behind. Interestingly, otherwise comparable countries differed remarkably with regard to their Digital Riser status: while Argentina ranked fifth, Brazil ranked fifth to last. When breaking down the results, Argentina and Saudi Arabia improved the most in the ecosystem and mindset dimensions, respectively. While India’s decline was driven by both the ecosystem and mindset dimensions, Italy scored comparably low for mindset. Saudi Arabia’s outperformance can be mainly explained by its “ICT Strategy 2023”, which was launched in 2018 to transform the kingdom into a digital and technological powerhouse. Furthermore, the smart city project NEOM, to which the government allocated 500 billion dollars, also highlights aspirations around the “Saudi Vision 2030”.



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## East Asia and the Pacific

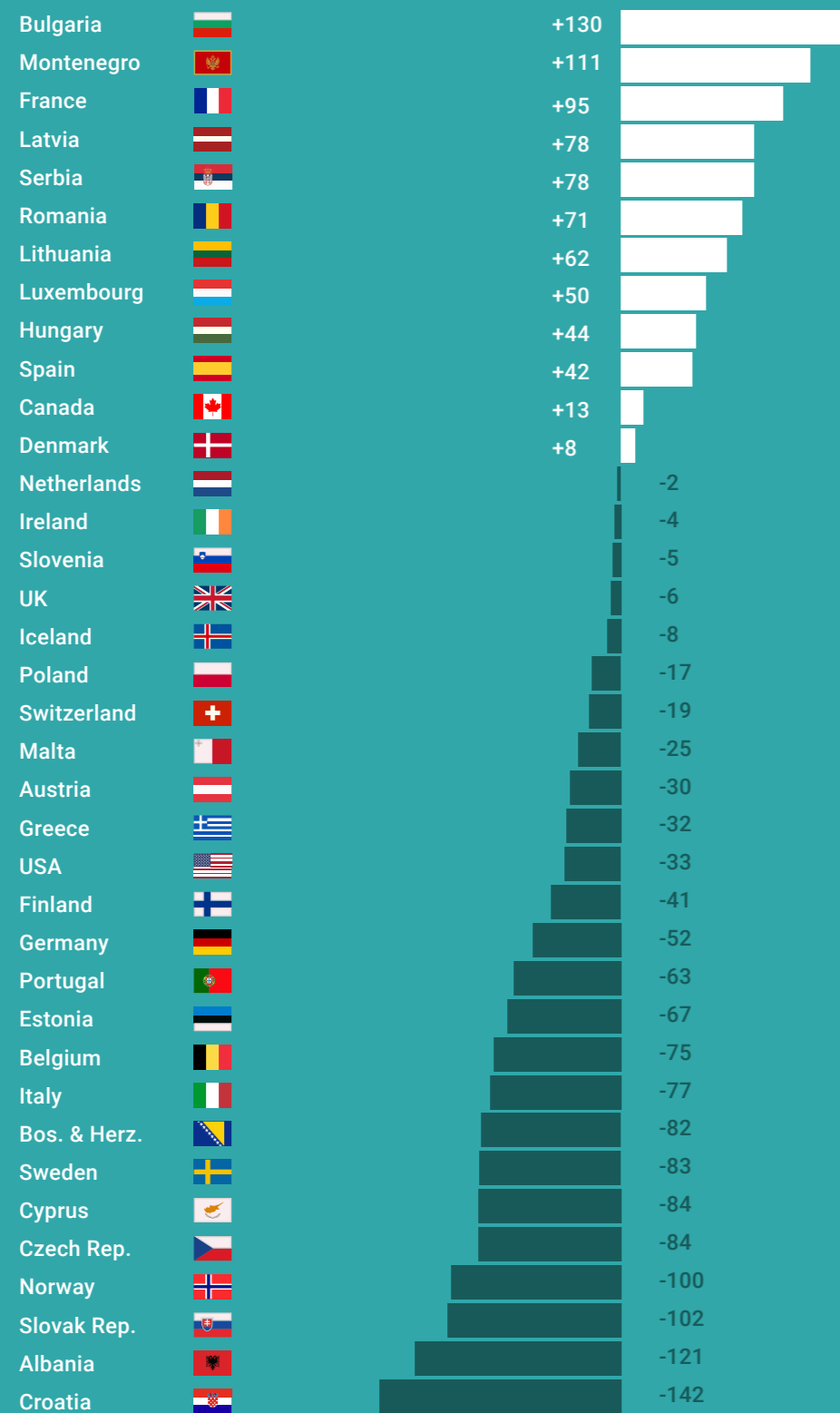
In East Asia and the Pacific, Philippines was the top Digital Riser over the last three years, while New Zealand fell significantly behind. Surprisingly, digitally aspiring countries such as Australia and Vietnam decreased in their relative competitive positions. When breaking down the results, Thailand and the Philippines improved the most in the ecosystem and mindset dimensions, respectively, and whilst New Zealand's decline was mainly driven by the ecosystem dimension, it also fell back in terms of its mindset. The Philippines' outperformance can mainly be explained by its "Innovate Start-up Act" lighthouse initiative, which was passed in 2019 to strengthen, promote and develop an innovative and entrepreneurial ecosystem and culture. Further beneficial initiatives include the introduction of start-up visas and public-private partnership initiatives, such as the "Start-up Venture Fund" in 2019, which matched investments from investors in local start-ups under certain conditions.



## Eurasia

In Eurasia, Armenia was the top Digital Riser over the last three years, while Georgia fell significantly behind. Notably, Russia – the region’s economic powerhouse – also decreased its relative competitive position. When breaking down the results, Kazakhstan and Armenia improved the most in the ecosystem and mindset dimensions, respectively, and whilst Georgia’s decline was driven by both factors, Russia lost ground in the ecosystem dimension. Armenia’s outperformance can mainly be explained by its “Digital Transformation Agenda 2018-2030” lighthouse initiative, which put digital at the heart of its economy. Also, education in Armenia holistically focused on independent thinking and technology, and the National Venture Fund, a public-private-partnership, was launched in 2019 with the aim of investing \$100mn over 5-7 years. Lastly, there were extensive investments in education, notably through the “Model of creative education in new technologies” (TUMO).



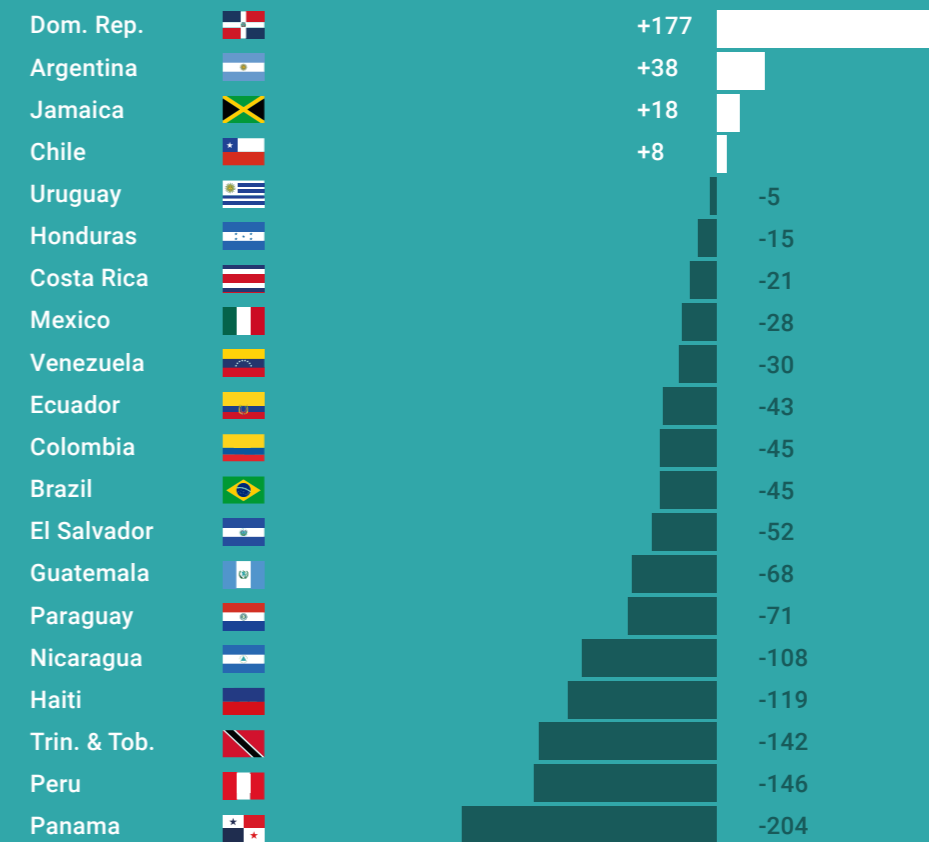


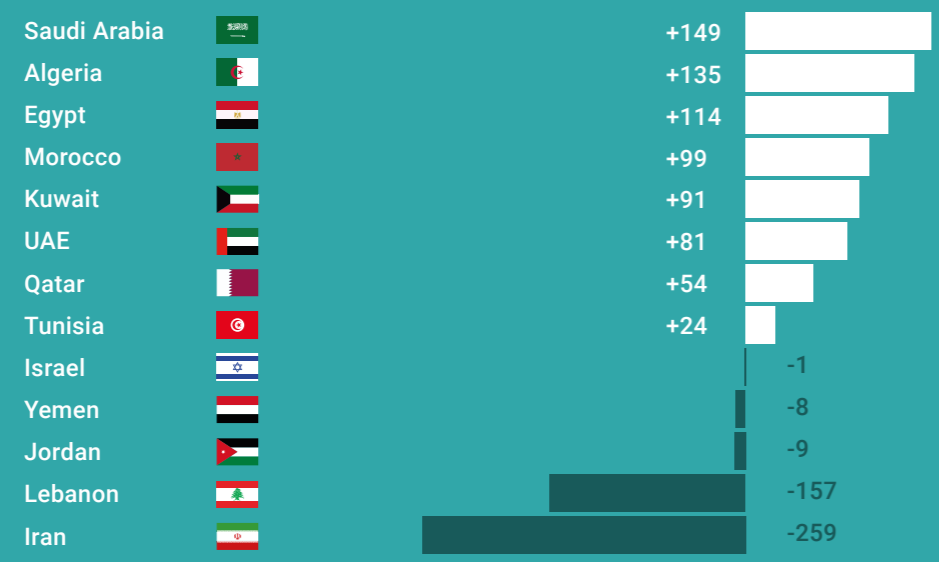
## Europe and North America

In Europe and North America, Bulgaria was the top Digital Riser, while Croatia and Albania fell significantly behind. Intriguingly, Sweden – which is often considered one of Europe’s most digital countries – only ranked 30th of the 36 countries in this group. When breaking down the results, Montenegro and Bulgaria improved the most in the ecosystem and mindset dimensions, respectively. Furthermore, while Croatia’s decline was driven by the ecosystem dimension, Albania scored the lowest in terms of its mindset. As in the EU country group, Bulgaria’s outperformance can mainly be explained by its “Digital Bulgaria 2025” lighthouse initiative, which was launched in 2018 as a continuation of the national programme “Digital Bulgaria 2015”. Its goal was to modernise and implement intelligent IT solutions in all areas of economic and social life. Also, the Digital National Alliance led a lot of initiatives to improve digitalisation free of charge, for example by ensuring digital skills, aligning business needs and education and supporting young Bulgarian talents both locally and globally.

## Latin America and the Caribbean

In Latin America and the Caribbean, the Dominican Republic was the top Digital Riser over the last three years, while Panama dropped significantly behind. Apart from the Dominican Republic, only three countries in this group – Argentina, Jamaica and Chile – improved on their relative digital competitiveness. When breaking down the results, Argentina and the Dominican Republic improved the most in the ecosystem and mindset dimensions, respectively. Panama’s decline was mainly driven by the mindset dimension, but it also scored very poorly in the ecosystem dimension. The Dominican Republic’s outperformance can mainly be explained by its “República Digital” lighthouse initiative, which was launched in 2017 and took a holistic approach to bringing more technology into all aspects of life in the republic, with a focus on education, access, job growth and digital transformation. Also, together with the República Digital programme, the three largest telecom companies (Claro, Orange, and Viva) announced infrastructure investments in the country, totalling some \$355m.



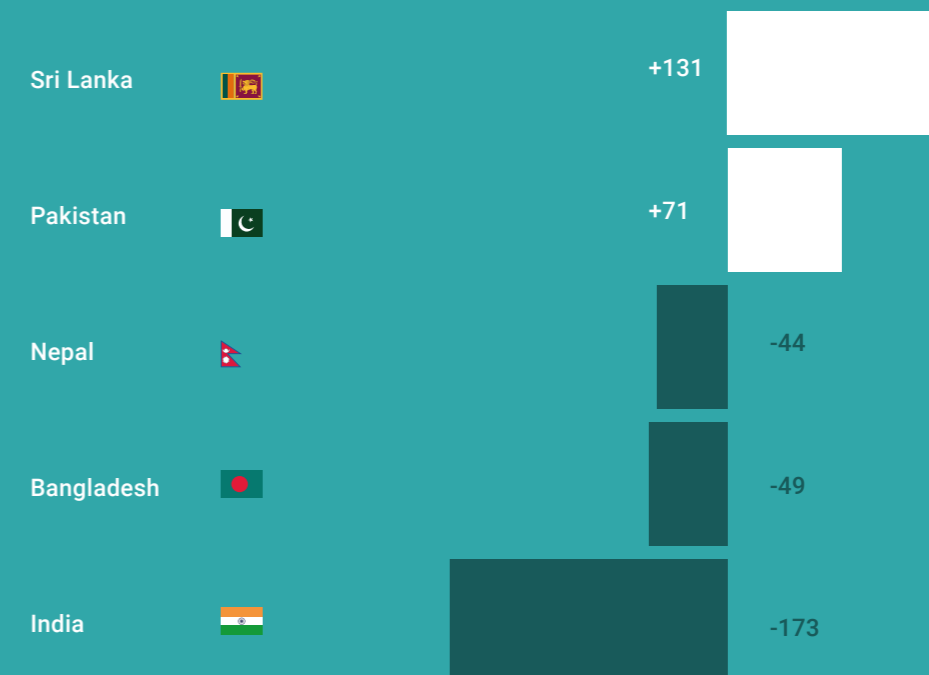


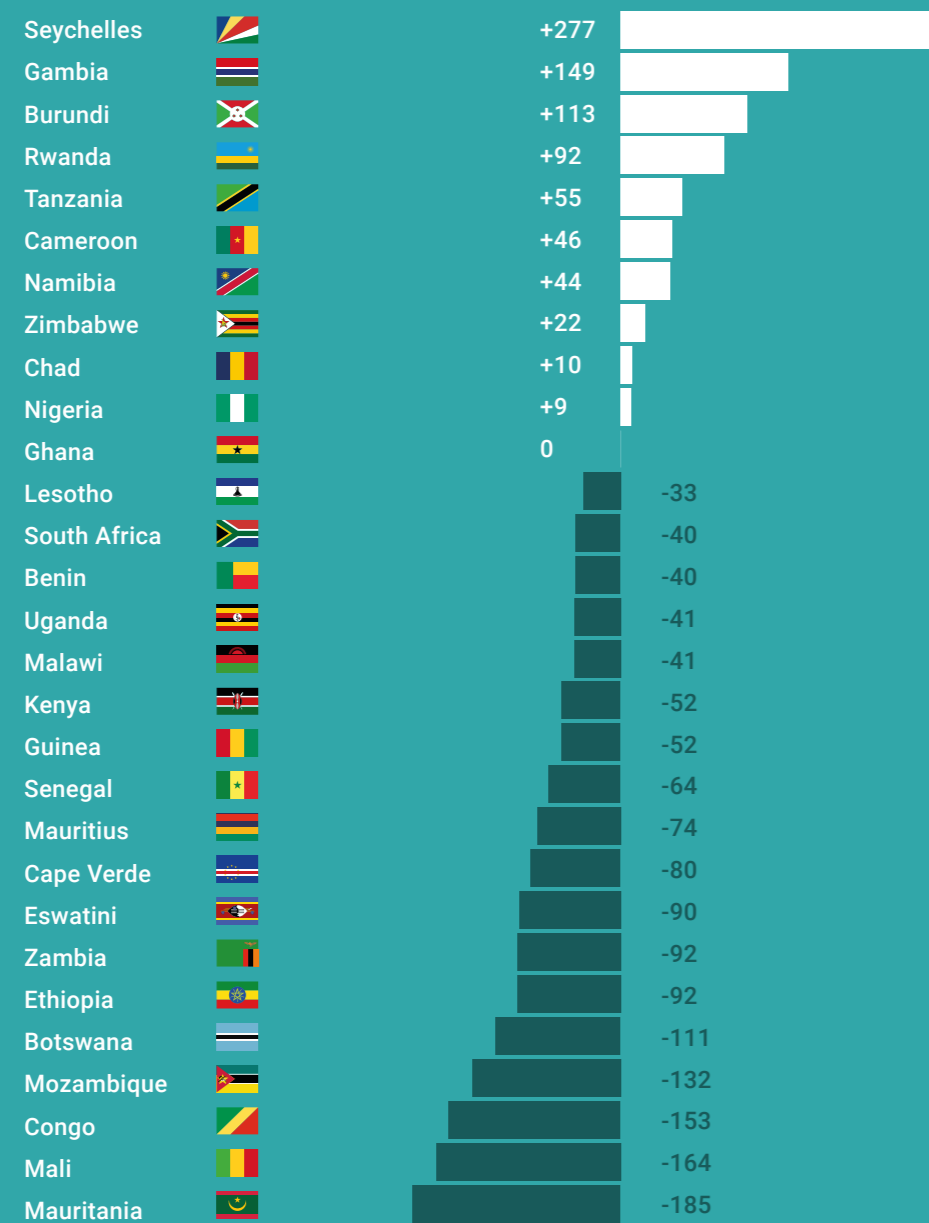
## Middle East and North Africa

Within the Middle East and North Africa group, Saudi Arabia was the top Digital Riser, while Iran and Lebanon dropped significantly. The group did comparatively well as a whole, as nine out of 14 countries improved their relative digital competitiveness. When breaking down the results, Morocco and Saudi Arabia improved the most in the ecosystem and mindset dimensions, respectively. Iran's decline was mostly driven by the ecosystem dimension, while it also scored poorly on its mindset. Likewise, Lebanon's position decreased mostly in the mindset dimension, but the country also did poorly in terms of its ecosystem. As in the G20 country group, Saudi Arabia's outperformance can mainly be explained by its "ICT Strategy 2023", which was launched in 2018 to transform the kingdom into a digital and technological powerhouse. Furthermore, the smart city project NEOM, for which the government allocated 500 billion dollars, also highlights its aspirations around the "Saudi Vision 2030".

## South Asia

In South Asia, Sri Lanka was the top Digital Riser, while India fell significantly behind. When breaking down the results, Pakistan and Sri Lanka improved the most in the ecosystem and mindset dimensions, respectively, and whilst India's decline was mainly driven by the ecosystem dimension, it also scored last in the mindset dimension. Sri Lanka's outperformance can mainly be explained by its "Innovation and Entrepreneurship Strategy of Sri Lanka 2018-2022" lighthouse initiative, which was launched in 2019 to create a resilient and innovative economy with export competitiveness, as well as an entrepreneurial society with better jobs. The initiative's three strategic objectives included supporting SMEs, building an ecosystem for scaling up growth-oriented start-ups and modernising the R&D sector, to allow it to be more enterprise-oriented.





## Sub-Saharan Africa

In Sub-Saharan Africa, the Seychelles was the top Digital Riser over the last three years, while Mali and Mauritania dropped significantly. When breaking down the results, Gambia and the Seychelles improved the most in the ecosystem and mindset dimensions, respectively. Both Mali and Mauritania's declines were driven mainly by the ecosystem dimension, while Mali also scored poorly in terms of mindset. The outperformance of the Seychelles can mainly be explained by the launch of the Seychelles National Investment Policy, which was adopted in 2018 to allow more investments to flow into the country. Also, initiatives such as SIDS were put in place with the aim of advancing the Seychelles' transition from fossil fuel to renewable energy. The state played a key role in this regard through the national energy company PUC, which heavily invested in green sources of energy.

» Country Groups and Regions:  
Digital Riser Best Practices



## LIGHTHOUSE INITIATIVE

- › La French Tech (2013)
  - » Government-initiated global community and platform to promote entrepreneurship
  - » Initiated by Ministry of Digital Economy and equipped with over €600m for investments
  - » Run by civil servants and former entrepreneurs that shape France's digital policy
- » Broad range of activities that include regulations (e.g. French Tech Visa) and international image campaigns to promote entrepreneurship

## REGULATIONS

- › Immigration law ("2018-778") that facilitates access to employment for certain foreign worker profiles
- › Also, new residence permits introduced, such as the multi-annual "talent passport" residence permit and the temporary "student-mobility programme" residence permit
- › Since 2008, the status of an auto-entrepreneur has made it possible to create a sole proprietorship quickly and easily, within a relaxed legal framework, and reduced the perceived risk of entrepreneurship

## INVESTMENTS

- › Startup fund over €5bn
  - » €2bn of which invested in French venture capital funds focusing on late-stage investments
  - » €3bn invested via French asset managers specialising in listed tech companies
- › private capital obtained
  - » €200m fund towards accelerators with budgets over €10m
- › In 2019, President Macron announced the goal of 25 French unicorns by 2025
- › La French Tech investments
  - » €400m matching fund for investments up to €250k when



## France

In the Group of Seven, France ranked first of our top 3 Digital Risers





## Japan

In the Group of Seven, Japan ranked second of our top 3 Digital Rise

### LIGHTHOUSE INITIATIVE

- › J-Startup Program (2018)
  - » The Japanese government proposed the goal of establishing 20 unicorn companies by 2023
  - » With the J-Startup Program, the government aimed to achieve this goal through the incubation of promising start-ups expected to expand business internationally
- » The government also established a "J-Startup Supporters" system of large companies, venture capital actors and accelerators to advance the initiative

### REGULATIONS

- › Simplification of procedures in order to attract foreign investors to Japan ("one-stop shop" created by Ministry of Economy, Trade and Industry and the Japan External Trade Organisation)
  - › Immigration reform to attract nearly 345,000 immigrants with specific skills over a 5-year period
- › Simplification of regulations for foreign companies wishing to set up in Japan by enabling them to choose a simple, inexpensive and easy way to start representative offices

### INVESTMENTS

- › As part of its Artificial Intelligence Technology Strategy, Japan allocated a budget for science and technology of \$33bn in 2017, \$35bn in 2018 and \$38bn in 2019
  - › In 2017, Japan's government for the first time backed a non-Japanese venture capital firm by investing \$35m into "500 Start-ups Japan"
- › Privately owned Japanese start-ups raised a record \$2.5bn in 2017, compared to \$579m in 2012

## LIGHTHOUSE INITIATIVE

- Innovation and Skills Plan (2017)
  - › The plan spanned four areas
    - » People and skills
    - » Research, technology and commercialisation
    - » Investment, scale-up and clean growth
    - » Program simplification
- › Agenda by the Canadian government to spark growth and help it realise its potential as a global leader in innovation
- › Moreover, it stated the explicit goal to create well-paying jobs and to help strengthen and grow the middle class

## REGULATIONS

- › In 2019, the Canadian Parliament announced plans to add more than 1 million new permanent residents each year over the next three years – nearly one per cent of the country's population
  - › enable social and economic well-being, e.g. via the “Start-up Visa Program” and the “Global Skills Strategy”
- › Numerous announcements that regulation was a key policy instrument used by government to
  - › Third biennial plan for the Open Government Partnership (2016-2018) to make government information and policies more open and transparent

## INVESTMENTS

- › Strategic Innovation Fund (SIF) to spur innovation by providing funding for large projects over \$10m in requested contributions – in total, SIF contributions amounted to \$2bn by 2020
  - › Venture Capital Catalyst Initiative: over \$450m supporting Canadian venture fund investments (e.g. fund-of-funds and clean technology funds)
- › The Innovation Superclusters Initiative invested up to \$950m to support business-led innovation superclusters with the greatest potential to energise the economy and become engines of growth



## Canada

In the Group of Seven, Canada ranked third of our top 3 Digital Risers



## Saudi Arabia

In the Group of Twenty, Saudi Arabia ranked first of our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

- ICT Strategy 2023 (2018)
  - › Government roadmap for innovation and the digital economy, aiming at developing digital capabilities and attracting foreign technical investments
  - › Featured 13 priorities aligned with Saudi Arabia's Vision 2030
- › Broad action plan, including
  - » Attracting leading international companies
  - » Enhancing technical and digital knowledge
  - » Promoting R&D in the start-up ecosystem
  - » Enabling mega-projects

### REGULATIONS

- › The Saudi Arabian Monetary Authority (SAMA) introduced a low-value contactless payment service to boost digital transactions and e-commerce
- › The government helped boost venture capital via Invest Saudi, an initiative to attract international VCs
- › It also established the Saudi Arabian General Investment Authority (SAGIA), which has been accelerating the process of granting investor licences. In 2018, SAGIA introduced a subsidised entrepreneur licence to attract start-ups to the kingdom

### INVESTMENTS

- › Announced a \$500bn smart city project (NEOM) to integrate data analytics and AI into all aspects of modern living
- › In 2018, it launched the Saudi Venture Capital Company (SVC) with funding worth \$1.33bn, on top of its highly publicised billion-dollar investments in tech companies through its state-backed Public Investment Fund (PIF), notably Uber and Magic Leap
- › In 2016, it set up the General Authority for Small and Medium Enterprises ("Monshaat") to launch co-working spaces, raise the skills of founders and build a culture of entrepreneurship

## LIGHTHOUSE INITIATIVE

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### LIGHTHOUSE INITIATIVE

National Research and Innovation Agency (2019)

created in 2016 with the goal of growing 1,000 start-ups with a valuation of US\$10 billion by 2020

- › Government agency to support investment, thereby creating jobs and strengthening SMEs to bolster both innovation and research
- › To improve the former, several initiatives were taken, e.g. the “1,000 start-ups movement”, a programme
- › Regarding the latter, it was set up to integrate all research (pure and applied), from the basic level to product innovation

### REGULATIONS

- › As foreign investors became increasingly attracted to the Indonesian market, the government – starting in 2016 – launched a number of efforts to ease setting up new businesses

In 2019, it widened the number of positions open to expatriate workers, consolidated the lists of positions and significantly simplified the approval process for foreign workers

- › Also, the government increasingly aimed to attract experienced and highly-skilled foreign workers.

### INVESTMENTS

- › Indonesia has several education and training institutions that seek to build a strong talent pool for the tech and start-up scene. For example, in 2019, the government invested \$7.7mn into a digital talent scholarship programme to provide certifications to 20,000 digital talents

In 2019, the government increased its focus on providing high-speed internet across the country, e.g. via the state-funded Palapa Ring project – the construction of an optical fibre network throughout the country to improve internet access

## LIGHTHOUSE INITIATIVE

Innovative Startup Act (2019)

for start-ups and enablers

- › Aimed to strengthen, promote and develop an innovative and entrepreneurial ecosystem and culture
- › At the heart of the Act was the Philippine Start-up Development Programme (PSDP), which offered programmes, benefits and incentives
- › It included the Start-up Grant Fund and Start-up Venture Fund and aimed at fostering the 2015 “Start-up Roadmap”, which stated the long-term goal of 500 Philippine start-ups with a total funding of at least \$200m

## REGULATIONS

- › In 2019, the government announced startup visas for owners, employees, and investors that are valid for five years and renewed with three-year validity as part of the Startup Assistance Program 2019-2023 that it announced in 2018
- › Moreover, applications for state services of promising startups and enablers will be prioritized or expedited
- › The government also directed its education institutions to integrate entrepreneurship in their curricula and to provide grants as well as incentives to academic institutions

## INVESTMENTS

- › In 2019, the Start-up Venture Fund announced half of the targeted \$5m by matching investments from selected investors to local start-ups
- › Additionally, the state provided a number of subsidies, e.g. for the use of office spaces, facilities, equipment, services and repurposed government spaces
- › The government also aimed to help start-ups and enablers by providing incentives such as travel grants and subsidies for business registration fees



+190



Philippines

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## Thailand

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### LIGHTHOUSE INITIATIVE

- Thailand 4.0 (2016)
  - › Economic initiative by the government aimed at making the country “Industry 4.0-ready”
  - › The goal was to defeat middle-income and inequality traps and to leapfrog into a dynamic, high-income nation
- › A multitude of initiatives, e.g.
  - » Start-up Thailand, a national start-up promotion platform
  - » Start-up Nation, Southeast Asia’s biggest tech conference

### REGULATIONS

- › In 2016, VC firms were enabled to distribute patents more easily to the most suitable businesses; Moreover, the government granted the private sector access to state funding for R&D in new technologies
- › To accelerate developments in fintech and regtech, the Bank of Thailand and the Thai SEC created respective regulatory sandboxes
- › In 2016, the government announced the waiving of dividend and income taxes for VC firms for up to 10 years, to pave the way for higher investments

### INVESTMENTS

- › In 2016, the government announced a \$570m venture fund for start-ups in ten supported industries, including digital, next-generation cars and smart-electronics
- › In 2019, the government set up the Government Innovation Lab to deploy a citizen-centric approach and focused public collaboration
- › for innovation development in government services
- › Also, the government announced it would invest heavily to deliver fibre-optic broadband to all of the country’s 75,000 villages

## LIGHTHOUSE INITIATIVE

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## Indonesia

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## Armenia

In Eurasia, Armenia ranked first of our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

Armenia's Digital Transformation Agenda 2018-2030 (2018)

- › Government-introduced framework with six focus areas to make Armenia competitive internationally via digital transformation: Smart government; Creative digital labour force; Highly efficient, reliable and affordable infrastructure; Safe and resistant cyber-space; Internationally

competitive private sector; Interconnected, collaborative and functional institutional framework

- › In 2019, the government created the Ministry of High-Tech Industry

### REGULATIONS

- › Education was holistically focused on independent thinking and technology
  - » Since 2011, chess has been obligatory for all children from 6 to 8 years
  - » In 2016, the government announced it would put robotics clubs in every school by 2019

- › The government also announced the e-government project EU4Armenia: e-Gov Actions (2017-2020), which aimed to establish a governmental interoperability platform

### INVESTMENTS

- › Armenia's National Venture Fund, a public-private-partnership set up in 2019 to invest \$100m over 5-7 years
- › Support provided to SME Development in Armenia (SMEDA) to improve the business and investment climates by supporting start-ups with up to €50,000

- › Many investments in education, e.g. through the "Model of creative education in new technologies" (TUMO), offering free programming lessons to almost 7,000 Armenians aged 12 to 18. The programme was exported to France and Germany

## LIGHTHOUSE INITIATIVE

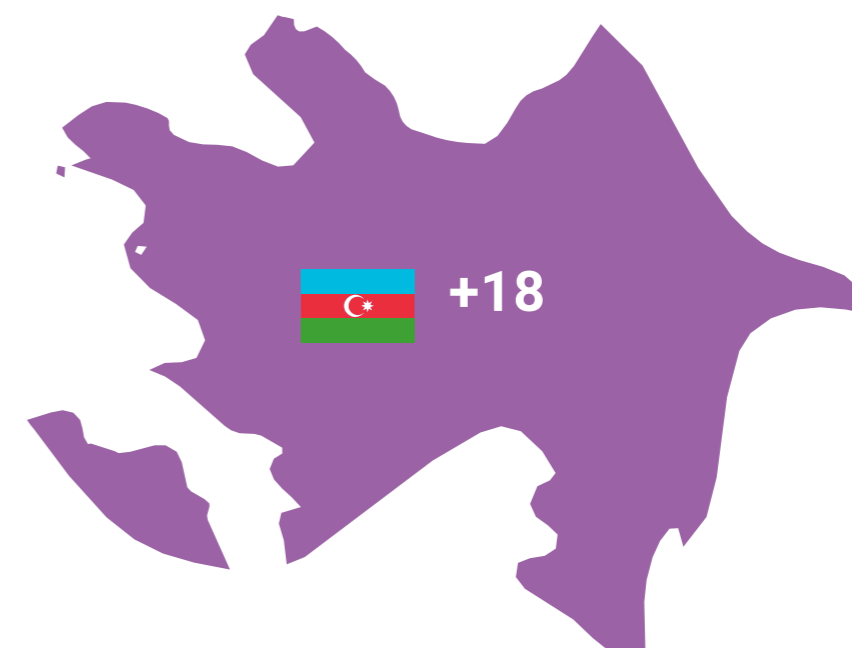
- Strategic Road Map on the Development of Telecommunication and Information Technologies (2016)
  - › Priorities included driving ICT skills and knowledge, mobile infrastructure investment and digital payments
- › Comprehensive framework with three targets:
  - › Improving governance structures and strengthening ICT
  - › Increasing the productivity and operational efficiency of the business environment
  - › Digitising government and social environments

## REGULATIONS

- › The government adopted a migration code in 2013 that removed restrictions on obtaining work permits, residence permits and visas
- › In 2016, changes were made to the labour law filing for work contract amendments and terminations online
- › In 2018, reforms made it easier to start and conduct business:
  - › Starting a business made feasible online – in 0.5 instead of 3.5 days, and free of cost
  - › Favourable tax schemes, e.g. social security contributions – down to 15% from 22%

## INVESTMENTS

- › Azerbaijan Digital HUB programme, conducted with AzerTelecom, to export innovations and digital services under the 'Made in Azerbaijan' brand to neighbouring regions
- › In 2017, the government announced its draft of the "Electronic school" programme that gathered 50 educational institutions to digitalise education in the country
- › In 2018, the government established the Innovation Agency to enable innovation in the business sector – this included supporting start-ups through grants, concessional loans and venture capital funds



## Azerbaijan

In Eurasia, Azerbaijan ranked second of our top 3 Digital Risers.



## Ukraine

In Eurasia, Ukraine ranked third of our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

- › Concept for development of the digital economy and society for 2018-2020 (2018)
  - › Strategy draft envisioning transition from a resource-based economy to high-tech production with efficient processes and higher GDP growth through the introduction of ICT
- › The draft focused on two major aspects:
  - › Digital infrastructure (notably, broadband internet)
  - › Digital transformation in different key areas, e.g. education, ecology, medicine, a cashless economy and transportation

### REGULATIONS

- › In 2018, the Ukrainian authorities began issuing 4G licences, which allowed internet infrastructure to grow and improve considerably
- › In 2019, the government announced simplifications to doing business by removing restrictions in labour relations and capital flows
- › In the same year, it announced plans to sell hundreds of interesting facilities to investors as part of a large privatisation process – as well as fostering the development of 5G standards in Ukraine

### INVESTMENTS

- › In 2019, the government launched the Ukraine National Start-up Fund, a public initiative to support innovation projects
  - › The fund's resources amounted to some \$14m
  - › The fund would initially use this money to disperse grants between \$25,000 and \$75,000 to promising Ukrainian start-ups
- › During subsequent stages, the most successful start-ups were eligible to receive soft loans

## LIGHTHOUSE INITIATIVE

- Digital Bulgaria 2025 (2018)
- › Continuation of the national programme “Digital Bulgaria 2015”, aimed at modernising and implementing intelligent IT solutions in all areas of economic and social life
  - › Six key priority areas for action
    - » Digital networks and services
    - » A dynamic and innovative digital economy
    - » Enhancement of digital skills
    - » Effective and high-quality e-services for businesses
    - » A secure cyber ecosystem
    - » Internet governance

## REGULATIONS

- › In 2018, coding was announced to become obligatory in primary schools
- › Investment Promotion Act (IPA) that introduced the principle of equality between Bulgarian and foreign citizens and entities
  - » High-tech sectors were defined as preferential by the Bulgarian state and therefore came with lowered financial requirements for investments
  - » Further government initiatives granted firms benefits regarding social security, taxes and vocational education
  - » Many incentives for investments under the IPA, e.g. grants for R&D and favourable prices on public land

## INVESTMENTS

- › The Digital National Alliance (DNA) – founded in 2014 – led a lot of initiatives to improve digitalisation free of charge, with a number of aims, e.g.
  - » Ensuring digital skills
  - » Aligning business needs and education
  - » Supporting young Bulgarian talents both locally and globally
  - » Facilitating young people to access digital technologies to communicate and co-create with people across Europe
  - » Helping young people to find new job opportunities



## Bulgaria

In Europe & North America,  
Bulgaria ranked first of our top  
3 Digital Risers



## Montenegro

In Europe & North America,  
Montenegro ranked second of  
our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

- Strategy on Innovative Activity (2016)
- › Comprehensive strategy, including:
    - 1) Capacities for innovation and technological development
    - 2) Instruments for networking and cooperation of actors in the innovation system
    - 3) Potential for innovation in the business sector
  - › Six thematic priorities, namely energy, agriculture and food, sustainable development and tourism, information-communication technologies, medicine and health of people and new materials, products and services

### REGULATIONS

- › Montenegro started to relax its traditionally strict rules linked to foreign employment
- › The country also started to work on creating a more favourable environment toward the development of the private sector by easing regulations, as well as ceasing to favour state-owned firms
- › Further assorted measures introduced to eliminate legal obstacles included developing advanced financial systems, encouraging and attracting talents and fostering entrepreneurial culture and access to markets through innovative and entrepreneurial projects

### INVESTMENTS

- › In 2018, Montenegro launched the Start-up Company Incentive Program
- › It became the first country in the Western Balkans region to apply for and receive support under the EC Policy Support Instrument, and it proposed interventions in the policy area related to the formation of start-up ecosystems, including:
  - » Legal solutions for a favourable environment for start-ups
  - » Organisational models for functioning ecosystems
  - » Schemes to fund start-ups and other actors in the ecosystem

## LIGHTHOUSE INITIATIVE

- › La French Tech (2013)
  - » Government-initiated global community and platform to promote entrepreneurship
  - » Initiated by Ministry of Digital Economy and equipped with over €600m for investments
  - » Run by civil servants and former entrepreneurs that shape France's digital policy
- » Broad range of activities that include regulations (e.g. French Tech Visa) and international image campaigns to promote entrepreneurship

## REGULATIONS

- › Immigration law ("2018-778") that facilitates access to employment for certain foreign worker profiles
- › Also, new residence permits introduced, such as the multi-annual "talent passport" residence permit and the temporary "student-mobility programme" residence permit
- › Since 2008, the status of an auto-entrepreneur has made it possible to create a sole proprietorship quickly and easily, within a relaxed legal framework, and reduced the perceived risk of entrepreneurship

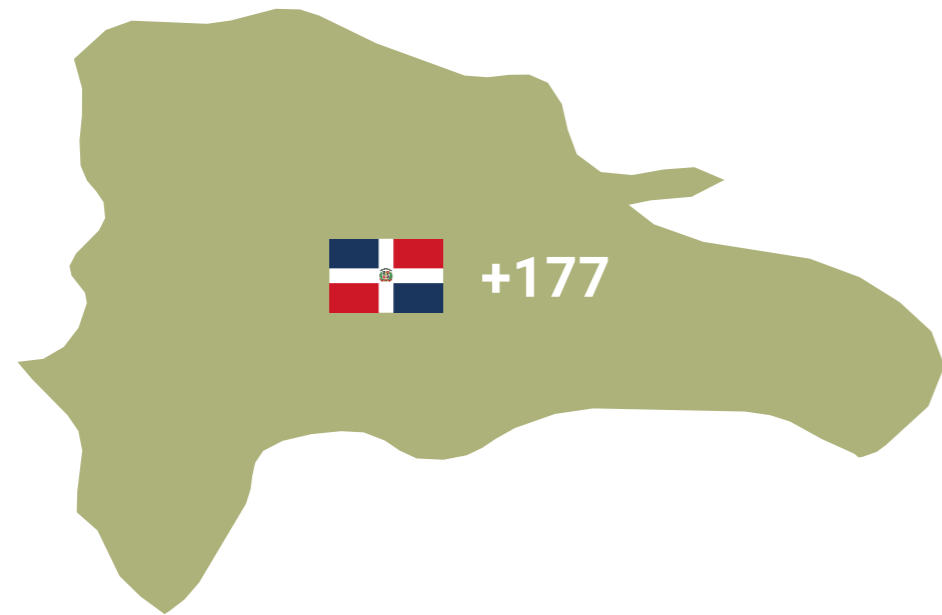
## INVESTMENTS

- › Startup fund over €5bn
  - » €2bn of which invested in French venture capital funds focusing on late-stage investments
  - » €3bn invested via French asset managers specialising in listed tech companies
- › La French Tech investments
  - » €400m matching fund for investments up to €250k when
- › private capital obtained
  - » €200m fund towards accelerators with budgets over €10m
- › In 2019, President Macron announced the goal of 25 French unicorns by 2025



France

In Europe & North America,  
France ranked third of our top 3  
Digital Risers



## Dominican Republic

In Latin America & the Caribbean, the Dominican Republic ranked first of our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

República Digital (2017)

- › Holistic approach taken by the government to bring more technology into all aspects of life in the republic, with a focus on education, access, job growth and digital transformation
  - » It included seven public online services, e.g. an app for citizens to compare the prices of household products, updated daily
  - » Also, it ensured the automatic renewal of the health registry available to all citizens

### REGULATIONS

- › Together with new and better services, the República Digital programme explicitly announced less red tape in a number of areas. Examples include:
  - » Streamlining the process for registering a business
  - » Creating a system of electronic signatures to facilitate transactions, e.g. taxes and bus fares
  - » Increasing the transparency of online government records
  - » Facilitating the effective use of digital payments and marketing

### INVESTMENTS

- › Together with the announcement of the República Digital program in 2017, the three largest telecom companies (Claro, Orange, and Viva) announced infrastructure investment in the country, totalling some \$355m.
  - › Also in 2017, the government announced its plan to build 5,000 free Wi-Fi spots in public parks, squares and hospitals
- › Around 4% of the state budget was allocated to education, e.g. in initiatives such as "One Computer," set up to give every child access to a laptop at school

## LIGHTHOUSE INITIATIVE

Program for Strengthening of the Digital Agenda (2019)

- › The objective of the programme was to improve the productivity of the economy by advancing its digitalisation through actions. The four key elements set out to:
  - › Establish a digital agenda
  - › Strengthen the legal framework for connectivity
- › Broaden offerings and improve the quality of digital government services
- › Promote policy measures for digital productive transformation

## REGULATIONS

- › Comprehensive entrepreneur's law ("Ley de Emprendedores") that included a fast-track process for company registrations and tax incentives:
  - › Simplified business entity (SAS) model that allowed setting up a business online within 24 hours, as well as adding partners later
  - › Up to 85% of any investment in an SAS-accredited investment fund would be tax-deductible for up to 10 per cent of the investor's annual profits

## INVESTMENTS

- › The entrepreneur's law also included support for accelerators as well as public funds to co-invest with private investors in order to promote start-ups
  - › Technical and financial assistance for 13 accelerator programmes with the creation of a new seed fund scheme
  - › Fiduciary Fund for the Development of Venture Capital (FONDCE) to finance start-ups and VC funds
  - › Also, it facilitated crowdfunding as a source of start-up funding



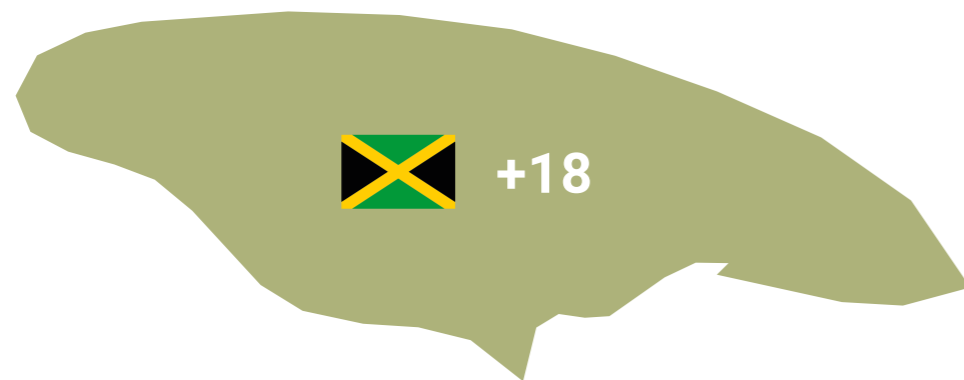
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Argentina

In Latin America & the Caribbean, Argentina ranked second of our top 3 Digital Risers





## Jamaica

In Latin America & the Caribbean, Jamaica ranked third of our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

Startup Jamaica (2014)

Jamaica's youth into an employment opportunity for future generations

- › Government initiative supported by the World Bank and contributed to the realisation of the country's "Vision 2030" by linking passion for ICT with entrepreneurship's potential
- › Strategically, the initiative aimed to move Jamaica away from merely being a consumer to becoming a producer of digital platforms and content
- › Key element in the government's strategy to turn the potential of

### REGULATIONS

- › In 2019, the government announced an online ("one-stop shop") interface for all government entities involved in investment or business facilitation. As a result, the number of days it takes to start a business went down from 15 to 3
- › In the same year, it announced the National Identification System (NIDS) to provide a comprehensive and secure structure to enable digital transactions and storage of identity information for all Jamaicans

### INVESTMENTS

- › To become the Caribbean's first "digital society", Jamaica invested in the country's infrastructure together with the Inter-American Development Bank Groups, e.g. through \$68m for a National Identification System (NIDS) for economic growth
- › Support was provided by the Branson Centre of Entrepreneurship-Caribbean (BCoEC) for entrepreneurs in the English-speaking Caribbean region to develop and scale their ideas, including with no-collateral loans with short repayment periods and low interest rates

## LIGHTHOUSE INITIATIVE

- ICT Strategy 2023 (2018)
- › Government roadmap for innovation and the digital economy, aiming at developing digital capabilities and attracting foreign technical investments
- › Featured 13 priorities aligned with Saudi Arabia's Vision 2030
- › Broad action plan, including
  - › Attracting leading international companies
  - › Enhancing technical and digital knowledge
  - › Promoting R&D in the start-up ecosystem
  - › Enabling mega-projects

## REGULATIONS

- › The Saudi Arabian Monetary Authority (SAMA) introduced a low-value contactless payment service to boost digital transactions and e-commerce
- › The government helped boost venture capital via Invest Saudi, an initiative to attract international VCs
- › It also established the Saudi Arabian General Investment Authority (SAGIA), which has been accelerating the process of granting investor licences. In 2018, SAGIA introduced a subsidised entrepreneur licence to attract start-ups to the kingdom

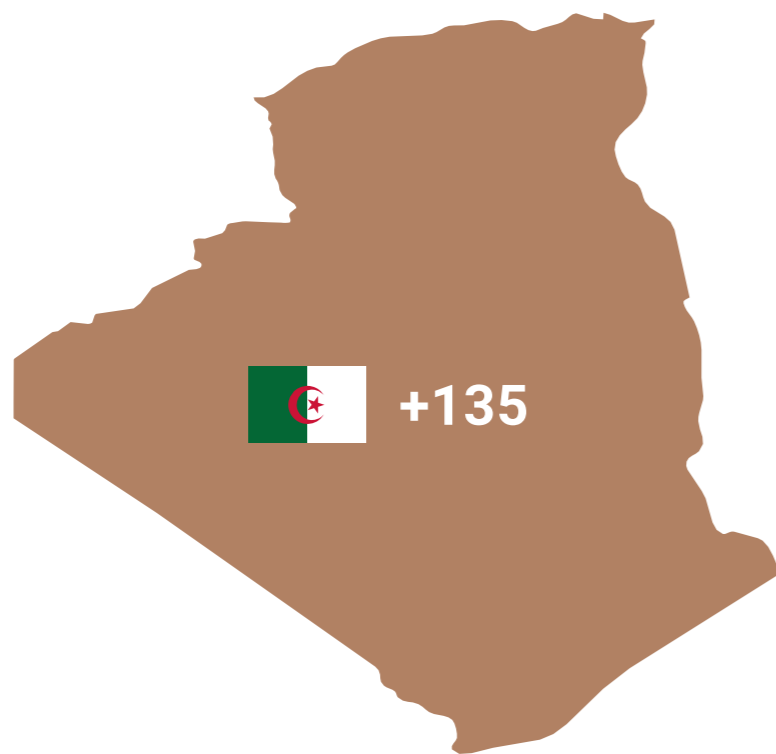
## INVESTMENTS

- › Announced a \$500bn smart city project (NEOM) to integrate data analytics and AI into all aspects of modern living
- › In 2018, it launched the Saudi Venture Capital Company (SVC) with funding worth \$1.33bn, on top of its highly publicised billion-dollar investments in tech companies through its state-backed Public Investment Fund (PIF), notably Uber and Magic Leap
- › In 2016, it set up the General Authority for Small and Medium Enterprises ("Monshaat") to launch co-working spaces, raise the skills of founders and build a culture of entrepreneurship



### Saudi Arabia

In Middle East & North Africa, Saudi Arabia ranked first of our top 3 Digital Risers



## Algeria

In Middle East & North Africa, Algeria ranked second of our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

- Initiative for Digital Transition (2020)
- › Initiative by the Ministry of Microenterprise, Start-ups and the Knowledge Economy
    - » Digitisation of central administration, documents and administrative forms
    - » Creation of a control panel for decision-making and monitoring government projects
  - › Modernisation of the government internet network, to ensure liaison between departments

### REGULATIONS

- › In 2019, the government lifted a rule that limited foreign equity stakes up to 49% of a company's equity
- › In 2018, it announced an extension to the scope of a reduced VAT rate of 9% for online sales of digital goods and certain electronically supplied services
- › Also in 2018, the government announced a law that made electronic payment terminals obligatory for all shop owners in the country

### INVESTMENTS

- › In 2020, the government announced the creation of "the City of Start-ups", which would constitute a multi-service technology centre to strengthen Algeria's place as an African role model in new venture creation
- › In 2019, the government announced its goal to create a start-up-friendly ecosystem, including a Start-up Support Fund and dedicated technological zones similar to those found in Silicon Valley

## LIGHTHOUSE INITIATIVE

ICT 2030 Strategy (2016)

government started many initiatives to foster digital education

- › Building on different previous medium- and long-term ICT development strategies, the plan aimed to enable the development of a knowledge-based society and a strong digital economy
- › An early achievement of the latter saw the transformation of Port Said into a smart city
- › To achieve the former, the

## REGULATIONS

- › In 2019, the government announced a strong legislative framework that provided e-commerce governance, data security and the preservation of seller and buyer rights
- › forward, as well as new legislation aiming to combat internet and digital offences
- › Also in 2019, it announced a comprehensive restructuring of the tax system to be implemented going

## INVESTMENTS

- › In 2018, the government announced a 300-acre "City of Knowledge" east of Cairo. It was planned to be a regional hub for high-tech innovation and scientific development around IoT and AI technologies, embedded systems and electronic design
- › centres around the country, to provide training to develop human capacities around digital transformation
- › The government also ran an early-stage accelerator called Fayak that funded ventures up to \$63,500
- › In 2019, the government said it wanted to build up to 4,000 youth



Egypt

In Middle East & North Africa, Egypt ranked third of our top 3 Digital Risers



+131



## Sri Lanka

In South Asia, Sri Lanka ranked first of our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

Innovation and Entrepreneurship Strategy of Sri Lanka 2018-2022 (2019)

- › The government’s landmark agenda for “[...] a resilient and innovative economy with export competitiveness, and an entrepreneurial society with better jobs”

› Three strategic objectives:

1. Support SMEs to innovate and become more competitive in domestic and export markets
2. Build the ecosystem for scaling up growth-oriented start-ups
3. Modernise and realign the R&D sector to be more enterprise-oriented

### REGULATIONS

- › Multitude of efforts to improve the ease of doing business via trade facilitation, streamlined investment approvals and fast-tracked investor issue resolution

- › Likewise, it introduced an online Single Window Investment Facilitation Taskforce (SWIFT) to smoothen the path for investors who needed to get multiple government approvals

- › The government also accelerated investment approvals and land allocations for investors through fast-tracked mechanisms

### INVESTMENTS

- › As part of its landmark agenda, the government announced the “Enterprise Innovation Program” to provide domestic entrepreneurs with extensive matching grants

- › Under the “Market Access Support Program”, firms received matching grants for entering new markets, e.g. when applying for special standards and certifications, obtaining external technical expertise or conducting market entry studies

- › This complemented the “Enterprise Sri Lanka” programme, which provided entrepreneurs with lower-cost capital

## LIGHTHOUSE INITIATIVE

Digital Pakistan Vision (2019)

- › Announced by the prime minister and headed by a former Google executive, the initiative set Pakistan's digital ambition to become a digitally progressive and inclusive country
- › The strong, self-critical commitment by the prime minister was especially

noteworthy: He stated that he "[...] should have given attention to Digital Pakistan earlier. This is the most important thing for Pakistan right now, especially its youth. The whole world is moving forward digitally and we have been left behind."

## REGULATIONS

- › In 2017, the government created regulations to allow local venture capital firms and investors to set up shop in Pakistan
- › As a result, it approved the licences for Pakistan's first Private Equity and Venture Capital funds in 2017
- › It also introduced three-year tax reliefs for start-ups

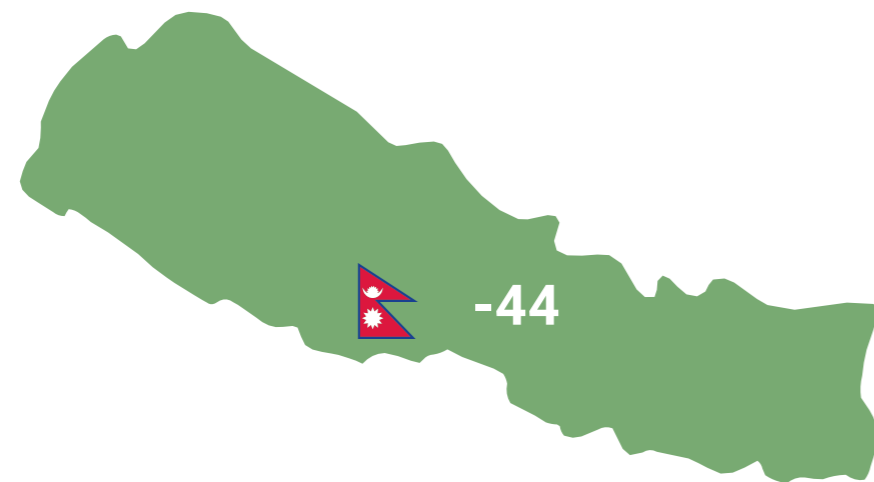
## INVESTMENTS

- › To promote a start-up culture, the government funded incubation centres to provide management services and secondary support services to help the formation of new start-ups in all four provinces
- › Along with corporations and foundations, the government provided funding for early-stage start-ups, to accelerate their growth
- › The government also took the lead in starting structured incubators, such as the "National Incubation Center" in Islamabad



Pakistan

In South Asia, Pakistan ranked second of our top 3 Digital Risers



## Nepal

In South Asia, Nepal ranked third of our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

Digital Nepal (2019)

- › Programme designed to enable Nepal to harness its growth potential by leveraging disruptive technologies and driving socio-economic growth:
  - » Determining how digital initiatives could contribute to economic growth
  - » Finding innovative ways to solve major challenges facing society

in a shorter period with fewer resources

- » Identify opportunities for Nepal to participate in the global economy

### REGULATIONS

- › The government introduced different tax benefits for business in the agriculture, tourism and renewable energy sectors. The new tax exemption threshold also benefited start-ups, as employees would have their tax liability reduced
  - » Likewise, it announced changes in VAT and customs, especially in the agriculture sector, to support

entrepreneurs in selected fields

- » The government also signalled its commitment to simplifying the establishment, renewal and liquidation of companies

### INVESTMENTS

- › In 2018, the government set up the Youth and Small Entrepreneur Self-Employment Fund (YSEF), which helped to provide unemployed individuals with subsidised loans to start small businesses
- › Additionally, the government of Nepal initiated the Women's Entrepreneurship Development Fund (WEDF) to help women entrepreneurs

meet the financial needs for their enterprise growth

- › Nepal is currently expected to lead internet penetration by 2025 relative to major economies such as China and India

## LIGHTHOUSE INITIATIVE

Seychelles Investment Bureau (2004)

- › The Seychelles improved the digitalisation of the country through several initiatives via the involvement of the Seychelles Investment Bureau (SIB), which was set up back in 2004
- › The goals of this agency included improving the country's global

business indicators on the international scene as well as supporting emerging sectors such as ICT, healthcare and education

## REGULATIONS

- › In 2018, the Seychelles National Investment Policy was adopted to allow more investments to flow into the country while still safeguarding environmental regulations
- › Also in 2018, the government and the central bank hosted a workshop with different ministers from top

institutions on the topic of digitising the national payment system

## INVESTMENTS

- › The Small Island Developing States (SIDS) lighthouse initiative aimed to advance the Seychelles' transition from fossil fuel to renewable energy. The state played a key role in this regard through the national energy company PUC, which heavily invested in green sources of energy – notably solar – as well as in water distribution facilities
- › Together with the Chamber of Commerce and the Youth Entrepreneurship Board, the government provided training schemes and network events for micro, small and medium enterprises (MSME) and start-up companies



Seychelles

In Sub-Saharan Africa, the Seychelles ranked first of our top 3 Digital Risers





## Gambia

In Sub-Saharan Africa, Gambia ranked second of our top 3 Digital Risers

### LIGHTHOUSE INITIATIVE

#### National Entrepreneurship Policy (2017)

- › Programme with the United Nations to create a thriving middle-income economy by 2026, driven by self-reliant and innovative entrepreneurs and an enabling and strengthening ecosystem
  - » Upgrading entrepreneurship education and skills
  - » Spreading ICT and recognising

entrepreneurs as creators of jobs and prosperity

- » Setting efficient bankruptcy procedures
- » Instilling an entrepreneurship mindset

### REGULATIONS

- › In 2017, Gambia officially became a member of the International Organisation for Migration (IOM), which helped its government to build and improve the capacity to protect migrants, promote their rights and better manage migration
- › The IOM also provided technical assistance to the government in

developing its first national migration policy, especially with regards to returning migrants from all around the globe

### INVESTMENTS

- › Announced the Youth Mobile Project to enable young people to develop and commercialise mobile application solutions for local problems, to achieve sustainable development, e.g. by founding coding schools and collaborations with the private sector
- › Created a number of educational programmes dedicated to entrepreneurship, such as the

“Gambian Entrepreneurship Foundation Course”, which provided entrepreneurship basics to young Gambians

## LIGHTHOUSE INITIATIVE

ICT development strategy (2018)

Agency to correct shortcomings in an earlier, rather moderately successful ICT development strategy

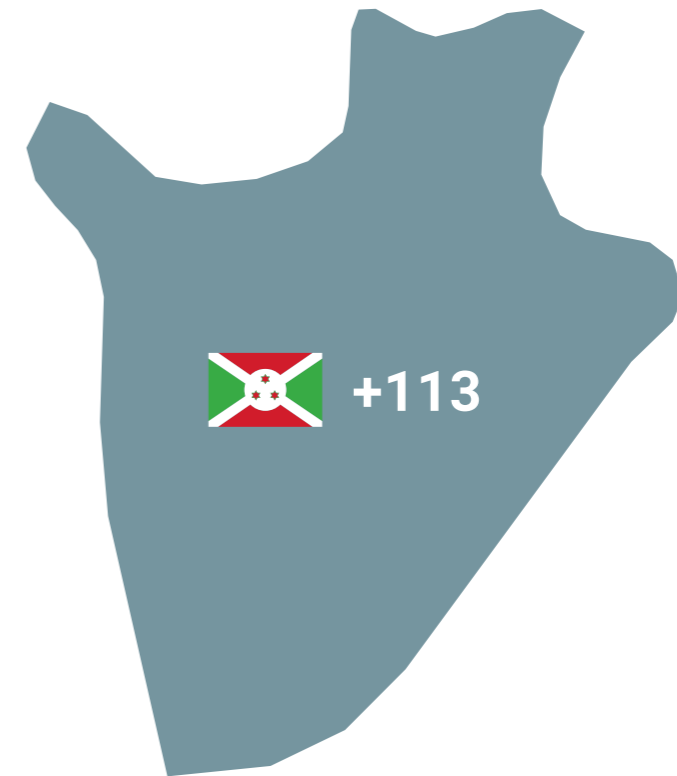
- › In 2018, the government announced the creation of an ICT development strategy, a regulatory framework to help the country's digital economy rise
- › The strategy is currently being created with the United Nations Specialized

## REGULATIONS

- › As in Gambia, the International Organisation for Migration (IOM), supported the Burundian government – the aim of the collaboration was the development of a “National Labour Migration Policy”
- › It also simplified tax procedures for SMEs and launched an electronic single interface for business transactions
- › The government created a “one-stop shop” for starting businesses,

## INVESTMENTS

- › In 2018, the government launched the Young Agribusiness Incubator (YAIN), to support agricultural entrepreneurship for Burundian youth to ultimately build innovative companies in this field
- › Authority (API) released the “Investment Guidebook 2017” that laid out the fundamentals of investing in the country in order to attract foreign capital
- › The country made very few investments by its own; yet, in 2017, the Burundi Investment Promotion



Burundi

In Sub-Saharan Africa, Burundi ranked third of our top 3 Digital Risers

## » Conclusion

The Digital Riser Index indicates that the competitive landscape around digital technologies is moving extremely quickly. Governments that place digital transformation at the top of their agenda can achieve tangible results in relatively short time frames, and countries traditionally less associated with digital, such as Saudi Arabia, have climbed to the top of the Group of Twenty (G20) in terms of their relative progress in this field. Also, our study highlights that countries can become Digital Risers independent of size and still boost their relative competitive position. In the East Asia and Pacific region, for example, the Philippines and Thailand have outperformed much larger neighbouring countries, such as China and Indonesia, which suggests that progress is attainable independently from both a country's digital competitiveness baseline and its size.

On the other hand, our study suggests that countries which are economically similar, e.g. the US and China, Germany and France or Brazil and Argentina, may differ significantly with regards to their Digital Riser status. This does not mean that the gain of one is the loss of another, but it does demonstrate that governments should emphasise strategically managing their policies in this crucial area for the future.

Going forward, we hope that the results of the best practice policies highlighted in this report inspire digital progress around the world, with measures catered to the respective baseline and needs of each economy centred around education, talent attraction and financial support for innovation and entrepreneurship.

Some experts argue that in digital technologies, we will see as much value being generated in the next 10 years as in the last 100 years. The crucial question is how this value and wealth will be distributed. In order to thrive, each government and each company must enable an ecosystem and mindset towards a more digital economy.



## » Appendix A: Methodology

The Digital Riser Report analyses and ranks the changes that countries around the globe have seen in their digital competitiveness over the last three years. It builds upon data from the Global Competitiveness Report, which is published by the World Economic Forum (WEF) every year.

Based on our research, we define a country's digital competitiveness into two main dimensions: ecosystem and mindset. In both cases, the Digital Riser Report includes five items from the Global Competitiveness Report. For the ecosystem and mindset dimensions, respectively, these items are:

### Ecosystem

- › **Venture capital availability**  
Global Competitiveness Report series code: 9.03  
Response to the survey question "In your country, how easy is it for start-up entrepreneurs with innovative but risky projects to obtain equity funding?"  
[1 = extremely difficult; 7 = extremely easy]
- › **Cost to start a business**  
Global Competitiveness Report series code: 11.01  
Expressed as a percentage of the economy's income per Capita
- › **Time to start a business**  
Global Competitiveness Report series code: 11.02  
Number of calendar days needed to complete the procedures to legally operate a business

- › **Ease of hiring foreign labour**  
Global Competitiveness Report series code: 8.07  
Response to the survey question "In your country, how restrictive are regulations related to the hiring of foreign labour?"  
[1 = highly restrictive; 7 = not restrictive at all]
- › **Skillset of graduates**  
Global Competitiveness Report series code: 6.04  
Average score of the following two Executive Opinion Survey questions: "In your country, to what extent do graduating students from secondary education possess the skills needed by businesses?" and "In your country, to what extent do graduating students from university possess the skills needed by businesses?" In each case, the answer ranges from 1 (not at all) to 7 (to a great extent).

### Mindset

- › **Digital skills among active population**  
Global Competitiveness Report series code: 6.05  
Response to the survey question "In your country, to what extent does the active population possess sufficient digital skills (e.g. computer skills, basic coding, digital reading)?"  
[1 = not all; 7 = to a great extent]
- › **Attitudes towards entrepreneurial risk**  
Global Competitiveness Report series code: 11.05  
Response to the survey question "In your country, to what extent do people have an appetite for entrepreneurial risk?"  
[1 = not at all; 7 = to a great extent]

› **Diversity of workforce**

Global Competitiveness Report series code: 12.01

Response to the survey question “In your country, to what extent do companies have a diverse workforce (e.g. in terms of ethnicity, religion, sexual orientation, gender)?”

[1 = not at all; 7 = to a great extent]

› **Mobile-broadband subscriptions**

Global Competitiveness Report item: 3.02

Number of active mobile-broadband subscriptions per 100 Population.

› **Companies embracing disruptive ideas**

Global Competitiveness Report series code: 11.08

Response to the survey question “In your country, to what extent do companies embrace risky or disruptive business ideas?”

[1 = not at all; 7 = to a great extent]

To compare the progress of 140<sup>1</sup> countries regarding their digital ecosystem, mindset and overall competitiveness, we assigned equal weight to all of the ten items by looking at absolute, accumulated changes in ranks for each country between 2017 and 2019 in the Global Competitiveness Report

<sup>1</sup>) While the WEF’s Global Competitiveness Report includes 141 countries, our Digital Riser Report only includes 140 countries. Turkey is not included, due to a lack of data on three out of the five mindset items.

As an example, France – which was the G7’s top Digital Riser – over the last three years saw an accumulated increase of 95 ranks over the ten items:

<b>Ecosystem</b>	2017 rank	2019 rank	Change
Venture capital availability	35	19	+16
Cost to start a business	15	16	-1
Time to start a business	7	8	-1
Ease of hiring foreign labour	75	53	+22
Skillset of graduates	33	31	+2
<hr/>			
<b>Mindset</b>			
Digital skills among active population	58	54	+4
Attitudes towards entrepreneurial risk	88	55	+33
Diversity of workforce	65	75	+10
Mobile-broadband subscriptions	38	42	-4
Companies embracing disruptive ideas	44	30	+14
<hr/>			
<b>Accumulated change in digital competitiveness (over all ten items):</b>			<b>+95</b>

To ensure the comparability of results relative to a comparative baseline, we clustered all countries into nine groups. These include the Group of Seven, the Group of Twenty and the seven WEF regional groups. Appendix B provides a comprehensive overview of all nine rankings.

Apart from the ranking itself, the Digital Riser Report also analyses the policies followed by the top Digital Riser countries. These offer an explorative overview of what these countries did to earn their top positions in our ranking.

## » Appendix B: Rankings

### G7

Rank	Overall	Ecosystem	Mindset
1	France 95	France 50	France 57
2	Japan 30	Japan 38	Canada 6
3	Canada 13	UK 29	Japan -1
4	UK -6	Canada 27	USA -14
5	USA -33	Italy -17	UK -17
6	Germany -52	USA -19	Germany -28
7	Italy -77	Germany -24	Italy -60

### G20

Rank	Overall	Ecosystem	Mindset
1	Saudi Arabia 149	Argentina 59	Saudi Arabia 111
2	France 95	Brazil 56	France 57
3	Indonesia 56	China 50	Indonesia 30
4	China 52	France 38	Australia 17
5	Argentina 38	Saudi Arabia 38	Russia 12
6	Japan 30	Japan 31	Canada 6
7	Canada 13	Indonesia 26	China 2
8	Korea, Rep. 1	Korea, Rep. 20	Mexico 1
9	Australia -2	UK 11	South Africa 1
10	Russia -4	Canada 7	Japan -1
11	UK -6	Russia -16	USA -14
12	Mexico -28	Italy -17	UK -17
13	USA -33	Australia -19	Korea, Rep. -19
14	South Africa -40	USA -19	Argentina -21
15	Brazil -45	Germany -24	Germany -28
16	Germany -52	Mexico -29	Italy -60
17	Italy -77	South Africa -41	India -62
18	India -173	India -111	Brazil -101
19	Turkey N/A <sup>1)</sup>	Turkey N/A <sup>1)</sup>	Turkey N/A <sup>1)</sup>
20	EU N/A <sup>2)</sup>	EU N/A <sup>2)</sup>	EU N/A <sup>2)</sup>

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<sup>1)</sup> Turkey is not included due to a lack of data on three out of the five mindset items.

<sup>2)</sup> The EU is not included since it is a collection of countries.

### East Asia and the Pacific

Rank	Overall	Ecosystem	Mindset
1	Philippines 190	Thailand 65	Philippines 133
2	Thailand 67	Philippines 57	Indonesia 30
3	Indonesia 56	China 50	Mongolia 29
4	China 52	Brunei 49	Vietnam 29
5	Cambodia 32	Japan 31	Cambodia 26
6	Japan 30	Indonesia 26	Australia 17
7	Mongolia 22	Korea, Rep. 20	Singapore 9
8	Brunei 20	Singapore 7	Taiwan 6
9	Singapore 16	Cambodia 6	Hong Kong 6
10	Taiwan 12	Taiwan 6	Thailand 2
11	Korea, Rep. 1	Malaysia -2	China 2
12	Malaysia 0	Mongolia -7	Malaysia 2
13	Australia -2	Australia -19	Japan -1
14	Vietnam -15	Hong Kong -27	Lao -7
15	Hong Kong -21	Vietnam -44	Korea, Rep. -19
16	Lao -65	Lao -58	Brunei -29
17	New Zealand -106	New Zealand -60	New Zealand -46

### Eurasia

Rank	Overall	Ecosystem	Mindset
1	Armenia 43	Kazakhstan 52	Armenia 26
2	Azerbaijan 18	Ukraine 49	Russia 12
3	Ukraine 5	Moldova 48	Azerbaijan 10
4	Moldova 2	Armenia 17	Kyrgyz Rep. -3
5	Kazakhstan -2	Azerbaijan 8	Ukraine -44
6	Russia -4	Russia -16	Moldova -46
7	Kyrgyz Rep. -29	Kyrgyz Rep. -26	Kazakhstan -54
8	Georgia -115	Georgia -35	Georgia -80

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## Europe and North America

Rank	Overall	Ecosystem	Mindset
1	Bulgaria 130	Serbia 58	Bulgaria 109
2	Montenegro 111	Montenegro 50	Romania 65
3	France 95	France 38	Montenegro 61
4	Latvia 78	Latvia 29	France 57
5	Serbia 78	Albania 27	Latvia 49
6	Romania 71	Spain 26	Luxembourg 40
7	Lithuania 62	Lithuania 25	Lithuania 37
8	Luxembourg 50	Greece 22	Hungary 34
9	Hungary 44	Bulgaria 21	Denmark 31
10	Spain 42	Ireland 12	Poland 27
11	Canada 13	Netherlands 11	Serbia 20
12	Denmark 8	UK 11	Spain 16
13	Netherlands -2	Luxembourg 10	Canada 6
14	Ireland -4	Hungary 10	Slovenia 0
15	Slovenia -5	Switzerland 9	Iceland -3
16	UK -6	Canada 7	Netherlands -13
17	Iceland -8	Romania 6	Malta -14
18	Poland -17	Slovenia -5	USA -14
19	Switzerland -19	Iceland -5	Austria -15
20	Malta -25	Malta -11	Finland -15
21	Austria -30	Austria -15	Ireland -16
22	Greece -32	Belgium -15	Estonia -16
23	USA -33	Italy -17	UK -17
24	Finland -41	USA -19	Sweden -17
25	Germany -52	Portugal -21	Bos. & Herz. -23
26	Portugal -63	Denmark -23	Switzerland -28
27	Estonia -67	Germany -24	Germany -28
28	Belgium -75	Finland -26	Slovak Rep. -38
29	Italy -77	Norway -32	Portugal -42
30	Bos. & Herz. -82	Czech Rep. -33	Cyprus -43
31	Sweden -83	Cyprus -41	Czech Rep. -51
32	Cyprus -84	Poland -44	Greece -54
33	Czech Rep. -84	Estonia -51	Croatia -57
34	Norway -100	Bos. & Herz. -59	Belgium -60
35	Slovak Rep. -102	Slovak Rep. -64	Italy -60
36	Albania -121	Sweden -66	Norway -68
37	Croatia -142	Croatia -85	Albania -148

## Latin America and the Caribbean

Rank	Overall	Ecosystem	Mindset
1	Dom. Rep. 177	Argentina 59	Dom. Rep. 135
2	Argentina 38	Brazil 56	Chile 50
3	Jamaica 18	Dom. Rep. 42	Honduras 7
4	Chile 8	Jamaica 21	Mexico 1
5	Uruguay -5	Uruguay 11	Venezuela 0
6	Honduras -15	Ecuador 10	Jamaica -3
7	Costa Rica -21	Guatemala -7	Costa Rica -7
8	Mexico -28	Costa Rica -14	Uruguay -16
9	Venezuela -30	Paraguay -19	Argentina -21
10	Ecuador -43	Colombia -20	Colombia -25
11	Colombia -45	Nicaragua -20	El Salvador -27
12	Brazil -45	Honduras -22	Haiti -28
13	El Salvador -52	El Salvador -25	Paraguay -52
14	Guatemala -68	Mexico -29	Ecuador -53
15	Paraguay -71	Venezuela -30	Guatemala -61
16	Nicaragua -108	Chile -42	Peru -82
17	Haiti -119	Trin. & Tob. -50	Nicaragua -88
18	Trin. & Tob. -142	Peru -64	Trin. & Tob. -92
19	Peru -146	Haiti -91	Brazil -101
20	Panama -204	Panama -101	Panama -103

## Middle East and North Africa

Rank	Overall	Ecosystem	Mindset
1	Saudi Arabia 149	Morocco 63	Saudi Arabia 111
2	Algeria 135	Saudi Arabia 38	Algeria 105
3	Egypt 114	UAE 34	Egypt 85
4	Morocco 99	Algeria 30	Kuwait 65
5	Kuwait 91	Egypt 29	UAE 47
6	UAE 81	Qatar 29	Morocco 36
7	Qatar 54	Kuwait 26	Qatar 25
8	Tunisia 24	Tunisia 25	Jordan 7
9	Israel -1	Israel 1	Yemen 0
10	Yemen -8	Yemen -8	Tunisia -1
11	Jordan -9	Jordan -16	Israel -2
12	Lebanon -157	Lebanon -37	Iran -87
13	Iran -259	Iran -172	Lebanon -120

## South Asia

Rank	Overall	Ecosystem	Mindset
1	Sri Lanka 131	Pakistan 53	Sri Lanka 105
2	Pakistan 71	Sri Lanka 26	Pakistan 18
3	Nepal -44	Nepal -17	Bangladesh -21
4	Bangladesh -49	Bangladesh -28	Nepal -27
5	India -173	India -111	India -62

## Sub-Saharan Africa

Rank	Overall	Ecosystem	Mindset
1	Seychelles 277	Gambia 83	Seychelles 240
2	Gambia 149	Burundi 72	Gambia 66
3	Burundi 113	Chad 56	Namibia 47
4	Rwanda 92	Rwanda 51	Tanzania 45
5	Tanzania 55	Seychelles 37	Burundi 41
6	Cameroon 46	Nigeria 23	Rwanda 41
7	Namibia 44	Ghana 21	Cameroon 30
8	Zimbabwe 22	Cameroon 16	Zimbabwe 13
9	Chad 10	Tanzania 10	South Africa 1
10	Nigeria 9	Zimbabwe 9	Kenya -3
11	Ghana 0	Guinea 6	Eswatini -6
12	Lesotho -33	Mauritania 5	Nigeria -14
13	South Africa -40	Mauritius 0	Ghana -21
14	Benin -40	Namibia -3	Lesotho -21
15	Uganda -41	Senegal -9	Cape Verde -25
16	Malawi -41	Benin -10	Uganda -27
17	Kenya -52	Lesotho -12	Malawi -29
18	Guinea -52	Malawi -12	Benin -30
19	Senegal -64	Uganda -14	Zambia -39
20	Mauritius -74	Ethiopia -24	Chad -46
21	Cape Verde -80	South Africa -41	Senegal -55
22	Eswatini -90	Botswana -48	Guinea -58
23	Zambia -92	Kenya -49	Botswana -63
24	Ethiopia -92	Zambia -53	Ethiopia -68
25	Botswana -111	Cape Verde -55	Mozambique -71
26	Mozambique -132	Congo -58	Mauritius -74
27	Congo -153	Mozambique -61	Congo -95
28	Mali -164	Mali -66	Mali -98
29	Mauritania -185	Eswatini -84	Mauritania -190



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## » European Center for Digital Competitiveness

BY ESCP BUSINESS SCHOOL

The European Center for Digital Competitiveness was founded at ESCP Europe Business School in Berlin with the goal of bringing digital competitiveness to the political and public debate, where it currently only plays a minor role.

Given the digital revolution that our economy and society currently face, digital competitiveness must take center stage in debates to secure our prosperity for the future.

Similarly, in this increasingly dynamic environment we want to support the initiative to position Europe as a global leader for the responsible application of technology for the benefit of society.

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