UPU Think Tank Brief

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The role of the postal sector in sustainable digital infrastructure deployment

I. Introduction

According to recent UPU estimates,[1] there are more than 650,000 post offices worldwide, most of which are located in rural and isolated areas, enabling social, financial and digital inclusion for individuals and businesses, particularly micro, small and medium enterprises.

This postal network is made available by postal operators designated by their governments to fulfil a universal postal service obligation. This critical national infrastructure **offers a unique physical and logistical network** to facilitate the **deployment of sustainable digital infrastructure** and provide an **all-important point of human contact** in underserved and remote communities.

Unfortunately, communities that lack connectivity also **suffer from a lack of digitalized postal services**, which further hampers their socio-economic development.

This policy brief proposes a set of concrete areas of collaboration to enhance current strategies and foster cooperation though different frameworks, in order to accelerate the full realization of opportunities for an inclusive and sustainable digital economy.

This, according to our analysis, can be achieved by utilizing national postal infrastructure, under the oversight of the relevant regulatory authorities.

II. Context and importance of the issue

According to the International Telecommunication Union, an estimated 2.7 billion people – or one third of the world's population – do not yet have Internet access and are therefore excluded from the benefits of digital services.[2] Four percent of the global population is not covered by mobile broadband networks, and 41% has coverage but does not use the Internet on mobile devices.[3]

Bridging this digital divide, potentially by leveraging the capabilities of mobile broadband networks, is of paramount importance in order to achieve the UN Sustainable Development Goals (SDGs). Digitalization is expected to be an essential requirement in six major transformations needed to attain the SDGs by 2030, namely i) improved human capital (SDG 4), ii) responsible consumption and production (SDG 12), iii) a decarbonized energy system (SDG 7), iv) healthy, affordable food and clean water (SDG 2 and 6), v) sustainable cities and communities (SDG 11), and vi) digital government (SDG 16).[4] However, there are significant challenges, not only in the **deployment of digital infrastructure** but also in the **adoption of digital services**.

According to the latest findings, some of the **main barriers to the deployment** of cutting-edge digital infrastructure are:

- the need for widespread infrastructure, including dense distribution of radio access antennas, fibre optic backhaul capability and edge computing capacity;
- lack of reliable data to inform deployment decisions;
- complex and non-harmonized right-of-way acquisition processes.

The **main barriers to adoption** are lack of demand, affordability and lack of digital skills. These two obstacles to bridging the digital divide, i.e. deployment and adoption, can both be effectively addressed by leveraging existing postal networks in most countries.

[1] www.upu.int/en/Universal-Postal-Union/Activities/Research-Publications/Postal-Statistics
[2] Measuring digital development: facts and figures 2022, ITU www.itu.int/itu-d/reports/statistics/facts-figures-2022/
[3] The Mobile Economy 2023, GSMA www.gsma.com/mobileeconomy/wp-content/uploads/2023/03/270223-The-Mobile-Economy-2023.pdf
[4] The new technology frontier for developing economies, KPMG assets.kpmg.com/content/dam/kpmg/xx/pdf/2022/02/new-technology-frontier-for-developing-economies.pdf

A postal response to sustainably overcome the digital divide

A. Tackling digital infrastructure deployment barriers

i Co-location of passive and active infrastructure in urban centres and remote and rural locations

The capillarity of the postal network, in most countries around the world, can contribute to digital infrastructure deployment. Posts can facilitate the administrative procedures for telecom operators to deploy infrastructure, especially in the co-location of antennas for small cells in densely populated areas, and vertical structures mainly in suburban and rural areas. Existing postal contact points and fixed post offices can be used to deploy fibre connection points, servers and edge computing equipment.

These are not new ideas and, indeed, they are already in play for some digital service providers. For example, the United States Postal Service (USPS) leases out space for communications infrastructure at 62 of its facilities.[5]

ii Infrastructure sharing to reduce carbon footprint

Co-location can facilitate the implementation of shared renewable energy sources, contributing to the sustainability agendas and security efforts of both the postal and telecom sectors through the sharing of costs.

iii Quality of service monitoring

Accurate and current data on service quality is essential for informing policy decisions and implementation. In many countries, Posts actively collect data on wireless broadband services and contribute to setting up geographic information systems to map national infrastructure, in order to identify black, white and grey areas. This can inform deployment efforts, enabling data-driven decision making.

For example, Australia Post uses postal trucks to find rural mobile coverage blackspots, to provide data to inform the selection of locations for upgraded regional telecommunications. Similarly, in Austria, Österreichische Post has deployed a mobile network coverage tool using data from its vehicle fleet.

iv Ready-made logistics for continuity of service

The postal network can contribute to the resilience and speed of disaster response and recovery efforts by leveraging its logistics network and coordination capacity.
This capability can augment national resilience in the event of natural disasters to ensure seamless connectivity, and can also serve to ensure that digital service providers offer uninterrupted service in normal circumstances.

B. Tackling digital service adoption barriers

i Demand-side interventions

The adoption of digital services is not only the ultimate objective of digital infrastructure deployment; it is also critical for the economic viability of the infrastructure itself. To enhance market conditions for investment, regulators and governments can leverage the postal network to implement demand-side interventions by:

- fostering access to domestic and international e-commerce for individuals and local businesses;
- strengthening the economic development of unconnected communities;
- utilizing Posts as demand aggregators to increase certainty for investors and operators.[6]

ii Supply-side interventions

To accelerate the deployment of secure digital services, regulators and governments can leverage the postal network and its capillarity to promote the development of trusted digital services at national level, for accessibility in all communities.

Posts can play the role of a trusted digital third party to contribute to the marketing and promotion of registration for and use of the digital services necessary for the development of the digital economy.

[5] Next Generation Connectivity: Postal Service Roles in 5G and Broadband Deployment, USPS www.uspsoig.gov/sites/default/files/document-library-files/2020/RISC-WP-20-007.pdf

[6] Bridging connectivity divides: Going Digital Toolkit Note No. 16, OECD goingdigital.oecd.org/data/notes/No_16_ToolkitNote_ConnectivityDivides.pdf

This role could comprise:

- making digital identity more accessible in urban and underserved communities by facilitating creation, verification and distribution processes through services such as validating a person's physical address location;
- rigorous identification of electronic certificate applicants, in particular through face-to-face or video verification of an identity document, meeting certain technical requirements.

III. Recommendations

Building upon examples gathered across our membership and based on conversations with our stakeholders, we believe that the postal sector could benefit from:

A. Collaborative frameworks capable of addressing the broad impacts of the digital economy across sectors

Cross-sector collaboration could advance sustainable and inclusive digital infrastructure deployment and digital service adoption by:

- Expediting and streamlining rights-of-way procedures at postal facilities for towers and antennas;
- Granting postal operators the status of registration authority for digital services, to foster greater inclusion and accessibility opportunities;
- Employing telecommunications' universal service funds[7] to support designated postal operators, in collaboration with telecommunications operators, in financing deployments, particularly in rural, unserved and underserved areas and for populations in vulnerable situations, in line with national digital transformation strategies;
- Promoting and using the postal network (postal facilities and post offices) as one-stop-shops for government services, provided with sufficient telecommunications capacity.

B. Enhanced partnerships between the postal and telecom sectors

Both sectors should strengthen their collaboration, leveraging the strengths and tacit advantages of their respective networks. Such synergy would unlock efficiencies and enhance the resilience and development not only of their networks but also of the communities that they serve.

[7] Universal service funds (USFs) are a funding mechanism managed by telecommunication administrations and national regulatory authorities, designed as an incentive to encourage telecom operators to assist them in achieving their universal service goals. USFs are typically funded via a form of contribution mechanism from telecommunication service providers/operators.