



# **Italian G20 Presidency**

## **G20 Guidelines for Financing and Fostering High-Quality Broadband Connectivity for a Digital World**

**October 2021**



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*developed with the support of the OECD*

## **The Rationale**

The COVID-19 pandemic has turned the spotlight on connectivity. While the pandemic has been disruptive, connectivity enabled the economy to move online and to reduce economic losses during physical lockdowns to extents that would not have been possible, nor imaginable years ago. This movement to an online world has led to soaring demand for broadband services, digital financial services and the underlying communication infrastructure and created a strong impetus for further financing and fostering high-quality broadband connectivity.

However, disparities in the level of connectivity determine whether and how countries, companies and citizens participate in the distance economy and society. Those who could not access high-capacity communication networks struggled to follow online classes, access digital health and financial services, and work from home. In some cases, participation in these critical social and economic activities was simply impossible because of a complete lack of access to communication networks. The challenge ahead consists of reaching the next level of reducing connectivity gaps within and across countries, increasing the quality of communication infrastructure and ensuring the resilience of communication networks. Expanding connectivity, fostering the quality of the connections and promoting the required digital skills are important drivers for the economic recovery across the G20. At the same time, complementary infrastructure necessary to enable connectivity, such as stable electricity supply, needs to be in place. Extending high-quality connectivity and related infrastructure are critical aspects of economic recovery packages.

In most countries, communication networks are mainly deployed and funded by the private sector and in particular network operators, as many G20 countries have transformed and liberalised their markets to enable competition for communication services. These developments have allowed to extend fixed and mobile connectivity over the past twenty years. Yet, due to the capital-intensive nature of the communication industry, proceeds from investments have to be sufficiently high in order to generate a reasonable return on investment. The interest of institutional investors, in particular in wholesale communication infrastructure, has grown in recent years, given the essential and transformational role it plays in the economy, and related growth potential and steady revenue streams.

However, the cost of deploying networks in certain areas (rural, remote or with a high share of low-income households) can be high, and in some cases, generating positive business cases may be difficult. As a result, these areas might be completely unserved or underserved by broadband, or do not dispose of networks with the quality of service (QoS) that policymakers and the society consider being appropriate. In such circumstances, the public sector may have a role to play to ensure that networks are deployed through direct and indirect actions, as well



as through alternative financing options, where pure market-based approaches are not sufficient and when public involvement would not distort otherwise healthy competition so that people can obtain equal access.

## **G20 Guidelines for Financing and Fostering High-Quality Broadband Connectivity for a Digital World**

The following *G20 Guidelines for Financing and Fostering High-Quality Broadband Connectivity for a Digital World* build on the long standing expertise of G20 members and the Organization for Economic Co-operation and Development (OECD)<sup>1</sup>. The following guidelines are voluntary and non-binding in nature, representing principles that may guide policy makers and regulators. The Guidelines primarily encompass provisions that recognise the importance of private investment and access to financing, and identify the role of public measures where private investment is not sufficient. In addition, considering that communication infrastructure is a multi-faceted policy area, these Guidelines identify principal elements that optimise the domestic environment to attract investments and highlight the importance of coordination and collaboration between different stakeholders, as well as information-sharing about the state and deployment of connectivity.

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**GUIDELINE 1: Acknowledge the important role of private investment and ensure related adequate financing opportunities. Where necessary, emphasise the role of the public sector in funding and financing communication infrastructure, in particular in rural and remote areas by:**

- **Extending broadband coverage through the promotion of tailored policy and financing initiatives to bridge gaps in unserved and underserved areas or demographics, including in cooperation with private investors, while striving to avoid distorting competition.**
- **Pursuing measures for low-income and other non-adopting households to foster the adoption and effective use of advanced broadband services at affordable prices, accessible for everyone, regardless of locations, genders, abilities, and socio-economic circumstances.**
- **Considering policies such as co-investment, voluntary network sharing or open access models to attract investments, and that under certain local circumstances or market structures may enhance competition.**
- **Taking into account different developments levels of countries to identify the best public and private financing and network deployment models.**

Private investment is typically the largest source of investment in communication infrastructures. Network providers can generally access different sources of financing to support infrastructure investments. Diversity of investors and financing sources is becoming increasingly relevant as network operators seek to optimise their business models and

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<sup>1</sup> See the *2021 OECD Council Recommendation on Broadband Connectivity*, adopted on February 24, 2021.



operating and capital structures, and generate cash to fund new investments in fibre and 5G networks.

While this guideline acknowledges the key role played by private network operators and financial players in supporting the financing of communication infrastructures, it also emphasises the potential role of public actors and encourage their engagement in financing communication infrastructure through direct and indirect actions, as well as through alternative financing options, where pure market-based approaches are not sufficient and their involvement would not distort otherwise healthy competition or crowd-out private investments.

Alternative models may be adopted to fill financing gaps. For example, fibre broadband networks can be operated at the municipal level, and/or funded by the public sector. Other models to foster investments in rural and remote areas are grants for Public Private Partnerships, which may diminish reliance on public resources derived from taxation or universal service funds, or the mechanism of coverage obligations in frequency auctions. Also, demand aggregation models can be used to increase certainty for investors and operators, by coordinating and bundling consumer demand to increase the profitability of the network rollout and, depending on the area to cover, achieve economies of scale. Other models include public funding to expand connectivity in rural and remote areas, making use of market mechanisms, such as reverse auctions, to provide funding to market players to deploy their networks in rural and remote areas.

When public funds or a mix of private-public funds are used, there are different policies that can be deployed to ensure that funds are used in the most efficient ways to increase the deployment of high-quality networks. Voluntary network sharing models and co-investment models allow to reduce deployment costs for the different entities involved. When deploying municipality networks, those could be designed as open access models, offering wholesale services, allowing for competition and revenues at the retail level.

Moreover, one important expenditure for mobile operators are spectrum licenses granted by governments and regulators. Where possible, those auctions should be used for an efficient, transparent and predictable spectrum management, guided by long term societal and economic benefits, rather than setting spectrum prices too high which can hinder private investments in communication markets.

While physical access can be a challenge, another challenge in some areas is the affordability of these services, in particular for low-income households. Affordability is key to bridging connectivity divides, and depends both on income level of households as well as prices of broadband services. An increased level of competition has led to increased investments and reduced prices for communication services and thus increased affordability. In addition, to foster adoption and use of connectivity services of these households, special public programmes could be considered as part of national broadband plan that may include targeted subsidies for low-income households.



Finally, G20 economies are at different network and financial development levels. Gaps exist between countries with regard to high-quality network deployment, which are due to multiple factors such as the differences in geographies, purchasing power or level of competition. These differences are paralleled by differences in access to capital and fiscal space. When national public resources are scarce, alternative financing sources need to be sought. Those could be attracted by players such as funds backed by institutional investors and private equity that have started to invest in open access wholesale models which provide steady cash flows and growth potential. For some G20 economies, Multinational Development Banks (MDBs) may play a role in complementing private and public funding to boost communication infrastructure deployment. In this respect, cooperation with MDBs could be increased in order to elevate the need for funding broadband network deployment in their strategic agendas.

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**GUIDELINE 2: Optimise the domestic enabling environment and financial framework to attract investments in connectivity through appropriate regulatory and legal frameworks by:**

- **Implementing robust legal and regulatory frameworks for connectivity in which decisions are made in an independent, impartial, evidence-based, and consistent manner.**
- **Reducing barriers to achieve affordable broadband deployment through efficient, transparent, and predictable policy frameworks, guided by long-term societal and economic benefits, while safeguarding competition and investment incentives.**
- **Promoting competition for high-capacity network infrastructures and services to achieve end user choice for connectivity at affordable prices and to drive innovation to expand options among competing technologies and services.**
- **Ensuring the resilience and security of communication networks to minimise the risk of network disruptions, also leveraging on emerging and low-cost technology.**

Governments have an important role in making investments in their respective countries attractive, as well as accessible and clearly directed, while taking into account the affordability and availability of the service for end users. High-quality connectivity requires significant investments, mainly by communication operators, not only to expand network coverage, but also to upgrade communication networks. In turn, given the positive spill-over effects, these investments contribute to economic growth and resilience. Experience in G20 countries has shown that these operators base their investment choices in which country to invest on the legal and regulatory framework and the market structures in place. This guideline intends to raise awareness of the importance of creating the right conditions to build a regulatory and policy environment that drives and supports the deployment and extension of digital connectivity.

Promoting a domestic enabling environment through a sound and strong regulatory and legal framework, based on country-specific needs, provides investment certainty for operators and investors, and leads to the extension of connectivity and an increase in quality-of-service. Frameworks work best if structures and agencies are created to make decisions in an



independent, impartial and objective way. Independent regulators, for example, ensure that regulation is developed in an objective way and provide the basis for investment certainty. A sound regulatory environment furthermore fosters competition, which has been one of the most effective levers to achieve high-quality, affordable and accessible connectivity across many G20 countries as competition drive investments in markets as well as innovation. It also provides strong incentives for further private investment.

Another important lever to promote investments in broadband deployment is through facilitating infrastructure deployment, rendering it less costly and faster for the private sector to deploy networks through efficient, transparent and predictable policy frameworks. Simplifying licencing procedures and permits for network constructions, as well as streamlining access to rights of way bring costs significantly down and provides investment-friendly environments. For example, for investment and deployment decisions for mobile networks, the transparency and predictability of spectrum auctions, and prices deriving from these auctions are important criteria for companies to decide whether and to what extent they invest in extending the network and upgrading to newer mobile generations. When countries design spectrum auctions, several policy objectives such as increasing coverage and competition in the market need to be balanced, guided by overall long-term plans and effects for the entire economy and society.

Further important measures in this category are policies that encourage investments in networks and those that are designed to foster innovation with the aim to increase end user choice, bearing in mind affordability concerns. In the same way, increasing the security and resilience of networks contributes to preventing, deterring and responding to threats.

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**GUIDELINE 3: Increase coordination and collaboration between the public, the private sector and other stakeholder groups, and facilitate the sharing of good practice and successful models by**

- **Developing processes and fostering a multi-stakeholder dialogue that includes, among others, consumers, financial institutions, network operators, government at national and sub-national levels and regulatory authorities, ensuring that the views of all stakeholders are properly considered.**
- **Recognising the importance of international coordination and collaboration in sharing good practices and related to network financing and deployment models.**
- **Incentivising communication network operators and other sectors, such as the transportation and energy sectors, to cooperate in network development and financing activities in order to minimise costs, disruption, and environmental impacts.**
- **Increasing the dissemination of information on network coverage and quality to all stakeholders, to promote network improvements and inform both end-user and investment choices.**

With numerous players and stakeholders involved in the communication sector, meeting the needs for high-quality connectivity networks requires collaboration among all key actors. This



guideline intends to promote commitment in adopting a multi-stakeholder approach and facilitating an open dialogue among all actors (industry, financial sector, non-profit organisations, multilateral bodies, governments and regulators, academia, civil society). It furthermore also aims at sharing good practices related to models and methods for financing and deploying high-quality, affordable and accessible communication infrastructure for better connectivity. A third goal is to shed light on the importance of increasing access to information and public assets as essential for G20 members in achieving their coverage and quality goals.

These tools are critical to enable cross-sectoral conversation on projects, build a common knowledge, identify shared objectives and priorities, design mechanisms for preventing and solving conflicts and establish strategic alliances and partnerships. In this sense, international fora such as the G20 and OECD, provide an effective means to exchange information on connectivity and foster a global multi-stakeholder and interdisciplinary dialogue on broadband policies, practices, and metrics to further effective broadband deployment.

Cross-sectoral collaboration in network deployment is important to help avoid redundancies and minimise costs, disruption, and environmental impacts, considering that several sectors' infrastructure deployments, such as energy, transportation and construction, require similar civil works. Effective sharing examples and joint approaches towards infrastructure deployment also include infrastructure sharing models – both of active and passive assets –, co-investment projects and wholesale open access models. In the same way, bordering countries can strengthen their international interconnection and reduce duplications simply through cross-border coordination at the institutional and technical levels.

Showing successful examples and experiences is expected to inspire replication and scalability of projects, and help decision making processes, reduce potential knowledge gaps and cut down costs and time dedicated to R&D or problem-solving activities. Examples shared could go from financing models and methods to the implementation of possible alternative practices for accelerating broadband deployment (e.g. sharing of broadband infrastructure, international coordination), as valuable options to expand connectivity and increase its quality.

Finally, different countries and stakeholders may benefit from the availability of coverage, quality-of-service and subscription information to identify best practices and increase network quality. Easily available information about useable and/or acquirable assets for operators may increase the efficiency of communication infrastructure deployment. Also, increasing the dissemination of information on availability, quality and prices of broadband connections can heighten competitive pressure in the market for providers to improve service.