

Working Group Report on 21st Century Financing Models for
Sustainable Broadband Development

21st Century Financing Models for Bridging Broadband Connectivity Gaps

Executive Summary
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BROADBAND COMMISSION
FOR SUSTAINABLE DEVELOPMENT



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Executive Summary

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Chairman's Executive Summary

In 2018, the Broadband Commission for Sustainable Development issued the 2025 Targets for "Connecting the Other Half",¹ the 3.7 billion people not yet benefitting from access to meaningful connectivity. The targets specifically focus on addressing three critical issues that make connecting the second half of our planet an utmost priority: access, affordability, and equality. With greater accessibility and more affordable digital communication services, connectivity can provide a foundation for greater equity among global societies and foster digital inclusion. The Broadband Commission and many supporting industry bodies and international organizations agree that increasing connectivity and closing the digital divide are critical to our future as a sustainable, knowledge-driven human society.²

The last 18 months have demonstrated the urgency of reaching these goals. The COVID-19 pandemic illuminated the impact that a lack of connectivity can have on rural and low-income communities. Especially when crisis strikes, being disconnected works against the greater aspirations of bringing a level-playing field and broader social and economic relationships to the rest of the world.³ For example, while it might seem hard to imagine, during the pandemic, educational and work options facilitated by connectivity were reserved for only a minority of the global population. At the time of this publication in

the middle of 2021, at the mid-point toward the 2025 Targets, there is still much work to be done and many challenges to overcome.

Some obstacles to the 2025 Targets are now biological, as in the case of COVID-19, and some are technological, while others are cultural and political. But fundamentally and practically, to advance toward achieving the targets, uncovering and establishing innovative financial models for bridging the connectivity gaps are perhaps the most critical obstacles we face. Economists and industry experts recognize the stakes if connectivity gaps are left unclosed. However, all equally recognize that fundamental challenge of bridging the existing and still-expanding digital gaps with new financing approaches. Broadband connectivity is critical for a globally connected society, but enabling connectivity is costly.

In the 21st century there has been, and continues to be, a great deal of open innovation and shared benefits because of the connectivity that the Internet provides. Unfortunately, the investment, funding and financing models that enabled earlier infrastructure development and its utilization, developed the digital ecosystems, and allowed for possibilities that citizens would have access to relevant content and digital services no longer suffice. They were created for the market realities and

1 Broadband Commission for Sustainable development. 2018. *2025 Targets: Connecting the other half*. Accessed at: <https://broadbandcommission.org/Documents/publications/wef2018.pdf>

2 Van Dijk, Jan AGM. 2020. *Closing the Digital Divide*. Accessed at: <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/07/Closing-the-Digital-Divide-by-Jan-A.G.M-van-Dijk-.pdf>

3 Garcia, Emma, Elaine Weiss, and Lora Engdahl. 17 April 2020. *Access to online learning amid coronavirus is far from universal and children who are poor suffer from a digital divide*. Accessed at: <https://www.epi.org/blog/access-to-online-learning-amid-coronavirus-and-digital-divide/>

economic perspectives of the 20th century. Today, however, many companies and industry-related stakeholders benefit from delivering services through broadband infrastructure. For some companies, such service delivery constitutes a simple yet powerful business model that leverages broadband infrastructure traditionally built solely by telecom operators. Because times have changed and discord between those at the forefront of infrastructure development and those making disruptive albeit far-impacting use of it has become inescapable, an objective-minded re-alignment of shared priorities and responsibilities is required.

Conventional wisdom maintains that, in the face of the daunting challenges of connecting the remaining un- and under-connected 3.7 billion of the world's population, telecom operators alone cannot solely be relied upon to bear the investment burden. This sets the thesis on which the work of the **Working Group on 21st Century Financing Models for Sustainable Broadband Development** is founded and conducted: *How can a wide spectrum of stakeholders within the digital space unite to tackle the challenge developing new broadband infrastructure, upgrading existing infrastructure, and cultivating relevant digital content and services for widely unconnected populations? And how shall these models aid in achieving the Commission's 2025 Targets as well as the United Nations' 2030 Sustainable Development Goals?*

The Working Group on 21st Century Financing Models for Sustainable Broadband Development recognizes that to reach the targets for access, affordability, and equality there will have to be new approaches that support the development of digital infrastructure, especially where it would otherwise not be profitable. Additional support for the confluence of factors beyond infrastructure is also needed to create and

sustain socially relevant and functioning digital ecosystems. Establishing these new approaches will mean resolving complex concerns and attending to stakeholder interests that demand thoughtful multi-lateral engagement. It is imperative to come to solutions that reflect the interests of all parties, which do have a direct role to play to help create the global infrastructure and also help sustain social and economic ecosystems that will define the next century, and beyond.

Industry stakeholders need to examine ways to augment and expand on the current financing and investment models. Such a strategic shift will require making new paradigm shifts, including: (1) broadening the base of contributors; (2) ensuring **all** who derive benefits from the digital economy, as consumers or as producers, objectively, equitably and fairly contribute towards *connecting the unconnected* given the urgency and attendant positive social impact on humanity; (3) for such contributions to be made by all ecosystem players taking into account the new realities of the disaggregation of digital services provision and, therefore, revenue generation from underlying network infrastructure investments; (4) making such contributions sustainable and predictable; and (5) for such contributions to be managed efficiently and disbursed in a timely and prioritized manner.

A shortlist of recommendations from the Working Group includes:

- Broadening the base of contributors by including companies participating in and benefitting from the digital economy
- Ear-marking ICT sector contributions to governments and spending it on initiatives supporting connectivity and adoption goals
- Reforming USAFs to be more effective financing mechanisms that support and expand connectivity to ICT services
- Having USAFs recognize various types of contributions from the broader base of contributors
- Creating an international ICT fund with the objective of supporting sustainable development of broadband connectivity
- Hosting the international ICT fund in a multilateral development bank (MDB) or an existing international organization
- Creating a database of funding best practices and their impact on broadband adoption and economic development (in line with the Moonshot for Africa Report)
- Exploring policies to incentivize voluntary contributions from new types of contributors
- Following a set of best-practice guidelines while reforming USAFs, such as the one provided in this report
- Supporting infrastructure incentives in high-cost areas, demand support initiatives, and digital ecosystem initiatives
- Improving project business cases through cross-collaboration between different public and private, national, and international contributors
- Balancing the broadband infrastructure development approach by catalyzing additional stakeholders to contribute to broadband development and via regulatory reform and demand side measures
- Collaborating across public, private, national, and international organizations

Consensus-driven findings of the Working Group reflect the fact that traditional investment, funding, and financing models are insufficient to close the connectivity gaps and reach the desired targets. Moving forward in a significant way will require developing innovative ones. Innovation,

however, is easier to acknowledge than it is to accomplish, which is why this report suggests developing a variety of innovative models through novel combinations of traditional ones as well as employing completely new ones. The report also integrates these models as core components into the larger

strategic recommendations that structure the document and that reflect current economic and political realities.

The larger strategic recommendations of this Working Group's report are 1) Broadening the Base of Contributors, 2) Earmarking Proceeds from ICT Sector Participants, 3) Reforming Universal Service and Access Funds (USAFs), and 4) Creating an International Fund. These recommendations are intended to drive progress in connectivity through a more effective set of investment, funding, and financing mechanisms and by engaging a broader range of stakeholders. **Annex C: Details of innovative and traditional contribution models** enumerates a variety of available models from which innovative inspiration can be drawn. Actions taken to realize these recommendation will have cascading

effects and more equitably distribute the costs of continuous and sustainable development in an area that will evolve substantially throughout the next decades.

These strategic recommendations act as a foundation for driving connectivity not only toward the 2025 Targets, but toward the more optimistic goal of connecting all populations into a larger fabric where individuals and communities are not excluded from the opportunity to live, work and engage with their global peers. They function here to shine a light on a growing narrative around connectivity – one that emphasizes the shared benefits we all enjoy, our collective responsibility, the commitment required, the reform we must face, and the opportunity to enable global connectivity for all.

Strategic Recommendation 1: Broadening the Base of Contributors

The working group recommends "broadening the base" of stakeholders. The primary goal is to increase the number of stakeholders that will support projects to increase both broadband deployment and adoption – particularly in locales where market forces up to now have proven to be insufficient. The Broadband Commission has already recommended broadening the base in the context of USAF in its 'Moonshot' report. Here, we recommend broadening the base of contributors beyond USAF by including companies participating in and benefitting from the digital economy. In particular, the report recognizes the new realities of the digital economy in the 21st Century – more companies are creating value over existing network infrastructure beyond those who have traditionally invested in, funded, or financed such networks or contribute to extending universal service. In addition, there are new players building and investing in new infrastructure, often in partnership with traditional players. The report also notes that broadening the base could create innovative and sustainable business models for the provisioning and use of broadband service that address the challenging problem of extending broadband connectivity to underserved and often unprofitable areas. In essence, it is also about closing the funding gap with new contributors but in an innovative way. Governments are encouraged to develop and combine, as appropriate, the locally or nationally most-relevant mechanisms in order to institute the necessary incentives and reforms to enable contributors to make even more investments.

Developing a sustainable ecosystem comprising up-to-date infrastructure, relevant content and services, and an environment with the skillsets and opportunities needed to maintain a thriving digital economy is extremely costly. It is a commonplace industry belief that connecting the next billion will not be as easy as it was connecting the last.

Annex A: The Connectivity Funding Gap

highlights that the median reported funding gap of several studies on connecting the unconnected is approximately \$450 billion (US).⁴ Sharing this funding challenge among the beneficiaries of the digital economies that connectivity enables is a priority, especially as market realities cannot provide the impetus to close the coverage, adoption, and usage gaps in all areas.

In the context of the work and recommendations of the Working Group, broadening the base of contributors means focusing on two parts – first, the contributors, the wide variety of entities that could contribute beyond traditional players and, second, profiling and detailing potential contributions that could be recognized from both new and traditional contributors. Acknowledging who benefits from connectivity and expanding the circle of responsibility to contributors beyond traditional players are essential for progress. Practically, this means looking at contributors such as non-network operators (ie. digital companies),⁵ companies deriving benefits from broadband, reformed Universal Service and Access Funds (USAFs), Multilateral Development Banks (MDBs), Corporate Social Responsibility (CSR) funds from large corporations that recognize the collective beneficial impact of connectivity,

philanthropic donors for specific ICT projects, and even local communities that see a return on investment in their own infrastructure and ecosystem-building projects. More work is required to better define who benefits from the investment into infrastructure and may therefore contribute to ensure its sustainable extension.

Likewise, the types of contributions could be expanded beyond the redistribution of funds gathered through normal fees, levies, and taxes. **Section 5: Investment, Funding and Financing models** provides a variety of ideas for new contributions that impact demand-side support, opex, capex, and risk protection. From allowing for in-kind contributions to tax incentives, spectrum allocation, risk mitigation provisions, asset transfers, human resource sharing to using capital markets and community financing, expanding the potential options for stakeholder contributions is a critical element that opens new pathways toward reaching connectivity targets.

4 Annex A – Figures A.3 and A.5 highlight the range of estimates and provide more detailed comparison of the reports

5 ITU. Broadband Commission. October 2019. *Connecting Africa through Broadband: A Strategy for doubling connectivity by 2021 and reaching universal service access by 2030*. Accessed at: https://broadbandcommission.org/Documents/working-groups/DigitalMoonshotforAfrica_Report.pdf

Section 5 Figures 7 & 9 Combined to show variety of contributors

| Model name | Contributors |
|---------------------------------------|---|
| Traditional Models and Contributors | |
| A - Capex model | <ul style="list-style-type: none"> Traditional contributors are network operators, tower companies and infrastructure companies This model can be innovative when non-traditional contributors finance a project. The actors can be infrastructure funds, financial institutions,⁶ and companies that derive economic benefit from infrastructure investment including digital companies and companies from outside the ICT sector⁷ |
| B - Vendor financing models | <ul style="list-style-type: none"> Network operators Network equipment vendors |
| C - Project financing model | <ul style="list-style-type: none"> Traditional contributors are network operators, tower companies, infrastructure companies, commercial banks, development banks, infrastructure funds or other financial institutions This model can be used in an innovative manner, through securitization of equity and debt to allow the participation of a larger selection of institutional and retail investors through global financial markets (including pension and mutual funds) |
| D - PPP model | <ul style="list-style-type: none"> Same as model C above with the addition of: Government contributing from its expenditure budget funded through traditional tax streams of governments along with sector-specific taxes that are redirected back to the sector |
| E - Reformed USAF | <ul style="list-style-type: none"> Traditional contributors are the network operators, through levies applied on their services' prices Innovative contributors can include a broader base of voluntary contributors, as described in Section 3 |
| F - Demand subsidization model | <ul style="list-style-type: none"> Traditional contributor is the government, from its expenditure budget (see model D of this table) Innovative contribution could be a country's reformed USAF, which will in turn fund itself with the possible ways described in Section 3 |
| G - Infrastructure sharing | <ul style="list-style-type: none"> Contributors are network operators, or whoever owns network assets including electricity utilities, railroads, roadways, and others Contributions are not intended as financial contributions, but rather in-kind contributions of existing or new network assets |

6 Infrastructure funds and other financial institutions are listed under innovative use of this model because they do not usually finance an infrastructure project entirely, without any equity of a strategic partner (e.g. network operator)

7 See note 5. As mentioned in the "Digital Moonshot for Africa" Broadband Commission report

| Model name | Contributors |
|---|---|
| Innovative Models and Contributors | |
| 1 - Loss guarantee scheme | <ul style="list-style-type: none"> • Network operators, or whoever owns a network • Equity investors, as described in the previous table • Creditors, such as commercial and development banks • Government, in the role of guarantor for certain risks • International insurers or banks, also in the role of guarantor for certain risks |
| 2 - Blended financing model | <ul style="list-style-type: none"> • Network operators, or whoever owns a network • Equity investors, as described in the previous table • Creditors, such as commercial and development banks • Impact investors • Foundations, companies' CSR funds and other philanthropic organizations • Government contributing from its expenditure budget. Expenditure budget can be augmented with sector-specific taxes that are redirected back to the sector • Companies participating in and benefitting from the digital economy, including digital companies |
| 3 - Community collaboration deployment model | <ul style="list-style-type: none"> • Community may provide capex for the network, in-kind contributions such as land plots and rooftops and ducts, opex contributions such as labour, etc. • Network operators, providing backhaul connectivity for the community network and, potentially, a part of the network capex |
| 4 - Government anchor tenant model | <ul style="list-style-type: none"> • Network operators, or whoever owns a network • Government, purchasing services it needs |
| 5 - Dual deployment model | <ul style="list-style-type: none"> • Network operators, or whoever owns a network • Provider of the second product bundled with connectivity; This provider can be a utility company, or other relevant companies |
| 6 - Demand aggregation model | <ul style="list-style-type: none"> • Network operators, or whoever owns network assets • Demand aggregation could be done by the demand provider, public entities, or international organizations |

Strategic Recommendation 2: Earmarking Proceeds from ICT Sector Participants

The Working Group recommends that Governments ensure that a portion of the ICT sector's existing contributions to governments is earmarked to be spent on initiatives supporting the Broadband Commission's connectivity and adoption goals. Such initiatives should include both projects to improve or expand broadband service availability and to enhance the demand adoption for broadband services in areas where coverage already exists, but penetration is low. The report provides a non-exhaustive list of existing contributions that will give Governments a menu of pragmatic options from which Governments can draw insights for implementation. The existing contributions encompass any current form of mandatory contributions, fees, regulatory levies or digital taxes. Notably, while the report is advocating increased contributions by broadening the base and applying existing contribution models to the broader stakeholder base, the report is not promoting the creation of new forms of digital taxation.⁸ Broadening the base as discussed above [in recommendation 1] is needed to ensure that, overall, contributions are predictable, sustainable, and sufficient to cover the costs of achieving the connectivity and adoption goals. To further assist readers, the report includes case studies on how this premise applies to selected markets.

Not all the contributions that are already collected from operators and other contributors are dedicated to government support for developing sustainable broadband infrastructure and digital ecosystems. Tax leakage and government priorities can cut into the budgets needed to meet targets. There is a growing need to focus on adoption and usage projects within communities to make real progress. Government earmarking of sector-specific contributions – the tax revenues AND alternative contribution types provided in this report – to support the connectivity goals could also help reduce the broadband connectivity gap by allowing project development that addresses issues

that focus on the demand side of the equation.

Earmarking proceeds from the ICT sector so that they can be dedicated to the projects that will create *meaningful* connectivity is vital to engaging the remaining un- and under-connected of the global population.⁹ Indeed, the general proclivity to think about connectivity solely as a technological issue means that taxes and funding are generally targeted toward new infrastructure. In fact, more than 90% of the global population lives at least within mobile coverage range,¹⁰ and the real concern for connecting the rest of the population is about addressing the demand side of the

8 Subject to sovereign country's rights and to the OECD Inclusive Framework members. See OECD statement on 1 July 2021. Accessed at: <https://www.oecd.org/newsroom/130-countries-and-jurisdictions-join-bold-new-framework-for-international-tax-reform.htm>

9 See Figure 1.1 of the report

10 GSMA. September 2020. *The State of Mobile Internet Connectivity 2020*. Accessed at: <https://www.gsma.com/r/wp-content/uploads/2020/09/GSMA-State-of-Mobile-Internet-Connectivity-Report-2020.pdf>

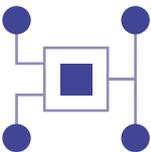
equation, maintaining infrastructure, and overcoming operational hurdles such as having reliable power and keeping equipment safe. **Section 2.1 Key Issues and expectations** provides more detail about the concerns most important to operators and the areas of focus and incentives that would help make projects more attractive to contributors.

Section 3.3 Retaining contributions from ICT players to support sustainable broadband development also highlights international examples of tax-retention mechanisms that are underway.

Annex F: Demand support measures

provides a deeper dive into adoption obstacles (Figure F.1 included here below) and makes the case for wise project investment, since deployment in low-demand areas means incurring higher costs per subscriber. This demand support includes *inter alia*, addressing affordability issues, developing relevant content, expanding access to communities, supporting digital awareness and literacy, and reskilling for new workforce opportunities. Annex F also points out actions such as subsidies for hardware and devices in addition to the cost of broadband subscriptions or services.

Annex Figure F.1

| Adoption obstacle | | Key measures | |
|--|---|--------------|---|
|  Limited affordability | 1 | A | Micro-financing of devices |
| | 1 | B | Reduction in taxes and import duties on devices and usage of services |
| | 1 | C | Reduction or exemption of patent royalties |
| | 1 | D | Demand aggregation for devices |
| | 1 | E | Subsidies reducing the the cost of devices |
| | 1 | F | Facilitation of reuse of discarded devices from developed countries |
|  Limited digital literacy and awareness | 2 | A | Community-based awareness and learning programmes |
| | 2 | B | Use of schools to galvanise awareness |
| | 2 | C | Independent learning enabled through incentives |
|  Lack of relevance and attractiveness (content) | 3 | A | Translation/production of content in local languages |
| | 3 | B | Support for development of internet-based essential services |
| | 3 | C | Support for local start-up ecosystem to develop locally relevant applications |

Strategic Recommendation 3: Reforming Universal Service and Access Funds (USAFs)

The Working Group acknowledges that USFs are an important option of broadband funding in underserved areas, but not the only one. The Working Group recommends that existing USFs, where they have been found to be ineffective, should be reformed to become a more effective financing mechanism to support and expand connectivity to ICT services. The report contains some high-level guidance on proposed reform measures that can address ineffective use and mismanagement and a lack of disbursement of funds and references ITU's upcoming work in this regard. While the proposed reforms encompass several aspects of the management of USFs, the Working Group would like to highlight the need to focus primarily and critically on new, incremental infrastructure deployment rather than upgrades of existing infrastructure. An additional focus is that a portion of USF should also be used to fund demand-supporting initiatives aimed at securing affordable connectivity to many. The Working Group further recommends that reformed USAFs recognise various types of contributions from the broader base identified in recommendation 1.

USAFs were an early solution to national and global connectivity goals. They were meant to support roll-out and complementary projects where profitability and market conditions were unfavorable or where the risk for private investment was unacceptable. Unfortunately, reports show that in many cases, USAFs and their financial control mechanisms have not lived up to aspirations. For example, as referenced in **Section 3.4: Reforming existing USAFs to ensure efficient collection and disbursement of the funds to support broadband development**, the ITU's *Universal Service Funds and Digital Inclusion for All Report* studied 69 USAFs and nearly half had almost no activity.¹¹

Current USAF models fall far short of the proposed broader base of contributors. **Section 3.4** highlights that they rely almost

solely on network operators for funding, and of the funding that is collected from operators, more than 50% is not utilized, while 30% of the USAFs distributed none of the funding collected.¹² The Working Group takes this as a strong indication that the current USAF model of funding collection and distribution has stagnated and requires extensive reform.

Suggesting full reform of these collection and disbursement vehicles is not as radical as it may seem. The report provides examples of newer initiatives, such as Thailand's *Digital Economy and Society Development Fund* that have clear sets of sector objectives and accompanying regulation to ensure the fund's use. Clear governance structure is a must to make USAF type mechanisms fully functional. In addition, USAFs need impartial governance and

11 ITU. September 2013. *Universal Service Fund and Digital Inclusion for All Report*. Accessed at: https://www.itu.int/en/ITU-D/Digital-Inclusion/Documents/USF_final-en.pdf

12 GSMA. 19 Feb 2019. *Rethinking mobile taxation to improve connectivity 2019*. Accessed at: <https://www.gsma.com/publicpolicy/resources/rethinking-mobile-taxation-to-improve-connectivity>; GSMA. April 2013. *Universal Service Fund Study*. Accessed at: https://www.gsma.com/publicpolicy/wp-content/uploads/2016/09/GSMA2013_Report_SurveyOfUniversalServiceFunds.pdf

administrators to disburse funds effectively. Many do not have clear and measurable objectives, but the Working Group feels this should also be part of any reform.

To highlight where USAFs are demonstrating best practices, the report illustrates examples from Pakistan and Nigeria, Colombia, Peru, Morocco, Ghana, Chile, and the Dominican Republic. Pairing nicely with the full description of areas that need reform,

Section 4: Ensuring efficient disbursement

of funds to sustain broadband development

supplies examples of disbursement areas where the funding would go furthest in addressing the adoption and usage connectivity gaps. From highlighting where funding can be placed to detailing innovative and balanced ways to disburse the funds across supply and demand-side initiatives, the report offers new ways to think about funding mechanisms and to rethink how USAFs have fallen short of their initial goals.

Strategic Recommendation 4: Creating an International Fund

The Working Group recommends the creation of an international fund whose objective is to support the sustainable development of broadband. The fund, which the Working Group recommends should be hosted by an existing international or multilateral development bank (MDB) and in coordination with the relevant UN organizations, will serve to act as a financial institution into which investors and non-governmental organisation could make voluntary contributions for the provision of low capital-cost, long-amortisation-period financing, or other forms of risk mitigation instruments for financing to underserved markets. The importance of operating as part of an existing international organisation with expertise in this type of activity cannot be over-emphasised. This approach will enable the maximisation of funds' efficiency and reduce the need for duplicate administrative functions. The fund could also provide technical advice and/or assistance to governments, local entities, and private companies involved in implementing and designing relevant broadband connectivity and adoption projects.

In response to the inconsistent utility of USAFs and the patchwork availability of related funding, the Working Group recommends the creation of a new international fund. In contrast to USAFs, an international fund would, ideally, reside within an existing international organization in collaboration with UN Agencies, and be designed with the previous three strategic recommendations of this report in mind. Such a fund would benefit from an impartial administration that could control the advisory and disbursement

responsibilities. This feature would provide clear prioritization of a balanced approach to developing sustainable connectivity through activities and projects that target infrastructure, demand support, and ecosystem building. The international fund would seek international contributors in line with the broadened base of contributors featured in strategic recommendation 1.

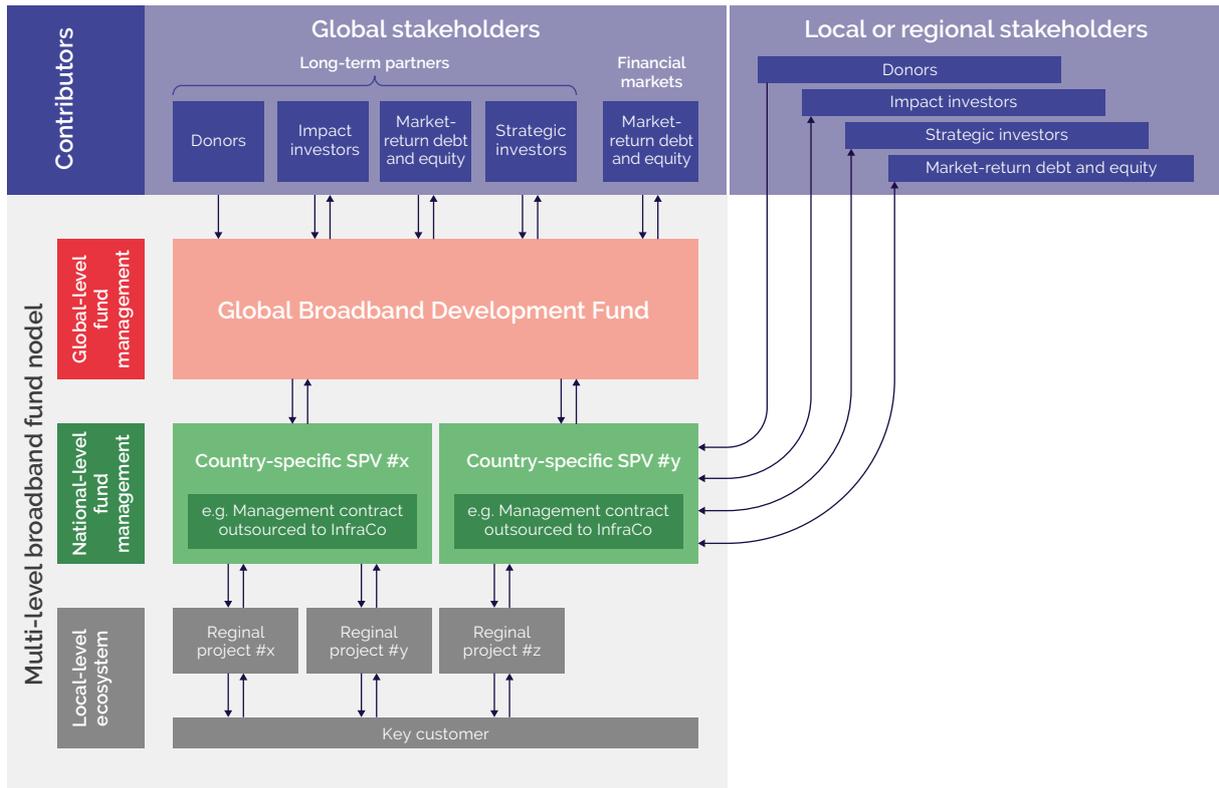
The advantages of international cooperative institutions are that they are excellent vectors

for managing political and procedural realities. Thus, they aid in drawing from and sharing best practices with otherwise disconnected global institutions and governments. **Section 7: Best practice for the design of an optimal contribution model** identifies successful models that the world knows well, such as GAVI, UNITAID, the IFFEd and Power Africa. In addition, disbursement of funding would not need to be limited to the fund itself. Instead, national entities could be linked through the common goal of closing the coverage, adoption, and usage gaps and involved in disbursing funding within their own borders. Again, a critical component of such an innovative approach is how the new

forms of contributors and contributions are employed and integrated into the process. The contribution elements would encompass both financial and operational aspects at both the international and national levels and include the wide variety of innovative contributions discussed above in strategic recommendation 2.

Annex D: Requirements of an internationally managed contribution model (i.e., the international fund) details the potential financial objectives and operational capabilities of the fund as well as the proposed management model (included in Figure D.3 here below) for target projects.

Annex Figure D.3



The use of blended financing schemes, risk reduction mechanisms, balanced priorities, and leveraging the existing national-level contribution models are all options that accompany this recommendation. **Annex H: Assessing project impact** provides the

assessment criteria for measuring the impact of projects, including their financial, social, environmental, economic impact as well as the overall effectiveness of connecting populations. The matrix of measurements also included in the annex is a helpful reflection for

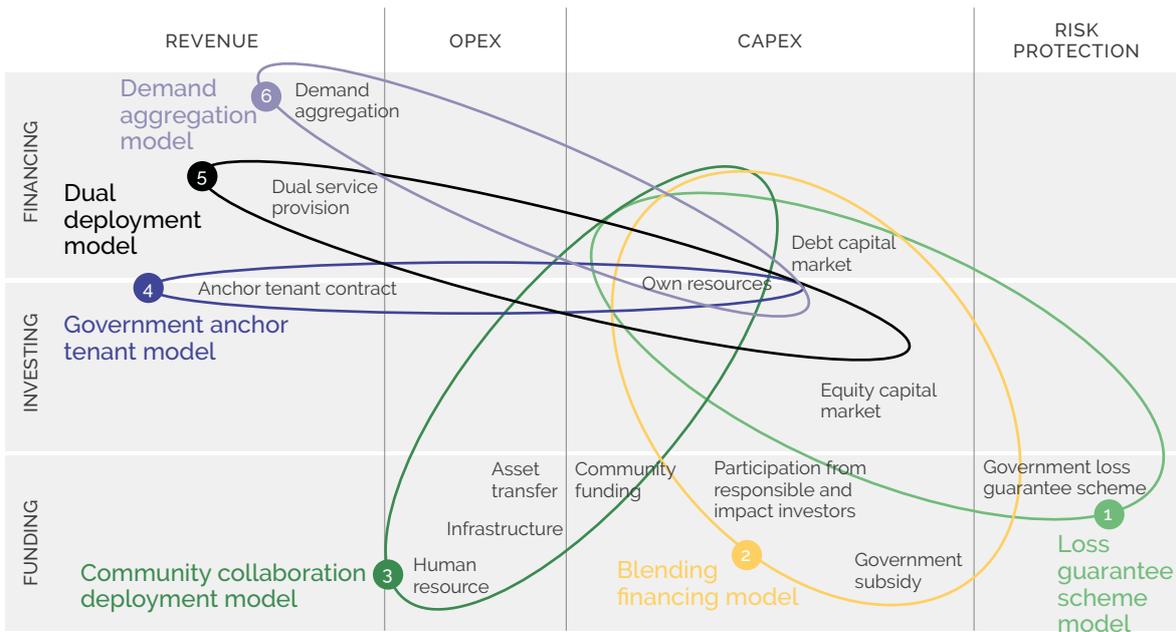
gauging stakeholder interest in projects and the distribution of impact along stakeholder lines. The metrics detailed throughout the annex are a substantial step toward a fundamental methodology to revitalize much-needed connectivity projects and take us closer to achieving consequential outcomes.

Innovative Investment, Funding, and Financing Models

The four strategic recommendations above are only achievable by expanding views around investment, funding, and financing

models. This more inclusive menu may be one of the most critical innovations needed to achieve desired targets. **Annex C: Details of innovative and traditional contribution models** lists more than a dozen models and yet does not exhaust the range of innovative options open to contributors of all sorts. Meanwhile, **Section 5: Investment, Funding and Financing models** supplies an enormously valuable menu of contribution models, including potential combinations of traditional models (Figure 5.9 included here below), along with the broader set of contributors who can realize them.

Section 5 Figure 9, Innovative contribution models



New contribution models involve both traditional and contemporary contributors, which has the doubly beneficial effect of allowing traditional models to be modified and upgraded as well as create entirely new regimes.

Each of the new models listed must be attuned to local conditions. *The Working Group recommends thorough collaboration across public, private, national, and international*

organizations. The most promising combinations involve systemic leadership, management, and problem-solving, thus the link between the international fund described above and national-level entities that have a better understanding of the local landscapes and market conditions.

Ultimately, the goal is to establish a broader range of disbursement methods and a wider range of target initiatives addressing

infrastructure needs, demand support and digital ecosystem creation. **Annex E: Management Models** details how such initiatives can be driven via innovative models that include community management models, public design-build-operate models, concessions and build-operate-transfer models, as well as joint ventures and private management models. These options provide ample opportunity to enable local stakeholders, mitigate risks, encourage co-development, and support skilling across organizations and communities. However, applying these models is only possible when the environment for experimenting with new models is open and ready to take on the challenge.

[Innovating the policy and regulatory environment](#)

Transforming policy into reality with future regulatory approaches is among the most crucial outcomes of innovation for investment, funding and financing models. While it may be straightforward to brainstorm new initiatives, compose novel strategies for collaboration and cooperation, and set out a vision for connecting half of the planet's population, without the support and participation of policy-makers and institutional leaders who

can enact risk mitigation programs, reform licensing processes, address competition concerns, improve permitting procedures and much more, real progress cannot be achieved without sufficient support and authorization at the policy and regulatory levels.

Leaders who see the value in taking new approaches to realizing global targets are essential to successfully uniting global communities and providing opportunities to citizens of every nation. Leadership is key to taking actions that prioritize earmarking funds, addressing project risks and operational hurdles. **Section 6: Ensuring efficiency in the use of contributions through the implementation of an optimal policy and regulatory environment** stresses the important regulatory areas where access to funding can be expanded, procedural complexity can be reduced, and assets, skills and labor can be shared and incentivized for collective benefits. Furthermore, it details the regulatory levers that are most useful for addressing the areas of intervention that are most important for project set-up and delivery (Figure 6.1 provided here below).

Section 6 Figure 1

| | Areas of intervention | Regulatory levers shortlisted and analysed | | |
|---|-----------------------------------|---|---|---|
|  | Infrastructure investment outlook | Increase local financing | | Facilitate foreign direct investment |
|  | Licensing framework | Simplify licensing process, fees and conditions | Optimise spectrum availability and planning | Enable market entry |
|  | Network access regimes | Facilitate competition management | Provide open access | Enable ICT infrastructure mapping and sharing |
|  | Infrastructure deployment | Right of Way and permit procedures | Enable 'dig once' policies | Enable other deployment facilitation measures |

The ITU recommends that each nation develop a detailed roadmap that fits its specific needs, with clear, locally relevant objectives. Avoiding excessive restrictions that hinder the sought-after goals is also a best practice. The report's findings show that local bank support, removal of barriers to investment, competition friendly regulation, encouraging open access, fostering cross-collaboration, and reducing bureaucratic roadblocks are core components that make the levers powerful tools for increasing connectivity.

ANNEX G Details of recommendations for an optimal policy and regulatory environment

describes what these recommendations could look like in practice and covers each of the regulatory levers in Figure 6.1 above. Progressive and determined action taken in these areas would address many of the concerns of potential contributors and the expectations of current stakeholders. Broadening the base provides for more

opportunities for leaders from multiple sectors via an expanded set of initiatives while simultaneously addressing the financial burden placed on operators. Allowing for new types of contributions increases the prospects for in-kind support. Reforming USAF structures unlocks funding flows, and risk mitigation makes projects more attractive to investors. Only the policy-makers can change the regulatory environment. Their leadership is needed to release the capabilities of operators, companies, investors, institutions, and communities.

A Call for Leadership and Action

In the 21st century, technology offers the opportunity to lift people out of poverty, incorporate unconnected groups into the broader global society and provide people with services and avenues of prosperity. The internet has even been recognized by the United Nations as an enabler of human

rights.¹³ Broadband connectivity is the underlying element that facilitates these new forms of value creation. Expanding connectivity requires mutual support, solidarity with global societies, and a commitment from many nations toward increasing collective wellbeing. Each moment that passes without progress is an opportunity lost. Stakeholders must adopt these recommendations as soon as possible to start substantially closing these gaps that hinder access, affordability and equality. If they do, the 2025 Targets will not be out of reach.

In this context, the Working Group on 21st Century Financing Models for Sustainable Broadband Development presents the following report to provide a more detailed look into innovative financing models that could help bridge the coverage, adoption, and usage connectivity gaps.

13 United Nations Human Rights Council, 17th Session, Agenda Item 3. 16 May 2011. Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Frank La Rue"; Accessed at: https://www2.ohchr.org/english/bodies/hrcouncil/docs/17session/A.HRC.17.27_en.pdf



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