DIGITAL DIVIDES IN THE AGE OF HYPERCONNECTIVITY

We live in a digitally hyperconnected world. Yet, a third of people remain without internet access. In the age of hyperconnectivity, combatting the multiple digital divides (in access, affordability and digital skills) has become a priority for all sustainable development strategies. Cities have proven to be highly active, dynamic and effective actors in the fight against digital inequalities, launching a diverse range of initiatives, including municipal broadband networks and programmes to improve citizens' digital literacy.

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In April 2021, Kazakhstan's national chess champion Dinara Saduakassova had to withdraw from an international tournament because of poor internet connection. This may seem somewhat trivial, but poor digital connectivity means for millions of people around the world missing out on more than just the chance to win chess matches. They may be denied access to particular jobs, to education and health services, and to administrative procedures and citizen participation. In fact, if we have learned anything from the COVID-19 pandemic, it is that digital connectivity is not a luxury: it is a basic need, on a par with electricity and decent housing, and is therefore essential to personal, social, economic and political development.

Today, many fundamental parts of our societies depend on access to the internet. The United Nations and its main agencies have repeatedly warned in numerous reports that access to connectivity and digital infrastructure directly impacts education, equity, innovation and economic growth. These findings have also permeated global policy frameworks like the 2030 Agenda and its Sustainable Development Goals (2015), the New Urban Agenda (2016), the Connect 2030 Agenda for Global Telecommunication/ICT Development (2018)

and the UN Secretary-General's Roadmap for Digital Cooperation (2020), among others. All categorise connectivity and digital inclusion as essential factors for achieving sustainable development.

Meanwhile, we live in an ever-more digitally hyperconnected world. According to estimates by the International Telecommunication Union (ITU) the number of internet users has increased fivefold in the last 15 years: in 2007 only 20% of the world's population was digitally connected, today the figure is 66%. However, accelerated digitalisation should not be confused with digital inclusion: at a time when we need the internet for almost everything, one-third of the world's population (2.7 billion people) still lack access to this basic good, especially in Africa (60%). To make things worse, in the age of hyperconnectivity the cost of being disconnected is rising, which is why tackling the multiple digital divides has become a priority for all sustainable development strategies.

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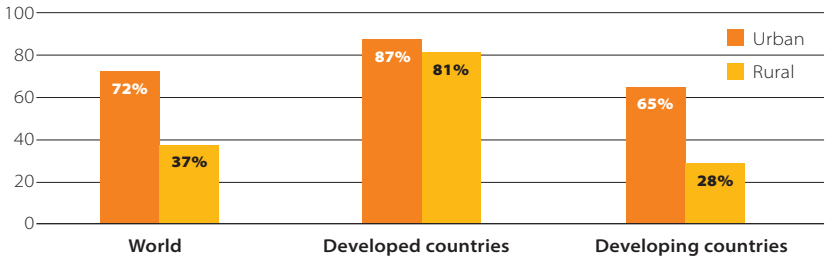
The multiple dimensions of the digital divide

Discussing digital divides means recognising the unequal ability of individuals, communities and countries to access and use information and communication technologies (ICTs). Often, these inequalities are presented in a "binary way" (Kende and Jain, 2015) with those who are connected separated from those who would like to be connected, but who for various reasons are not. In reality, digital divides contain multiple nuances and dimensions, ranging from purely material aspects related to physical access to the infrastructure and devices that make digital connectivity possible, to other elements of a more psychosocial nature linked to socio-economic, skills and even cultural barriers.

The first barrier is accessibility. This includes access to broadband infrastructure and service of sufficient speed and quality to use the internet, as well access to the necessary digital devices like computers, tablets and mobiles. This "digital infrastructure divide" has a very strong geospatial dimension, which is particularly evident in rural areas. ITU (2020) estimates that globally around 72% of households in urban areas have internet at home, almost twice the figure for rural areas (37%). As Figure 1 shows, while in developed countries the urban–rural gap is relatively small, in developing countries the percentage of households with internet access is more than twice as high in urban areas as rural.

Figure 1. Percentage of households with internet access in 2019



Source: Compiled by the author using data from ITU (2020).

This gap is due both to the cost and complexity of providing digital services in more remote locations, and to the political failure to prioritise telecommunications infrastructure investment and upgrades in rural areas. But the digital divide extends beyond the urban–rural disparity; it also manifests itself within well-connected cities, particularly in low-income areas and districts with higher concentrations of disadvantaged people. For example, in New York as many as 500,000 households lack a stable connection, while in Chicago the COVID-19 pandemic revealed that 20% of students were without broadband. But this digital divide is particularly deep in informal settlements in or adjacent to large urban areas, which often suffer from a chronic lack of investment in infrastructure and services, including digital services. This lack of access to adequate telecommunications services, already critical for most slums prior to the pandemic, exacerbates the multiple vulnerabilities of their inhabitants (Boza-Kiss et al., 2021).

A second major barrier, this time socio-economic, is the cost of connectivity. In short, the ability to afford broadband services and devices. To address the affordability problem, in 2020 the Broadband Commission for Sustainable Development, co-led by ITU and UNESCO, established an affordability threshold: basic broadband services in developing countries should cost less than 2% of gross monthly per capita income. The bad news is that to date this threshold is being exceeded in all regions of the world except Europe. In fact, the global average is more than double (4.2%), rising to around 11.5% in Africa (ITU, 2020). As the last section of this chapter will show, many cities are confronting this reality with major projects to ensure that socio-economic conditions are no longer a barrier to internet access for the most disadvantaged groups in society.

Finally, as well as the capacity to pay for internet access, any discussion of affordability should include the ability to devote the time and resources

necessary to acquire digital literacy skills (UN-HABITAT, 2022). This leads us to the third barrier: digital illiteracy. According to data from the Digital Economy and Society Index (DESI), four out of ten adults in the European Union lack basic digital skills, a similar level to the ITU's global figures. The lack of digital skills is also much more pronounced among traditionally disadvantaged groups (women and girls, older people, indigenous communities, the rural poor, people with disabilities, etc.).

Digital connectivity: an essential local public service

DIGITAL DIVIDES CONTAIN MULTIPLE NUANCES AND DIMENSIONS, RANGING FROM PURELY MATERIAL ASPECTS (PHYSICAL ACCESS TO THE INFRASTRUCTURE AND DEVICES), TO OTHER ELEMENTS OF A MORE PSYCHOSOCIAL NATURE LINKED TO SOCIO-ECONOMIC, SKILLS AND EVEN CULTURAL BARRIERS.

Tackling the digital divide requires action and collaboration between different actors. Although national governments have an essential role to play in building large-scale digital infrastructure and creating regulatory frameworks for private operators, cities are also proving to be highly active, dynamic and effective players in the fight against digital inequalities. The range of actions that can be driven from the local level is broad and diverse. A recent UN-Habitat (2022) report set out some of the most common local-level solutions, ranging from the construction of municipally owned broadband networks to the establishment of various partnerships with the private sector and interventions aimed at increasing digital literacy and improving the accessibility of digital services. Below, several examples are considered.

For starters, achieving full digital inclusion requires cities to first understand and identify where digital divides exist, both geographically and demographically. Local Digital Divide Observatories, such as those put in place by the cities of Bordeaux, Ghent and Barcelona, can play a key role here, providing the data to make targeted interventions in the areas most in need. As a result of this, Barcelona discovered that around 8,000 households (8% of the city) lacked internet access, and some people did not have the necessary skills to carry out online procedures, make video calls or send emails. In this context, the city promoted the "Connecting Barcelona" programme to provide quality internet access to 400 vulnerable households in the Trinitat Nova neighbourhood, one of the city's most vulnerable.

In a similar vein, during the pandemic many local governments put in place

temporary measures to ensure children from disadvantaged families had the internet access needed to continue their schooling online. Washington, D.C. and Chicago, for example, offered free and low-cost service to families who could not afford to pay for broadband and provided the devices needed to connect. As in many other fields, the pandemic made us all more aware of our vulnerabilities and the importance of reducing digital divides. Hence, many of the temporary measures launched in 2020–2021 have gone on to become permanent programmes.

Meanwhile, more and more cities are driving the construction of municipal broadband networks, usually via some form of collaboration with the private sector. This is the case in Stockholm (Stokab), Amsterdam (Citynet) and Singapore (NetLink Trust), as well as others. It is often presented as a solution that can bring coverage to the most under-served areas of the city and provide an affordable connectivity option for low-income residents struggling with high prices and slow internet speeds. It is worth noting that, despite their growing popularity, such initiatives have often faced significant resistance. For example, Toronto's ConnectTO project, which was announced in 2021, had to lower expectations only a year later due to pressure from large telecommunications operators.

CITIES ARE PROMOTING IMPORTANT INITIATIVES TO TACKLE DIGITAL DIVIDES, SUCH AS THE CONSTRUCTION OF MUNICIPALLY OWNED BROADBAND NETWORKS, THE ESTABLISHMENT OF VARIOUS PARTNERSHIPS WITH THE PRIVATE SECTOR OR INTERVENTIONS AIMED AT INCREASING DIGITAL LITERACY.

But addressing digital divides does not always require large outlays on new digital infrastructure. In fact, it can often be more effective to build on and improve existing community spaces. This is well illustrated by many cities' use of their public library systems to improve their citizens' digital access and skills. Johannesburg, for example, uses public facilities of this type to provide free Wi-Fi and digital skills training courses, whether in basic computing or more advanced programming. One of the most interesting aspects of the city's initiatives is the capacity it has shown to accompany them with specific programmes developed in collaboration with NGOs in order to bring these resources to the communities in the city most at risk of digital exclusion (Mbambo et al., 2022).

Finally, as well as working to bridge the digital divide within their cities, some local governments are also helping to do so in the rest of the world. Barcelona is one example. In collaboration with other levels of government, it has worked on hosting GIGA, a joint ITU and UNICEF initiative that aims

to connect all the world's schools to the internet by 2030. No mean feat, as only half of the world's schools currently have adequate digital connections, most of which are in developed countries. GIGA's potential to contribute to improving global education is thus immense. And, as pointed out at the beginning of this chapter, achieving global sustainable development goals in the era of hyperconnectivity will depend to a significant degree on cities applying a local and global perspective and working to close all gaps, including digital.

References

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