Licensing Approaches for Community-Centered Connectivity

November 2025

Executive Summary

Community-centered connectivity (CCC) solutions—locally-owned, operated, and governed communication networks[1]—have become powerful vehicles for delivering meaningful connectivity to underserved communities.

The original Internet Society 2018 paper "Unleashing Community Networks: Innovative Licensing Approaches" laid out key principles and early licensing options. Since then, the global regulatory landscape, evidence base, and policy orientation have matured: regulators in multiple countries have adopted dedicated licensing frameworks for community networks; the concept of "meaningful connectivity" has gained traction; and spectrum policy and financing mechanisms have evolved.

This refreshed paper presents updated regulatory options, model license clauses, guiding principles, and recommendations for regulators and operators.

By adopting low-barrier, proportionate, and inclusive licensing regimes tied to spectrum access and funding eligibility, regulators and governments can accelerate the deployment of community-centered, meaningful connectivity in areas where commercial operators do not reach.

Key Considerations

Persistent Connectivity Gaps

Over the past decades, governments, the private sector, and multilateral institutions have extended connectivity to much of the world. Yet traditional approaches have struggled to reach the hardest-to-connect areas. Globally, some 2.6 billion people do not use the Internet, according to the International Telecommunications Union (ITU). Many are in rural, remote, low-income, or marginalized communities.

[1] What is Community Centered Connectivity and why should we care?, July 2025, https://www.internetsociety.org/blog/2025/07/what-is-community-centered-connectivity-and-why-should-we-care/

Traditional connectivity models often do not work in low-density or low-income regions. In these contexts, returns on investment are low, and deployment costs are high, driving commercial service providers away.

Even when infrastructure exists, affordability, relevance, and trust can still prevent people from going online. These are structural issues. Without innovative solutions, the gap will persist.

As Internet Society-supported efforts around the world show, see examples in Panama[2], Zimbabwe[3], Pakistan[4], or Kyrgyzstan[5], Community-centered networks serve a niche where commercial providers cannot or will not operate due to complex economics, remote locations, low population, or cost constraints.

Licensing and Regulatory Frameworks Remain a Key Barrier

Most traditional licensing frameworks were created for large national telecommunications operators, involving long-term exclusive rights, significant compliance demands, and high fees. Licensing restrictions, burdensome compliance requirements, and elevated spectrum and license fees act as entry barriers for smaller operators.

For CCC actors—often small cooperatives, non-profits, or local trusts—these regimes are mismatched: burdensome obligations, large upfront fees, and high spectrum auction requirements decrease their viability.

While many regulators have implemented reforms specifically for community-centered networks, licensing remains one of the most effective tools for regulators to speed up community network deployment in underserved areas-and help close the digital divide.

Licensing Is a Key Enabler for CCC

Licensing sits at the intersection of regulatory access, spectrum rights, funding eligibility, and legal certainty.

A clear, proportionate license category allows CCC actors to operate legally, access spectrum, connect to backhaul, qualify for subsidies/USF funds, interconnect with other networks, and govern locally.

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[2] The Powers of Volunteers: Connecting and Indigenous Community in Panama, August 2025, https://www.internetsociety.org/blog/2025/08/the-power-of-volunteers-connecting-an-indigenous-community-in-panama/

[3] From Cyber Café to Digital Revolution: The Story of Joseph Bishi and Murambinda's Community Network, February 2025, https://www.internetsociety.org/blog/2025/02/joseph-bishi-and-murambindas-community-network/

[4] Girls in Rural Pakistan are Tackling Inequality using the Internet, November 2024, https://www.internetsociety.org/issues/community-networks/success-stories/tackling-inequality-using-the-internet/

[5] A Village in Kyrgyzstan is Using the Internet to Fight for Their Rights, July 2024, https://www.internetsociety.org/issues/community-networks/success-stories/zardaly-kyrgyzstan/

Without it, networks may not take the first step to operate. Some may do it informally (and risk legal or regulatory uncertainty).

Licensing is more effective when paired with a spectrum and financing policies that allow community actors to access spectrum and funding. Shared spectrum frameworks, localized licenses, and license-exempt models have emerged—but only when authorization/license regimes support them.

Without proper licensing regimes, CCC initiatives might be excluded from Universal Service Fund (USF) grants, subsidies, or regulatory relief. Licensing provides a pathway to funding, sustainable business models, community governance, and inclusion metrics such as affordability, local content, and gender equity. Therefore, licensing frameworks should explicitly include conditions for funding eligibility and inclusion outcomes.

Monitoring Meaningful Connectivity

Today's policy discussion emphasizes not just coverage but meaningful connectivity, including speed, affordability, skills, local content, and governance. Licensing regimes should include these outcome-focused obligations or metrics, rather than focusing solely on technical or market requirements.

Recommendations

For policymakers/regulators adopting or updating licensing for CCC, we recommend:

Recommendation 1: Create a Dedicated Community-Centered Connectivity License/Authorization

Regulators should establish a specific licensing category designed for community-centered connectivity actors, recognizing their unique social and developmental role in expanding Internet access. This license should include exemptions or significant reductions in application and annual fees, as well as in bond or guarantee requirements, to lower barriers to entry.

Compliance and reporting obligations should be streamlined and proportionate to the scale and capacity of community operators, and the application process should be swift, efficient, and transparent to encourage participation.

Furthermore, eligibility under this license should be linked to access to public funding mechanisms—such as Universal Service Fund grants, targeted subsidies, or tax and customs relief measures—to ensure that community initiatives can sustainably build and operate local connectivity infrastructure.

Recommendation 2: Link the Authorization/License to Flexible Spectrum Access

Regulators should develop a shared-spectrum or local-licensing regime that enables community actors to obtain affordable and practical access to spectrum on a non-exclusive, low-power, and localized basis.

The license conditions should clearly specify the applicable spectrum rights, including the relevant frequency bands, power limits, and coordination procedures, to ensure clarity and predictability.

Within the authorized area, sub-licensing should be permitted to allow community networks to extend access to additional local users and service providers, thereby maximizing the efficient and inclusive use of available spectrum resources.

Recommendation 3: Embed Inclusion, Affordability, and Sustainability Conditions

Licensing frameworks should incorporate explicit provisions that promote inclusion, affordability, and long-term sustainability.

Licenses should enable, or where appropriate require, open-access or wholesale obligations and cooperative business models that encourage shared use of infrastructure and equitable participation.

Outcome-based metrics—such as affordability thresholds, gender inclusion targets, service uptime, and community governance indicators—should form part of the license renewal or review criteria to ensure continuous performance improvement.

Community licensees should be exempt from contributing to Universal Service Funds or should be granted access to specific USF funding streams aligned with their social objectives.

Regulators should also maintain a publicly accessible database detailing license conditions, fees, reductions, and related regulatory outcomes to ensure transparency and support replication of effective models.

Recommendation 4: Monitor, Review, and Adapt the Licensing Regime Periodically

Regulators should create a structured process for regularly reviewing the licensing system to make sure it stays relevant and effective. This should include an annual check of key factors like application and renewal fees, reporting rules, and the basic technological or market assumptions. The licensing system should stay flexible and ready to adapt to new technologies—such as low-Earth orbit satellite systems, TV white spaces, and dynamic spectrum-sharing models—that could change how community-focused connectivity is built and managed.

Key Challenges

1. **Regulatory inertia and legacy frameworks**: Many regulators continue to apply large-scale operator licensing models (exclusive spectrum auctions, long-term national licenses, heavy reporting burdens). These do not suit community-centered connectivity models.

2. **Coordination across policy domains**: Licensing intersects spectrum, telecoms, broadcasting, universal service funds, local government permitting (rights of way), and even tax/customs policy. Misalignment can restrict CCC deployment.

3. **Sustainability of community actors**: Even when licensing is light-touch, community networks may struggle with backhaul cost, power, local expertise, supply chain, and governance. A license alone does not solve these operational issues.

4. **Spectrum management and interference**: Low-power/shared spectrum licenses require coordination mechanisms, monitoring, and enforcement.

5. **Monitoring and enforcement**: Embedding meaningful connectivity outcomes into license terms is straightforward; enforcing them (and supporting operators to meet them) is harder.

6. **Financial exclusion**: Without explicit linkage, community-centered connectivity initiatives may not qualify for USF/subsidies, or may face tax/customs burdens on equipment. Licensing must integrate with funding pathways.

7. **Scaling and replication**: Scaling CCC models across many localities requires consistent licensing frameworks, but many countries have unpredictable frameworks.

Guiding Principles

These are guiding principles for designing licensing regimes for community-centered connectivity:

1. **Proportionality**: License obligations (fees, bonds, reporting) should be scaled to the size, scope, and risk profile of the community network actor.
2. **Simplicity & certainty**: Application, review, approval, and renewal processes should be clearly defined, swift (e.g., 30-45 days), and accessible to community organizations.
3. **Recognition of local actors**: Eligible licenses should explicitly accommodate community-based organizations, cooperatives, social enterprises, non-profits, municipalities, and indigenous groups.
4. **Spectrum-access alignment:** Licensing framework must link to affordable, accessible spectrum rights (shared, localized, low-power) appropriate for CCC.
5. **Affordability & inclusion**: License terms should embed or enable measures (fee exemptions, USF/fund eligibility, open access obligations, local governance) that support affordability, gender inclusion, local content, and meaningful use.
6. **Transparency & replicability**: License templates, fees, and reporting requirements should be published publicly; best practice examples and toolkits should be available to regulators and community connectivity operators.
7. **Sustainability orientation**: Licensing should be a stepping stone to long-term sustainability: linking to business models, open access, local capacity building, and renewal processes tied to performance/outcomes.
8. **Non-discrimination & openness**: Community-centered connectivity actors should not be subject to burdens when serving underserved zones; regulatory frameworks should foster cooperation between commercial and community actors.
9. **Continuous evolution**: Licensing frameworks should be reviewed periodically to adapt to new technologies (e.g., dynamic spectrum access, satellite backhaul), market models, and community needs.

Annex-A

Case Studies

Many countries require operators to register their business and subsequently apply for a license to provide service. Operators often must also get permits and other authorizations before constructing their network.

These often require operators to file applications (and pay application fees) with multiple agencies. The applications are often difficult for the layperson to complete. Furthermore, application requirements, though well-intentioned, may inadvertently disqualify community networks. For example, some jurisdictions require applicants to satisfy a minimum net worth requirement to demonstrate their ability to deploy the network. India, in some instances, has required applicants to demonstrate a net worth of at least Rs 100 crore ($11.3 million) to participate in spectrum auctions. Others require collateral, which many community-based networks are not able to supply as they start up.

Once completed, processing times can take months or even years—time these communities remain without service. Compliance requirements, including onerous reporting obligations, can further hinder community network initiatives. Complying with these requirements may detract from limited time and resources needed to get nascent community-built networks off the ground.

Policymakers can facilitate community access to spectrum through innovative licensing solutions, such as social-purpose licensing, license exemptions, unlicensed or "license-free" use, secondary use, and dynamic spectrum sharing.

In this section, we feature three case studies that show how innovative licensing approaches can enable communities to connect to the Internet and unleash the potential of community-centered networks.

Case Study A: Argentina – Formalizing community-based connectivity

In Argentina, the regulator ENACOM issued resolution 4958[6] (2018) that formally recognized non-profit community networks, created discounted fees and a simplified registration process. This has enabled local, community-centered connectivity actors to operate with regulatory recognition.

Lessons learned: Formal recognition reduces legal uncertainty; discounted fees accelerate uptake; tie-in to underserved zones strengthens alignment with universal access goals.

[6] ENACOM, Resolución 4958/2018, https://www.argentina.gob.ar/normativa/nacional/resoluci%C3%B3n-4958-2018-313590/texto

Case Study B: Kenya – Shared spectrum & light preferential license

In Kenya, the Communications Authority of Kenya (CA Kenya) published in 2021 the "Licensing and Shared Spectrum Framework for Community Networks"[7] which includes a Community Networks Service License with low annual fees (≈ USD 35) and exemption from standard USF contributions. According to CA, there were 13 licensees under the category as of November 2025.

Lessons learned: Low fees attract local actors; explicit spectrum/shared framework supports technical viability; consultation with stakeholders builds legitimacy.

Case Study C: Mexico – Indigenous/local community authorization

In Mexico, regulation under the 2014 Telecommunications & Broadcasting Law[8] enabled indigenous community connectivity initiatives to access spectrum/non-profit licenses (15 years) with minimal cost; and local villages deployed their own networks (e.g., Oaxaca). As a result, Indigenous peoples can put their traditional knowledge, creativity, and entrepreneurship to build their own networks.

Lessons learned: Licensing frameworks attentive to local governance, cultural contexts, and community leadership are more inclusive; granting spectrum sovereignty or community-held rights fosters sustainability.

Summary of Licensing Insights

The three cases—Argentina, Kenya, and Mexico—were selected because they illustrate the diversity of regulatory pathways through which community-centred connectivity can be enabled, each addressing a different structural barrier.

Argentina demonstrates how a national regulator can formally recognize community-based operators and lower administrative and financial thresholds through simplified licensing.

Kenya shows how pairing a light-touch licence with an explicit shared-spectrum framework creates both legal certainty and practical technical conditions for sustainable operation.

Mexico provides a rights-based model that recognizes Indigenous and local communities as legitimate license holders, offering long-term, low-cost spectrum access within culturally grounded governance structures.

[7] Licensing and Shared Spectrum Framework for Community Networks , May 2021, https://ca.go.ke/sites/default/files/2025-01/Licensing%20and%20Shared%20Spectrum%20Framework%20for%20Community%20Networks%20May-2021.pdf

[8] Telecommunications & Broadcasting Law, 2014, https://www.ift.org.mx/sites/default/files/contenidogeneral/asuntos-internacionales/federaltelecommunicationsandbroadcastinglawmexico.pdf

Collectively, these cases represent three distinct but complementary approaches—administrative simplification, spectrum policy innovation, and governance-driven inclusion—that provide regulators with adaptable templates for enabling community-centred connectivity.

Additional Resources

- APC – "Community-centred connectivity: A new paradigm" (Oct 2024): https://www.apc.org/en/blog/community-centred-connectivity-new-paradigm
- APC – *Community Network Regulation Around the World* (2023) — mapping of national regulatory frameworks, including licensing models: https://www.apc.org/en/pubs/community-network-regulation-around-world
- Internet Society – *Spectrum Policy: An Internet Society Public Policy Brief* (2025) — guidance on spectrum access aligned with CCC,: https://www.internetsociety.org/resources/policybriefs/doc/2025/spectrum-policy/
- A4AI – Affordability Reports & Good Practice Database — includes national licensing good practices and funding eligibility for connectivity: https://a4ai.org/policy-advocacy/good-practices-database/
- OECD – *Closing Broadband Connectivity Divides for All* (2025) — policy review emphasizing meaningful connectivity and regulatory essentials: https://www.oecd.org/en/publications/closing-broadband-connectivity-divides-for-all_d5ea99b2-en/full-report.html