# The missing link

## Reclaiming connectivity through human rights

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# Executive summary

Despite decades of global efforts to bridge the digital divide, 32% of the world's population remains offline, with the most marginalised communities disproportionately affected. While multilateral organisations and governments recognise internet connectivity as fundamental to human rights – particularly freedom of expression and access to information – their solutions persistently fail to match the scale and urgency of the challenge.

### THE CORE PROBLEM: A MARKET-FIRST APPROACH

The fundamental disconnect lies between how the digital divide is diagnosed and how it is addressed. Policymakers correctly identify connectivity as essential to human rights, yet their solutions consistently treat the internet as a commercial service governed by market principles rather than a public good enabling fundamental freedoms. This market-centric approach creates an oligopolistic system dominated by large mobile telecommunications corporations, undermining the very rights that connectivity is meant to enable.

### HOW MARKET SOLUTIONS FAIL HUMAN RIGHTS

Current connectivity strategies reinforce digital inequality through several mechanisms:

- **Exclusive spectrum auctions** that favour wealthy corporations over community networks and smaller providers.
- **Corporate consolidation** that reduces competition, innovation, and local responsiveness.
- **Zero-rating schemes** that create second-class internet users with limited access to information.
- **Lack of transparency** in network operations, making accountability exceedingly difficult.
- **Prioritisation of mobile over fibre infrastructure** in underserved areas, limiting connectivity quality and capacity.

These approaches may expand basic coverage but fail to deliver universal and meaningful internet connectivity – the standard necessary for genuine human rights fulfilment.

### THE HUMAN RIGHTS IMPERATIVE

The right to freedom of expression, enshrined in international law, creates positive obligations for states to ensure citizens can seek, receive, and impart information. When connectivity strategies empower oligopolies to control information flows, prioritise profitable content, and limit access based on ability to pay, they directly undermine these fundamental rights. The concentration of infrastructural power in corporate hands creates opacity that prevents democratic oversight and reduces public accountability.

## A RIGHTS-BASED PATH FORWARD

This report calls for a fundamental reorientation of connectivity strategies around human rights rather than market expansion. Key recommendations include:

- Treating connectivity as a fundamental enabler of human rights in all policy development.
- Supporting diverse, local, and community-controlled technological solutions to foster internet resiliency.
- Implementing spectrum management that serves public interest over corporate profit.
- Establishing robust monitoring and accountability mechanisms for telecommunications providers.
- Prioritising network resilience and democratic governance over short-term economic gains.

Universal and meaningful internet connectivity cannot be achieved through market mechanisms alone. When connectivity strategies prioritise corporate interests over human rights, they perpetuate the very inequalities they claim to address. Only by centring human rights – particularly freedom of expression and access to information – in connectivity policy can we build an internet that truly serves all people. The choice is clear: continue with market-first approaches with the same group of companies that have failed for decades or embrace rights-based solutions that put communities and democracy at the centre of digital infrastructure development.

**The missing link is the deliberate result of how infrastructure is built and governed. Every fibre cable that stops short of a rural community, every spectrum licence auctioned but never used, every regulation written for markets instead of people — these are the gaps that leave entire communities offline. Until impact is assessed in terms of rights denied — and not only profits foregone — billions will remain disconnected.**

# Introduction

Despite decades of global efforts, universal internet access remains an unfulfilled promise – especially for those who need it most. In 2024, 32% of the global population did not have any access to the internet, with the majority of the unconnected residing in the Global Majority. Reports that 67% of the world's population is now online do not tell the whole story: only 27% of the population in low-income countries used the internet in 2023, for example, compared to 93% of high-income countries. Even among the connected, divides persist. The quality of the connection is often not sufficient or reliable enough to allow for the actual enjoyment of what the internet has to offer. The numbers, in short, are stark.

This is a human rights issue. The lack of connectivity disproportionately affects populations already at greater risk of exclusion. People in rural and remote areas, Indigenous communities, women in low-income countries, and other social, ethnic, and economic minorities – groups who are already less represented in civic and public spaces – are the most impacted.

Policymakers use the term 'digital divide' to describe these persistent disparities in access to telecommunications infrastructure and services. The term describes gaps in internet connectivity; in the quality, speed, and reliability of the connection; in the affordability of devices and services; and in the ability to make meaningful use of digital tools. The numerous inequalities captured under the 'digital divide' seem to grow as new technologies emerge, spurring new methods to define what it means to 'be connected'.

In this report, we use the term 'digital divide' to refer to the evolving and layered gap between those who have reliable, stable, and affordable internet connectivity – along with the devices and digital literacy needed to use it fully – and those who, to varying degrees, do not. This definition includes both the unconnected and the underconnected: those who lack any internet access and those whose connections are too poor, expensive, or limited to enable meaningful participation in social, economic, cultural, or political life.

**In 2024, 32% of the global population did not have any access to the internet. But even among those reported to be 'connected' divides persist. Connections can be unreliable, time-bound, or low quality.**

This report points out a critical inconsistency between problem identification and problem solution. International organisations, national governments, and policymakers carefully gathered a wealth of both qualitative and quantitative research to analyse the state of internet connectivity in the last decades. It highlights major human rights issues for communities around the world that lack internet access. The suggested solutions have not merited the same level of scrutiny and reflection. Across proposed solutions, the internet

primarily features as an engine of economic growth, a mere service governed by market principles.

ARTICLE 19 argues for a fundamental shift in approach, treating connectivity not as a simple commercial service but as an **essential condition for the exercise of human rights**. In this report, we lay the groundwork for this fundamentally different approach. Addressing international institutions, states, intergovernmental stakeholders, and regulators, we reframe connectivity as a fundamental human rights issue that stakeholders must understand beyond measuring economic growth efforts and market instruments and we advocate for a fair balance between economic incentives and human rights guarantees in policy and regulatory interventions.

## BRIEF HISTORY OF THE DIGITAL DIVIDE AS A POLICY CONCERN: THE MISSING LINK?

The disconnect between problem identification and solution has a long history. Multistakeholder experts have diagnosed the universal access (at that time, to telephone) as a human rights problem since the 1980s. The United Nations' (UN) special agency on transnational telecommunication matters is the International Telecommunication Union (ITU), and in 1985, it published a report titled *The missing link*. This report details how a lack of access to telephones disproportionately impacts populations that need these connections the most, especially in the Global Majority. The first page of the report's introduction states: 'In a majority of developing countries, the telecommunications system is inadequate to sustain essential services,' and 'in large tracts of territory, there is no system at all.'

The report immediately makes clear that a lack of communication infrastructure impacts human rights: 'Neither in the name of common humanity nor on grounds of common interest is such a disparity acceptable.' In the 1980s, it was clear that the expansion and universalisation of telecommunications involved geographic and socioeconomic challenges that would require special provisions and planning to mitigate. In 1992, the ITU added a Development Sector (ITU-D) focused on fostering sustainable and inclusive telecommunications growth.[1] Among policymakers and telecommunications agencies in the mid-1990s, concerns about telecommunications and 'missing links' crystallised into concerns about a 'digital divide'.

In the late 1990s and 2000s, international development agendas influenced approaches to bridging the divide, as the founding of the ITU-D demonstrates. For instance, the UN, with the support of the ITU, the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the United Nations Development Programme (UNDP), and others organised the 2003 World Summit on the Information Society (WSIS). At that time, the digital divide was framed primarily as a problem of physical connectivity – whether households, schools, and public institutions had access to a telephone line or an internet connection. By 2005, during the WSIS in Tunis, the

framing expanded to include issues of internet governance, affordability, capacity-building, and local political economies of connectivity. Yet, the solutions proposed still leaned heavily on the market-driven models and public–private partnerships associated with development agendas rather than rights-based agendas.

## BRIDGING THE DIGITAL DIVIDE TODAY

Across decades of policy concern, from the telephone and its missing links to today's global networks, proposed solutions take the centrality of the private sector as a given. Most national and regional governments developed strategies for overcoming the digital divide, both independently and as part of bilateral and multilateral plans. Examples of regional agendas include the Association of Southeast Asian Nations' *Digital Master Plan 2025* and the Council of Regional Organisations of the Pacific's Information and Communications Technology Working Group. The Policy and Regulation Initiative for Digital Africa is a joint initiative of the African Union, the European Union, and the ITU that addresses various dimensions of broadband demand and supply in Africa. Its objective is to foster universally accessible and affordable broadband across the continent.

These initiatives predominantly frame connectivity as a matter of economic development. This perspective tends to reduce the digital divide to infrastructure deployment, affordable pricing, and basic digital skills education. It invites private sector and investor participation, transforming the digital divide into an opportunity for corporate growth and expansion. However, relying mostly on the large mobile private sector for internet provision and infrastructure development can fuel inequality and exacerbate digital exclusion, particularly in underserved or economically unprofitable regions.

Private companies often prioritise profit over equitable service coverage; investors want to see financial results. This means that they charge rural areas higher prices, for example, or choose to limit the development of higher-quality connections in low-income areas. These effects accumulate with time: driving up consumer costs, stifling competition and innovation, and ultimately undermining the broader public interest objectives of universal connectivity and digital inclusion. This is one of the main reasons why solutions to the digital divide have historically failed.

ARTICLE 19 advocates for more holistic responses to the digital divide, rooting connectivity in the international human rights framework. The expansion of internet connectivity depends on the development of strategies that encompass all aspects of human rights. This includes economic rights alongside social, cultural, civil, and political rights, such as the right to freedom of expression. This report reviews the relationship between internet access and human rights, evaluates common approaches to the digital divide, and ends with recommendations that anchor connectivity strategies in the protection and promotion of human rights.

# Applicable international human rights standards: the right to freedom of expression and information

Multilateral organisations have long recognised that the digital divide reveals connectivity as a human rights concern, as evidenced in the abundant literature on this topic. But what kind of human rights are at stake in internet access? The ways in which relevant UN agencies and regional organisations have answered this question directly shaped the types of solutions they have supported over the past decades. An overly narrow understanding of the human rights obligations that apply to the connectivity sector is a key reason why these solutions have failed to close the digital divide.

This report proposes a return to a fundamental question: in concrete terms, what does it mean to frame connectivity as a human rights concern – and what obligations does that framing create?

## THE INTERNET AS A HUMAN RIGHTS ENABLER

The principal right affected by internet access is the right to freedom of expression, of which the right to access to information is a fundamental component. Article 19 of the Universal Declaration of Human Rights (UDHR) protects the right to freedom of expression.[2] It gains legal force through Article 19 of the International Covenant on Civil and Political Rights as well as regional human rights treaties.[3] According to these provisions, everyone has the right to freedom of opinion and expression. This includes the freedom 'to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers,' as per the UDHR.

The internet plays a crucial role in the seeking, receiving, and imparting of information, such that a lack of connectivity imperils freedom of expression. Connectivity appears in reports as an *enabler* of this human right. However, this enabling role has expanded to the extent that the internet now not only facilitates freedom of expression but also other human rights. In a 2011 report, the UN Special Rapporteur on freedom of opinion and expression emphasised that 'without internet access, which facilitates economic development and the enjoyment of a range of human rights, marginalised groups and developing states remain trapped in a disadvantaged situation'. He stressed that restrictions on internet access must be limited to exceptional circumstances circumscribed by international human rights law. A lack of connectivity – whether caused by government restrictions, criminal interference, or simply by the absence of infrastructure – undermines the full range of human rights.

One of the key priorities in the 21st century for advancing human rights is ensuring everyone has universal and affordable access to the internet. In October 2024, the UN Human Rights

Council (UNHRC) adopted a resolution on 'the promotion, protection and enjoyment of human rights on the internet'. The resolution addresses issues such as online censorship, net neutrality and encryption, while urging member states to 'accelerate efforts to bridge digital divides', ensuring meaningful connectivity – safe, affordable and reliable access for all. It also highlights the need for enabling policies that support small, non-profit and community internet operators, recognising their essential role in connecting underserved areas.

The UNHRC further recognises net neutrality as a safeguard for human rights, calling on states to prohibit service providers from prioritising certain content or applications for commercial gain. This creates a dual obligation: to prevent discriminatory practices while proactively expanding universal, open and rights-respecting connectivity.

Importantly, the resolution requests the Office of the High Commissioner for Human Rights to prepare a report on human rights approaches to meaningful connectivity and overcoming digital divides, to be presented at the UNHRC's sixty-second session. This analysis should address not only direct barriers, such as digital literacy or limited resources in many countries of the Global Majority, but also the enduring impact of outdated connectivity policies shaped decades ago. These frameworks continue to restrict states' capacity to close digital divides and to strengthen the resilience and diversity of internet services.

The Covid-19 pandemic ramped up this view of the internet as a crucial enabler of human rights even further. In 2020, the European Parliament's President asserted that 'access to the internet must be recognised as a new human right'. One year later, the European Parliament Research Service published a report entitled *Internet Access as a Fundamental Right*, fuelling debate at regional and local levels. Portugal and Greece have since added the right to an internet connection to their constitutions specifying that the internet does not just enable the flourishing of human rights but becomes a human right itself.[4] The rationale behind this approach is that recognising internet access as a formal right could simplify the process by which individuals can claim it or pursue legal remedies when denied. Yet declaring the internet a human right does not produce the infrastructure, policies, and investments necessary to make that right meaningful. This is where a critical gap emerges – one that this report seeks to interrogate.

## CONNECTIVITY PARADIGMS AND WHY 'BASIC' IS NOT ENOUGH

Whenever internet connectivity is presented as a guarantor or enabler of human rights, the question that should follow is how states and institutions intend to make that connectivity real. What practical obligations, investments, and governance models are required to ensure that rights-based declarations translate into actual, universal access? This report argues that the failure to answer this question clearly is one reason why rights-based language has, so far, had such a limited effect on strategies for closing the connectivity gap.

Multilateral organisations have shifted considerably over time in how they understand the connectivity by which they aim to enable human rights. This is unavoidable: ways to access and use the internet have evolved over the years, just as the internet itself has evolved to encompass a broader range of services, from social media to streaming platforms.

UNESCO first summarised its understanding of connectivity under the concept of *Internet Universality* in 2015 under the ROAM principles which state that the internet should be human rights-based (that is, respectful of rights such as the freedom of expression and access to information, freedom of association, right to privacy, and other cultural rights), open, accessible and affordable to all, and nurtured by multi-stakeholder participation. The ROAM principles define connectivity as encompassing many levels of access, from the physical availability of the networks to the accessibility of the content from the perspective of language, relevance, or affordability. Different countries have applied the ROAM principles and published research in a series of UNESCO reports titled *Assessing Internet Development*.[5] The ROAM principles are a cornerstone of connectivity policies across multilateral organisations and governments.

The ROAM framing of connectivity – which extends beyond mere network availability to include affordability, accessibility, and the ability to meaningfully engage online – directly influenced and widened how the digital divide is now understood within human rights frameworks. The consensus is that 'digital divide' should not imply a simple binary, where people are either connected or unconnected (the 'haves' vs. 'have nots'). A 2015 European Parliament briefing rightly notes that 'the concept of the digital divide keeps evolving and broadening with new technological developments'. The 2022 *Global Connectivity Report* published by the ITU accordingly states that 'there are multiple digital divides, across and within countries, between men and women, between youth and the elderly, between cities and rural areas, and between those who enjoy a fibre connection and those who struggle on a spotty 3G connection'. Across the human rights sector, an expansive understanding of connectivity fuels an expansive understanding of the digital divide and vice versa.

This mutual strengthening is one explanation for the plethora of diagnoses and problem statements circulated in multilateral organisations when it comes to connectivity. Just as connectivity enables nearly every human right, according to these various reports and plans, so does the digital divide touch on and stem from every form of inequality. This makes connectivity a site of intense ambition in international organisations. For example, the language used in a 2021 report commissioned by the UNDP states that 'global efforts to close the digital divide have not aimed high enough. Basic connectivity targets will simply lead to greater inequalities in basic and enhanced capabilities in the future.' Basic, in short, is not enough.

The most recent paradigm in defining connectivity similarly pushes beyond the basics. Connectivity has to be 'universal' and 'meaningful', and this is a 'new imperative'. In 2022, a multi-stakeholder working group coordinated by the UN Office of the Secretary General's Envoy on Technology and the ITU developed an analytical framework. Under this framework, *universal* connectivity means connectivity available to everyone, and *meaningful* connectivity allows users a safe, satisfying, enriching, and productive online experience at an affordable cost. The two dimensions are complementary: neither universal connectivity with poor quality nor meaningful connectivity for only a privileged few meets the criteria. This ambitious definition broadly reflects the ambitious connectivity goals set by multilateral agencies.

Yet, despite the clarity with which the problem is defined – and the growing sophistication in how connectivity and the digital divide are measured – the solutions proposed by the UN, its specialised agencies, and member states remain profoundly misaligned with the scale and urgency of the challenge. Declarations, summits, and frameworks lack the practical measures required to realise their ambitions. The operational response in the policy domain overwhelmingly prioritises market expansion, with infrastructure growth framed as commercial opportunity.

This means that the divide will persist – and even deepen. Organisations that speak of connectivity as an essential condition for the exercise of rights simply cannot opt for solutions that treat it as a product or service to be sold and expect to successfully realise their stated ambitions.

## IMPLEMENTATION: FROM DIAGNOSIS TO SOLUTION

Too often, the idea that the internet enables an array of human rights is ignored and instead reduced into a narrow conception of the internet as a driver of economic growth, and in this sense, capable of lessening economic inequality. This slippage occurs across the board; it is built into the dominant frameworks of international policy and can probably be traced to the historical context of lack of universal access in policy. At the beginning of the 1990s, the access divide was tied only to a lack of infrastructure (as opposed to a lack of affordable options, for example, or access to devices); however, it still appears to many policymakers only as a matter of economic development.

The UN Sustainable Development Goals (SDGs) are a case in point. All UN member states adopted the goals in September 2015 as part of the 2030 Agenda for Sustainable Development, which sets out a 15-year plan to achieve the goals and their related targets. Universal connectivity falls under SDG 9: 'Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation.' Once the digital divide is framed only as a matter of economic development, connectivity is reduced to a narrow economic concern. This can be seen, for example, in the fact that connectivity disruptions are now routinely expressed – by international organisations as well as

by corporations – in terms of damage to a nation's gross domestic product, or worse, pictured in terms of national security, rather than the extent to which such disruptions restrict people from sharing life-saving information, or obstruct journalists from reporting violence, or even how disruptions are a tactic used to prevent people from holding authorities accountable. Economic return is used to calculate the value of connectivity, which is then expressed as a matter of investment, productivity gains, and industrial competitiveness. This narrow view is evident in the fact that multilateral organisations nearly exclusively pursue connectivity through investments in expanding existing infrastructure.

This economic framing similarly haunts connectivity solutions at the level of national governments. Governments are obligated to take concrete action when the right to freedom of expression is at stake. This is a 'positive obligation': not only should states refrain from interfering with citizens' expression, they must also ensure citizens' enjoyment of their rights. States must take active steps to create an environment where individuals can freely exercise their right to freedom of expression. Under an economic development lens, states do not have an obligation to achieve universal or meaningful connectivity, even though the internet is understood to enable the right to freedom of expression. In practice, this has meant that there is a widespread reliance on private capital for developing and managing infrastructure, including telecommunications networks, especially in low- and middle-income countries.

Crucially, this economics-oriented approach to connectivity enfranchises the large mobile telecommunication corporations that are already operational at scale. These incumbent mobile telecommunication corporations often have oligopolistic positions, especially in the Global Majority. Connectivity strategies reinforce their power, even though the services they offer and prioritise are often not the most conducive to universal and meaningful connectivity.

Compare fibre internet (via fixed connections) and mobile internet (via cellular networks): fibre internet generally offers more stable, faster, and uncapped service. Mobile internet often constrains users with data caps, signal quality, and slower speeds – particularly in areas served only by 3G or low-quality 4G. Despite this, multilateral organisations with connectivity strategies often partner with large corporations that focus almost exclusively on mobile services, especially in rural or remote areas. This partnership is frequently justified by the relative ease of mobile deployment in regions where fibre infrastructure is lacking. Yet this approach is not only insufficient; it can also deepen digital inequalities.

Recent ITU data shows that in Africa, only 1% of the population has a fixed broadband connection. Mobile broadband subscriptions are more common but heavily limited by affordability, speed, and data usage. Moreover, mobile broadband users in high-income countries reach their average monthly data consumption in just four days, while it takes much

longer for users in low-income countries, reflecting a massive disparity in quality of access. Over 28% of the population in low-income countries still rely exclusively on 3G, which severely restricts meaningful engagement with modern internet services.

This illustrates a structural flaw in market-led connectivity strategies: they entrench a two-tier system where member states treat mobile connectivity as 'good enough' for the poor, while reserving fibre-grade access for richer populations. If universal and meaningful access is truly the goal, we cannot treat mobile connectivity alone as a sufficient solution. States must design connectivity policies that prioritise long-term infrastructure investments, including fixed connections where feasible, and ensure that mobile deployments meet minimum quality and affordability thresholds. This includes defining clear public interest conditions for private sector participation, particularly when public funds are involved. Affordability, service quality, and user autonomy must be central metrics – not just geographic coverage.

The embrace of Starlink and other satellite-based connectivity models is another illustrative example. Marketed as a solution for underserved areas and embraced by many national governments, from Brazil and Bangladesh to India and Ukraine, Starlink's high costs relative to income in lower-income countries actually make it inaccessible to those most affected by the divide. To make matters worse, it reinforces patterns of digital colonialism – offering connection as a means of extraction and profit, rather than empowering communities to build and control their own infrastructures. Far from dismantling existing inequalities, these corporate solutions risk deepening them by sidelining community-led solutions – those grounded in local ownership, accountability, and contextual knowledge. Instead they place even more control over information and communications in the hands of powerful private actors. This reflects the broader failure of policies that treat connectivity as a matter of market expansion rather than of human rights, self-determination, and sustainable, locally governed solutions.

Crucially, this economic framing in the policy domain has direct implications for freedom of expression. A diverse and pluralistic information ecosystem is essential to the exercise of this right. In the absence of real competition, incumbents have no incentives to improve the quality of their services and have the power to use pricing and other mechanisms to make certain services or content – such as public interest content like local media outlets, Wikipedia or health portals – more, or less, available to particular sets of users. For example, video streaming platforms may be zero-rated, while access to privacy-focused applications like Signal or The Onion Router (Tor) may be deprioritised or data-capped, shaping user behaviour in subtle but powerful ways.

In this scenario, incumbents have the power to shape the boundaries of public discourse. Investments that naturalise and reinforce this power

pursue connectivity at the price of the right to free expression and the right to access information. Yet, this outcome is not inevitable. Approaching connectivity through a broader human rights lens – especially by centring rights such as freedom of expression, access to information, and freedom of assembly – offers a radically different foundation for solutions. This approach demands that connectivity is treated not as a commercial good, but as an essential condition for exercising human rights. This shift enables us to understand how we should design, fund, and govern connectivity initiatives – not according to the logic of economic efficiency, but according to the imperatives of rights, dignity, and inclusion.

**If universal and meaningful access is truly the goal, states must design connectivity policies that prioritise diverse (internet) services and ensure that mobile deployments meet minimum quality and affordability thresholds.**

**They must also define clear public interest conditions for private sector participation – geographic coverage alone will not do. Affordability, service quality, and user autonomy must be central metrics.**

# Connectivity and corporate power

## CORPORATIONS AND CONNECTIVITY GOVERNANCE

Nowhere is the tension between connectivity as a commercial good and connectivity as a human right more visible than in the governance of the radio spectrum, the invisible infrastructure that enables all wireless communication. Public policy continues to assign spectrum – arguably one of the most vital public resources – via auctions that assign exclusive licences. In the auction model, licences for using a set of frequencies on the radio spectrum are sold to the highest bidder, typically a large mobile telecommunication provider. Designed by economists, auctioning spectrum licences seems like a win–win: it is transparent, it ensures that governments receive large sums of money, and it seems to encourage efficient use of the spectrum, since bidders will want a return on their investment.

In practice, poorly designed auctions often reinforce market concentration by allowing dominant corporations to accumulate vast amounts of spectrum, edging out smaller or community-focused actors and reducing the diversity of service providers and technologies in the internet ecosystem. Research – including by Nobel laureate economist Paul Milgrom, one of the original architects of spectrum auctions – shows that while auctions are highly effective at generating short-term revenue for governments, they are often counterproductive when it comes to achieving broader public interest goals like universal service, affordability, and network diversity. The auction model also severely limits the ability of communities – particularly Indigenous communities, local cooperatives, and non-profit networks – to design and control their own communications infrastructure in ways that reflect their needs, languages, and priorities. Auctions reward financial power, not the capacity to innovate for public good.

**Allocating specific frequency bands for unlicensed, shared, or lightly licensed use can yield better outcomes in terms of resilience, innovation, and meaningful local connectivity.**

Regulators could solve this problem by capping the number of bids a single corporation can win, reserving bands for non-profit or community operators, or making coverage and affordability obligatory conditions of the licence. In other words, although auctions might not be the best instrument for promoting equitable connectivity, how they are designed and implemented significantly impacts their effectiveness. Moreover, in some cases, allocating specific frequency bands for unlicensed, shared, or lightly licensed use – rather than through auctions that assign exclusive licences – can yield better outcomes in terms of resilience, innovation, and meaningful local connectivity. These approaches open space for community networks, local internet service providers (ISPs), and other non-commercial actors to operate

affordably and flexibly, particularly in rural or underconnected regions.

Auctions that assign exclusive licences do not lead to an optimal use of the available spectrum. Assumptions that spectrum band pricing incentivises telecommunication corporations to use and develop connectivity on those bands are incorrect. It does not take in account how oligopolistic power works. Seeking to maintain their power, corporations have opted to buy spectrum rather than use it, but to ensure that they – and not others – will be able to use it in the future. This practice is called spectrum hoarding, and it is another way for wealthy corporations to restrict opportunities for competition. Because licensing by auction works against competition, restricting the diversity of available options, it becomes a connectivity strategy that can inadvertently *prevent* the expansion of internet access. National governments who distribute their spectrum only through auctions that assign exclusive licences, and who do not consider how corporations in oligopolies operate, often work against the stated aim to ensure that all spectrum is used for improving and increasing connectivity.

This auction model is also at odds with the stated aims of multilateral organisations. A UN General Assembly resolution on digital technologies called on states to create an enabling and inclusive regulatory environment for small and non-profit internet operators,[6] reflecting the recognition that community networks have great potential to empower marginalised groups. Yet exclusive licensing by auction prevents smaller, less resourced companies from obtaining the spectrum they would need to offer competitive or complementary services.

As Martha Suárez, President of the Dynamic Spectrum Alliance, succinctly said in a 2025 interview with ARTICLE 19:

**'Spectrum is a public good. If access to it is limited to only a few big players, we are also limiting the diversity of the services and reducing the possibilities of new business models. This is particularly relevant for community networks, local ISPs, and others that aim to connect those who remain unconnected.'**

Limited access to spectrum ultimately harms community-led initiatives that would address specific needs regarding content, language, and digital use. For example, in rural Mexico, the community network Telecomunicaciones Indígenas Comunitarias provides affordable mobile and internet services to Indigenous communities that commercial telecommunication providers ignored. The network offers coverage in local languages and reinvests revenue into the community's own infrastructure and needs. Telecommunication corporations encourage reliance on auctions, which makes it difficult for these initiatives to flourish as they are often bundled with content packages from major commercial providers and tied to a one-size-fits-all business model. When national governments opt to

exclusive licence by auction, they often ignore public interest considerations of the radio spectrum, and prioritise financial gain over the needs of local communities.

Alternative approaches already exist. Extensive research on shared spectrum models – such as those presented in the Internet Society's Innovations in Spectrum Management and the Dynamic Spectrum Alliance report on Automated Frequency Coordination – demonstrates that spectrum can be managed in ways that are both technically efficient and socially equitable. In these models, multiple service providers can share the same frequencies without harmful interference, which ensures that all available radio spectrum serves connectivity needs. These alternatives include: unlicensed spectrum (as in the frequency bands used for Wi-Fi); lightly licensed or coordinated access models (such as TV White Spaces and the Citizens Broadband Radio Service framework in the US); and tiered access systems where primary, secondary, and general services coexist under transparent rules and database coordination. These approaches allow for greater flexibility, lower barriers to entry, and the ability to accommodate a broader set of actors – especially those operating in rural or marginalised communities. In contexts where market-based exclusive licences have failed to close the digital divide, such models provide a socially equitable path to expanding meaningful access.

## CONSOLIDATION OF CORPORATE POWER IS NOT GOOD FOR CONNECTIVITY

Connectivity strategies that operate via and in tandem with large corporations, as in the case of spectrum licences, often end up serving corporate interests rather than those of the unconnected or underconnected public. As a few powerful companies gain control over critical infrastructure, like spectrum, they also gain disproportionate influence over regulatory agendas, technical standards, and even the metrics by which their performance is evaluated. This consolidation allows them to shape narratives around efficiency and innovation while limiting external visibility into their operations. When control over connectivity is concentrated in the hands of a few corporations, the network itself becomes opaque – unaccountable to the public and resistant to scrutiny. Commercial confidentiality often blocks requests for information or independent audits, and performance data is self-reported and rarely verified. Sometimes, it becomes impossible to know whether or to what extent large telecommunication corporations are living up to the 'social use' clauses in their spectrum licences, for example.

This is not simply a regulatory inconvenience; it is a structural lack of transparency and accountability problem that is nearly unavoidable when connectivity strategies only bring large corporations to the table. By enabling companies to operate behind a veil of secrecy, these models weaken democratic oversight and

reduce the capacity of the public sector to intervene in the name of equity or universal service. By design, such strategies will undermine the ability of governments, communities, and civil society organisations to plan for equitable expansion, monitor the performance of service providers, or ensure that connectivity serves public rather than private interests.

A striking example of this problem is the chronic lack of accurate or publicly available data on mobile and fibre (as part of mobile infrastructure) coverage. As the Internet Society highlighted when launching the Open Fibre Data Standard initiative, fibre is rapidly becoming an essential infrastructure for the digital economy. Yet, telecommunication operators consider most information about fibre routes, capacity, and availability to be proprietary. Without access to this data, policymakers cannot accurately assess coverage gaps or validate claims from operators about network congestion, for example. This lack of transparency is not an isolated oversight. It is closely linked to the concentration of infrastructural power: when telecommunication companies have greater control over infrastructure deployment, they face fewer external conditions or oversight requirements, which means less pressure to be transparent. In other words, more control often goes hand-in-hand with less scrutiny, reducing their incentive to disclose details about the process. Powerful operators often shield infrastructure maps – whether for fibre or mobile coverage – behind commercial confidentiality, making independent scrutiny of their obligations nearly impossible. Without the tools for evaluation, governments and multilateral organisations cannot assess whether the right to free expression or the right to access information are under pressure as a result of corporate (de)prioritisation of fibre optic networks in particular regions, and therefore cannot take the necessary evidence-based policy and regulatory decisions.

### DIVERSITY OF OPERATORS IS GOOD FOR CONNECTIVITY

The Covid-19 pandemic underlined that large telecommunication operators are not necessarily the most successful in expanding or maintaining access to the internet in emergency situations. The Internet Society documented how internet exchange points (IXP) kept internet traffic local. An IXP is a physical infrastructure through which ISPs and other network operators exchange internet traffic between their networks to improve efficiency, reduce latency, and lower costs. When demand surged, especially in the Asia–Pacific region, IXPs reduced the load on international links. In the report *Moving Toward an Interconnected Africa: The 80/20 Initiative*, the Internet Society showed that African countries with stronger local IXPs were better able to handle the surge in internet usage during the pandemic. The report highlights how keeping 80% of internet traffic local is not only a goal for fast performance, but also a necessity for resilience.

Various entities own and operate IXPs, depending on the specific model and local environment. From non-profit organisations to for-profit

companies, or from universities to informal associations, IXPs often have governance models that promote openness and accountability, including publishing traffic statistics and encouraging broad participation from community networks, universities, and small ISPs. By including IXPs within a multilateral or national connectivity strategy, governments can build a more resilient and transparent infrastructure – particularly in regions where corporate actors dominate the connectivity landscape.

**By including IXPs within a multilateral or national connectivity strategy, governments can build a more resilient and transparent infrastructure.**

Other important stakeholders to include are community networks, who are actively excluded by expensive spectrum licences. During the pandemic, community-led networks were able to rapidly expand coverage, adapt services, and meet surging local demand especially in places where large providers, who are usually prioritised in the policy domain, failed or withdrew. For example, in rural Argentina, the cooperative network Altermundi expanded coverage to ensure that communities could access telehealth and remote education. In South Africa, the Zenzeleni network adapted pricing and capacity to serve households during lockdowns – demonstrating flexibility that large telecommunications were unwilling or unable to provide.

Incumbent oligopolistic corporations are not the only option, and more importantly, they may not be the best option, especially for vulnerable populations. Climate change demands that universal and meaningful connectivity will depend not just on the availability of infrastructure, but also on the resilience of that infrastructure. Resilience requires decentralisation: a variety of alternatives for internet services. The more diverse an ISP ecosystem, encompassing community networks, small ISPs, and cooperatives as well as larger telecommunication operators, the more resilient it will be. Highly centralised, monopolistic or oligopolistic systems lack the flexibility that maintaining connectivity during crises requires. This means that the most durable connectivity strategy is effectively the opposite of the connectivity model encouraged by auctions that assign exclusive spectrum licensing strategies in which connectivity is 'won' by a few large companies whose main task is to make a profit.

**The more diverse an ISP ecosystem, the more resilient it will be.**

## HUMAN RIGHTS AT RISK

The entrenchment of corporate power has significant downstream effects on the human rights the internet enables: the right to free expression, the right to access information, and the right to democratic participation. The immediate conceptual problem inherent in the oligopolistic connectivity model is condoned and encouraged in the connectivity strategies that multilateral organisations and national

governments pursued in their decades of seeking to bridge the digital divide. No corporation should have the near-exclusive power to determine the boundaries of public discourse, as is the case if a few corporations hold the licences for the available spectrum, or when investments by policymakers allow telecommunication operators to crowd out smaller competitors. The sheer fact of this concentrated corporate power shows that a model of connectivity as driven by economic profits (whether for industry shareholders or investors) and productive of economic growth has taken precedence over a model of connectivity as a path to the enjoyment of human rights.

**No corporation should have the near-exclusive power to determine the boundaries of public discourse, as is the case if a few corporations hold the licences for the available spectrum, or when investments by policymakers allow telecom operators to crowd out smaller competitors.**

A particularly striking example of connectivity strategies that leave the safeguarding of human rights to corporations is *zero-rating*. Take Internet.org, now renamed Free Basics, which is operated by Meta and other large content corporations. Explicitly presented as a connectivity solution, Free Basics groups together communication tools, health information, education resources, and other low-bandwidth services that users can access even after they have run out of mobile internet. This is an example of a zero-rated service. Zero-rated apps are apps that can still be used after the data cap of a mobile service contract reaches its limit. Zero-rating is an example of a much larger phenomenon: oligopolistic telecommunication operators striking exclusive deals with content providers to whom they promise that their apps and services always remain accessible to users.

While this claims to bridge the digital divide, in that it maintains access for people who would otherwise lose it, it gives the content provider the power to control what content specific socioeconomic groups and regions are able to access. Deals between major ISP and major content providers, of which zero-rating is but one example, create a group of second-class users. While well-connected users have access to the whole internet, users whose access is restricted to particular apps cannot freely access the information their well-connected peers can and are restricted in the forms their free expression and democratic participation can take online. Access to an inferior version of the internet deprives the most vulnerable users of a service that is essential to their enjoyment of their human rights.

At the core of the risks inherent in pursuing connectivity through and with large corporations is the realisation that corporate priorities cannot neatly map onto a human rights standard. It is possible, and highly probable, in a telecommunication operator's best interest to ensure that the infrastructure it funds and builds is primarily suited to commercial content, such as advertisements and

e-commerce, rather than civic speech, local media, or grassroots platforms that cater to specific communities. It may be that smaller content providers, such as independent media or activist hubs, cannot afford the bandwidth or the hosting that would ensure that they remain visible and accessible to internet users. If, on top of that, spectrum access is restricted to licensed models, only large corporations with the resources to compete for these licences will be able to offer services at scale. Others will be forced to operate within the limited unlicensed spectrum, resulting in lower quality and less reliable service.

**If spectrum access is restricted to licensed models, only large corporations with the resources to compete for these licences will be able to offer services at scale.**

The concentration of power in the hands of a few dominant telecommunication operators brings with it a troubling lack of transparency. This has direct human rights implications. When only a handful of providers control infrastructure, it becomes nearly impossible to assess whether they are discriminating between types of internet traffic, prioritising certain regions over others, or quietly complying with state demands to throttle or shut down access. Without independent oversight, there is no public accountability over where and how connectivity is expanded – or withheld.

This opacity is not a side effect but a substantial problem of strategies that accept corporate dominance as a necessary trade-off for network rollout. Such approaches risk treating any connectivity as inherently good, regardless of who controls it or how it functions. But who owns and governs infrastructure ultimately determines who can access information and under what conditions. When freedom of expression depends on private interests and opaque policies, fundamental rights are in jeopardy.

**Who owns and governs infrastructure ultimately determines who can access information and under what conditions.**

# ARTICLE 19's recommendations

The internet is a critical enabler of human rights and must be treated as such in connectivity strategies. Yet too often, connectivity is framed solely in economic terms – as a service to be delivered through market investment, with large telecommunication corporations cast as the central partners. This framing overlooks the internet's public interest role and risks subordinating rights like freedom of expression and access to information to corporate or commercial agendas. This has resulted in a model in which a handful of global companies defines how, where, and for whom connectivity is built. The concentration of power among these companies limits technological diversity, weakens network resilience, and undermines local autonomy – particularly for Indigenous communities, ethnic minorities, and those living in remote areas in deciding how they wish – or do not wish, to be connected.

If the internet is to fulfil its potential as a rights-enabling infrastructure, connectivity strategies must move beyond corporate dominance and market-driven assumptions. Instead, they must centre human rights, equity, and community participation.

In light of this, ARTICLE 19 provides the following recommendations for prioritising human rights in connectivity strategies:

**Intergovernmental organisations**, especially the UN and associated agencies, should:

- **Aim for consistency between the assessments they produce and the solutions they recommend or support.**
  Assessments of the digital divide and of connectivity as an enabler of human rights are meticulous, but the same level of scrutiny and skill should be applied when evaluating the adequacy of connectivity policies. Since connectivity is integral to the enjoyment of multiple human rights, connectivity policies should be measured by their ability to enable these wider human rights including but not limited to economic development.

- **Involve a wide range of stakeholders in connectivity policy development.**
  They should actively include smaller and diverse service providers, community operators, cooperatives, working through and with their associations and broader representative bodies. This ensures that connectivity strategies do not imperil human rights by reinforcing an oligopolistic connectivity model in which incumbent operators effectively control people's connectivity.

- **Seek policy and regulatory solutions that encourage fair competition and prioritise digital autonomy.**
  States have the obligation to create the conditions for a plurality of actors and open, fair, and

competitive markets. To fulfil this obligation, connectivity strategies must intentionally incorporate considerations of inclusiveness, diversity, and equity – not only in their policy design but also in how spectrum is allocated and public funding is distributed. Acting against entrenched oligopolistic interests requires regulatory solutions that promote fair competition and prioritise communities' right to decide how they connect. A key risk of concentrated market power is that communities lose the ability to choose or shape their preferred connectivity models, and internet resilience becomes more fragile during disruptions.

- **Develop and issue clear, actionable guidelines for member states.** These guidelines must provide practical direction on how to integrate member states' positive obligation to guarantee the right to free expression, the right to access information, and the right to democratic participation in the design, development, and deployment of connectivity strategies. Potential recommendations might focus on the consultation of a wide range of stakeholders and the weighing of short-term financial benefits (such as those obtained through spectrum auctions) against permanent human rights obligations.

**National governments** should:

- **Champion the development of a range of different, smaller-scale, and local solutions over one-size-fits-all mass products.** Examples include mesh networks, which use a system of interconnected nodes that relay data between devices without relying on traditional telecommunication infrastructure, and community Wi-Fi initiatives that provide shared internet access and can be managed locally. Supporting smaller ISPs through grants, subsidies, and favourable regulations can enhance competition and curtail the power of the oligopolies that pose a threat to human rights. In the domain of spectrum licensing, governments should combine strategic and innovative spectrum management – including dynamic sharing and coexistence techniques – with increased public investment in infrastructure and policies that prioritise competition and innovation over short-term financial gains.

- **Prioritise local connectivity solutions, which are more resilient and better serve vulnerable populations.** Involving smaller enterprises, local governments, cooperatives, non-profits, and community operators is a promising path to complementary connectivity in rural areas and for minorities, including for communities that do not participate (or do not wish to participate) in the formal economy. These initiatives are often more responsive to local needs and can offer more relevant and affordable services, including in local

languages. These smaller-scale, local networks are often more resilient in the face of sudden increased demands or disruptions because they can be flexible. Wholesale satellite business models, which allow service capacity to be leased to local actors, can further support this ecosystem by enabling local distribution, entrepreneurship, and cost adaptation. Given the climate crises, resilience will be a core component of connectivity strategies in the future, underlining the importance of investing in local options.

- **Establish monitoring and accountability mechanisms that make it possible to evaluate large telecommunication operators on their human rights record.**
  National governments must support their independent agencies to monitor and ensure the transparency, efficiency, and accountability within spectrum management and connectivity models. These organisations must be equipped with the authority to review data and reports submitted by telecommunication corporations, to evaluate their compliance with human rights standards, and to issue sanctions when they encounter violations. The findings of these evaluations should be made publicly available, in the interest of building public trust and accountability.

- **Gather detailed data on connectivity, and base policies on this data.**
  To enable effective monitoring, specialised oversight bodies must have access to comprehensive information about both public and private internet networks, including about traffic flow and network capacity. The information provided by large telecommunication operators should be cross-referenced with other sources, such as IXPs, content delivery networks, cloud infrastructure providers, satellite operators, and community networks. Only when connectivity strategies accurately reflect the full complexity of the internet ecosystem can they be trusted to improve connectivity and bridge the digital divide.

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# Endnotes

[1] Fickers, A. and Balbi, G. (2020b) *History of the International Telecommunication Union: Transnational Techno-diplomacy from the Telegraph to the Internet (Innovation and Diplomacy in Modern Europe 1)* (1st edn.), Berlin: De Gruyter Oldenbourg.

[2] Its adoption in a resolution of the UN General Assembly does not make the UDHR strictly binding on states. However, many of its provisions are regarded as having acquired legal force as customary international law since its adoption in 1948. See *Filartiga v. Pena-Irala*, 630 F. 2d 876 (1980) (US Circuit Court of Appeals, 2nd circuit).

[3] UN General Assembly, International Covenant on Civil and Political Rights (ICCPR), 16 December 1966, UN Treaty Series, vol. 999, p.171. See Article 10 of the European Convention for the Protection of Human Rights and Fundamental Freedoms, 4 September 1950; Article 9 of the African Charter on Human and Peoples' Rights (Banjul Charter), 27 June 1981; Article 13 of the American Convention on Human Rights, 22 November 1969.

[4] Article 5A(2) of the Greek constitution: 'All persons have the right to participate in the Information Society. Facilitation of access to electronically transmitted information, as well as of the production, exchange and diffusion thereof, constitutes an obligation of the State, [...].' Article 35(6) of the Portuguese constitution: 'Everyone is guaranteed free access to public-use information technology networks'.

[5] Assessing Internet Development using ROAM X Methodology: Benin, Brazil, Cape Verde, Germany, Kazakhstan, Kenya, Senegal, Thailand.

[6] See General Assembly resolution 78/213, para 8 (A/RES/78/213).