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# **Data and the Global South: Key Issues for Inclusive Digital Development**

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# Foreword

The data-driven economy holds tremendous potential for positive change. The digital transformation can help businesses and governments provide better services; it can empower people with new tools for democratic participation and income generation. The Covid-19 pandemic and the ensuing restrictions on physical interactions have highlighted the crucial role of these tools for the functioning of our societies and economies.

At the same time, the digital economy enables surveillance and creates new risks for individuals whose personal data fuel these new virtual products and services. It challenges traditional economic sectors and threatens a variety of jobs. If governments manage this transformation badly, this can exacerbate existing and create new inequalities and injustices.

These forces are at work in all societies, but they are especially pronounced in developing countries. Many factors need to fall in place for these nations to benefit from the digital transformation in a way that overcomes their disadvantages in the global economy. To succeed in the data-driven economy, countries must establish and enforce clear and just rules that enable innovation, development, and growth. They must simultaneously determine how to collect, use, and share data in a manner that protects citizens from abuse.

Striking the right balance between innovation and regulation, between opening up to international companies and retaining national control of data transfers is particularly difficult in lower-income countries. Many developing countries lack a skilled and trained digital workforce as well as a reliable digital infrastructure. Without access to the internet, there is no digital economy. Without domestic innovation, countries will see their markets carved up between tech companies from the United States and China. Without regulation, there is no trust that the digital economy can produce equitable growth while protecting fundamental rights.

We are in the early phase of debating how countries should prepare for and manage the growing role of data and digital technologies in their economies and there is limited consensus on best practices. At the Heinrich-Böll-Stiftung, Washington, DC, we promote a fair and just digital transformation with lasting benefits for the well-being of people, societies, economies and the environment. With this paper and other projects at the intersection of development and digital policy, we want to contribute to a discussion on a sustainable and inclusive digital transformation. And we want to ensure that the Global South participates in these debates on a level playing field.

This paper identifies key factors for a socially just, inclusive, and sustainable digital governance regime. We would like to thank the authors – Geraldine de Bastion and

Sreekanth Mukku – for laying out the predominant debates on data as a development issue and sketching policy pathways for emerging economies. A special note of thanks goes to Sebastian Duwe, our previous Program Director for Infrastructure and Development, who played a central role in getting this project off the ground.

We would like to conclude with two disclaimers: First, while this overview paper charts some policy ideas, it does not aim to nail down final solutions. Second, this paper does not go into depth on many important questions, such as raising revenue through digital taxes, regulating the tech industry, ensuring fair work in the digital age, dealing with disinformation, election interference, and the rise of hate speech. We decided to start with the two issues at the core of every discussion about how to make the digital age work for developing countries: access and data governance. We will continue to engage in this discussion – hopefully in exchange with you.

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Washington, DC, October 2020

# 1. Introduction

Digital technologies have brought new opportunities to the global economic margins. However, rapid digitalization in the absence of sufficient regulatory frameworks and human rights protections poses new challenges and risks. Digital development has implications for human wellbeing. It affects all countries, sectors and stakeholders, yet it affects the developing world differently and disproportionately. Since developed countries pioneered the digital revolution, developing countries could only benefit from the periphery. Populations in industrial countries have been digitally connected since the 1990s, yet people in low-income countries arrived relatively late to the digital world.<sup>1</sup> This gap has narrowed rapidly in the past few years due to the falling costs of hardware, connectivity, and large infrastructure initiatives. Most of the more than one billion people who secured internet access between 2013 and 2018 live in low- and middle-income countries.<sup>2</sup> However, another billion people, in particular women living in rural areas, remain unconnected.

Lack of connectivity makes it difficult for lower-income countries to grasp the opportunities of the digital age and to protect its citizens from potential risks. Even in the countries with the strongest digital economies, the progress of digitalization has outpaced the establishment of state institutions, legal regulations, and other mechanisms that could help manage the new challenges. As countries around the world grapple with questions ranging from innovation policy to data governance, it is crucially important to establish a global framework that will lead to inclusive development in the digital age.

Digital technologies have been described as “democratizing” forces and opportunities for innovation, entrepreneurship, and economic development. It is widely held that digitalization contributes significantly to economic growth in emerging economies. Research has shown that each additional 10 percentage points of internet penetration, meaning more people with access to computers or phones connected to the internet, add 0.77 percentage points to per capita gross domestic product (GDP) growth in developed countries and 1.12 percentage points in emerging economies.<sup>3</sup> Furthermore, each additional 10 percentage points of broadband penetration contribute 1.21 percentage points to per capita GDP growth in developed countries and 1.38 percentage points in emerging markets.

These numbers show that new technologies drive economic growth, but the question remains whether such growth is inclusive. Do these technologies provide opportunities for everyone? Do they help improve standards of living? While there is no agreed-upon definition in the academic literature, the term “inclusive development” is widely understood to refer to “growth coupled with equal opportunities.”<sup>4</sup> The term inclusive can refer to the inclusion of poor and vulnerable populations (based on geographic location,

gender, religion, ethnicity, caste, creed etc.) within a country. The recognition of rights along with economic prosperity is a key principle adopted in the United Nation's Millennium Development Goals (MDGs) and subsequently in the Sustainable Development Goals (SDGs). The recent discourse of inclusive development has shifted from poverty eradication to bridging the income inequality gap between wealthy and poor individuals and nations. The international development policy literature interprets inclusive development as reducing inequality between industrialized and low-income countries.

The discussion of inclusive development is particularly relevant in the digital era. Less developed countries are at risk of being left behind by the front-runners in the digital economy, the United States and China, and to a lesser extent the European Union.

Many countries in the developing world struggle with fundamental issues when it comes to inclusive digital development:<sup>5</sup>

- The ability to provide universal coverage to their citizens, due to patchy infrastructure, lack of affordable data bundles, and gender, age, economic, and other access divides.
- The ability to play an active part in their data-driven economy, due to a lack of capital, skills, and technical capacities.
- The ability to protect their citizens' rights whilst tackling the complexities of digitalization, due to lack of institutional capacities and frameworks for effective data governance.

This report explores some of the key issues that affect inclusive digital development in the Global South, largely focusing on Least Developed Countries (LDCs). The report begins with a review of existing models for digital development and continues to examine hindering factors such as access and connectivity divides. Further, it examines the importance of data and data governance for digital development.

## **Methodology**

Interviews and various secondary sources are the base of this report. The authors conducted eight interviews with experts from the developing world, the United States and Europe in October and November 2019. Secondary research relied on recent reports published by various multilateral institutions, research institutes, think tanks, and media articles. The report also synthesizes insights gathered at the Internet Governance Forum in Berlin in November 2019 and at the conference "Data as a Development Issue" in Washington, DC in January 2020, which was co-organized by the George Washington University, the Center for Global Development and the Heinrich-Böll-Stiftung, Washington, DC.



## 2. Digital Development Models

Many factors determine digital development, such as infrastructure, skills, availability of capital, and a favorable regulatory and policy framework, among others.<sup>6</sup> Although many developing countries launched national digital development strategies and created ICT ministries or other government bodies in charge of digital policy before many developed countries, they lack the resources and infrastructure to set the tone for digital development or to shape the rules for the international digital space. Instead, their digital ecosystems are often molded by platforms and software created by the internationally more powerful players. Overall, the interests and values of two powerful players – the United States and China – shape the global tech ecosystem, with the European Union attempting to become a third, balancing force.

## 2.1. The Big Players: United States, China and European Union

Tech investment by the United States and China has brought economic benefits to many parts of the Global South – from access to digital financial services, governance, skill training, and job creation. Yet in the long term, the recipient countries of such investments, a large share of which are in the platform economy, “risk becoming mere providers of raw data” since they lack domestic processing capacity and have weak regulatory environments.<sup>7</sup> This is already in effect today, for instance in the advertisement and transport sector in different developing countries. The number of people working in the platform economy in Africa is estimated at five million.<sup>8</sup>

While the platform economy is bringing new job opportunities, it is also changing national revenue streams. For instance, the ride-hailing app Uber has taken over the taxi market in South Africa, a market formerly controlled by local companies. 25 percent of the value of each Uber transaction is taken back to corporate headquarters,<sup>9</sup> while the company also vacuums up customer and driver data. Equally, the presence of Google and Facebook has taken away the vast majority of online advertising revenue from the South African press. In 2017, South Africa’s major media groups reportedly took just 8 percent of the pie, whereas Google and Facebook controlled over 80 percent of the money spent on online advertising.<sup>10</sup> In comparison, many governments in the developed world with greater bargaining power have forced the platforms to pay media companies for using their content.

A big part of the platform business model is to exploit personal data for ad revenue, and the value creation of the collected data occurs mostly in the United States and China – with little respect for the data subjects’ privacy. In the case of China, civil liberties are also at stake as Chinese technology provides a blueprint for authoritarian governments on how to use digital technology to control the population. Huawei is currently rolling out extensive surveillance systems across Africa.<sup>18</sup>



## United States: The Silicon Valley Model

The United States is the leading nation in the global digital economy. It accounts for 72 percent of the total market capitalization of digital platforms that are valued at more than USD 1 billion.<sup>11</sup> The country is leading the way in investing in emerging technology such as AI, robotics, cybersecurity, blockchain, internet of things (IoT), virtual reality (VR), and augmented reality (AR) with USD 92 billion inbound investment in 2019, followed by China with USD 22 billion.<sup>12</sup> In 2018, the United States accounted for over half of the global publicly available venture capital for AI startups.<sup>13</sup>

Until recently, the prevailing notion in the policy discourse was that the enormous success of the US digital development was driven exclusively by “disruptive innovations” by big tech firms such as Amazon, Apple, Facebook, and Google. Yet newer research suggests that high investments from the defense and other government-backed agencies initiated the first digital wave in the United States.

The close link between universities and enterprises supported research that could be commercialized quickly with strong market linkages. This well-oiled innovation ecosystem combined with a light regulatory environment and a new financing model – venture capital funding – enabled new entrepreneurs to build upon the existing industry structure. These features were crucial for the growth of the so-called “Silicon Valley model,” along with supportive policy interventions. The economist Mariana Mazzucato argues that without state capital and the risk absorbed by the state the “Silicon Valley innovations” could not have been successful.<sup>14</sup> The much-celebrated iPhone patents were the result of publicly funded research and not solely the entrepreneurial brilliance of Apple.<sup>15</sup>

The US big tech firms, particularly the top five companies – Alphabet (Google), Amazon, Facebook, Microsoft, and Apple – are amongst the most valuable companies in the world. Since the mid-2000s, a lot of this massive growth has been the result of an increasingly data-driven business model. Regulators have grown concerned that these companies abuse their dominant market positions to thwart competition from smaller players and that they disrespect users’ rights. Their advertisement-based revenue model is heavily criticized for encouraging the exploitation of personal data.<sup>16</sup> One famous example was the Facebook-Cambridge Analytica scandal, in which data of up to 87 million Facebook users was sold for political advertisement.<sup>17</sup> The scandal triggered demands for stronger regulatory oversight of the industry and authorities have launched investigations into these firms for antitrust violations and unfair data-gathering practices that can potentially undermine the privacy of citizens and threaten the democratic process.

The European Union – with a digital vision that fosters innovation along with responsible human progress – may have some solutions to offer and its General Data Protection Regulation (GDPR) has become an inspiration for many countries. Around the world, low-income countries have started adopting GDPR-style regulations to protect personal data, but compliance and enforcement will be a big challenge for countries that lack financial resources and well-developed institutions. Even in the European Union, a survey found that millions of small businesses lack the technical knowhow to comply with the legislation.<sup>19</sup> Other reports have shown that big tech firms dodge compliance and mislead consumers about their rights in the absence of stricter enforcement and litigation.<sup>20</sup>

Hopes that GDPR would spur the creation of more data protection-friendly, innovative services and infrastructures by startups based on the principle “privacy by design” have so far been limited in effect. Privacy by design means implementing appropriate technical and organizational measures in the planning and design phase of a new product or process development that complies with data privacy laws. Whilst startups are trying to become part of the cloud service landscape, they often lack large corporations’ resources and technical capability to manage cloud services compliant with data regulations such as GDPR and relevant for building national data sovereignty infrastructures. Some technology analysts, like Danny Crichton, managing editor at TechCrunch, believe, “the complexity around these data sovereignty laws ultimately benefits highly scaled service providers who can manage the nuanced regulations around these laws in an automated fashion. That means, ironically, that Google likely will win long-term on its cloud side, along with other major cloud providers like Amazon and Microsoft Azure.”<sup>21</sup>

## European Union: The Regulatory Model

There is a widespread fear in Europe that the continent is losing the digital race to the United States and China. None of the major platforms originates in a European country and the European Union only captures eight percent of global AI investments.<sup>22</sup> The Lisbon Agenda in 2000 set out the goal for the European Union to become “the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion.”<sup>23</sup> However, ever since EU policymakers have grappled with connecting market outcomes to these broader social and environmental goals.

Europeans are now trying to identify areas that are still open to competition. EU member states have published national AI strategies and digital policies.<sup>24</sup> In February 2020, the European Commission presented its vision to shape the European Union’s digital future. This was described as a second chance for Europe to become a world leader in digitalization.<sup>25</sup> This framework aims to achieve excellence and trust in AI and optimize the use of data to support innovation and entrepreneurship. With its strong industrial base and educated workforce, Germany, for example, is hoping to

achieve a leading role in IoT and in the automatization of manufacturing. The other focus area for Germany and other EU member states is developing sustainable digital technologies. In February 2020, Germany's Federal Ministry of the Environment published its Digital Policy Agenda for the Environment, defining principles and goals for a sustainable digital transformation.<sup>26</sup>

At the same time, the European Union is taking on the big US tech companies for their perceived abuse of market power. Facebook, Amazon, Google, and Apple have increasingly come under scrutiny for anti-competitive practices in Europe, and for alleged violations of GDPR, which limits the collection and processing of personal data.<sup>27</sup>

While critics – especially in the United States – decried these measures as protectionist and as harming innovation,<sup>28</sup> the narrative has shifted along with the intensifying “techlash” around the world. Many European policymakers now believe that rather than harming innovation, the European Union could develop a competitive advantage by building ethical and responsible digital products for the world (“privacy by design”). GDPR has also become an export model. The European legislation influenced the debate over the California Consumer Privacy Act,<sup>29</sup> which went into force in January 2020, as well as the draft bills for federal privacy legislation in the US Congress.<sup>30</sup> Around the world, countries have introduced new privacy laws modeled after GDPR, many of them in the developing world.

The European Commission prepares to release its next major legislative proposal for the digital economy later this year: the forthcoming Digital Services Act (DSA) aims to strengthen the protection of consumer rights in the digital age while increasing the accountability of platforms for content or products they host and promote. The legislation has the potential to set global standards for internet regulation similar to the way in which GDPR has influenced data privacy around the world.

## 2.2. Charting a Path for Low-Income Countries

While low-income countries can learn from elements of innovation policy and data governance in the Global North, there is no readily available model. However, the digital development models discussed in this chapter provide some lessons for developing countries on how to advance their own digital economies. These models have one common feature: strong state support in terms of providing both a favorable policy environment and the necessary resources. Building a public digital infrastructure is one of the key policy options to develop a local digital ecosystem. It includes developing physical hardware but also tools and technologies required for building a digital economy and finding solutions for challenges of inclusion.<sup>31</sup> Developing countries could adopt the following strategic approach to advance their digital economies:

The close link between research universities and enterprises in the United States allowed for innovations that easily translated into commercialized goods and services. Publicly funded research agencies like the National Institute of Health and the National Science Foundation have supported innovation research. Low-income countries could potentially replicate this model of partnership by creating research institutes and support business innovation by collaborating with local universities. Low-income countries lack the resources and ecosystem to emulate the winner-takes-all Silicon Valley model, which relies on accumulating market power by collecting and processing large amounts of data. A company's value is determined by the volume of user data and the use of algorithms to generate intelligent insights. In low-income countries in particular, SMEs, startups, and community initiatives are not able to match the data collection and processing capabilities of the big players. Building intra-regional economies of scale is one strategy to help increase digital economic impact. Another is stimulating the creation of local and national markets, for example by incentivizing domestic procurement of digital infrastructure, software, and services. Further, domestic businesses do not always need to follow the Silicon Valley paradigm to scale globally fast, but rather understand how to address local problems of global relevance. The successful startups in the developing world have addressed local market and societal challenges while others that did not address them failed.<sup>32</sup>

China's policy pathway to obtain technological capabilities through technology transfer is another example that developing countries can learn from. Chinese companies have cloned US tech platforms and developed digital products and solutions for local market needs with the help of state-backed technology transfer and protectionist policies. This led to the expansion of their technological and institutional capacities and enabled domestic firms to compete globally. LDCs could adopt these strategies to boost the domestic digital enterprise ecosystem whilst avoiding the components that could undermine the democratic rights of citizens and enable digital authoritarianism.

## China: The State-led Model

With strong party-state support, China has witnessed more than a decade of uninterrupted digital growth, emerging as one of the two leading players in the digital arena along with the United States.<sup>33</sup> The major Chinese tech companies developed in an environment in which the government blocked market access for US search engines and social media platforms such as Google and Facebook with the goal to curb competition and to prevent Chinese citizens from accessing unmediated digital social platforms. Their Chinese competitors successfully copied US digital platforms by adapting them to local usage patterns.<sup>34</sup>

China has since adopted a government-led centrally planned digital strategy. It has supported the growth of its homegrown internet platforms BAT (Baidu, Alibaba, Tencent) and other players such as the ride-sharing platform Didi, the Chinese equivalent of Uber, with a protectionist approach to information and competition. China formulated policy plans to replace foreign competition in major technology sectors – from industrial robots to aerospace technology – in its ambitious “Made in China 2025” strategy in 2015. This strategy is closely linked to the “Internet Plus” plan, which has the goal to integrate the manufacturing sector with mobile internet, cloud computing and the Internet of Things (IoT).<sup>35</sup> The New Generation Artificial Intelligence Development Plan in 2017 spelled out China’s goal to become an AI superpower.<sup>36</sup>

China is co-shaping the global digital architecture with its own big tech firms. China’s Digital Silk Road is a key part of its global infrastructure investment scheme, the Belt and Road Initiative (BRI), which taps into the opportunities of telecom infrastructure, data centers, and smart cities. Huawei and ZTE, the two largest Chinese telecom

and network technology companies, play a prominent role in providing digital infrastructure across the BRI partner countries. Chinese internet platforms are competing for market access with big US firms – especially in the developing world, where Tencent’s chat service WeChat is in a close race with Facebook’s WhatsApp.

China’s impressive digital rise is taking place under the watch of an authoritarian one-party state. The “Great Firewall” of censorship prevents the flow of data between Chinese citizens and foreign tech firms. The new “Social Credit” scoring system uses big data and facial recognition technologies for the political surveillance of Chinese citizens. China is a proponent of the concept of “cyber sovereignty” to justify censorship and requirements to store data only in China.<sup>37</sup> The global digital expansion of Chinese tech companies has raised fears of an export of China’s “digital authoritarianism” to other parts of the world.<sup>38</sup>

Lastly, developing countries can learn from the European Union when it comes to coordinating policies on a supranational or regional level, thus potentially creating a larger digital economic space. The European Union's Horizon 2020 initiative combines all funding programs of the European Commission related to research and innovation. It has broader policy implications and aims to tackle challenges with locally developed innovations. To promote innovation among LDCs, the European Union's Horizon 2020 program can serve as a mission-oriented funding model<sup>39</sup> for the African Union or other regional economic communities as it could target specific problems with multi-stakeholder collaboration. Targeted funding can lead to local innovations to tackle local challenges, which in turn can develop into local or regional digital ecosystems. Collaborations between entrepreneurs, universities, and civil society could lead to innovative digital solutions to local problems. The EU also provides a template for a rights-based approach to regulating the digital economy while protecting individual data rights through GDPR. Multilateral actors such as the African Union could promote GDPR-style regulation in countries across the continent by providing guidance and encouraging harmonization.<sup>40</sup>

Some promising cross-country initiatives have already sprung up in Africa. In early 2020, the African Union presented a digital vision for Africa and set the digital priorities for 2030.<sup>41</sup> The strategy aims to build a digital single market in Africa, an aspiration it shares with the Smart Africa initiative. Smart Africa, launched in 2013, gives digital policy directions to its 30 member states, covering a population of 750 million people.<sup>42</sup> It has established a pan-African platform for digital policy deliberations with the goal to build technology capabilities, promote innovation and entrepreneurship, implement e-governance, provide digital access, and develop a digital policy. In addition, there are other pan-African initiatives such as "Digital Africa" and "Africa4Tech". Digital Africa is a collaborative initiative between France and African countries to promote innovation and entrepreneurship in Africa. Africa4Tech is a global platform and a network of innovators with the goal to design and develop innovative solutions for Africa and from Africa. Whereas these initiatives do not represent a model at this stage, they have a potential to evolve into one and underline the desire to create continent- or region-wide networks and develop an African approach to the digital age.<sup>43</sup>



### 3. Open and Affordable Access

Internet connectivity and access to digital technologies have the potential to increase social and economic inclusiveness, efficiency, and innovation. Conversely, the digital divide prevents societies from harnessing the full benefits that information and communication technologies can deliver. The 193 member states of the United Nations agreed to work toward achieving universal, affordable internet access by 2020 as part of the SDGs.<sup>44</sup> Yet, as of now, half of the world's population does not have access to the internet. Globally, mobile internet infrastructure is estimated to cover 90 percent of the population, but only 47 percent have access to mobile internet and the rest are yet to be connected.<sup>45</sup>

### 3.1. Barriers to Internet Access in the Global South

Lack of affordability and limited mobile coverage are major causes for the digital divide. However, other factors such as lack of literacy, digital skills, or content in local languages play an important role in explaining the lack of internet access.

Socio-economic inequalities in the majority of the developing world are at the root of many digital divides. In many countries, social norms restrict the independence and mobility of women, creating additional barriers. Most of the unconnected population resides in some of the lowest-income regions in Africa, the Middle East, and South Asia. Women in low- and middle-income countries are 23 percent less likely than men to use mobile internet.<sup>46</sup>

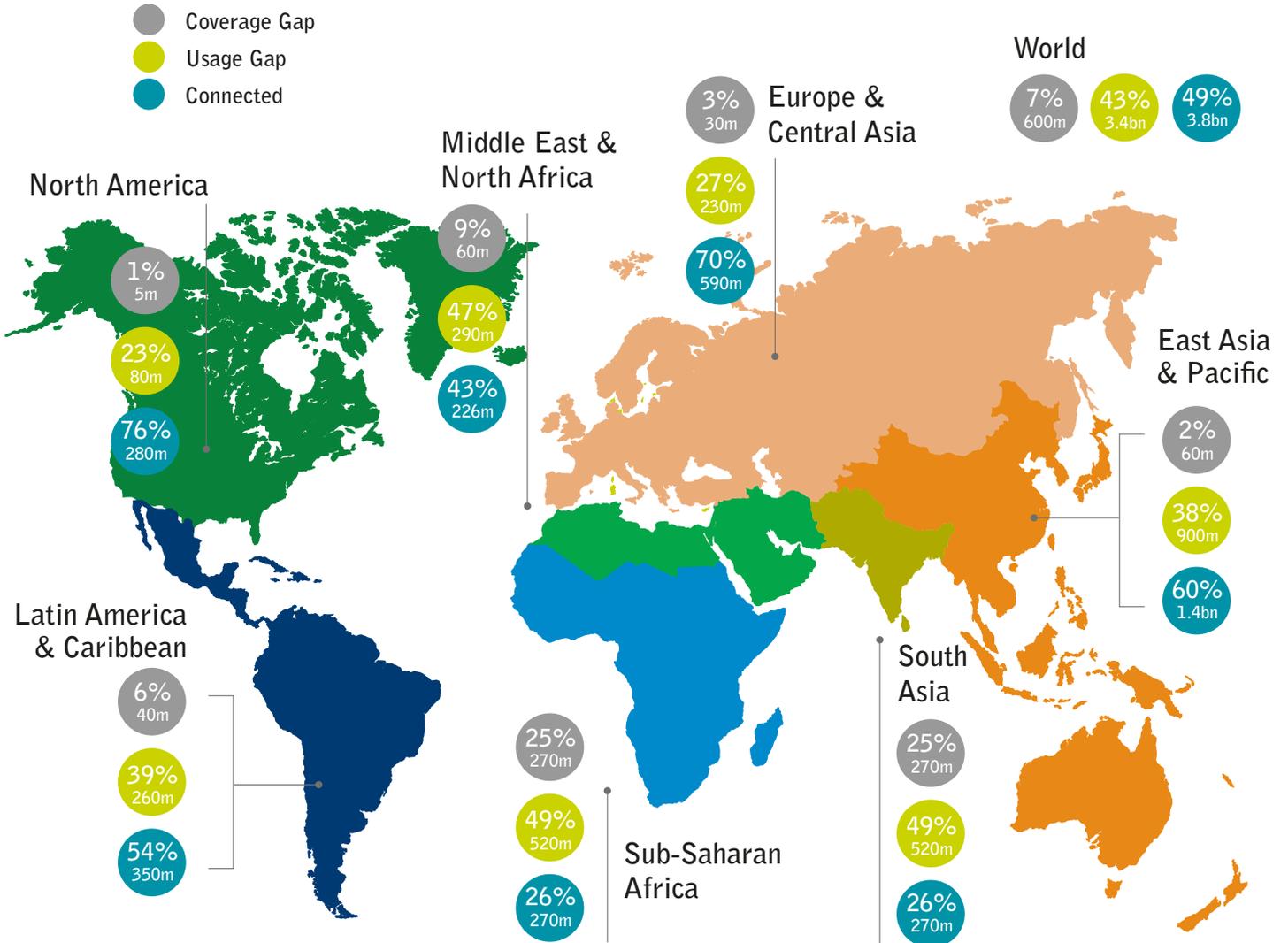
The digital divide mirrors the economic and social inequalities across the globe. In low- and middle-income countries, just over 40 percent of the population (around 2.6 billion people) is connected to the internet, compared to almost 75 percent of the population in high-income countries.<sup>47</sup> Average expenditure on mobile internet in developing countries is 3.8 percent of household income, whereas it is only 1.8 percent in the developed world.<sup>48</sup> The average cost for 1 Gigabyte (GB) of data is 7.12 percent of the average monthly salary across Africa.<sup>49</sup> In some countries, 1 GB costs as much as 20 percent of the average salary, which is unaffordable for large parts of the population. Lack of alternatives to the existing pre-paid models like contract-based data plans are also a barrier to providing affordable connectivity in Africa. In many developing countries, pre-paid bundles are the only option to purchase data. On the one hand, pre-paid and time-bound packages enable immediate affordable access. On the other hand, this often means the price per GB is higher than it would be if internet service providers could calculate with longer-running contracts. This pre-paid conundrum persists in most developing countries.

The fact that only 39 per cent of the population in low-income countries has access to electricity is another major constraint.<sup>50</sup> The lack of steady supply of electricity also severely curtails digital access and limits the ability to use digital services in certain sectors.

Lack of content in local languages is another major barrier for internet access. 56 percent of global online content is in English, and ten languages together make up more than 80 percent.<sup>51</sup> A collaborative solution would be to drive content creation through the support of local language devices and software. Facilitating local content creation can result in new linguistic online ecosystems enabling more communities to partake in the internet, which in turn helps attract more users. For example, contributors from the Global South produce only about 20 percent of Wikipedia's knowledge. In other words, only 14,000 of the 70,000 active Wikimedia authors come from developing countries, and only 1,000 are based in Africa.<sup>52</sup> All these factors are interlinked and prohibit societies from reaping the full benefits of digitalization.

# State of Mobile Internet Connectivity (by region, 2019)

Coverage is high around the world, but usage lags behind



Base: Total population

Note: Total may not add up to 100% due to rounding.

© GSMA Mobile Internet Connectivity Report (2020)

## **3.2. Strategies for Promoting Access and Infrastructure Development**

Despite these barriers, many LDCs are making progress connecting their citizens to the internet. A report on internet access in the least developed countries by GSMA, the international association for mobile operators, states that six (Bangladesh, Benin, Cambodia, Guinea, Myanmar and Rwanda) have achieved virtually complete coverage, with over 99 percent of their populations able to receive a 2G mobile signal. Almost half of LDCs have reached a high level of coverage – between 90 and 99 percent. Another 20 percent are on their way, with coverage reaching between 75 and 90 percent, but one-fifth of the least developed countries cover less than 75 percent of the population with 2G.<sup>53</sup>

In Sub-Saharan Africa, current investments in 3G and 4G networks have taken mobile broadband coverage to around a quarter of the population, while smartphone adoption has doubled over the past three years and now accounts for two in five mobile connections. The GSMA report estimated that by the end of 2019 Sub-Saharan Africa would have more mobile broadband connections (3G and 4G) than 2G connections. Most Asian and South American countries have already completed the trials for adopting 5G technology. Seven African countries are expected to adopt 5G communication technology by 2025. They include Kenya, Nigeria, and South Africa – countries with larger markets and larger numbers of potential subscribers. Though it is not immediately possible for other African countries to adopt 5G, the cost of technology deployment is bound to decrease over time. The delay in deploying large-scale 5G could have positive implications for the region as it could allow the technology to mature and be tested in other markets first. The continent could benefit if the costs of devices and equipment fall as more countries deploy 5G.

Many initiatives aim to bridge the digital connectivity gap and make internet usage more affordable and accessible. Some infrastructure initiatives require large investments. Others target smaller communities. Innovative financing schemes like Universal Service and Access Funds work towards achieving gender parity in the digital space.

### **3.2.1. Universal Access Funds**

In recent years, many lower- and middle-income countries have expanded digital infrastructure through policy interventions like national broadband policies.<sup>54</sup> Many countries have also established communal funds dedicated to expanding connectivity to unserved and underserved communities. Mobile network operators and other telecommunications providers typically finance these funds, known as Universal Service and Access Funds, through mandatory contributions. According to research published by the World Wide

Web Foundation in 2018, 37 African countries have such funds in place, but only 53 percent of the available funds were disbursed due to administrative spending capacity constraints.<sup>55</sup> Moreover, only three countries have universal access policies that explicitly aim to connect women and girls. Untapped funds could be mobilized with the aim to narrow the digital gender gap in Africa.

### **3.2.2. Investing in Local Content**

Further investments in digital infrastructure can narrow the infrastructure and the coverage gap of ten percent of the population. However, the biggest challenge remains the usage gap that keeps half of the global population away from digital connectivity. Only the combination of making mobile devices and internet connectivity affordable whilst increasing the availability of local content and addressing social challenges like gender disparity will help overcome this problem. Local equipment manufacturing, allowing for competition in the telecom market, and a regulatory framework that enables consumer protection and innovation would bring down the prices of data. The European Union provided a successful example for regulation with the goal to lower the costs of mobile telephony when it scrapped roaming charges or set maximum prices for text messages within the block.

Numerous initiatives are underway to narrow access gaps in low- and middle-income countries. In some cases, finding solutions to common poverty problems goes hand in hand with digital readiness. In Papua New Guinea, 35 percent of the population is illiterate. A project called "SMS Story" intends to change this by not only teaching people to read but by doing so with text messages.<sup>56</sup> In Pakistan, there are currently over 120 e-villages training over 3,000 girls in computer skills.<sup>57</sup> This project will be expanded to reach as many as 20,000 girls in the near future. Yet, these initiatives, while well intentioned, are inadequate when it comes to bringing larger parts of the unconnected population online. Nevertheless, they can work effectively within the targeted population at the village or community level.

### **3.2.3. Community Networks and Unused Spectrum**

Community-owned networks are popular around the world and not just considered an alternative for developing countries with low service coverage. In the United States there is a vibrant landscape of community wireless networks that enable municipalities or collectives to profit from digitization.<sup>58</sup> In countries that lack coverage or a viable business case to attract commercial operators, community networks can be a step toward closing connectivity divides and stimulating local markets. This is the case in Colombia where

rural communities are severely underserved since coverage, especially cellular mobile service, is concentrated in urban centers. In September 2017, communities in the municipality of Buenos Aires, located in the department of Cauca, decided to confront this situation by planning and developing their own international communications network. The project was carried out by local civil society organizations Colnodo and Rhizomatica and their international partners, The Internet Society and APC.<sup>59</sup> Community Wireless Networks are networks collectively owned and designed to service community needs. They often service unconnected areas that are not profitable for commercial operators or precede other forms of internet development.

Thailand set up its first Community Wireless Mesh Network (CWMN) in 2013 to provide low-cost internet access to rural areas in 2013. TakNet has been deployed in 17 rural communities throughout Thailand's Tak province, with approximately 2,000 residents using it on a daily basis. In the past years, Thailand conducted experiments with unused existing spectrum like TV White Space (TVWS) to complement TakNet.<sup>60</sup> Advocacy for making use of TV White Space spectrum available is ongoing in several countries, but only few allow the use today. South Africa changed its legislation in 2018 after a decade of debate. TVWS regulation exists in the United States, the United Kingdom, and in Singapore. However, South Africa is arguably the first market where TVWS technology could make a significant difference due to a combination of need for affordable rural access to broadband and the relative abundance of unused television spectrum in rural areas.

### **3.3. Infrastructure Development: Powered by Google and Facebook**

Local initiatives cannot replace the need for large-scale developments of internet backbone infrastructure. Not just governments and telecommunications companies, the classic providers of telecommunication infrastructures, but also new actors like the big tech companies are active in this field, in particular Facebook and Google, who have been heavily investing in global connectivity solutions for the past decade. In 2013, Facebook and Google launched "moonshot" initiatives to bridge the Internet connectivity gap. Facebook had abandoned its effort connecting solar-powered drones to atmospheric satellites in early 2018 but reportedly relaunched this project in December 2018 by collaborating with Airbus. Google's project Loon, which relies on a network of balloons deployed into the stratosphere using unlicensed bandwidth, had also slipped off the news radar but seems to finally be taking effect now, with commercial launches planned in Kenya,<sup>61</sup> a cooperation with South African mobile operator Vodacom to provide network coverage in rural areas in Mozambique planned for 2020, and the launch of services in cooperation with Telefonica planned for 2021.<sup>62</sup>

More significantly, Google and Facebook are amongst the key actors building backbone internet infrastructure, in particular with the aim of connecting underserved parts of the world or improving internet penetration in developing countries. Facebook is currently teaming up with MTN, Vodafone, China Mobile, Orange and others to build a new undersea cable around Africa, a major infrastructural undertaking, which is expected to improve connectivity and lower the cost of internet access in Africa. Google is also currently building an undersea cable, its third international subsea cable project, and its first connecting Europe and Africa. The cable named Equiano will start in Portugal's capital of Lisbon and run down Africa's west coast to connect with South Africa.<sup>63</sup> These are of course not altruistic undertakings, but part of a wider vertical integration strategy, including data access and transfer. The term vertical integration is used to describe the process of controlling all layers of digitization, from the infrastructure, to the devices, operating system and apps.

Apart from its technology development initiatives, Facebook launched a "zero-rating" offering called "Free Basics" by partnering with six other companies to provide stripped-down versions of the internet in places where access is a challenge. Zero-rating is the commercial practice where the internet service provider does not charge any fee for using an app or service. In 63 developing countries, users who cannot afford the internet have opted for Facebook's Free Basics service.<sup>64</sup> The service allows internet users to access only Facebook services free of charge, leading them to believe that Facebook is the entire internet.<sup>65</sup> Though the service allows local content creation, it violates the principle of net neutrality, a vital precondition for open access. Net neutrality prevents discrimination and protects the end user's freedom to utilize the internet "without third-party favoritism, blocking, or throttling."<sup>66</sup> The limitation of freely available content also creates new dangers to democracies. In Brazil for example, Free Basics' zero-rating services reportedly aided in the uncontrolled spread of misinformation that resulted in the rise of the far right.<sup>67</sup> Consistent campaigns by civil society activists in India led to a ban on Free Basics services.<sup>68</sup>

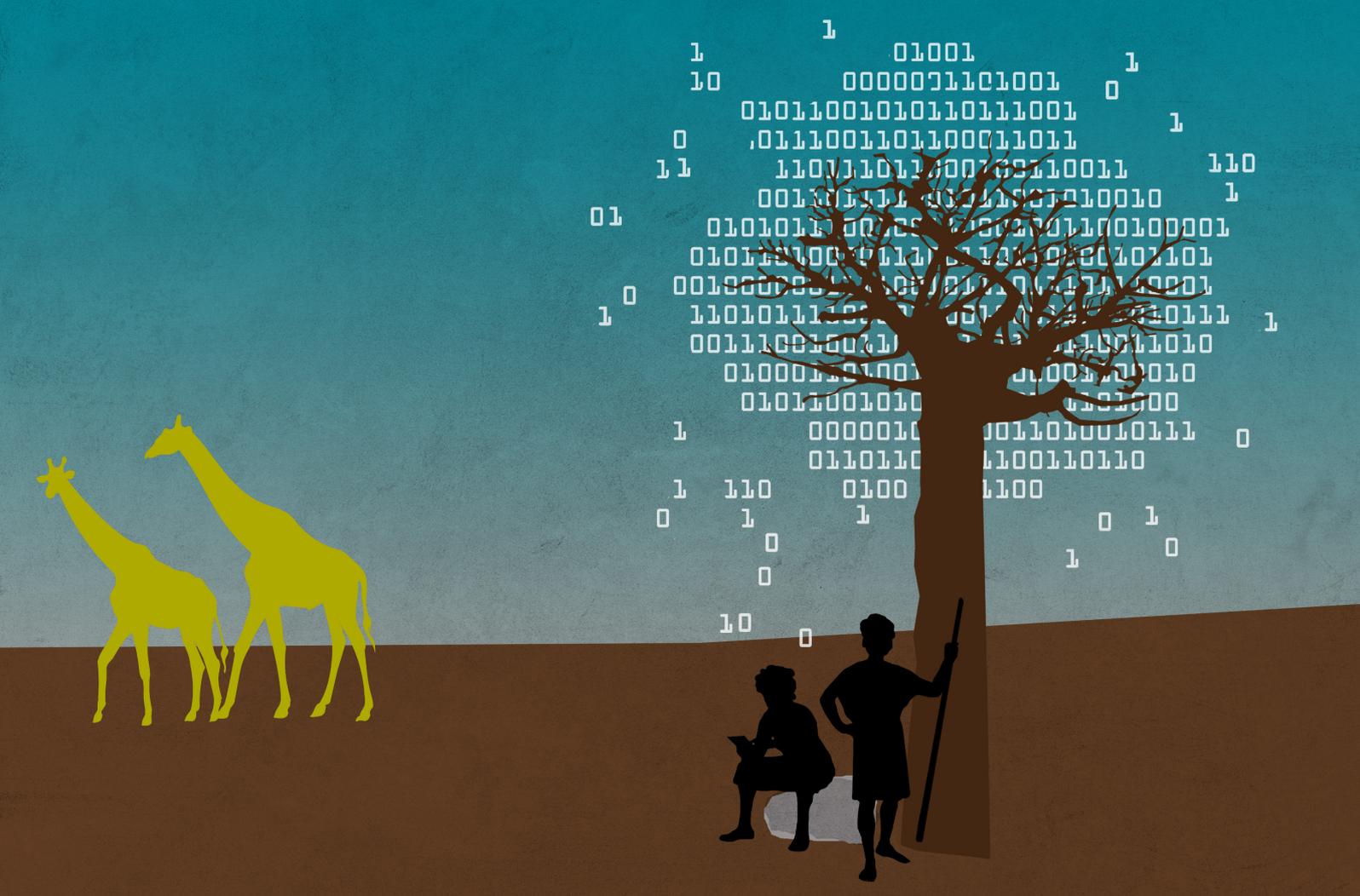
### **3.4. From Access to Digital Development**

Where do efforts to close the digital divide as described above leave the average person in developing countries? Concerns are growing that citizens in developing countries are the providers of data rather than the creators of content and that this will further increase socio-economic divides.

One example of this is the reliance on mobile devices and mobile infrastructure in developing countries, in particular in Africa. Even though the digital economy's potential and future growth sound promising in LDCs, big parts of the populations continue to rely on mobile phones to conduct all digital activities as it is expensive to own a desktop or laptop computer. Whereas mobile phones make it convenient to consume digital products

and services, they do not provide access to the tools that help people to produce them and turn them into economic opportunities. “We hear a lot about mobile-first Africa, it sounds sexy. But how much meaningful work can you get done through your mobile?” said Nanjira Sambuli, senior policy manager for the World Wide Web Foundation in Nairobi (expert interview). Access to appropriate and affordable hardware and education are equally important prerequisites for unleashing digital development potential.

Apart from the focus on mobile infrastructure, other factors outlined above such as the lack of content in local languages and the use of limited lock-in versions of the internet through zero-rating create further barriers to active participation in the digital economy. The question is then, beyond access, what frameworks are needed to ensure citizens in developing countries can be active contributors to the digital economy and in control of their data, rather than exploited for it.



## 4. Digital Innovation and Data Sovereignty

As data is at the core of the digital economy, the actors who control it and possess the technological capabilities to process it can turn it into a tradable commodity. It requires significant financial resources to aggregate data sets and produce data-driven higher economic value. In the platform economy, personal user data is the core asset. Access to high computing power and sophisticated algorithms enable big platform corporations like Facebook, Google, and Amazon to exploit this personal data for commercial gains.<sup>69</sup> As large US and Chinese tech companies are expanding their market dominance to the developing world,<sup>70</sup> governments are struggling to create frameworks protecting their

citizens' interests and rights. Whilst many governments recognize the potential of data for development and the management of societies, they lack the infrastructure, policy frameworks, and vision for how to employ the data for the greater public good. In countries with low protection of human rights, government efforts to use data for development can result in increased surveillance and infringement on civil liberties.

As outlined in the previous chapter, the first step for developing countries attempting to navigate the digital shift is to improve access and skills. The next step is building a digital economy that is inclusive and protects citizens' fundamental rights.

## 4.1. The Global Data-Driven Economy

“The only way for fostering digital innovation in developing countries at this stage is by pressing for access to technology from developed countries in lieu of market access. They (developing countries) have to make hard negotiations at every possible opportunity.”

Dan Ciuriak, Senior Fellow, Center for International Governance and Innovation (expert interview)

Currently, a wide gap exists between the countries that are digitally under-connected and the hyper-digitalized countries where the technologies, platforms, innovations, and standards were developed. The United States and China largely lead the global digital economy. They account for 75 percent of all patents related to blockchain technologies, 50 percent of global spending on the IoT, and more than 75 percent of the world market for public cloud computing. Both together account for 90 percent of the market capitalization of the world's 70 largest digital platforms. Other countries or regions are far behind these two – Europe's share is four percent and Africa's and Latin America's together only one percent. Microsoft, Apple, Amazon, Google, Facebook, Tencent, and Alibaba – the seven “super platforms” – account for two-thirds of the total market value.<sup>71</sup> Current trade frictions between the United States and China reflect the quest for global dominance in frontier technology areas.

Given the importance of data from a development perspective, it is relevant to look at who can capture the value from this resource. For example, Facebook's largest number of users outside the United States are in India (with 270 million users India has the largest Facebook user base), Indonesia and Brazil. Yet, of Facebook's 15 data centers that process and store these data, ten are in North America, four in Europe and only one in Asia – that too in highly developed Singapore.<sup>72</sup> In fact, Africa and Latin America together account for less than five percent of the world's colocation data centers.<sup>73</sup> Less than one percent of all patent applications worldwide is filed in the least developed countries.

At the same time, emerging technologies, such as the IoT, AI, blockchain, drone, and mobility technologies are attracting interest from local and international digital players across the Global South, partly because of the role they could play in addressing social and economic challenges in the region. In April 2019, Google opened its first AI Lab center in Africa,<sup>74</sup> located in Accra, Ghana, to develop a solution that could help farmers diagnose plant diseases and boost production. In March 2019, Microsoft launched its first Africa Development Centre,<sup>75</sup> with two initial sites in Nairobi, Kenya, and Lagos, Nigeria, to spearhead AI, machine learning, and mixed reality innovation in the region. IBM is among several global and local organizations applying blockchain to use cases, including digital credit scoring and land registration.<sup>76</sup>

While big US tech firms are setting up research and development activities in Africa, Chinese and European players are also betting big on the continent. In December 2018, the European Commission and the Commission of the African Union launched a joint initiative called the EU-AU Digital Task Force. In 2018, France unveiled a USD 65 million fund to invest in startups, accelerators, and venture capital funds in Africa.<sup>77</sup> Other European countries including Germany, the Netherlands, and Belgium have launched Africa-focused technology investment initiatives, and Chinese firms are investing both in digital infrastructure and in financial technology startups.<sup>78</sup> However, without corrective policies, over-dependency on foreign investments could put local innovative ecosystems in jeopardy. In order to develop their own technology innovation ecosystems, low-income countries need to press for a level playing field in accessing technology and markets. Actors such as Smart Africa and the African Union could leverage their size to bargain for technology access and cooperation. The following section will discuss strategies for developing countries to tap into the gains of large tech companies and other foreign entities in order to promote inclusive development.

## 4.2. Strategies for Data and Development

“Data infrastructures are not ordinary optional projects that can provide certain benefits; they constitute the very foundation of a strong domestic digital and AI industry, and ensure its openness and fairness.”

Parminder Jeet Singh, Executive Director, IT for Change<sup>79</sup>

New concepts for the ownership, control, portability, equity, and monetization of data need to be developed in order for people around the world to benefit equally from the data-driven economy. Such concepts need to address questions of data storage, cloud and other infrastructure issues as well as issues around data transfer, for instance how a country can control the transfer of data that might include personal data of citizens or data relevant to national security.

### 4.2.1. Data Sharing

Whereas data is gathered locally, it is often accumulated in data centers of global technology companies while local communities are unable to access it or benefit from it. This is a challenge not just for developing countries. City governments around the world face this problem when trying to regulate mobility service providers such as e-scooters or other shared-mobility services. Some municipal governments such as Berlin and Barcelona mandate operators to share non-personal transport data with the city, ensuring a local gain from the data collected by mostly international operators. However, many others fail to enable their cities to benefit from this kind of data sharing.

Many national-level debates also revolve around “data sovereignty,” the question whether countries should have more control over data generated within their borders. The argument is that countries need access to their domestic data to develop their own digital economies. This is why countries such as China and India increasingly seek to control the data produced within their borders with data localization clauses. For example, enforcing anonymized data sharing can be a tool against monopolization. Take traffic navigation: the platform with the most users will be most effective in traffic predictions. If that user data is shared across platforms, it is more likely that local players stand a chance against international platforms like Google Maps.

The idea behind this strategy is to level the playing field between private companies gathering citizens’ data and public interests. Critics warn that such sharing requirements could result in protectionism and could lead to digital trade wars with no winners.<sup>80</sup> At the same time, there is a danger that national governments can misuse data localization requirements to limit the free flow of information between countries and therefore undermine the digital rights of their own citizens.

### 4.2.2. Technology Transfer

Developing new technologies is a long-term and cost-intensive process. Technology transfer can be an effective policy measure for promoting digital development in the Global South. Developing countries can gain skills, expertise, and technological know-how by including technology transfer requirements in their trade policies. East Asian countries and to some extent India have witnessed success by using technology transfer strategies to grow their own digital economies.<sup>81</sup> China worked through a combination of policy and strategic interventions to push for technology transfer, which helped companies like Baidu, Alibaba, and Tencent (BAT) to rapidly localize their tech platforms. Flipkart and Paytm in India cloned tech giants Amazon and PayPal (with Paytm later adopting the Tencent business model) respectively.<sup>82</sup> Leveraging early linkages to the global digital value chain, access to open source technologies, and rapid localization helped these

tech companies in gaining leadership in their respective markets. However, this may not work in fragmented markets with weaker administrative capacities and a limited pool of talent to absorb the influx of technological know-how. Nevertheless, giving local tech platforms a fillip by ensuring policy measures to protect national economic and humanitarian interests and by promoting an open-source technology culture in the local innovation ecosystem may be a way forward for LDCs.

### **4.2.3. National and Regional Data Governance Infrastructures**

The objective of data sovereignty laws is to move data away from the borderless world of cyberspace and plant those data sets directly under local jurisdictions. China's 2017 Cybersecurity Law requires all cloud computing and Chinese customer data to be hosted on China-based servers – although the law's interpretation and implementation has been a matter of debate both inside and outside of China.<sup>83</sup> Many other countries have introduced laws and technical initiatives to change how data can be stored, processed, and transmitted with the aim of ensuring data sovereignty. GDPR was enacted to govern data protection and privacy of EU citizens as well as to regulate the transfer of data outside the borders of the European Union and European Economic Area, but it does not require data storage in servers within these jurisdictions. Gaia X is the European attempt to strengthen independence from US and Chinese IT giants such as Amazon Web Services or Microsoft's platform Azure. The cloud infrastructure will be launched in 2021, and will be accompanied by a sovereign and trustworthy European data infrastructure connecting existing European services via open-source applications.<sup>84</sup>

As most developing countries lack infrastructure and means to launch such initiatives, supporting the development of data governance and public data infrastructures is a topic for future development cooperation and technical assistance.

### **4.2.4. Open Data and Platforms**

Beyond creating the cloud infrastructure needed to host data nationally or regionally, creating data-driven economies also requires optimizing the use of data and stimulating local innovation. India offers an open data platform model to harness digital innovation. IndiaStack is an attempt to create a cash- and paperless society and advance the state of digitization in India. This initiative is a set of Application Programming Interfaces (API) that allows governments, businesses, startups, developers, and citizens to access digital solutions including digital payments, authentication, and digital public services.<sup>85</sup>

It facilitates secure transactions, interoperability of different payment networks, information storage and retrieval. As part of the initiative, the Indian government launched an open data platform called FarmerZone, a multipurpose platform serving all stakeholders in agriculture. The services include dissemination of information from climate and weather, land or soil conditions, to prices for seeds and produce. FarmerZone and IndiaStack are a clear response to tech giants such as Facebook and Google as well as startups based on for-profit data-driven business models. Both projects are attempts to regain control over the utilization of data for the public good.

Such initiatives also exist on a municipal level, for instance the open-data infrastructure created by the DECODE project in Amsterdam and Barcelona. The project developed technology to enable citizens to better control their data and innovate on top of open data platforms. The decentralized DECODE stack includes a cryptographic virtual machine, a blockchain stack, a modular mobile app to access services privately, a dashboard for data visualization and a passport scanner. In Barcelona, the pilots focused on open democracy and the Internet of Things.<sup>86</sup> Initiatives and networks such as DECODE are examples of open data platforms that help create a sustainable foundation for local digital innovation ecosystems based on participation and citizens' interests. Such measures can be replicated in developing countries.

#### **4.2.5. Global Data Governance**

Global data governance is fragmented, with diverging global, regional, and national regulatory approaches. This international environment is difficult to navigate for low-and middle-income countries trying to figure out their own digital development strategies and regulatory frameworks.

This situation has resulted in a race for controlling the data and to rising apprehensions in lower- and middle-income countries of being exploited by US and Chinese tech companies. Experts such as Nick Couldry have described this process, in particular the extraction and monetization of personal data, as "data colonialism." His definition includes citizens in the developed world,<sup>87</sup> but people in the Global South are more likely to become victims of this new form of colonialism as poverty reduces the options to opt out of involuntary data collection. As Nanjala Nyabola, writer, activist, and political analyst from Kenya, put it, "People who have money and power are able to opt out of risks that are produced by tech, but in the developing countries these risks are national issues."<sup>88</sup>

Many stakeholders in the Global South fear that bilateral trade agreements as well as the e-commerce talks at the World Trade Organization (WTO) will be harmful to the interests of LDCs and will lead to further data colonization in the Global South in the absence of effective data protection regulation at a domestic and global level.<sup>89</sup> This fear was reflected at the G20 summit in Osaka, Japan in June 2019, where developing

countries such as India, Indonesia, Egypt and South Africa refused to sign the “Osaka Track” declaration to promote free international data flows among countries, albeit with enhanced data protection measures.<sup>90</sup> The Osaka Track is an initiative intended to introduce global rules on data flows, removal of prohibitions on data localization, and cloud computing, among other things. The European Union, France, Germany, Japan, Russia, the United Kingdom, the United States, Singapore, Thailand, and Vietnam were among the signatories. India and other BRICS members stayed away, arguing that since cross-border data flows are critical to trade, rulemaking must involve all countries and not just the most powerful ones.

### 4.3. Human Rights Concerns

“The complexities of the digital economy require new laws and regulatory frameworks. The digital economy poses new challenges to citizens and institutions in the developing world.”

Berhan Taye, Senior Policy Analyst, Access Now (expert interview)

Providing economic opportunity is often at the focus of harnessing data for development. However, data is not only an economic asset, it also provides the risk of abuse for surveillance purposes. Therefore, it is equally important to recognize the risks for human rights and to work towards mitigating them. Civil society activists in some countries, like India, are skeptical about their governments’ narratives about data colonialism, worrying instead about the increased access to sensitive personal information that localization enables.<sup>91</sup>

From a digital rights perspective, development initiatives should focus on ensuring that public data is open and used for the public good and that personal data is protected.

#### **Global State of Data Protection Regulation**

Tech companies often make a case for either self-regulation or light-touch regulation. However, there is a growing push by civil rights activists and policymakers for creating regulatory frameworks to prevent violations of data privacy and the abuse of market dominance. Governments are enforcing not only regulations to protect users and market players but also framing ethical guidelines for technology deployment.

According to the United Nations Conference on Trade and Development (UNCTAD), 58 percent of countries have some form of data protection legislation.<sup>92</sup> These laws

include e-commerce transaction laws, consumer protection laws, privacy laws, and cybercrime laws. The countries that do not have any legislation governing data protection are all in the developing world. That being said, 40 percent of the countries that have recently introduced legislation are developing countries. In the developed world, the United States is an outlier since it has yet to enact a comprehensive federal data protection legislation. In the absence of federal action, the state of California has enacted the California Consumer Privacy Act, which went into force in January 2020.

Most data protection laws in developing countries were initiated after the European Union's GDPR went into force in 2018. Despite the vastly different local contexts, many of these laws were copy-pasted from it. Some countries went a different route. Dinita Andriani Putri, an analyst from Indonesia interviewed for this study, pointed out that Indonesia had modeled its own emerging data protection legislation on Singapore's Personal Data Protection Act 2012. The Singaporean law is limited in scope when compared to the European regulation and also gives government agencies control over personal data. As both countries are part of the ASEAN (Association of Southeast Asian Nations) regional trade bloc, Indonesian businesses that come in contact with Singaporean subjects have to comply with the Singaporean rules, anyway. Indonesia's working draft bill is also trying to integrate some components of GDPR, but primarily it seeks to learn from the familiar context in the neighborhood.

Often, businesses argue that stringent regulations for data protection could stifle "innovation, efficiency and economic activity."<sup>93</sup> However, the protection of digital rights is arguably especially important for populations who are the most vulnerable to exploitation and discrimination. There is also evidence that consistent regulation enables innovation by creating a predictable environment for doing business.<sup>94</sup>

Surveillance is one of the biggest threats to digital civil liberties.<sup>95</sup> A large number of developing countries are implementing surveillance technologies under the pretext of national security and public safety. Governments have justified intensive data collection in recent years with the ostensible goal of strengthening national security or preventing civil unrest, in effect abusing it to quell political dissent or to manipulate electoral outcomes.

Cases of data misuse or data-based violations of human rights exist around the world. Some of the most prominent examples of mass surveillance or questionable uses of AI in public decision making come from the United States, where predictive policing has become an integrated method for crime prevention.<sup>96</sup> Biased data sets have led to discriminatory policing and a well-documented case of a jail sentence that was determined by a flawed algorithm.<sup>97</sup> The most prominent example of a government controlling its citizens based on big data is China's Social Credit System.<sup>98</sup> Personal life choices feed into this scoring system, which ranks everything from financial behavior to traffic violations and

loyalty to the party-state. Data sharing among different Chinese platforms has also strengthened the surveillance ecosystem. Although most countries are far away from such all-encompassing systems, social scoring is becoming a reality in many industries and a growing cause of concern for human rights defenders.

Another concern for civil rights defenders is the introduction of digital identity management systems without the needed checks and balances. India's Aadhaar and Kenya's Huduma Namba programs are examples of how states use digital technologies that undermine citizens' rights. In India's case, the digital identity program Aadhaar originally was intended to deliver a host of public services. However, the government is using the program to surveil citizens who are often poor and vulnerable, thereby threatening to violate their rights.<sup>99</sup> In January 2019, Kenya took up a similar digital identity initiative called National Integrated Identity Management System, also popularly known as Huduma Namba. The program is designed to collect DNA, GPS coordinates, retina scans, iris pattern, and voice waves of citizens, refugees, and immigrants as a condition for issuing identity documents.<sup>100</sup> Ethnic, racial, and religious minorities could face obstacles.<sup>101</sup> After a challenge by civil society organizations, a Kenyan court ordered the government to stop the implementation of the program.<sup>102</sup>

In 2018, the Zimbabwean government signed a cooperation agreement with the Chinese startup CloudWalk Technology, allowing the company to export a database of Zimbabwean citizens' faces to be processed in China. For CloudWalk, this is an opportunity to improve its algorithms, which had so far only been fed with Chinese faces. Allegedly, the Zimbabwean government agreed because they wanted to benefit from the facial recognition services to improve public safety. However, human rights activists fear the government will use this system to monitor its citizens. Zimbabwe has put no plan for protecting personal data forward.<sup>103</sup>

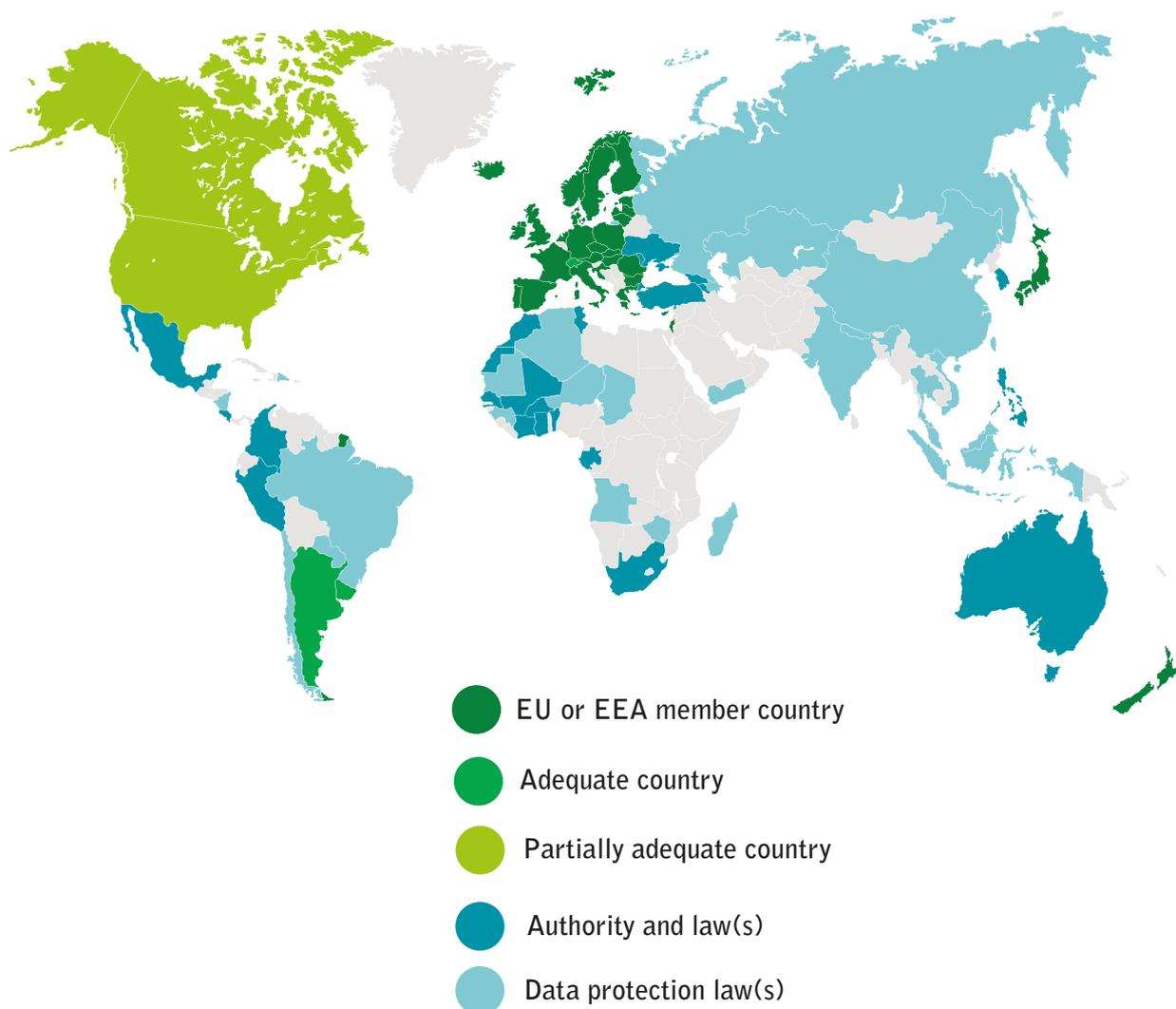
Such public private cooperations are raising a range of serious ethical, social and political concerns, as is the increased deployment of AI technologies in general and their growing influence in decision-making processes. In authoritarian regimes with weak democratic institutions, data-centered governance combined with algorithmic decision-making is likely to lead to discrimination based on identity resulting in infringements of basic rights of disadvantaged communities.<sup>104</sup>

Government institutions, civil society representatives, scientists, and think tanks around the world have tried to respond to these new challenges by developing ethical guidelines for the use of AI in public sectors. The European Commission appointed the High-Level Expert Group on Artificial Intelligence, whose "Ethics Guidelines for Trustworthy AI" include principles of privacy by design and human oversight of AI-based decision-making (human-in-command approach).<sup>105</sup> The guidelines were published in April 2019 and fed into the European Commission's "White Paper on AI," which was released in February 2020.<sup>106</sup> The Organization for Economic Co-operation and Development (OECD), Singapore and the United Kingdom have as well appointed expert groups and advisory councils to look into the ethical use of AI.

Most of these principles and guidelines originate in economically developed countries, with the United States and the United Kingdom together accounting for more than a third, followed by Japan, Germany, France, and Finland. African and South American countries are not represented independently from international or supra-national organizations.<sup>107</sup> From a digital civil rights perspective, creating ethical guidelines and systems of transparent checks and balances for data-driven and AI-based systems needs to be a global undertaking involving the data subjects not just in developed but in all countries where these systems are in use.

## Data Protection Around the World

The European Union allows data flows without further safeguards to third countries with adequate data protection



© CNIL.FR OpenStreetMap contributors, CNIL data protection around the world (19/11/2019)

## 4.4. Outlook: Future Data Governance Approaches

Regulating the digital economy means determining who reaps the benefits from the use of personal and non-personal data and digital technologies. While the current mechanisms give more power to corporations and private businesses, one can envision data governance models that give data subjects and local communities control over their own data. In 2013, Jaron Lanier argued that data collectors and data market players must pay an individual who is the source of the data.<sup>108</sup> Some policymakers favored this idea, but both the practicality of oversight of such a process as well as the neoliberal implications were questioned. Evgeny Morozov proposed a second model in 2015 suggesting that personal data should become a public good and a centralized public administration of anonymized data could be used for innovation and research. Today, ideas around data commons and data trusts or data stewardship are being developed, with every approach having its own value and challenges regarding implementation. These open data as well as community-based tiered access and data-trust models see the public, represented by the state or the community, in control of data governance.

One of the problems with the open data movement is that it does not account for the fact that open data benefits different entities in different ways. Once the data is open to all, there is little control over who will be able to make most use of it. Take agricultural data for instance: in an open data commons model, small-scale farmers are granted the same access to data as seed patent-owning pharmaceutical companies. However, it would be much easier for the companies than those farmers to harness economic benefits from the data. Data governance models raise the question of who gets to decide what data can be accessed and used by whom and for what purpose, and to define what benefits the common interest or common good. The idea of a data trust is that the community places their data or their data rights under the control of a trustee, or board of trustees.

The biggest challenge for both governments and civil society in developing countries is that such ethical standards and regulatory measures require independent legal and democratic institutions along with the necessary infrastructure and technology to implement them effectively. In the process of empowering governments to benefit from data-driven systems, new checks and balances need to be created and civil society needs to be strengthened so that the systems are transparent, accountable, non-discriminatory, and to the benefit of citizens.

## 5. Conclusion: A Call for Cooperation

Global power structures are changing, perhaps more rapidly than expected, due to Covid-19. Trade conflicts today circle around who will be in control of digital infrastructure, such as 5G. Further, the conflict of interest between citizens, governments, and large tech corporations benefiting from private data but unwilling to demonstrate social and economic responsibility, for instance by paying taxes, is becoming increasingly apparent. Governments in developing and economically developed countries alike face challenges on how to balance human rights and economic interests in the data-driven economy.

As outlined in Chapter 2, different competing models exist for digital development, with the European Union attempting to design a third path counterbalancing the surveillance economy and the state surveillance models offered by the United States and China. Often, developing countries are left out of these debates and remain on the receiving end of strategies, policies, and technologies created in the Global North.

Whilst countries are trying to create strategies and infrastructure to protect their citizens' data rights and interests, it would be in the interest of developed and developing countries to create a shared vision for data governance for the public good, instead of countries falling into a protectionist position and creating national data silos. Cooperation could include creating space for experimentation through technical assistance, regulatory sandboxes, and collaboration. For most governments, developing inclusive, human rights-oriented data governance plans will not be an easy undertaking. Policymakers will need guidelines, incentives, and technical assistance. Collaborative efforts between stakeholders who share democratic values and a vision for digital development will be key, irrespective of their geographic location.

While developing countries can do a lot to overcome digital development challenges, they cannot tackle this task all by themselves. It is equally important for development organizations and donors, be they bilateral partners, multilateral organizations, or private actors, to support and shape a more inclusive digital space. These organizations can facilitate international cooperation for transfer of technology and skills, access to financial resources, access to open data platforms, and harmonization of data regulations. It is necessary for all actors to push for quality digital access, promote development of local innovations and responsible use of data to protect the vulnerable sections of society while advancing their digital economic goals in order to achieve inclusive development in the digital age.

# Annex

## Expert Interviews (October-November 2019)

1. Berhan Taye – Senior Policy Analyst, Access Now Africa.  
Nairobi, Kenya.
2. Dan Ciuriak – Senior Fellow, Center for International Governance and Innovation.  
Ottawa, Canada.
3. Dima Samaro – Policy Associate, Access Now MENA.  
Tunis, Tunisia.
4. Dinita Andriani Putri - Project Manager, Open Data Lab.  
Jakarta, Indonesia.
5. Julia Manske – Consultant, Data Innovation and Privacy.  
Mexico City, Mexico.
6. Nanjira Sambuli – Senior Policy Manager, World Wide Web Foundation.  
Nairobi, Kenya.
7. Saurabh V – Business Head at a leading research and consulting firm focusing  
on telecom and technology.  
Dubai, UAE.
8. Teddy Woodhouse – Research Analyst & Advocate, World Wide Web Foundation.  
London, UK.

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