The Role of Public Internet Connectivity in Advancing Universal Access to the Internet

Approved by the IEEE Board of Directors on 18 November 2018

Revised and renewed by the IEEE Board of Directors on 21 November 2021 as an Addendum to the IEEE Position Statement entitled ***"Universal Access to the Internet"***

Revised and renewed by the IEEE Board of Directors on 19 January 2026

IEEE endorses the goal of universal access to the internet and supports national initiatives and international collaborations designed to expand access to the billions of people in both developed and developing countries around the world who do not have access to the internet.[1]

Public internet connectivity can be an important element in helping to expand internet access and enabling individuals and communities to reap the benefits of the internet. IEEE recognizes the impact public internet connectivity can have on addressing current universal internet access challenges.

Public internet connectivity can take the form of free wireless connectivity in public squares, parks, town halls, libraries, transportation stations, and individual businesses. This option for wireless connectivity can be funded by governments, public-private partnerships, or businesses.[2]

Public internet connectivity can also be provided through telecenters. Telecenters can be separate spaces or part of public institutions, such as libraries. Also called Public Access Centers (PACs), Community Access Program sites (CAPs), and multi- purpose centers, telecenters are places where community members can use networked computers and other information and communication technologies (ICTs) for free. Their financing can come from governments, development agencies, or non-governmental organizations (NGOs).[3]

As satellite-based internet capabilities and services access advance, current constrained satellite-based public internet services (primarily limited to emergency communications and basic messaging) are evolving toward comprehensive satellite-based public internet connectivity. This evolution includes both direct satellite-to-mobile device connectivity and hybrid network that integrate satellite infrastructure with terrestrial base stations, creating significant opportunities to connect underserved populations worldwide.[4]

Public internet connectivity providers may need training and other resources for the implementation of technical and procedural safeguards so that public internet connectivity can be used lawfully, ethically, safely, and with respect for community norms.

- **Public internet connectivity can offer economic benefits to individuals and their communities.** Public internet connectivity can be essential for people who have no other means of being part of the information society, including the use of employment and business-related resources, government information and services, email, e-learning, and social media. Public internet connectivity is also important for communities, helping businesses to connect with local customers and visitors, to provide up-to-date information on local events, transportation, and other amenities, and to disseminate information and organize activities in emergencies.

- **Public internet connectivity provided through telecenters offers an opportunity to increase basic digital literacy.** Some telecenters, including those hosted by libraries and other public institutions, offer free training in the use of the internet, computers and peripherals, e-readers, various software applications, and supportive technologies for users with disabilities.

- **Public internet connectivity through telecenters can help individuals develop a variety of skills useful in the digital economy.** Depending on the community, telecenters can provide training ranging from the basics of finding information online and safe and ethical use of the internet, to learning about specialized software and equipment. Some telecenters provide free access to hardware and software that people may not be able to afford individually, such as specialized photo editing software or 3D printing. Telecenters can also provide training and experience in maintaining software, hardware, and networks, and in providing user support.

- **Public internet connectivity points can serve as anchor points for community networks.** Community networks[5] can provide internet access in areas where commercial internet service is not available, offer alternatives to commercial internet service, encourage the creation and distribution of local content, and offer other benefits.

- **Public internet connectivity offers benefits even to those who have private internet access.** Many individuals continue to use public internet connectivity even though they have private internet access, including access via mobile phone. Some users with private access use public internet connectivity for resource-intensive tasks so as not to use their limited data plans. Some use desktop computers in telecenters for tasks that are not easily performed on mobile devices. In some communities, telecenters serve as gathering places where community members obtain needed training, share knowledge and experience, meet new people, and increase their social connections by helping each other use the internet and ICTs.

IEEE supports public internet connectivity because it can provide a variety of benefits to individuals and their communities and plays an important role in providing universal access to the internet.

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[1] According to Internet World Stats, in April 2025 there were 5.56 billion active internet users worldwide (accessed 29 September 2025). See https://www.statista.com/topics/1145/internet-usage-worldwide/ According to the International Telecommunications Union *Measuring Digital Development: Facts and Figures 2024* report, globally, about 83 per cent of households in urban areas had access to the internet at home in 2024, while less than half (48 per cent) had access in rural areas. The urban-rural gap was small in high-income countries (a ratio of 1.1) but large in low-income countries where the level of internet use in rural areas is barely a third of that for urban dwellers. See https://www.itu.int/itu-d/reports/statistics/2024/11/10/ff24-internet-use-in-urban-and-rural-areas/

[2] See, for example, WiFi4EU Initiative at http://europa.eu/rapid/press-release_MEMO-17-1536_en.htm; and LinkNYC at https://www.link.nyc.

[3] See discussion in Uys, C., Pather, S. (2016), "Government Public Access Centres (PACs): a beacon of hope for marginalised communities," The Journal of Community Informatics, 12(1), 21-52.

[4] V. Chamola, M. Shall Peelam, M. Guizani and D. Niyato, "Future of Connectivity: A Comprehensive Review of Innovations and Challenges in 7G Smart Networks," in *IEEE Open Journal of the Communications Society*, vol. 6, pp. 3555-3613, 2025, doi: https://doi.org/10.1109/OJCOMS.2025.3560035; Y. Shaengchart and T. Kraiwanit, "Starlink satellite project impact on the Internet provider service in emerging economies," in *Research in Globalization,* vol. 6, 2023, https://www.sciencedirect.com/science/article/pii/S2590051X23000229; Ari Bertenthal, "Maine to Hand Out Free Starlink Terminals to Unserved", Broadband Breakfast, 17 October 2024, https://broadbandbreakfast.com/maine-in-an-apparent-first-to-offer-starlink-to-9-000-unserved-locations/.

5 "Community networks are IP-based computer networks that are operated by a community as a common good." (Christian Fuchs, "Sustainability and Community Networks", *Telematics and Informatics* 34 (2): 628-639, 2017, available at https://www.sciencedirect.com/science/article/pii/S0736585316303203).