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within the Dynamic Coalition on Public Access in Libraries

The Role of Libraries in National Broadband Plans and Policies



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● EXECUTIVE SUMMARY

Libraries are leading promoters and providers of free and equitable access to all types of information, to support education, learning, research, wellbeing and sustainable development. As part of this professional commitment, libraries and skilled librarians can and do bring more people online, and support digital literacy skills learning to enable them to make full use of (and benefit from) access to the internet and ICTs.

With over 2.6 million libraries worldwide, the potential of this vast network to support digital inclusion can be fully realised by incorporating libraries into national broadband policies, from the planning to the delivery stage. As such, they help deliver on the potential of public access solutions in general to support universal meaningful connectivity, as highlighted, among others, in the Broadband Commission's 2019 policy recommendations.¹

This report explores the ways libraries have been engaged with such broadband plans to date, in policy and in practice:

- **'Libraries in National Broadband Policies'**, written in 2019, analyses references to libraries in national broadband plans and policies from 32 countries. It highlights the various roles libraries have been assigned in the broadband ecosystem, supporting both supply and demand sides of connectivity, as well as policy measures and support mechanisms designed to help libraries take on these tasks.
- **'Implementing Broadband Policies: Case Studies on Public Access in Libraries'**, written in 2020, focuses on the experiences of public libraries with policy interventions that leverage shared access to the internet and ICTs through library facilities, to help bridge digital divides. Through five country-level case studies - from Colombia, Kenya, Lithuania, Romania, and the Philippines - the report identifies lessons learned and insights from implementing such measures.

'Libraries in National Broadband Policies': key findings

- **Many national broadband policies seek to engage libraries as providers of public access to the internet, ICT, digital skills learning opportunities and related services, especially for underserved users.** This includes leveraging library connectivity to broaden access to e-government services and e-commerce, support educational institutions and e-learning, and make more local content available online – including through digitisation of heritage materials.
- **To help libraries effectively fulfill these roles, national policies outline a number of possible interventions – such as improvements to library connectivity infrastructure and ICT equipment, helping libraries bear internet connectivity and related costs, and staff training.** The policies differ in their scope and specificity, focusing on different (types of) libraries, and leverage different implementation mechanisms.

¹ 'The State of Broadband 2019' Report Highlights (2019). The Broadband Commission - <https://www.broadbandcommission.org/Documents/SOBB-REPORT%20HIGHLIGHTS-v3.pdf>

- **Interventions to set up or expand public access in libraries can be implemented through dedicated government-led projects**, with the help of Universal Service Funds, through public-private partnerships, and other measures.

‘Implementing Broadband Policies: Case Studies on Public Access in Libraries’: key findings

- **Policy measures to set up or expand public access in libraries do support meaningful access and digital inclusion.** The case studies point to examples of public access facilities in public libraries being particularly useful for older people or those with lower incomes, students, residents of rural or remote areas – user groups who are more likely to be offline. Libraries offered various forms of digital skills training and support to help ensure that users could get the most of connectivity. Measures to build or expand public access infrastructure in libraries therefore address not only connectivity access and affordability issues, but also lack of skills of the population.
- **Connecting public libraries makes it possible for them to introduce more ICT-based services and initiatives that help meet local needs.** Public libraries were able to use their connectivity infrastructure to offer a variety of services – encouraging people to get involved in local content creation, offering learning opportunities and support to job-seekers, access to health information, commercial and public e-services, or in some cases to more specialised ICT equipment, such as 3D printers or robotics kits. Libraries also worked together with various partners to launch more projects and interventions on the basis of library ICT infrastructure – e.g. to support literacy, education, and other community needs.
- **Libraries’ experiences across the five case studies offer insights into what good practices during policy implementation can help maximise impacts of public access interventions.** These include, for example, governments and their agencies carrying out initial stocktaking exercises to map available infrastructure and connectivity needs, systematic collection of impact data, ICT skills-training for librarians, and more.

BACKGROUND AND USE OF THE REPORT

At the Internet Governance Forum (IGF) in 2012, [Electronic Information for Libraries](#) (EIFL) and the [International Federation of Library Associations and Institutions](#) (IFLA) created the Dynamic Coalition on Public Access in Libraries (DC-PAL), with the aim to open discussions among the internet governance community about public access to the internet and the role and potential of libraries. EIFL and IFLA’s engagement is based on the evidence that public access to computers and the internet in libraries contributes not only to expanding connectivity, but also supports national agendas for development.

This report was prepared within the framework of DC-PAL. It is intended to offer evidence and insights around these topics for policy makers and government officials involved in development, revision and evaluation of national broadband policies. It can also help libraries and library associations in their work to advocate for the inclusion of libraries in broadband plans and policies. Other stakeholders, such as researchers and students interested in internet governance issues, as well as library and information science, may also find this study relevant.

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If you find this study useful or want to contribute, please feel free to contact us and share your feedback at plip@eifl.net or valensiya.dresvyannikova@ifla.org. You are also welcome to join the DC-PAL mailing list: <http://lists.apc.org/mailman/listinfo/pal-dc>

● LIBRARIES IN NATIONAL BROADBAND POLICIES

1. INTRODUCTION

The often-cited milestone of having more than half of the world population online has passed,² yet stark differences in connectivity rates between different world regions remain,³ and the rate at which more people come online has slowed in the recent years.⁴ Connecting the next billions is an urgent task, but the world may be decades away from universal and affordable internet access.⁵ One of the solutions for bringing more people online is public access to the internet – shared connections available in public or community organisations,⁶ low-cost or free of charge.

The importance of public access today has been recognized internationally – for example, the UNESCO Internet Universality Indicators suggest measuring the number of available public access facilities in proportion to how many people lack individual access. Another suggested indicator is whether public access is included in a universal access strategy in a given country.⁷ Similarly, in 2019 the Broadband Commission for Sustainable Development has recommended that public access programmes be included in universal access initiatives and national broadband plans.⁸ In both cases – and elsewhere – libraries are mentioned as one of the key public access facilities.

Beyond the value of public access per se, these two examples highlight that it is important for public access solutions to be codified in national policy frameworks that set out internet, ICT and broadband strategies. This is what this chapter focuses on.

1.1 The case for public access in libraries

Libraries often offer free or low-cost internet access, something that can be particularly useful for those who cannot afford individual connectivity, or others facing marginalisation or who are otherwise underserved. If they are given the right support from the government, including for hardware and personnel training, libraries are particularly well-positioned to offer, alongside internet access, basic ICT skills training and support for people who are less confident with using the internet or access devices.

² For example, as announced in <https://news.itu.int/itu-statistics-leaving-no-one-offline/>

³ <https://internethealthreport.org/2019/more-than-half-of-the-world-is-online-but/>

⁴ See, for example, <http://webfoundation.org/docs/2018/11/The-Case-For-The-Web-Report.pdf> and <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2019.pdf>

⁵ <https://a4ai.org/affordability-report/report/2019/>

⁶ The impacts of public access in such venues as libraries, cybercafés and telecentres are explored, for example, in the 2013 Global Impact Study by the Technology & Social Change Group, University of Washington Information School; the benefits of public access include digital inclusion and developing ICT skills of users: <https://tascha.uw.edu/publications/connecting-people-for-development>

⁷ https://en.unesco.org/sites/default/files/internet_universality_indicators_print.pdf

⁸ https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.20-2019-PDF-E.pdf

Public access in libraries is not only something for those classed as disconnected; many people only have the possibility to get online via handheld devices⁹, or are subject to strict limits on data consumption. The availability of ICT workstations and high-capacity connectivity in libraries can also help such users make full use of the internet and access a broader range of ICTs. In particular, compared to mobile connectivity alone, public computers in libraries offer a wider range of opportunities to use the internet for educational, creative, productive or entertainment purposes, which can be less effective or more costly through mobile access.¹⁰

There are examples of libraries in different parts of the world fulfilling these roles – public access, ICT skills training, helping users take advantage of digital opportunities – whether in employment, education, health, or other areas.¹¹ As part of an established and existing infrastructure in many countries, libraries can offer a cost-effective way to provide public access.

In light of this potential, libraries feature in broadband plans and policies of many countries. The initiative *Broadbandpolicy.org* provides access to a database of broadband policies, as well as tools to analyse these documents, enabled by artificial intelligence and natural language processing. In 2019, it indicated that broadband policies in at least 38 countries (out of 92 countries included in its database) already included references to “library” or “libraries”.

1.2 Why National Broadband Plans?

As highlighted above, the Broadband Commission has recommended including public access solutions in national broadband plans and universal access initiatives. The importance of national broadband plans and policies to achieving connectivity and digital inclusion goals was emphasised when, in 2011, the Broadband Commission set a target for all countries to have a broadband plan (an updated target calls for funded broadband plans).¹²

Such a plan outlines a country’s vision for broadband development, often on both supply and demand sides, and can take many forms: a broadband, ICT or communication policy, strategy, or plan, a digital vision or agenda, or others.¹³ ¹⁴ Crucially, they should offer a roadmap towards stronger connectivity and internet use, making most efficient use of available resources.

Countries regularly update existing broadband plans or adopt new ones. These policy changes and measures can have a significant impact: for example, the two countries noted as having achieved the most progress in the 2019 A4AI Affordability Report/Affordability Drivers Index, Cameroon and Mali, both had recently adopted new national broadband plans.¹⁵

⁹ <https://www.pewresearch.org/internet/2019/03/07/mobile-connectivity-in-emerging-economies/>

¹⁰ https://www.apc.org/sites/default/files/EndingDigitalExclusion_dig.pdf

¹¹ See, for instance, the Dynamic Coalition on Public Access’ submission to the Internet Governance Forum’s “Connecting and Enabling the Next Billion(s)” process: https://www.ifla.org/files/assets/hq/topics/info-society/documents/cenb_iv_ifla-eifl_contribution.pdf

¹² One of the five target set by the Broadband Commission in 2011 was initially phrased as follows: “By 2015, all countries should have a national broadband plan or strategy or include broadband in their Universal Access / Service Definitions”

(<https://www.broadbandcommission.org/Documents/publications/BD-BBLS-report-2012.pdf>). The updated 2025 target reads: “By 2025, all countries should have a funded National Broadband Plan or strategy or include broadband in their Universal Access and Service (UAS) Definition” (<https://www.broadbandcommission.org/Documents/publications/wef2018.pdf>).

¹³ <https://www.broadbandcommission.org/documents/reportNBP2013.pdf>

¹⁴ https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.20-2019-PDF-E.pdf

¹⁵ <https://a4ai.org/affordability-report/report/2019/>

1.3 What is the role of libraries and public access in national broadband plans?

Broadband plans can therefore be a powerful tool for broadening and supporting public internet access, particularly through libraries. Comparing how libraries have been included in broadband plans to date can show the range of goals they have been recognised as helping fulfil, and the support they would need to carry out these roles.

Using the *State of Broadband 2019* list of national broadband plans and the *Broadband Policy* project tools,^{16 17} this paper examines broadband policy documents which contain references to libraries. Analysing and comparing these references across different national contexts highlights the various roles policymakers envision for libraries in supporting digital inclusion, examples of enabling policy environments, the types of support libraries can receive and the functions they are expected to carry out.

Annex One describes the full methodology for selecting national policy documents and scanning the policy texts. Annex Two contains the list of policy documents included in the sample.

2. POLICY INSIGHTS 1: THE DIFFERENT ROLES OF LIBRARIES

The first takeaway from comparing national broadband policies was that libraries come into play in several distinct contexts. The public access function of libraries, as expected, was highlighted in many plans. However, there were a variety of other roles that different libraries were seen as ready to take on in an information society – from creating local content to promoting digital literacy. Below is an overview of the different contexts where libraries come into play in broadband strategies.

2.1 Public access

Many national broadband plans highlighted the role of libraries as public access facilities – for example, in Zambia, Kenya and Nigeria, among others. Public access in libraries can help bridge the digital divide within countries, even in cases where individual connectivity is the policy priority (as it is, for instance, in the Broadband Plan of Mauritius). The policy in Nigeria emphasises the use of established and pre-existing infrastructure to ensure broader access, libraries being one of the key available facilities.

In some cases, public access was framed as a response to affordability challenges on an individual level: the costs of access devices and/or internet services (e.g. in Angola or Nigeria). A different perspective on digital exclusion focuses on broader societal patterns and emphasises the needs of vulnerable and underserved groups: disadvantaged families, unemployed people, older people, and others (for instance, in the policy document in Hungary). A third perspective on digital exclusion focuses on under- or unserved areas (rural areas, for instance) and emphasises the need to ensure availability of public access facilities in such locations (e.g. in Botswana's policy document).

As an additional function of public access, some plans and policies also highlight its role in improving access to e-government and other online public services, or to e-commerce (e.g. in Bulgaria, Canada, Zambia).

¹⁶ https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.20-2019-PDF-E.pdf

¹⁷ <http://broadbandpolicy.org/>

2.2 Digital literacy and ICT skills

Digital literacy and ICT skills are key to supporting the demand for broadband and enabling meaningful digital inclusion. Many broadband plans engage libraries in digital literacy efforts – for instance, in Botswana, Hungary, Turkey and elsewhere.

Some policy documents envision concerted educational efforts in libraries (often among other anchor institutions or public access points) - for instance, in Turkey or Botswana. The broadband strategy of Botswana discusses a “train-the-trainers” model, where staff members in public access facilities funded by the government are trained to deliver a basic ICT skills curriculum.

Libraries can also serve as a location for digital literacy initiatives led by other organisations: the Digital Literacy Exchange program described in Canada’s Innovation and Skills Plan, for example, envisions digital literacy initiatives carried out by non-profit organisations in pre-existing facilities such as libraries.

The need for ICT skills training of library professionals themselves is acknowledged, for example, in the Bulgarian broadband plan, which proposes developing a system of educational courses for the staff of libraries, community centres, theatres and related institutions.

2.3 Supporting education

Several broadband policy documents refer to libraries with an emphasis on how to achieve broader educational goals. The broadband policy of Mauritius, for example, links improved connectivity of both libraries and schools to fostering efficiency and innovation in e-learning, digital educational content and personalised learning. Similarly, in Ethiopia’s ICT Policy and Strategy, the goal of increasing the use of ICT in public libraries is linked to e-learning and educational goals.

A reference to digital educational materials appears in Cameroon’s strategic plan: libraries (academic, research and school libraries specifically) are encouraged to digitise educational materials and make those available online.

Meanwhile, in Ethiopia the strategy also discusses establishing electronic links between academic institutions and libraries to ensure broader access to learning materials for students and teachers. In other cases, measures envisioned in broadband plans target formal educational institutions directly (e.g. schools or universities) and encourage them to build digital libraries (e.g. in Bangladesh and Cambodia). Such measures can encourage more school and academic libraries to be established and supported.

2.4 Heritage digitisation and local content creation

Other broadband policy documents highlight the role of libraries in digitising and providing access to heritage materials – for example, in Slovenia, Turkey or Switzerland. To this end, some plans and policies engage broader library networks in such initiatives – e.g. in Turkey or Gambia; while in Qatar or Mali it is national libraries which are set to be involved in these efforts.

Local content creation can be a particularly high priority for non-English speaking countries. The need to generate content in local languages through digitisation of printed texts and facilitating the creation of new outputs is highlighted, for example, in broadband plans in both Portugal and Turkey.

Finally, some plans and policy documents refer to library connectivity in broader situational analyses and assessments of national strengths, weaknesses and opportunities for digital inclusion. For example, libraries feature in such broader overviews in the policy documents of both Hungary and Colombia.

To summarise, different national policies highlight several roles that libraries play in broadband strategies. They can act as **public access points** (supporting underserved and vulnerable populations and ensuring access to government and public e-services and e-commerce), carry out and assist **digital literacy initiatives, support educational institutions and e-learning**, and **help create local digital content** through digitisation of heritage materials and stimulating new creativity.

Several policies envision libraries playing a role in several context simultaneously (e.g. public access and literacy, public access and digitisation).

3. POLICY INSIGHTS 2: PLANNED INTERVENTIONS

To help libraries successfully fulfil the roles outlined above, a number of broadband plans that reference libraries also set out practical policy interventions or strategies. The approaches that different nations take as concerns libraries differ in focus, scope and content - but across the 32 countries examined, there were a number of commonalities and recurring elements. The section below highlights key similarities and differences across the library-focused interventions the policy documents outline.

3.1 Connectivity and technology needs of libraries

To deliver on their potential as public access facilities, digital literacy or e-learning facilitators or providers of digital content, libraries themselves need to be equipped with suitable connectivity. For that reason, the focus of many interventions targeting libraries aims to improve their internet connections. This can entail different elements:

- *Connectivity infrastructure.* In many broadband plans, the starting point is making sure that libraries are connected to the broadband network. This goal is put forward, for example, in the policy documents of Jamaica, Egypt, the Czech Republic or Mauritius.
- *Electricity supply* can be seen as a sub-category of infrastructural needs. The plans in both Kenya and Botswana point out the need to ensure electricity supply to libraries.
- *Reduced internet subscription costs.* Alongside connectivity infrastructure, several broadband policies seek to address the *ongoing costs of internet service subscriptions* for libraries. A number of policies envision partial subsidies or pledge to develop strategies to offer lower-cost subscriptions for libraries - for example, in the United States or Mauritius. In some cases, such support for internet subscription costs could be offered for a fixed period – in other policies, no such limits are set.
- *Computers and hardware.* Some broadband plans focus on *providing connectivity hardware, computers or other communications technologies* to libraries (such as those in Nigeria, Jamaica, Kenya, Bahamas or Bangladesh). Such interventions are often integrated with internet connectivity and infrastructure efforts.
- *Library staff skills.* Finally, in a few cases, the need to equip library staff with necessary ICT skills has also been recognised – one example is the Broadband Infrastructure Plan in Bulgaria.

When it comes to infrastructure and internet services, some policies put emphasis on simply connecting more libraries, while others also raise the question about the quality of connectivity. Mauritius, for example, discusses setting a minimum speed threshold for libraries, Kenya's Strategy discusses the need to improve broadband speed

and reliability, and policies from both Belgium and Canada make the case for connecting libraries to ultrafast internet.

For instance, the Canadian Connectivity Strategy sets out the reasons for prioritising ultrafast connectivity for libraries, among other anchor institutions. It explains that the connectivity needs of such facilities are greater because (a) more people use the shared connection simultaneously and (b) the connection could be used for more sophisticated and intensive applications.

3.2 Type and number of libraries in focus

Whether their end-goals focused on digital inclusion, digital skills, e-learning or local content, the envisioned policy interventions or targets differed in what libraries they sought to engage (or impact) to achieve these objectives.

Some policies targeted libraries at large: for example, several policies sought to equip libraries with internet connectivity and/or ICTs to support digital inclusion. Other policies sought to impact libraries of a certain type – e.g. public or community libraries to boost digital inclusion (e.g. in Bahamas or Bangladesh), or academic and school libraries to support e-learning (e.g. in Cameroon).

A policy can also seek to engage a specific institution (often the National Libraries). For example, Qatar’s digitisation initiative involved the National Library in particular. Finally, there are policy interventions that encompass several types of institutions: for example, libraries, archives, museums and other cultural institutions in digitisation efforts, or libraries, post offices, and community centers for digital inclusion. Given the broader scope, such interventions could also focus on a select number of institutions from this pool.

3.3 Policy design and types of library interventions

While the shape of the intervention clearly depends on both the overarching policy goals and the local context, there are a few commonalities and shared design elements found across multiple policies.

- *Subsidies and other financial interventions*

Interventions targeting all libraries or a broad category of libraries may come, for example, in the form of financial support measures - such as providing subsidies or ensuring discount rates for internet services (e.g. in Egypt or Botswana). Such measures can range from (or include) funding offered directly to libraries (e.g. in the US ‘E-Rate program’) to responsibilities or obligations placed on internet service providers. For example, the 2009 Communications Act in the Bahamas, further clarified through guidelines from the Utilities Regulation and Competition Authority, entrusts an internet service provider with, inter alia, “the provision of [...] internet [...] free of charge to specified institutions”, which includes public libraries.¹⁸

Direct financial support is also sometimes made available for ICT technology procurement for libraries (e.g. in the US). Some policy documents do not specify the procurement mechanism for ICT hardware or other technologies, but do set out a goal or commitment to equip libraries with necessary ICTs.

- *Public Access Points-type projects*

¹⁸ <https://www.urcabahamas.bs/wp-content/uploads/2017/01/Guidelines-for-Calculating-the-Net-Cost-of-the-Universal-Service-Obligations-for-CBL-Results-and-Final-Decision-1.pdf>

In other policy documents, instead of tackling the connectivity of an entire category of institutions, the starting point is the need to establish public access facilities for communities in a given location. Such initiatives aim to select community or public institutions in specific locations deemed as representing a priority, and fully equipping them to function as free or low-cost public access points (e.g. Puntos Vive Digital in Colombia).

Libraries are often listed among institutions which can accommodate such initiatives. Other commonly referenced facilities include, for instance, post offices, schools, community centers and similar institutions. In some cases – for instance, in Turkey and Botswana – public access points are also set to deliver digital literacy education.

- *Soft instruments and other mechanisms*

There is also a wide range of softer instruments and other mechanisms that national policies can leverage to reach their goals. For example, to support the creation of local digital content (including through libraries), the policy in Turkey aims to coordinate digitisation efforts. Similarly to the Portuguese Digital Agenda, it also discusses the need to adopt interoperable formats and open standards to facilitate digitisation efforts.

The Czech policy document outlines another possible approach to ensuring suitable library connectivity. The policy discusses making public support for projects building Next Generation Networks conditional on the requirement that all public interest objects (including libraries) in an area must be connected.

3.3.1 Policy targets and financing mechanisms

Drawing on policy texts that offer more details on the implementation, we can point out two additional possible mechanism for financing and supporting library-based interventions:

- *Drawing on Universal Service (Access) Funds*

Some plans and policies intend to draw on Universal Service/Universal Service and Access Funds to support public access and library collectivity. The Botswana National Broadband Strategy, for instance, suggests that the Universal Service Fund subsidise internet connectivity and access for libraries. In Jamaica, the Fund is intended to provide libraries with hardware and software; and the definition of universal service/access in Jamaica includes connectivity services to public libraries.¹⁹

Similarly, The Universal Service Provision Fund (USPF) in Nigeria has been leveraged for the *E-library* intervention, which targets existing public libraries to establish digital libraries and databases.

- *Building Public-Private Partnerships (PPP)*

A number of plans also intend to make use of public-private partnerships to achieve the goals they set out. Zambia's policy, for instance, plans to transform public libraries into Public Access Points with the help of both the private sector and civil society. Similarly, Jamaica's Sector Plan sets out a goal to encourage public-private partnerships to establish connectivity and internet access to community access points.

In the Colombian Puntos Vive Digital project, public internet access points in libraries (among other anchor organisations) were subsidised for several years, after which government support ended and libraries were expected to form PPPs with internet service providers. Angola also calls on PPPs to subsidise equipment and

¹⁹ https://www.itu.int/itu-d/apis/clients/res/pdf/country_profile/report_JAM.pdf

services for digital inclusion infrastructures, but the policy discusses building a network of “Media Libraries” – new entities, as opposed to drawing on the existing infrastructure.

Public-private partnerships can also be used for infrastructure rollout – Canada’s Connect to Innovate program, for instance, deploys high-capacity network infrastructure to connect both households and anchor institutions such as libraries through a public-private partnership. Similarly, Jamaica’s plan to accelerate connectivity to libraries, post offices and other public institutions is set to be achieved through strategic cooperation with public and private sector actors, as well as sponsors.

Finally, some policies and plans set out specific targets or time frames to guide the implementation of measures relevant for libraries. Some define the final target to be achieved: for example, the Bangladesh National Broadband Plan includes a goal of 100% broadband connectivity goal for public libraries. The Botswana policy sets a deadline to provide WiFi access in “100% of strategic public areas (bus ranks, shopping malls, airports, hospitals, stadia, libraries)”.

Similarly, in the area of local content, the goals could be defined in terms of the amount of content to be digitised (including through libraries - e.g. in Mali and Hungary), or the creation of digital platforms and e-libraries. Plans in Rwanda and Cameroon, for instance, set out the goal to create national digital libraries.

Some set goals also offer benchmark targets as guidance for the implementation process: for instance, Nigeria’s “E-library” project aims to cover 10 public libraries a year. Another example of a phased target approach is the 2011 eMsir National Broadband Plan, which set a goal for 50% of Egypt’s community anchors (e.g. public libraries, schools, hospitals) to be connected to broadband by 2015, and 100% by 2021.

To summarise, policy interventions aimed to help libraries carry out their roles in the digital ecosystem can focus on different aspects of library connectivity and technology needs: infrastructure, ICT equipment, software and hardware, and broadband services.

Regardless of the policy objectives (supporting digital inclusion, skills-building, learning, or local content availability), the range of libraries implicated in these policies varies: from all libraries (or all libraries of a certain type) to a few selected institutions.

Some of the common policy interventions designs can include: financial support mechanisms for libraries (direct or indirect, for a fixed or indefinite time period); public access points projects that engage select libraries alongside other anchor institutions; and various softer instruments like endorsements, standards adoption, or activity coordination.

In some cases, broadband plans relied on Universal Service Funds or public-private partnerships to implement the envisioned measures. There are also examples of policies containing detailed targets and objectives to guide the implementation of measures which implicate libraries. These can include final goals and benchmark targets that set the pace of the initiative rollout and implementation.

4. INSIGHTS AND CONCLUSIONS

Many national policies reviewed in this study pursue two or three policy targets in relation to libraries simultaneously. This could imply an understanding that libraires can play multiple roles in the context of

broadband policies, but may require support in order to do so. For example, Slovenia's assessment of current digitisation activities (including libraries' role in them) leads to a conclusion that both investment in ICT tools and optimisation of business processes are needed.

In some cases, libraries at large were the focus of specific policy interventions (e.g. subsidies or infrastructure development projects). In others, they were among the implementation partners - for example in Public Access Point-type projects. In this sample of policies, public libraries were often the specified beneficiaries, but several strategies made no such distinction and targeted libraries in general. In addition, some policies focused particularly on national, academic or school libraries.

Based on the various policy elements included in national broadband plans, the approaches often taken when engaging libraries can include:

- Policies to improve connectivity and/or ICT equipment in all (or most) libraries in the country
- Public Access Point-type projects, where selected libraries (amongst other institutions and facilities) are transformed into public access facilities through provision of ICTs and internet connectivity
- Projects and policies that include digital literacy initiatives - either uniquely in libraries, or in libraries amongst other providers
- Digitisation initiatives

As the Broadband Commission's 2019 report recommends that public access be included in broadband plans, it is helpful to understand how libraries have already been included in such policies to date. The categories above reflect some of the most common roles envisioned for libraries in broadband plans and policies – as well as the wide range of activities they can carry out, and the types of support they may need.

● IMPLEMENTING BROADBAND POLICIES: CASE STUDIES ON PUBLIC ACCESS IN LIBRARIES

1. INTRODUCTION

This chapter takes a closer look at the implementation of broadband policy initiatives that leverage shared internet and ICT access facilities in public library networks to support digital inclusion. A series of case studies spotlight good practices and challenges in setting up and delivering public access through libraries in Colombia, Kenya, Lithuania, Romania and the Philippines, and highlight the impacts of undertaken efforts.

Each of the five case studies tells a unique story of building public access solutions in public libraries, shaped by local factors and stakeholders. To help highlight the differences, similarities and key takeaways, the case studies are structured as follows:

- a brief overview of the broader country context and the national public library network;
- a description of the current (at the time of the study) broadband policy, which either gives an impetus to initiatives supporting public access through libraries, or refers to sustained roles and new targets for public libraries, building on public access infrastructure established through earlier initiatives;
- an overview of how the policy initiative(s) setting up or expanding public access in libraries have been implemented on the national level. More often than not, the implementation spanned a time period longer than that of the current broadband policy only;
- final considerations – key impacts of the interventions and lessons learned; as well as any remaining notes on the current situation or plans regarding the public access infrastructure in the public library network.

2. COLOMBIA

Country profile. Colombia is a country in the north of South America. It comprises 32 departments and the Capital District of Bogotá, the country's largest city. With over 50 million inhabitants, Colombia is one of the most ethnically and linguistically diverse countries in the world. Urban centers are concentrated in the Andean highlands and along the Caribbean coast. According to recent World Bank data, the number of internet users in Colombia stands at around 65 % (in 2019).²⁰

Colombia has over 1,500 public libraries: departmental, district, municipal and rural, libraries of community councils and indigenous reservations. According to the General Law of Culture (2010), the responsibility for coordinating all state libraries is assigned to the Ministry of Culture through the National Network of Public Libraries in the National Library of Colombia (RNBP). The objective of RNBP is to improve educational and cultural offers to Colombian citizens by providing free access to information, literature, documentation and electronic resources.



Broadband policy. At the time of the study, one of the key policy documents focusing on broadband rollout and information society development in Colombia was the “Plan Vive Digital 2014-2018” (Digital Plan). However, major

²⁰ <https://data.worldbank.org/indicator/IT.NET.USER.ZS>

efforts to build internet access infrastructure in public facilities (including libraries) started before 2014, within the framework of the previous Digital Plan (2010-2014).

Implementing public access in libraries

Though Plan Vive Digital 2014-2018 does not specifically mention libraries, in Colombia public libraries were included in several public access development projects initiated by the government:

1. National Fiber Optic Project, Ministry of Information Technologies and Communications of Colombia (MinTIC) aimed to expand the existing fiber optic infrastructure in the country, in order to reach more people with better services and improve technical and economic conditions. The project began in January 2013, benefiting a total of 788 municipalities in Colombia and 2,000 public institutions, including 409 public libraries.

Initially, the agreement set out to deliver 2 Mbps connectivity for libraries for 5 years. It also included a commitment that, once the initial contract was completed, local administrations would take over the internet subscription costs for the public libraries. In 2014 the Ministry of Culture negotiated with MinTIC to increase bandwidth to 6 Mbps. By the end of the project, The Ministry of Culture agreed with MinTIC that they would continue to pay for internet subscription for another 8 months, until August 2018 – to give more time for local administration to budget for internet subscription costs.

2. The “Puntos vive digital” project was another strategy of the Government aimed at promoting internet use among the population, by creating a network of public access centers, "Puntos Vive Digital" (PVD). The project began in February 2012 and ended in July 2018. The PVDs were designed as a self-sustainable service model that allows the community to use ICTs for access, training, entertainment, and other activities in one place. Several public institutions, such as city halls, educational institutions, military forces, libraries and houses of culture were eligible for the installation of PVDs.

The PVDs were one of the first initiatives in Colombia that considered libraries as hosts of public access facilities, and presented a great opportunity to support digital inclusion through the public library network. However, the implementation scheme created by the government set out a strict formula for the rollout and installation of PVDs on the ground, which did not always allow for their easy integration with public library services – for example, due to the program’s specific requirements regarding space, infrastructure, administration and publicity.

In some municipalities, this led to a displacement of library services by the PVDs, instead of a full integration of public access into libraries’ services. Broadly, 3 different scenarios emerged throughout the library network:

- Some PVDs were physically installed in public libraries, but operated through independent administration;
- Some cases saw PVDs successfully integrated into library services and facilities;
- Some libraries were moved out of the premises to set up PVDs.

Given the challenges that some public libraries faced, at the end PVD’s were only integrated in around 50 libraries – around 3.5% of the total number of public libraries in Colombia. Almost half of the libraries which successfully integrated PVDs into their services were in the Cali municipality – so their experiences can offer some insights into what good practices can help facilitate an effective rollout of public access facilities in libraries.

The Cali Mayor's Office worked with a non-profit organisation *BiblioTEC Foundation* to set up 20 PVDs in the public library network. Their work included the selection of libraries which were to host the PVDs; working with the

community and host libraries to determine the best possible integration model (and ensure that it does not negatively affect other library services); and the selection, hiring and training of library staff to operate the PVD. BiblioTEC allocated and invested more than 0.5 million USD to modernise and adapt library premises to carry out these new functions, in addition the MinTIC investment for computers and connectivity (approximately 1.5 million USD). As a result of this joint effort, the ICT infrastructure has been improved in more than a third of the Cali libraries, which were equipped with more than 1,000 computers with internet service.

BiblioTEC did not stop there in supporting the digital transformation of public libraries in the Cali municipality. In 2014, it established the School of Innovation and Library Development of Cali (EIDBC) in partnership with several universities (the University of Barcelona, the National Autonomous of Mexico UNAM, Javeriana of Colombia and the Autonomous University of the West UAO) to deliver training for library professionals and managers. The training programmes helped librarians to develop programmes which supported and encouraged the use of the newly established public access infrastructure.

After the installation and activation of the PVDs in Cali, BiblioTEC looked to expand and broaden the public's use of these facilities - from internet access and training to other diverse activities and services. In two local libraries, BiblioTEC piloted technology-based laboratories with a focus on more advanced technology use and competencies. These laboratories were equipped with 3D printers, laser cutters, multimedia, robotics and electronics kits.

After the successful pilot, the initiative was picked up by the Cali Mayor's Office, which established such laboratories in seven more libraries run by the municipality. This created more spaces for modelling, robotics, audio-visual work, as well as spaces facilitating the use of government electronic services. The effort attracted another private partner - Carvajal Foundation - that created a manual for the management of innovation spaces in libraries. All laboratories that evolved on the foundation of PVDs in libraries are supervised by the technology department of the Mayor's Office of Cali.

3. The 'Use and appropriation of ICT in public libraries' project was another key initiative focused on expanding public libraries' connectivity and public access infrastructure in Colombia. This project was developed by the Ministry of Culture and the National Library, and supported by the Bill and Melinda Gates Foundation.

A pilot for the project was launched in 2012²¹, which started with an assessment of the national library network to establish a baseline of the physical and technological conditions of public libraries.²² The next steps included purchasing and providing technology to libraries, training for library staff, and promoting the development of innovative services, using ICTs. This helped public libraries enrich their offer by offering their communities free access to computers and the internet – as well as launch other services facilitating public's engagement with ICT, such as "Big Questions", the digitisation of photography and local memory, and Colombian film forums.

Additionally, the project helped promote local public libraries as public access venues, raise their visibility in communities, and secure a commitment from local authorities, the private sector and civil society to support the sustainability of new services. Within the framework of this project, the Ministry of Culture allocated public funds to bring 2-6 Mbps connectivity to more than 400 public libraries, including through satellite connectivity in libraries which could not be reached through fiber optics. In parallel, the project team worked with the local

²¹ https://issuu.com/proyectotic/docs/20150211_pilot_ad

²² https://issuu.com/proyectotic/docs/nat_ass_national_network

administrations to include connectivity costs into the local library's budget, and negotiated with internet service providers about the costs of library connectivity.

The evaluation of the 'Use and appropriation of ICT in public libraries' project highlighted important benefits that it had helped generate – particularly in terms of social capital among users. It powered self-learning opportunities and helped make available and generate more local content, either by libraries and communities themselves, or through broader access to digital heritage collections.²³ In addition, it enabled the launch of more than 300 unique service projects inside participating libraries – from educational to culture-focused initiatives, from family time to arts and creativity, and beyond.²⁴

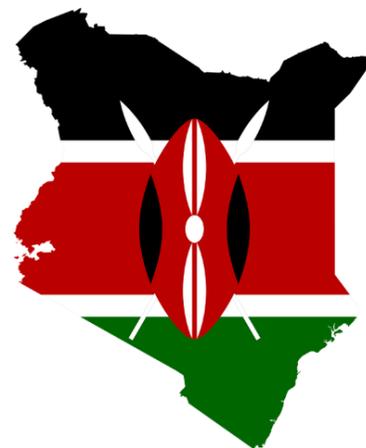
Final considerations. Overall, with the help of these projects, 95% of Colombia's public libraries were connected to the internet and equipped with ICTs by August 2018. The availability of public access in more than 1,400 libraries across the country helped bring about important positive outcomes – new services available to the public, broadening communities' access to the internet and to local content, skills training opportunities and ICTs. Public internet access in libraries, digital literacy training, and other ICT based programming have contributed to the bridging of the digital divide in Colombia-

The current priority for further connectivity interventions - as laid out by the government in the new ICT Plan 2018 – 2022²⁵ - is connectivity in homes, as opposed to free internet access in public spaces such as libraries. In a sense, this leaves the responsibility for continuous support for public access venues largely in the hands of local administrations and the Ministry of Culture.

Drawing on experiences of the other countries, libraries and a public access approach continue to be useful and used even in places with high levels of home connectivity. Users who have private internet access continue to use library-based connectivity or workstations – to access different technologies or a high-capacity connectivity, additional services that libraries are able to provide at the same time, or digital skills training or technical support that library staff offer. Lithuania is one of the possible examples – a country where rates of individual connectivity are high, yet public access remains in use and demand (full case study below in section 3.4).

3. KENYA

Country profile. Kenya is a country located in Eastern Africa which shares land borders with Somalia, Ethiopia, South Sudan, Uganda and Tanzania – and borders the Indian Ocean to the south-east. A 2019 census indicated that Kenya's population exceeds 46.5 million people, which places it among the 30 most populated countries in the world. Kenya is one of the fastest-growing and largest economies in Sub-Saharan Africa.²⁶ ²⁷ 2019 World Bank estimates suggested that around 23% of the population in Kenya are internet users.



²³ https://issuu.com/proyectotic/docs/infografia_resultados_proyecto_tic

²⁴ https://issuu.com/proyectotic/docs/20170418__ganadores_servicios_final

²⁵ https://www.mintic.gov.co/portal/604/articles-101922_Plan_TIC.pdf

²⁶ <https://www.worldbank.org/en/country/kenya/overview#1>

²⁷ <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD?contextual=region&end=2019&locations=KE&start=2019&view=bar>

The Kenya National Library Service (KNLS), a statutory body of the Government, is responsible for supporting and establishing national and public library services. The KNLS network consists of 67 public libraries and 1 national library.

Broadband policy. The Kenyan Broadband Strategy 2018-2023 includes references to public libraries, specifically mentioning the existing public internet access infrastructure in libraries, and points out the opportunity to upgrade public internet access facilities with high-speed broadband.²⁸ The Strategy also sets out to equip libraries with more devices and increase the speed and reliability of their connections. Among other measures to support access to broadband services, as well as digital skills-building and employment, the current Strategy aims to build or expand community/innovation hubs in each locality. This measure also brings the possibility to involve libraries and build on their existing capacity and infrastructure.

The public internet access infrastructure in Kenyan public libraries was established in 2011-2018, guided by the policies preceding the current broadband strategy:

1. *The Universal Service Fund (USF) Framework* was released after the 2009 Information Communications Amendment Act; and in 2010, the *Information and Communications Regulation* was formally established by the Kenyan USF. This document details how the Communication Authority of Kenya (CAK) would manage the Fund, the guiding principles and key considerations.

Alongside these guidelines and principles, the Framework tentatively outlined several programs that the CAK considered implementing through the USF. One of the programs – Community Broadband Networks – focused on equipping major public institutions in villages or towns which do not have broadband connectivity with such a connection. Libraries, alongside such institutions as schools and health facilities, were listed among the possible locations.

2. The Kenyan Universal Service Fund financed a project launched through a *Memorandum of Understanding (MoU)* signed by KNLS and the CAK in 2011-2012, aimed at equipping public libraries with ICT and connectivity. The overarching goal was to increase and facilitate public access to the internet and ICT, especially in rural communities; and to create opportunities for digital skills training and capacity-building – with the end goal of supporting social and economic development.

Implementing public access in libraries

The process of connecting public libraries in Kenya and creating a national network of public access facilities took place in several phases.

Prior to 2010, few public libraries in Kenya were equipped with an internet connection or computers. Estimates suggest that the country-wide public library network had around 15 computers available, with few set aside for public use. Libraries in general had more computers for staff than users, and a lack of public access computers was mentioned as one of the key drivers of user dissatisfaction with libraries.²⁹

An early initiative focusing on ICTs in libraries in Kenya was carried out by EIFL (Electronic Information for Libraries) in 2010, when EIFL hosted an open call for proposals for public libraries from developing countries to apply for small grants to pilot technology-based services targeted at different community groups. Three public libraries

²⁸ <https://ca.go.ke/wp-content/uploads/2020/08/National-Broadband-Strategy-2018-2023.pdf>

²⁹ <https://www.eifl.net/resources/perceptions-public-libraries-africa-0>

(Kisumu, Eldoret, and Kibera) received the grants; and evidence captured from their successful pilot services was the basis for case studies on the role of libraires in bridging the digital divide, which then helped support the efforts of KNLS to build a partnership with CAK.

Between 2011 and 2013, following the MoU between KNLS and CAK, dedicated *e-resource centres* were set up in 10 community libraries from the KNLS public library network. The main goal of the e-resource centers was to broaden access to ICTs and enhance ICT skills and capacity building among rural communities, to help support social and economic development. Each library was equipped with 10 computers, hardware and peripherals (e.g. printers, servers), software, internet connectivity infrastructure (where needed) and a two-year connectivity subscription, as well as necessary furniture.³⁰

Following the success of the pilot intervention, the project was soon scaled up to cover the vast majority of public libraries in the country. From 2015 to 2018, the same measures were implemented in 46 more public libraries, bringing the total number of libraries equipped with ICT and connectivity within this project to 56. At present, all public libraries at the branch level are equipped with ICT and connectivity to the same standard.

Additional measures included setting up and connecting libraries to local area networks where such infrastructure was not available (which was the case with about 80% of libraries in this project). It also set up voice telephony connectivity – which both library users and staff visitors can use. Furthermore, libraries were provided with the equipment to set up wireless access points – these public WiFi hotspots broadened the reach of library connectivity by a minimum of 200 meters.

Within the framework of the current Kenyan Broadband Strategy 2018-2023, three libraries have been set up as locality-level ICT hubs. This entailed further upgrading public internet connectivity and equipment to provide access to e-government services, more training opportunities for their communities, and wider ICT-based programming.

The libraries which have been transformed into locality-level hubs under the current Strategy also experienced significant demand for the new services. They are able to offer expanded access to online resources and accessibility tools, extended programming and more learning opportunities for their communities. Training courses which help build the skills for online work and employment are in particularly high demand, especially among youth.

Reporting and feedback. This intervention highlighted how taking stock of existing infrastructure, opportunities and needs can be a useful first step for such projects. Such a stock-taking exercise was carried out at the beginning of the intervention to establish a baseline - and helped plan for, and more effectively address, some local needs from the outset. For example, the stocktaking report helped establish that several libraries were not connected to an electricity grid - the intervention plans were then adjusted to also include equipping these libraries with solar panels.

During and after the implementation, reporting and feedback remained an important part of the process. For the CAK supported project particularly, KNLS established an online reporting tool which helped libraries to monitor the state and usage of their IT infrastructure and services, including computer use and digital skills training.

This helped get more insights on use patterns and shifting needs. For example, at the start of the project, libraries were equipped with a 2 Mbps connectivity, which over the next years was upgraded to 10 Mbps based on received

³⁰ <https://ca.go.ke/wp-content/uploads/2018/02/Annual-Report-for-the-Financial-Year-2011-2012.pdf>

feedback and changing community needs. After evaluating the pilot results and local connectivity needs, CAK also equipped libraries with additional technology, assistive devices and software (such as screen readers, magnifiers and JAWs) to enable access for people with disabilities. The reporting process and stakeholder insights also drew attention to the importance of planning for the long-term sustainability and equipment maintenance (including such questions as, for example, license renewal).

Capacity-building for librarians was another important part of the development of public access infrastructure – particularly as the number of libraries connected to the internet grew, and more library staff became involved in programmes based on technology. This need for capacity-building was partly addressed by the CAK and USF-backed project, and, in addition, KNLS was able to mobilise its existing and new partnerships to equip staff with new competencies.

For example, the collaboration between EIFL and KNLS in particular evolved to place a greater emphasis on capacity-building for library staff to support the deployment of public access facilities. Through the EIFL-supported capacity-building initiative, librarians underwent training in advanced ICT skills, library service management, community engagement, and creation of new ICT-based services. KNLS and EIFL trained a cohort of 20 local trainers (public librarians themselves) and 12 ICT officers (a newly created position at KNLS) who have then moved on to support staff professional development within the KNLS network of public libraries.³¹

Impact. Some of the key goals of the overarching partnership between CAK and KNLS were to expand communities' access to ICT, the internet, digital skills training, and information at large. Overall, the libraries registered significantly more users and visitors coming in, which offers some indication of the demand for these public access venues and associated new services, especially digital skills training provided on a regular basis. For example, from 2013 onwards, the Muranga public library started to offer quarterly basic computer skills training for groups of 20 - 40 people. The completion of the training program is marked by a festive graduation event to hand out the certificates.³²

Public access facilities became especially popular with youth and students, who can come in to complete their study assignments online and/or use library workstations. The public access facilities also help support people's access to e-government services. As many services and functions – e.g. passport or driver's license applications – are increasingly carried out online, libraries offer a venue to do such tasks, and can offer support to users who are less comfortable with their ICT skills.

Libraries also introduced various ICT-based activities and programming on a pilot basis, which makes it possible to later scale up or replicate the most successful and demanded activities throughout KNLS public library network.

Public access infrastructure in public libraries also made it possible to introduce new ICT-powered services which help meet the diverse needs of their communities. The Ministry of Agriculture, the University of Nairobi and KNLS jointly set up a service delivering relevant information for farmers – e.g. on market prices, farming methods, government services and so on. Similarly, the public access infrastructure improved access to health information at the health corners set up in several KNLS libraries.³³

The public access facilities in libraries and increased library staff capacity also helped create a platform for other partnerships with private businesses and development organisations, launching new technology-enabled

³¹ <https://www.eifl.net/eifl-in-action/capacity-building-public-librarians-kenya>

³² <https://knlskenya.wordpress.com/2018/09/21/basic-ict-computer-training-graduation-knls-muranga-april-2018/>

³³ https://www.eifl.net/system/files/resources/201704/eifl_brochure_hr.pdf

programmes over the following years. For example, in partnership with Microsoft libraries started offering technology skills online learning opportunities through the Microsoft Imagine Academy. In collaboration with EIFL and Peer-2-Peer University, KNLS also introduced facilitated in-person learning circles to support online learning in Kenya. In 2017, KNLS entered a new partnership with the Good Things Foundation – a UK based charity – to adapt and provide access to a free online learning platform “Learn My Way Kenya”, which helps users develop basic digital skills.³⁴

Public access and connectivity infrastructure also enabled libraries to carry out reading and education programmes beyond the library walls – for example, to upload and update digital content for outreach initiatives. With Book Aid International support, KNLS, public libraries visited schools, bringing to classes BRCK’s Kio Kits uploaded with local educational materials (books, text, audio and video content).³⁵ KNLS also collaborated with WorldReader to start digital reading programs for schools across the country. Public libraries are lending tablets to schools with preloaded international and local e-books, and promote digital reading on mobile phones through the BookSmart application.³⁶

Final considerations. Overall, with the help of these initiatives, all Kenya’s public libraries were connected to the internet and equipped with ICT by the end of 2017. Throughout this process, stakeholders’ experiences highlighted the value of initial capacity-building and scoping, as well as of ongoing feedback and evaluation, to ensure continued impact.

In general, the Kenya case illustrates how a Universal Service Fund can successfully be used to support digital inclusion through public access in libraries. Government investments into public internet infrastructure and strengthened KNLS staff capacity built a platform for multi-stakeholder collaboration to tackle the digital divide. Given their experience with offering digital skills training for different societal groups, public libraries can support further government efforts towards universal meaningful connectivity - for example, by training staff of other public access internet facilities, or serving as a hub for community internet networks.

4. LITHUANIA

Country profile. Lithuania is a state in the central part of Europe, on the southeastern shore of the Baltic Sea. The area of the country is 65,300 km², with a population of 2.8 million (2019). The country borders Latvia, Belarus, Poland, and Russia (Kaliningrad region). The Lithuanian-Belarusian and Lithuanian-Russian Federation borders are also the external borders of the European Union. As of 2019, over 81.5% of the population in Lithuania are internet users.



The Lithuanian library network consists of 2,365 libraries, among which the majority (1,237) are county and municipal public libraries. Most functions of state administration of libraries are carried out by the Ministry of Culture. Libraries of state significance and county public libraries are financed from the Lithuanian state budget. Municipal libraries are financed from municipal budgets.

³⁴ <https://www.goodthingsfoundation.org/node/1780>

³⁵ <https://knlskenya.wordpress.com/2018/09/28/digital-connections-children-corners-kio-kit-training/>

³⁶ <https://www.worldreader.org/where-we-are/kenya/>

Broadband policy. The Information Society Development Program for 2014–2020 *'Digital Agenda of the Republic of Lithuania'* is a framework policy document guiding the government's broadband development efforts. The programme sets out the main goals and objectives of information society development, in order to make the most of the opportunities provided by information technologies.

The document envisions several roles for libraries, including tackling the digital divide – particularly digital exclusion among older community members, those with lower income, disabled persons, and rural residents. It built on a public access infrastructure in public libraries that had been developed through a series of interventions which were part of the earlier Information Society Development Strategies (2005-2010; and 2010-2014). As such, the Information Society Development Programme for 2014–2020 includes the goal of *'upgrading and developing the public Internet access infrastructure in public libraries'*.

One of the targets it sets out is that by 2020, residents should be able to access internet connectivity of 30 Mbps or faster through public internet access facilities. The aim of this measure is to ensure that Lithuanian residents, especially those living in rural areas or belonging to social risk groups, have access to high-speed internet free of charge.

Implementing public access in libraries

The implementation of public internet access in Lithuanian public libraries started in 1996, when the Open Society Fund-Lithuania Library Program (OSF - LP) funded the establishment of a first dial-in internet classroom in the Martynas Mažvydas National Library of Lithuania (NLL). During the next six years, OSF-LP supported the creation of public access facilities in around 30 public libraries across Lithuania through small grants. Alongside equipment and connectivity infrastructure, these grants also enabled libraries to broaden access to digital resources and launch digital literacy training for local communities.

In 2002, the long-term *'Library renovation and modernization program of 2003-2013'*, approved by the Government of the Republic of Lithuania, set out a goal *'to eliminate discrepancies of urban and rural informational communication infrastructure and to provide equal opportunities to all residents to use information technologies for social and community purposes'*.

This programme ensured annual state budget allocations through the Ministry of Culture for computer and peripheral equipment for public use in public libraries, and for country-wide subscriptions for several electronic databases for the public library network. These included, for example, the database on Lithuanian Law Information and Court Practice.

Secondly, it encouraged local governments which run public libraries to provide recurrent funding for library connectivity. Third, and most importantly, this long-term programme formally defined a new role for the public library system – to provide access to information and communication technology for urban and rural communities. This, in turn, opened the possibility for public funding meant for broadband infrastructure development and tackling the digital divide to be used to support public access in this manner. Major initiatives that helped build public access infrastructure and capacity in the following years are outlined below.

1. During the period from 2003 to 2008, 700 public internet access points (PIAPs) were established by the Information Society Development Committee and the Ministry of the Interior of Lithuania projects. These were funded by the European Union PHARE 2003 programme, and a non-profit initiative "Langas į ateitį" (Window to

the Future), an association of socially responsible private business companies. Over 400 PIAPs were located in public libraries, predominantly in rural areas.

On average, each PIAP was equipped with up to five computers connected to the internet, and the host organisation had to be open to the public for at least 40 hours per week. Their services included: training people to use computers and the internet, helping them find and make use of electronic government services, offering information about available online content and services, and online training programs.

2. Public internet access in rural public libraries, in terms of speed and bandwidth, was significantly advanced during the implementation of three projects supported by the EU Structural Funds and led by the Ministry of Transport and Communications and a public institution *'Plačiąjuostis internetas'* (Broadband Internet): *'Rural Area Information Technology Broadband Network'* (RAIN), 2005-2008,³⁷ *'The Development of Rural Area Information Technology Broadband Network'* (RAIN II), 2009-2015,³⁸ and *'Broadband infrastructure development in rural areas'*³⁹ (2014-2018). These projects extended broadband access to around one million people throughout rural Lithuania by installing a total of [3883 broadband network access points](#) (including 650 in rural libraries).

3. A project *'Libraries for Innovation'*, led by the National Library of Lithuania (NLL) and implemented in two phases (2008–2012 and 2013-2016), was the largest-scale initiative in Lithuania which focused specifically on expanding public internet access in public libraries. It was co-funded by the Bill and Melinda Gates Foundation *Global Libraries Program* and the Ministry of Culture of Lithuania. This project closely coordinated efforts with the RAIN projects, to strengthen public libraries' technological capacities and staff skills to maximise impact and further encourage the public's use of ICTs in Lithuania.

By the end of Phase 1 of the *'Libraries for Innovation'* project, approximately 65,000 residents had participated in ICT skills training organised by public libraries. Libraries also carried out country-wide communication campaigns to raise awareness and encourage residents to use the internet. These campaigns included, for example, contests for local content creation, entertaining learning events on staying safe on the internet which targeted different social and age groups, raising awareness around online employment resources, education opportunities, e-government services, digitized cultural heritage platforms, and virtual communication tools.

Phase 1 achieved two main milestones:

- *'Practically, the problem of access to a computer and Internet is solved in the entire territory of the country (in both urban and rural areas). People who do not have a computer or Internet at home can find free of charge Internet access in the nearest library 5-7 kilometres away.*
- *A network of specialists who know how and actively consult residents on a daily basis and who help to gain or improve digital skills in public libraries was created. Approximately 2,000 of competent members of libraries' staff joined this continuous daily activity'.⁴⁰*

Building on these milestones, Phase 2 of the *'Libraries for Innovation'* project set a further ambitious goal to *"enable libraries to respond to communities' evolving digital needs, and positioning them as sustainable community institutions, so that they increase opportunities for Lithuanian citizens to quality of life through advanced digital services"*.

³⁷ <https://www.placiajuostis.lt/en/rain>

³⁸ <https://www.placiajuostis.lt/en/rain-2>

³⁹ <http://placiajuostis.lt/lt/prip>

⁴⁰ <http://www.bibliotekospazangai.lt/en/>

This phase supported further capacity-building for public librarians on advanced ICT, programming, 3D graphics, robotics, foreign languages, and entrepreneurship, and provided grants to develop innovative services to address needs of users of various ages. Examples of such services include: creating an online bibliotherapy platform and programme for at-risk children and their families; facilitating youth and adults' problem-solving skills and creativity through interactive educational games and 3D labs; and introducing a live broadcast of educational and cultural events to remote and rural communities, etc.⁴¹

Under the current Digital Agenda of the Republic of Lithuania 2014-2020, the Ministry of Culture and NLL continued their work with the public libraries network through a new initiative, '*Promotion of Smart Use of the Web Through the Upgraded Facilities of Public Internet Access*'. The key goals of this project are to develop and upgrade public access ICTs and internet infrastructure in public libraries, to help residents develop digital competencies – enabling them to go online and take part in digital information initiatives, and local content generation. The project is funded by the European Regional Development Fund and the budget of the Republic of Lithuania. The value of the project is 10.74 million EUR.

The project is due to be completed in 2021, to upgrade more than 1,200 public internet access points in public libraries throughout the country. The first step of the project focused on upgrading the hardware and software in public access facilities. 4,625 computers were purchased and distributed to libraries based on their needs, available space and the size of the population they serve.

The project also made improvements to library connectivity, which was relevant for approximately 500 out of 1,200 libraries participating in the project. An installation or upgrade of internet connection was purchased and paid for with project funds. The ongoing internet service fees are paid by municipalities, which poses considerable challenges for municipalities with a large number of libraries.

In addition to computers, the project saw routers, multifunction printers and, optionally, projectors and TVs installed in libraries. The project updated the system of user registration and statistics collection in public internet library facilities. The main feature of the update is the ability to capture the number of users using library WiFi. Libraries were also offered additional ICT packages that create new opportunities for users to interact with a broader range of hardware and software for productivity, entertainment, exploration, creativity and skills-building:

- **Creative packages** consist of a negative and photo digitisation scanner, an inkjet printer for photos, a workstation (computer), a headset for listening to recordings, a microphone for voice recording, a 360-degree camera and a Web-type FHD camera with streaming function, a tablet for design, software for footage and image processing. 67 packages were distributed.
- **Programming packages** consist of a desktop computer, tablet with software, robotics constructor, robotics constructor for beginners, programmable microcomputer set, programmable microcontroller set for beginners, computer set, educational programmable drone for school children. 67 packages were distributed.
- **Engineering packages** consist of 3D printer, workstation (computer), constructor for mastering electronic elements, constructor for mechanical elements, constructor for hydraulic or pneumatic elements, constructor for research of renewable energy sources (sun, lawn, water), constructor for research of optical principles. 58 packages were distributed.
- **Experimental packages** consist of software for virtual reality and artificial intelligence. 67 packages were purchased.

⁴¹ <https://www.lnb.lt/media/public/english/pdf/Report-for-2015.pdf>

- **Packages for visually impaired users** consist of Braille printers, Braille staplers, laminator, voice synthesiser. 30 packages were distributed.

Towards the end of 2020, the equipment was already delivered to about 70 percent of the libraries participating in the project, with the rest to be delivered in 2021.

In parallel with an upgrade of technology infrastructure in public libraries, a network of partners – Window to the Future, Ministry of the Interior, Communications Regulatory Authority and, again, the NLL – joined forces on the '*Connected Lithuania: An Efficient, Secure and Responsible Lithuanian Digital Community*' initiative (2018-2022). Funded by the European Regional Development Fund and the state budget, it focuses on the remaining digital divide of about half a million people in Lithuania - those who are not using the internet or whose digital skills are not sufficient to use digital technologies efficiently, safely and responsibly. This project set up a network of 2,000 digital leaders and consultants and an *e.Scout* network, to help local communities throughout Lithuania improve their digital skills. Over 1,200 public librarians have joined these networks and help people build up their digital competencies.⁴²

Impact. The NLL has coordinated most of the library-focused public access projects described above at the national level. As a part of project implementation, NLL collected and consolidated statistics on library performance, and conducted (or commissioned) country-wide surveys on the quality and user satisfaction with public library services in Lithuania, including the use of public access facilities and services.

The data show that over the last decade, the user profile of library public access facilities has changed drastically: in 2011, public internet access in libraries was most actively used by people aged 15 to 24. Today, community members between the ages of 45 and 65 make up the largest proportion of library internet users. In 2019, a survey of almost 5000 internet users of Lithuanian public libraries showed that 15% of them currently have no other place than a library to access the internet. Older library users who live in rural areas have the least opportunities to use the internet outside of the library (42%). People with disabilities, users with lower formal education levels or lower income also have fewer opportunities to go online outside of the library.

Most visitors make use of library public access facilities for leisure purposes and communication. However, many also use it for studying or accessing e-government services. The survey also highlighted that library usage has a significant impact on users' overall ability to critically assess changes in society (an average score of 7.2 out of 10). Library visitors, particularly those living in rural areas, reported that the library helped them deal with practical issues and develop critical thinking skills. 39% users of library public access facilities said that these helped them maintain communication with friends and relatives, 33% - that it improved the way they carry out their work, 31% said it expanded their possibilities to take care of their health. 29% of users improved their studies, 20% saved money and 8% managed to find a job with the help of library public access facilities.⁴³

The results of this study confirmed that public libraries in Lithuania play a significant role in reducing the digital divide. It also revealed that a librarian's help with questions regarding ICT use is currently one the main motivations for using public internet access in libraries.

Final considerations. In Lithuania, public libraries are recognized as primary national public internet access infrastructure providing equal access to urban and rural communities. The library public access network there has been created in a systematic and coordinated way over two decades. Today, ongoing efforts building on previous

⁴² <https://www.prisijungusi.lt/>

⁴³ <https://www.lnb.lt/en/news/5063-latest-survey-reveals-public-libraries-improve-the-quality-of-life-for-visitors>

achievements and established infrastructure and capacities strive to address the moving targets and new challenges of digital transformation.

The series of public access initiatives was based on continuous multistakeholder collaboration, and engaged different funding sources under the Information Society Development policy framework. The National Library of Lithuania's close collaboration with the Ministry of Culture and other ministries in charge of broadband policy issues played an instrumental role in coordinating and rolling out the country-wide library public access internet infrastructure, as well as in capturing the progress and impact of such initiatives.

5. ROMANIA

Country profile. Romania is a country located at the crossroads of Central, Eastern, and Southeastern Europe. It shares land borders with Bulgaria to the south, Ukraine to the north, Hungary to the west, Serbia to the southwest, and Moldova to the east, and has access to the Black Sea. Romania is the twelfth largest country in Europe and sixth-most populous member state of the post Brexit European Union, with approximately 20 million inhabitants. 2019 World Bank data suggests that over 73% of the population in Romania use the internet.



Romania has 2,300 public libraries, including county, city and town as well as commune-level libraries. The library system is decentralised, and public libraries depend on their local governments. The main institution which unites public libraries is the National Association of Public Librarians and Libraries of Romania (ANBPR), the largest professional organisation of librarians with more than 3,300 active members from across the country.

Broadband policy. Designed in alignment with the 'Digital Agenda for Europe 2020', the 'Digital Agenda for Romania 2020' outlines four key fields of action for the period of 2014-2020: e-government and digitisation of public services and administration; support for ICT at the sectoral level in areas like health, culture, education and the other; ICT-driven economic growth in the regions and in the private sector, and infrastructure for broadband and digital services.⁴⁴

The second field of action – "ICT in Education, Health, Culture and e-Inclusion", among other activities, includes a goal of creating "a modern ICT infrastructure within public libraries". Within the "ICT in Culture" subcategory, one of the national targets is for 25% of cultural facilities and libraries to be equipped with relevant technologies by 2020. Broadly, this aligns with the goals of better interaction between Romanian citizens and libraries, and better access to digital cultural content (including through providing access to digitised collections; as well as improved access to information at large).

In addition, the Agenda points out several existing initiatives that strengthen the interaction between libraries and citizens. These library-based projects work towards improved accessibility (especially for persons with visual disabilities), digital literacy and skills, and employment (including in employment in the agricultural field). The agenda builds on major efforts to build internet access infrastructure in public facilities (including libraries) which started before 2014, within the framework of preceding policies.

⁴⁴ <https://trusted.ro/wp-content/uploads/2014/09/Digital-Agenda-Strategy-for-Romania-8-september-2014.pdf>

Implementing public access in libraries

The establishment of public access facilities in libraries in Romania began with projects aiming to stimulate the use of ICT in society as a whole. One such project was '*Access to ICT in Rural Areas through Telecenters*' (2002-2005), supported by the United States Agency for International Development, USAID. It aimed to establish 8 pilot Telecentres to pilot different technical and organisational models of providing public access to key telecom and IT services at affordable prices for local communities.⁴⁵

A similar initiative was the '*Knowledge Economy Project*', supported by a loan from the World Bank in 2005-2011. The goal of the project was to accelerate the participation of disadvantaged communities in Romania in the knowledge-based society and economy. One of the strategies to achieve this goal was establishing approximately 200 public internet access points in local schools, public administration buildings and public libraries.⁴⁶

The *Biblionet program* (2008-2014) was the first project aimed particularly at building a nationwide public internet access network through public libraries. It was funded by the Bill & Melinda Gates Foundation and implemented by the International Research & Exchanges Board (IREX), in partnership with the national library association (ANBPR), the Ministry of Culture, the Ministry of Communications and local governments. The program provided hardware, software, and IT support for 2,280 public libraries. Meanwhile, local administrations invested \$25 million EUR to cover internet connectivity, library renovations, and operating costs. Training centers were also established within each of Romania's 41 county library systems, as well as regional excellence training centers (RTCs) in five county libraries.

In total, *Biblionet* equipped over 80% of Romania's libraries with ICT and internet connectivity, reaching over 600,000 first-time internet users and training 4,200 librarians to use ICT to provide better services to library visitors and their communities. The program also provided financial support and technical assistance to the ANBPR in order to strengthen its organisational capacity, and raise the profile of library issues at the national and EU levels.⁴⁷

The aforementioned library connectivity and public access projects had been completed by the time the '*Digital Agenda for Romania 2020*' was introduced. This paved the way for the Agenda to recognise the contributions of a range of library-based projects and initiatives in the fields of digital inclusion, digital skills building, and employment. As a following step, one of the lines of action the Agenda set out focuses on ensuring a modern ICT infrastructure in public libraries.

Currently, the library ICT infrastructure maintenance is supported by local governments through standard annual budgeting for municipal library activities, including ICT-related services and programmes. Library representatives mentioned that while the Agenda does not offer binding targets or guaranteed central government investments, it does help libraries secure support from the local authorities.

Impact. Establishing a country-wide public access infrastructure in public libraries paved the way for more productive collaborations with external partners on education and e-inclusion projects. These varied in scope – from international to national to local, and were funded by different sources. Below are several examples and highlights from these projects.

⁴⁵ <https://partnerships.usaid.gov/partnership/access-itc-rural-areas-through-telecenters>

⁴⁶ <http://documents1.worldbank.org/curated/en/764741468333031527/pdf/ICR26580ICR0Ro000PUBLIC00Box379811B.pdf>

⁴⁷ <https://epale.ec.europa.eu/en/blog/biblionet-global-libraries-romania>

International and national-level projects. The National Association of Librarians and Public Libraries (ANBPR) - one of the partners in the *Biblionet* project - continued its collaboration with public libraries in a series of educational projects and programs. These were targeted at different audiences – from children and young people to seniors and members of more vulnerable or underserved social groups.

The educational projects and campaigns carried out by ANBPR aim to offer learning opportunities and reduce the disadvantages that emerge from a lack of access to technology. Some examples of such projects are: *'CinEd'* - cinema education for youth (in partnership with the NeXT Cultural Foundation), *'Digital Parents'* - digital education for children and their parents in small communities (in partnership with Active Watch), *'Opening Opportunities'* - a multi-annual computer-based mentorship program for high school students (in partnership with Microsoft Romania and TechSoup Romania).

ANBPR is engaged in redesigning the role of public libraries in Romania to be key players in reducing the digital divide and digital exclusion. To achieve this, there is a strong focus on building up librarians' digital skills and involving libraries in coordinated digital inclusion activities at European and international levels – such as the e-Skills Week, Get online! Generation Code, Hour of Code, Skills 4IT Coalition, and others. ANBPR is also one of the founding members of the *Alliance for the Digitalisation of Romania*, the *Coalition for Digital Education - CED*, the *Education Transformation Initiative (ETI)* and the *C4Ted - National Cluster for the Education Transformation* which brings together organisations and educational experts in Romania to develop a synergistic community skilled in transformative educational policies and solutions.

Currently, ANBPR is also implementing the *'Teach for Future'* project, focusing on transforming adult education through innovation, technology and entrepreneurship. This is a large-scale Erasmus+ project, which aims to create a transnational multisectoral network of facilitators from Romania, Bulgaria and Greece who can support skills-building in the fields of IT, innovation management & network collaboration, and entrepreneurship & leadership. Through the library networks in these 3 countries, the facilitators aim to integrate digital skills into lifelong learning adult education, and create a positive change through these learning opportunities.

29 rural public libraries (equipped with technologies and relevant skills through *Biblionet*) became partners in a programme run by Progress Foundation and Etic Association, aimed at providing coding skills for children aged between 10 and 14. The *CODE Kids* programme included open-source exercises, creative tasks, mentoring and local support as well as gamification techniques. The pilot engaged more than 450 kids across Romania, prompting plans for further upscaling of the initiative.⁴⁸

Local projects. Individual libraries also continued to offer public access, digital literacy training and other ICT-based services to their communities using existing infrastructure. For example, the Harghița County Library in central Romania obtained computers and an internet connection from the County budget and the *Biblionet* program in 2008-2014, and still uses all 28 computers and offers a number of ICT-based services. These include, for example, no-cost computer and internet access (including WiFi) for the public, STEM and coding training for children and digital skills classes for senior citizens, among others.

The Onesti City Library in Bacău county currently has 19 computers for public use, which have been obtained from the local municipality, the *Biblionet* program and private partnerships. The computers are used for numerous programs, such as: *'Navigator 50+'* – IT training for elderly people, *'Travels around the world'*, which offers virtual travels to elderly people, *'The Mountain's Eye'*, a video projection with images from expeditions in Bacău County and information about the County's geography and protected areas; films and opera broadcasts, video

⁴⁸ <https://librarymap.ifla.org/stories/Romania/CODING-FOR-KIDS-IN-LIBRARIES/20>

conferences, IT classes for kids, digital drawing competitions, online contests, coding lessons and other activities and services. Hundreds of library visitors benefited from these programs.

Final considerations. Public access through the public library network in Romania has been established through a series of initiatives during the period between 2002 and 2018. The large-scale rollout of these public access initiatives paved the way for the Digital Agenda Strategy of Romania to include references to a variety of existing library-based projects which support digital literacy and digital inclusion.

This case study once again highlights the importance of local governments' role in supporting and sustaining the library public access infrastructure after it has been set up. This can be particularly relevant for decentralised library systems – and, in turn, it points to the need for supporting and ensuring local government's capacity to sustain this infrastructure through their budgeting. As in other cases, it also highlighted that additional support can come from different or multiple sources – and that partnerships between public access and external organisations can help maximise impact to champion digital inclusion.

6. THE PHILIPPINES

Country profile. The Republic of the Philippines spans an archipelago of more than 7,000 islands in Southeast Asia, sharing maritime borders with Palau to the east and Vietnam to the west. With an estimated population of over 110,054,600 in 2021,⁴⁹ it is among the 15 most populous countries in the world.⁵⁰ A 2019 national ICT household survey suggests that about 43% of individuals in the country are internet users.⁵¹

Communities in the Philippines have access to a network of more than 1,500 public libraries, established through the partnership between the National Library of the Philippines (NLP) and Local Government Units (LGUs).⁵² Evidence from a 2018-2019 study suggests that a large share of public library users are students and youth, as well as senior community members; and that the gender balance among library users is leaning towards women.⁵³ The NLP Public Libraries Division is the central node of the public library system in the country. It offers guidance and technical assistance for public libraries, and facilitates coordination, training and distribution of library materials.⁵⁴



Broadband policy. A case study by the Alliance for Affordable Internet points out that universal internet access has been an important policy goal for the government of the Philippines from an early stage – for example, referenced as early as the 2006-2010 ICT Roadmap.⁵⁵

Since 2016 the Department of Information and Communications Technology (DICT) has worked on planning, developing, and promoting the development of connectivity in the country, including the improvement of public access to broadband internet services.

⁴⁹ <https://population.un.org/wpp/Publications/Files/WPP2019-Wallchart.pdf>

⁵⁰ <https://www.worldometers.info/world-population/population-by-country/>

⁵¹ https://www.itu.int/en/ITU-D/Statistics/Documents/events/egh2020/EGHEGTI2020 ICTHHSurvey2019Philippines_Presentation.pdf

⁵² <https://librarymap.ifla.org>

⁵³ <http://web.nlp.gov.ph/nlp/sites/default/files/14Jun2019/Status%20of%20Philippine%20Public%20Libraries%20and%20librarianship.pdf>

⁵⁴ <http://web.nlp.gov.ph/nlp/?q=node/659>

⁵⁵ <https://a4ai.org/studies/providing-ict-centres-for-universal-access/>

In 2017 DICT developed the National Broadband Plan (NBP) to broaden internet access across the country. It outlines strategies and instruments to help achieve a more universal, fast and affordable internet access.⁵⁶ Among these, the plan also seeks to leverage several existing tools and initiatives to help deliver on the policy goals and commitments it sets out – of which both ‘Tech4ED’ and ‘Free WiFi in Public Places’ support digital inclusion through public access.

In 2017, the Republic Act 10929 (otherwise known as the “Free Internet Access in Public Places Act”) set out a Free Public Internet Access Program to cover such public spaces as government offices, parks, educational institutions, libraries, and others. In 2020, a revised Act was signed, and the rollout of the “Free Wi-Fi for All” program has been accelerated.

Implementing public access in libraries

The ‘Free WiFi in Public Places’ initiative referenced in the 2017 Broadband Plan focuses on setting up a large network of wireless connectivity hotspots the public can make use of at no cost.

The rollout of the program is ongoing, with public access hotspots already set up in around 9,000 sites as of May 2021 – including more than 300 libraries.⁵⁷ The implementation continues through a collaboration between the DICT and the United National Development Program, as well as local government units. These hotspots offer end-users a speed of at least 2 Mbps – with some locations offering users 10 Mbps connectivity, with a goal of further increasing the speed to 40 Mbps.⁵⁸

The Tech4ED project – ‘Technology empowerment for Education, Employment, Entrepreneurship and Economic Development’ – is another digital inclusion initiative led by DICT. This project evolved from an earlier government program - Community e-Centers (CECs); and its goal is to establish a network of sustainable access points, largely in existing facilities, to help bridge both the digital and educational divides. These public access venues offer free or low-cost access to the internet and ICT, digital services, e-government facilities, and unique tailored content collections which enable learning and skills-building. Already in 2016, the Tech4ED initiative has received acclaim as the winner of the 2016 annual WSIS prize for its achievements in supporting e-employment.⁵⁹

Tech4ED centres are frequently set up in existing public venues - schools, Local Government Units, libraries, and others. In a ‘partner-sponsored’ Tech4ED centre model, the host facility can provide a minimum of 3 computers, WiFi connectivity, personnel, as well as the necessary space and furniture – while DICT would be able to offer training, technical support and assistance, and access to the digital Tech4Ed platform itself.⁶⁰

The Tech4ED platform that can be accessed through public access points includes several digital content collections, which have been evolving and expanding over time. At present, it includes several segments - dedicated to digital skills building (with an additional skills-focused segment for several distinct target audience groups, e.g. people with disabilities, senior citizens, teachers, and others), government services, e-commerce and online freelancing, as well as content focusing on health, agriculture, and women’s empowerment. In some cases, DICT also delivers a computer package for the facility.

⁵⁶ <https://dict.gov.ph/national-broadband-plan/>

⁵⁷ <https://freepublicwifi.gov.ph/livehotspots/>

⁵⁸ <https://dict.gov.ph/five-provinces-in-one-day-free-wi-fi-for-all-accelerates/>

⁵⁹ https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-WSIS.SUCC_STORIES-2016-PDF-E.pdf

⁶⁰ <http://www.psa.gov.ph/sites/default/files/7.6.3%20Tech4Ed.pdf>

Within the library network, *Tech4Ed* centres have been set up through cooperation between DICT and the National Library of the Philippines (NLP). The National Library identifies, evaluates and recommends public libraries where the centers can be established, offers additional content and materials, and helps promote the Tech4Ed platform and services.

Today, 248 Tech4Ed centers operate in public libraries across the country. In some cases, libraries were already able to meet the baseline requirements for setting up a Tech4Ed center (an existing WiFi connection, a minimum of 3 computers, etc) from the outset. In others, local governments and/or DICT provided the necessary ICT equipment.⁶¹ In general, this highlights the fact that (in most cases) the implementation necessitates a baseline ICT and connectivity infrastructure. As such, a robust connectivity infrastructure in libraries and similar public venues can facilitate the rollout of such interventions.

At present, around 50% of barangays (the most local government and administrative units) in the country have a telecommunications operator in the area. All in all, 524 public libraries affiliated with NLP have internet access.

⁶²

Impact. NLP and participating libraries collect information on key performance indicators of library-based Tech4ED centres on an ongoing basis, which helps estimate the impacts of the intervention. In 2019 alone, 176,620 people made use of library-based Tech4ED centres to improve their digital skills (e.g. through formal training or on-the-spot help from library staff). In the same year, 71,443 people made use of the facilities to search or apply for jobs online, and 140,529 accessed online government platforms and services.

Making use of and building on available facilities. The individual experiences of libraries that host Tech4ED centers can also offer insights on how the established facilities can be used - and built on - to maximise impact. For example, after becoming a Tech4ED center, the Butuan City Public Library organised a series of free digital literacy training courses, tailored for specific groups in its community. These turned out to be particularly useful for two target audiences: senior community members, and local healthcare volunteers who were able to optimise and speed up their data collection and processing.⁶³

Supporting vulnerable groups. Drawing on the available content and facilities, the library was also able to set up various educational courses to support employment in its community – e.g. free training on business outsourcing, virtual assistant and e-commerce. This links back to one of the key objectives of the Tech4ED initiative: creating digital inclusion and learning opportunities tailored for more vulnerable or marginalised groups. In this case, the public access facilities created further opportunities to support older community members, self-employed people, and those not currently in employment.

The library also built partnerships to deliver more tech-enabled services relevant to the community. Together with the Philippine Overseas Employment Administration, it helped thousands of people apply for Overseas Employment Certificates, and with the Professional Regulation Commission, it supported teachers with their Licensure Examination registrations.⁶⁴

⁶¹ For example, <https://www.pna.gov.ph/articles/1086445> and <https://www.ptvnews.ph/iloilo-city-public-library-gets-dict-equipment-package/>

⁶² The Monitoring and Evaluation Unit record, April 2021; see also. https://dict.gov.ph/ictstatistics/wp-content/uploads/2020/06/NICTHS-FINAL-REPORT-PRESENTATION_26-JUNE-2020.pdf

⁶³ <http://nlpdl.nlp.gov.ph/web/20200816/impactstories.pdf>

⁶⁴ <https://www.eifl.net/eifl-in-action/economic-wellbeing-innovation-award-4>

Final considerations. The Tech4ED project shows how rolling out an access (and learning) programmes through public venues (with a suitable ICT infrastructure, or where such infrastructure can be made available) can support digital inclusion, skills-building, access to e-government, and employment. Such models are relevant particularly as the Philippines and other countries work to further develop their internet infrastructure and access, particularly in geographically isolated, rural and underserved areas.

Alongside infrastructure availability, budget allocations also impact further scaling up of the initiative – i.e. how many new centres can be set up in a year. Finally, to ensure the long-term sustainability of the centres, training for host staff has been a crucial element of implementation. This allows librarians to continuously adapt to the changing needs of the users, and continue to offer relevant support and programming. The stakeholders involved are also considering what operational models can help build long-term self-sustainability – for example, whether public libraries involved in the project could charge a minimal fee for some services, such as printing and special training courses (while it is of course important to ensure that this would not exclude those who cannot pay).

7. LESSONS LEARNED AND CONCLUSION

The five case studies show a diversity of policy approaches to supporting and enabling public access in public libraries. These include public funding, Universal Service Fund mechanisms, partnerships with NGOs, centralised and decentralised coordination mechanisms. The main focus of public access policy interventions ranged from connectivity infrastructure to skills-building, and these differences inevitably shaped the implementation and outcomes of these policies.

Notably, a number of common themes and similarities emerge across the case studies, offering some insights and lessons for actors planning or considering such policy interventions:

The unique potential of public access through libraries

Helping users from more vulnerable or marginalised groups get and stay online. Several case studies highlighted how public access in libraries was particularly useful for user groups who may be more at risk of staying offline. For example, public access in Lithuanian libraries plays a role in supporting the digital inclusion of residents of rural areas and people with disabilities, people with lower incomes or less formal qualifications. In Romania and the Philippines, established library connectivity infrastructure offered a basis for digital skills classes tailored for senior users.

Developing digital skills. Once the ICT and connectivity infrastructure was in place, it was common for libraries to offer equitable opportunities for digital skills training. Impact evaluation in Lithuania has shown that support and advice from library staff on various ICT questions was one of the key reasons for the public to use library public access facilities, highlighting the value of such offers.

Facilitating discovery and use of relevant digital resources and services. Across the case studies, public access facilities in libraries also helped support their users' employment goals, access to health information and e-health services, and e-government services. The public access facilities and educational resources set up in public libraries in the Philippines as part of the broader Tech4Ed project supported job seeking, skills-building, and access to government services online.

In Kenya, KNLS partnered with the Ministry of Agriculture and the University of Nairobi to set up a service delivering information for farmers online, via phone, and by appointments with the agriculture extension workers.

Introducing value-added services and initiatives, such as local content creation. Many connected libraries were able to offer more than just access and digital skills-building, and introduced new services aimed at supporting social and economic community needs.

In Colombia, library connectivity and public access facilities made it possible for libraries across the country to contribute to local content generation – and introduce 300 new unique service projects for their communities. Similarly, the new services and initiatives that libraries in Romania were able to roll out range from entertainment to culture and heritage to advanced skills-building. In Kenya, public libraries have added devices and programmes which support the development of literacy skills, and learning results in general, among schoolchildren.

In addition, libraries were able to leverage public access infrastructure to take on and help implement other ambitious interventions in collaboration with national and international-level partners. In Romania, the national library association continues to support digital inclusion and educational goals through ICT-enabled services and initiatives in libraries.

Other examples of value-added services and resources made available through libraries include learning circles for participants in online courses, local history and social mapping contests, and more. These can help stimulate interest and engagement with digital ecosystems and encourage further digital skills-building – which can be critical for new internet users.

Providing access to advanced technologies. In Colombia, Lithuania, and Romania, following the installation of traditional public access facilities in public libraries, some have also been equipped with more advanced or specialised technologies, like 3D printers or robotics constructors. This offers the community opportunities to interact, learn and master new technologies and acquire more advanced digital skills.

The formula for policy intervention success

What measures can help fully realise and deliver on this potential of public access in libraries? Several common themes across the case studies suggest important considerations for policy implementation, and factors which can contribute to policy success and long-term sustainability.

Building on existing institutional infrastructure and assessing community needs. Building on existing and functioning local public or community-based organisations – such as a public libraries network – can be an efficient and effective way to expand public internet access. Taking stock of available facilities and needs first can help ensure that a policy intervention helps deliver on all ‘missing’ elements – to enable effective and sustainable public access facilities.

Integrating key elements in public internet access interventions. In general, effective and sustainable public access in libraries and similar facilities included the following elements: ICT equipment + connectivity + training for library staff. However, it is also important to check if all other fundamental infrastructural needs are considered, such as conditions of premises, furniture, etc. In Kenya, initial stock-taking helped identify that local area network infrastructure would need to be set up for many public libraries – and in some cases, it was also important to secure a reliable electricity source. The intervention therefore set up both connectivity infrastructure and solar panels where needed.

Building the capacity of library staff. The case studies also showed library staff training to be an important contributor to long-term success of the interventions. In the cases of Colombia, Lithuania, Kenya and Romania, the training curriculum was broader than just ICT skills, covering such subjects as community engagement, impact assessment, awareness raising, communication and advocacy, etc. This enabled librarians to deliver equitable digital skills learning opportunities, build new partnerships to roll out new ICT-based services, which in turn helped amplify the impact and value of the public access infrastructure and digital inclusion measures.

Drawing on diverse funding sources. The rollout of public access facilities in public libraries is a long-term effort which can be funded from different sources - national and local governments budgets, Universal Service Funds, European structural and investment funds (in EU countries), NGOs, and private foundations. However, it is also vital to plan for continued sustainability of public access facilities from the beginning. This entails planning for long-term expenses and maintenance – for example, computer and connectivity upgrades as demand increases, software and e-resources license renewal. The importance of such long-term sustainability planning and support has been highlighted, for example, by the Kenya, Romania, and Philippines case studies.

Capturing the impact of public access interventions in libraries and similar facilities helps identify good practices, find out what works best, and demonstrate success. A strong evidence base can help articulate the impact of library public access in order to gain government support, attract new partnerships, or carry out fundraising efforts for new initiatives. This also makes it possible to evaluate the progress made - and make adjustments if needed.

In Kenya, for example, recorded impacts of an early grant-based pilot public access intervention in three libraries helped inform an agreement between the national Communications Authority and the Kenya National Library Service for a more large-scale intervention. During the country-wide rollout of library public access infrastructure several years later, ongoing feedback and evaluations helped further tailor the intervention. For example, public access facilities were initially equipped to support a 2Mbps user speed – and on the basis of feedback and shifting community needs, this was later adjusted and raised to 10 Mbps.

Strengthening partnerships and effective leadership. Finally, the case studies highlighted the importance of strong leadership at national, regional and local levels, as well as of coordination and openness to partnerships. For example, a joint initiative between a local non-profit organisation, the public library network, and the Mayor’s Office in Cali, Colombia, helped establish a successful public access model tailored to local needs.

Similarly, the National Library Service worked closely with the Communications Authority of Kenya throughout the implementation of the library connectivity project. Leadership and coordination by the KNLS head office helped to expand the rollout and ensure the longstanding impacts of the project. It also made it possible to build new partnerships and attract external funding for the development of ICT-based programming in libraries across the country.

ANNEX ONE: BROADBAND POLICY ANALYSIS METHODOLOGY

The initial sample is a set of 38 countries and 41 policies highlighted by the Broadbandpolicy.org project keyword search for “library” and “libraries”.

The key broadband policy documents for these 38 countries were assembled based on the list of national Broadband Plans published in Broadband Commission’s 2019 *State of Broadband* report.

If the policy document(s) indicated in Broadband Commission's list did not contain the quote highlighted by Broadbandpolicy project's tool, an exact phrase search was used to identify the policy document that contains the reference(s).

If the identified document was:

- (a) a national policy document with a focus on broadband, ICT, communications or digital development (or if the section of the document containing the reference was dedicated to any of those themes);
- (b) issued by a national authority or agency, and
- (c) the latest available version of the document (i.e. no newer versions of the document have been published), then the policy document was included in the sample.

Several policy documents were excluded from the sample when: (a) the references to libraries were not substantial (e.g. did not contain policy goals, targets, objectives, initiatives, or actions; or feature as part of a situational analysis), or (b) if the document could not be located in a translatable format.

On the basis of suggestions from DC-PAL and working group members, two broadband policies which have been released recently and contained references to libraries – the broadband plans of Kenya and Cameroon – have been added to the sample manually. If you are aware of any other national broadband policies that contain references to libraries, please let us know.

This resulted in a sample of 32 countries.

All policy documents were then scanned for the following keywords:

- "library", "libraries";
- "public access", "access point"; ("public", "community" OR "anchor") AND ("institutions" OR "organisations")
- "school", "universit*", "hospital", "post*", "museum" – to see if policy actions focused on various anchor institutions can apply to libraries as well (if the list of eligible institutions is open-ended).

In addition, if the paragraphs containing those keywords included references to specific projects or programs, further information about these initiatives was sought.

ANNEX TWO: LIST OF BROADBAND PLANS, POLICIES AND STRATEGIES INCLUDED IN THE ANALYSIS (PART 2)

Angola	Livro Branco das Tecnologias da Informação e Comunicação 2019-2022; “The commitment of Angola in the Communications and IT sector according to the Recommendations of the World Summit on the Information Society.”
The Bahamas	Electronic Communications Sector Policy (2014); Policy Statement on Electronic Commerce and the Bahamian Digital Agenda (2003); Framework for the Clarification and Implementation of Existing Universal Service Obligations (USO) (2013)
Bangladesh	National ICT Policy (2009); National Broadband Policy (2009)
Belgium	Digital Belgium - Plan for Ultrafast Internet in Belgium 2015-2020
Benin	eNNOV Benin (Atelier sur la stratégie de développement de l'économie numérique au Bénin Cotonou - Rapport de Synthèse) (2016)
Botswana	National Broadband Strategy (2018)
Bulgaria	National Broadband Infrastructure Plan for Next Generation Access; Roadmap for the implementation of the National Infrastructure Plan for Next-Generation Access Plan
Cambodia	Cambodian ICT Master Plan 2020 (2014 – Summary by the Korean International Cooperation Agency)
Cameroon	Strategic Plan for a Digital Cameroon by 2020 (2016)
Canada	Digital Canada 150.2; High-speed Access for All: Canada's Connectivity Strategy (2019); Canada's Innovation and Skills Plan (2017)
Colombia	Plan Vive Digital 2014-2018
Czechia	National Plan for the Development of Next Generation Networks (2016)
Dominican Rep.	Agenda Digital 2016-2020 (2015)
Egypt	eMisr National Broadband Plan Phase 1 (2011)
Ethiopia	The National Information and Communication Technology (ICT) Policy and Strategy (2016)
Gambia	The Gambian ICT4D-2012 Plan (2008)
Germany	Digital Agenda 2014 – 2017 (2014)
Hungary	National Infocommunication Strategy 2014-2020 (2014)

Jamaica	Vision 2030 Jamaica - Information and Communications Technology (ICT) Sector Plan 2009-2030 (2009); Information and Communications Technology (ICT) Policy (2011)
Kenya	National Broadband Strategy 2018-2023
Mali	Plan Mali Numerique 2020 (2015)
Mauritius	National Broadband Policy 2012 –2020 (2012)
Nigeria	National Information and Communication Technology (ICT) Policy (2012); Universal Service Provision Fund Strategic Management Plan 2018-2022
Portugal	Agenda Portugal Digital (2012)
Qatar	National Broadband Plan for the State of Qatar
Rwanda	SMART Rwanda Master Plan 2015-2020
Serbia	Strategy of Broadband Network and Service Development in the Republic of Serbia by 2016
Slovenia	Digital Slovenia 2020 – Development Strategy for The Information Society Until 2020 (2016)
Switzerland	Digital Switzerland Strategy (2018)
Turkey	Information Society Strategy and Action Plan 2015-2018 (2015); National Broadband Strategy 2017-2020 (2017)
USA	Connecting America: The National Broadband Plan (2010)
Zambia	National Information and Communication Technology Policy (2006)

ANNEX THREE: LIST OF CONTRIBUTORS TO THE CASE STUDIES (PART 3)

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