PNMA Repository (as of 12/2023)

2022 PNMA Good Practices with Implementation Updates

- **Connectivity**

2022 selected case	
Case 1:	**Contribution of SMEs Business Associations to Develop Meaningful Connectivity**
Location:	Georgia (isolated remote areas in highlands) - Eastern European Group
Funding:	n/a
Responsible institutions / partners / people:	• Telecom Operators Association of Georgia
What is the problem?	• Lack of connectivity in isolated areas in the Georgian highlands • Micro, Small, and Medium-sized Entities (MSME)s and Community Networks (CNs) have to be regulated minimally and the Government will give the non-regulated areas the last mile ISPs, including in rural areas.
Which were the actions taken to address the problem(s)?	• Usage of SME ISPs resources and lobbying advantages in negotiation to create and plan assistance, training, tech and legal support of the CN

Results / Impact / Lessons learned (what worked / remaining challenges)	• Results:
	  ○ After 2 years: traffic has doubled, there are new users and new settlements, new businesses
	  ○ For the last 7 years: establishment of community network projects with support and mentorship of internet champions (e.g., Jane Coffin, Maarit Palovirta, Massimiliano Stucchi) and trisectoral participation (state, private actors, NGOs)
	• Impact: all local SME businesses are online and are bookable digitally; education and all local state services are accessible online and remotely.
	• Lessons learned: after working with a state and regulatory body the CN model is now part of a public strategy to provide connectivity to remote areas; the state is ready to be a donor to these projects as it was done in the pilot region of Pshav-Khevsureti.

2023 Follow-up	
Has the problem been solved?	A challenge of business model and economics sustainability is a case for almost all CNs, same in Pshavi-Khevsureti network at times (due to heavy snow, lightening, cheap hardware etc). An additional challenge was a dark fibre cable installed two years ago - it changed network performance and sustainability but added a few challenge. To solve funding problems, we raise the monthly fee but for operational expenses we add money from our personal salaries.
Did any new problems emerge during implementation?	On implementation level we did not meet any serious problems just small issues and were solved easily.
2022 solutions still work to tackle the problem? New solutions needed to be developed?	This is a technical network so when you are using solar power and batteries issues are just adding, The network capacity has to be made bigger because of the end-user and network performance data is increasing and demand is rising so challenges are much more than a year ago. The radio network amortization period is not huge so this issues are also rising.

Was the solution scaled or localised to other regions? If so, please share examples	Our experience with solar panels, charge controllers and batteries were shared with SME's of Georgia.
New milestones:	We can say fibre optics operational challenges are related with heavy snow and landslides. This two issues take too much time and money - we mean restoration.
New challenges:	Georgian Parliament started creation of white paper on universal funding so it could be useful for CN funding, but we did not see any draft yet. The middle mile project - open net is almost finished so will be solved first and middle mile challenge and replayed in many areas.
Lessons learned:	Yes, if you are using cheap solar panels and batteries will find after two-three years that you have to buy new ones and installations.
Next steps:	We want to cover other isolated region but looking forward for additional funding at least 40% for all budget.
Another important matter:	ISOC supported project on IXP has started so it will try to connect CNs to the IXP and decrease so called internet connection wholesale expenses.

Case 2:	Alternative model for closing the connectivity gap in rural areas of developing countries based on multi-stakeholder initiatives for development
Location:	Peru, Province of Condorcanqui (Amazonas Region) - Latin American and the Caribbean Group (GRULAC)
Funding:	Spanish Cooperation, on a multi-stakeholder nature - monetary contributions from the Binational Plan, the Regional Government and the Municipality of Condorcanqui; non-monetary contributions from other institutions, including Catholic University of Peru.
Responsible institutions / partners / people:	• Lead: Peruvian Government • Pontificia Universidad Católica del Perú • Several public and private institutions, including the Provincial Municipality, the Regional Government, and universities

What is the problem?	• Connectivity gaps in rural, remote areas of developing countries
	• Specifics:
	  ○ The pilot localities have no broadband internet access services and only two of them have 2G mobile telephone service.
	  ○ Served population is almost entirely made up of natives belonging to the Awajun and Wampis ethnic groups

Which were the actions taken to address the problem(s)?	• Implementation of a series of telecommunications stations that function as repeaters. Between them, two free-band wireless links are established as backhaul. In each locality, wireless links are established from the repeater station to the public institutions; through this network, the highest public entities in the area are able to purchase and share the broadband Internet access service with rural institutions. • The actions are carried out within the framework of the Multi-stakeholder Alliance for the Development of Reliable Digital Territories
Results / Impact / Lessons learned (what worked / remaining challenges)	• Results: integration of two innovative and complementary proposals aimed at bringing mobile telecommunication services (3G/4G) to rural communities • Impact: improved essential services such as health, education, and governance. 23 public institutions were benefited - including 1 hospital, 10 schools, and 5 primary health care facilities • Lessons learned: it would have been desirable to have a regulatory framework that allows and encourages collaboration between different actors, including different telecommunication companies. The interest of telecommunication operators in securing their customer base means that they are often not receptive to collaborating with other operators. This lack of collaboration makes it difficult to develop new connectivity models where telecommunication services are not available and financial return is perceived as too low.
2023 Follow-up	
Has the problem been solved?	Partially; although local public institutions already have Internet access, the possibility of a mobile operator participating in the project to provide 4G services in these localities is still being coordinated and evaluated.
Did any new problems emerge during implementation?	No new problems have emerged during project implementation.
2022 solutions still work to tackle the problem? New solutions needed to be developed?	Considering that technology evolves very quickly, it is possible to state that, although the solution is still applicable today, PUCP and EHAS are still working to identify potential improvements or new alternative solutions. In this way, LEO satellite systems, for example, could be an option we want to test in the near future.
Was the solution scaled or localised to other regions? If so, please	This initiative is being implemented in other regions of the country. As part of these activities, coordination is underway to replicate the connectivity project in those places.

share examples	
New milestones:	Between June and July, PUCP and EHAS have installed tele-education and telemedicine stations in 10 schools and 5 health facilities, respectively in the Santiago river basin.
New challenges:	The change of authorities in the regional government of Amazonas (via the electoral process) has been a challenge for the continuity of the project because there was a possibility that these new authorities would not continue the collaboration with the Multi-Stakeholder Alliance and the Project. However, after a process of coordination and information sharing, the new authorities have not only continued with the support but are also evaluating financing of the second stage of the project.
Lessons learned:	Unfortunately, the lack of institutional framework in the regional and municipal governments makes it necessary to maintain a permanent and exhaustive coordination and awareness-raising effort with these institutions to ensure the continuity of the policies and activities committed to the project.
Next steps:	To implement telemedicine and tele-education services; to secure the participation of a mobile telephone operator to provide services in the localities benefiting from the Project; and to formalise the approval of the second stage of the project, which includes the construction of 8 additional repeater stations in the same number of rural localities.
Other important matter(s) on the project and not covered above:	As part of the initiative in Condorcanqui, the PUCP has organised the Seventh Workshop of the Multi-stakeholder Alliance with the participation of various entities from the three levels of government. This workshop is a milestone in the process of multi-stakeholder alliances in this territory and was held with the participation of the Regional Government of Amazonas, demonstrating its commitment to the Project.

- **Digital Inclusion**

2022 selected case	
Case 1:	**Are We Together?**
Location:	Uganda – African Region
Funding:	Internet Society Foundation
Responsible institutions / partners / people:	• Pollicy ○ Focal point: Meital Kupfer (in 2023: Bonnita Nyamwire)

What is the problem?	• As Internet access continues to exponentially grow and reach communities that were previously offline, it is necessary to install proper, curated digital spaces to document and preserve languages, share, teach and disseminate material to new or existing speakers, and translate information for marginalised groups.
	• Digital platforms give importance and value to minority groups when the use, production and consumption of digital products and design occur - hence, there is room and opportunity for linguistic empowerment online.
	• Specifics:
	  ○ The project looks at rural areas (farmers who use applications for livelihood purposes) and informal economy workers in urban areas.
	  ○ It sheds light on the unique experiences of women and gender-diverse individuals in how they access and use online spaces in local languages. Intersectionality is key.
	  ○ The project prioritises local content - its white paper is translated into Amharic, Luganda and Swahili. The product of the ethnographic research will be disseminated in multiple languages; the focus groups are being conducted in local languages as by location.

Which were the actions taken to address the problem(s)?	• Individuals and organisations in all sectors touching the digital space should listen and adapt for a more inclusive and diverse language landscape. This includes the following actions:
	  ○ Policymakers and governments: mandate open source code; promote digital education in local languages; Incentivize tech businesses to operate in-country
	  ○ Technology firms: consult indigenous/local groups for feedback; hire people who speak underrepresented languages in their countries of origin; localise software and code so developers in the global South can translate products/services; spend more resources on software and code in non-Latin scripts; focus on content moderation in all countries of operation
	  ○ Civil society: support social media and other digital platforms spearheaded by indigenous groups; continue to conduct research; provide advocacy platforms
	  ○ International actors: sponsor and fund grants to preserve endangered languages online; support local organisations and conduct regional and global advocacy

Results / Impact / Lessons learned (what worked / remaining challenges)	• Results (best example): farmers in rural Uganda can use applications or communicate in their local languages to apply for loans on WhatsApp with relative ease.
	• Desired Impact:
	  ○ Understand/improve the impact of languages on the usability, accessibility, trustworthiness, growth and moderation of digital platforms
	  ○ Generate specific recommendations for technologists and developers to create a more inclusive internet for all. Digital platforms play a critical role in developing countries – beyond entertainment and commerce, they enable livelihood opportunities and enable governments and citizens to better engage with one another. In many developing countries, Big Tech platforms fill gaps in state capacity, and provide essential informational and social infrastructure. It is therefore critical to understand issues around access, usability and safety (domains) across different languages groups on digital platforms.
	• Lessons learned: there are no specific local/regional/national policies or regulations that could help. Research on national language policies in Ethiopia, Tanzania and Uganda has demonstrated fallbacks - e.g., post-independence Tanzania has championed the use of Swahili resulting in 98% of its people speaking some level of it in everyday life; however, dozens of other local languages that are not prioritised are falling into disuse.

2023 Follow-up	
Has the problem been solved?	No, we are continuing with advocacy on local language inclusion on online platforms. Advocacy has been ongoing among government agencies, civil society organisations.
Did any new problems emerge during implementation?	Yes, limited funding to continue with advocacy through workshops and conferences.
2022 solutions still work to tackle the problem? New solutions needed to be developed?	2022 solutions are still working to tackle the problem.
Was the solution scaled or localised to other regions? If so, please share examples	Solutions were localised to countries where the research was conducted. For example, because of limited funds, most of the physical advocacy has been done in Uganda where the Pollicy team is mainly based.
New milestones:	1. Creation of a microsite where resources on this project are shared and have been accessed by over 100 people. 2. We hosted dissemination webinars about the project 3. Data from this project was combined with that from other two projects; one on Future of work and the other on fair conditions for gig economy workers to advocate for a better future of work through workshops with different stakeholders including gig economy workers, linguistic experts, market vendors, influencers, bloggers, online entrepreneurs, e-commerce delivery personnel and students. A report was published by Pollicy from this combined information. 4. Getting to collaborate with the government, specifically the Ministry of ICT, on our projects that focus on the future of work of which Are Together Project is among.
New challenges:	The most challenging policy has been the amended Computer Misuse Act that introduced measures and penalties that seek to control use of social media platforms to share content. This is a challenge as the Future of work moves to largely online platforms but also as we advocate for local language inclusion some content may be interpreted as "hate speech" or offensive because of lack of accurate online translation. The recently launched Digital Transformation Road map for Uganda presents us with an opportunity to scale up advocacy for local language app that can be easily used for communication and access to services.

Lessons learned:	It is important to involve the government in the work we do; advocacy, awareness raising, etc. This makes it easy for CSOs to penetrate the targeted community. Secondly, government involvement makes the target community to easily embrace any programs on the project as communities tend to believe in government programs that they focus on their needs and are credible as well as sustainable.
Next steps:	As we move into advocacy, we have been able to collaborate with the government and brought them on board on our projects that focus on the future of work of which the "Are we Together" project belongs to. We hope to widen our scope for advocacy as we leverage on this collaboration.
Other important matter(s) on the project and not covered above:	None

2022 selected case	
Case 2:	**NUPEF Projects**
Location:	Brazil - Latin American and the Caribbean Group (GRULAC)
Funding:	n/a
Responsible institutions / partners / people:	● Instituto NUPEF ○ Focal point: Carlos Afonso, Oona Castro
What is the problem?	● Lack of support for the preservation/rescuing/presence of local languages of original cultures over the Internet
Which were the actions taken to address the problem(s)?	● Graúna Project: enable local access to knowledge packages in local community networks even without a good connection to the Internet. ● Caburé Project: develop online security resources to help NGOs and local communities to protect themselves ● Project actions take into account the concept of meaningful access defended by PNMA.
Results / Impact / Lessons learned (what worked / remaining challenges)	● Results: ongoing projects ● Impact: ongoing projects ● Lessons learned: action is needed at the federal level, beyond the communities' efforts. Given the challenges of growing inequality in Brazil and other countries, a major need is a strategic national public policy of meaningful access which coordinates with local (state, municipalities) actions.
2023 Follow-up	
Has the problem been solved?	No
Did any new problems emerge during implementation?	Several challenges, given the diversity of the indigenous cultures and idioms.
2022 solutions still work to tackle the problem? New solutions needed to be developed?	This is ongoing and also a learning experience for Nupef. Ideally a result would be the community enabled to carry out the further development of the activity.
Was the solution scaled or localised to other regions? If so, please share examples	Too early to tell. A full report will be available at the end of 2023.
New milestones:	-
New challenges:	One major challenge is funding sources for the proper continuity and advancement of the project.
Lessons learned:	-
Next steps:	-

2022 selected case	
Case 3:	**WWW as a web of our Webs**
Location:	India - Asia/Pacific Region
Funding:	● APC and Dweb Camp (figures n/a)
Responsible institutions / partners / people:	● Janastu ○ Focal point: Dinesh T.B. ● Tools development support: ISIF.asia, APC, Development Alternatives, Design Beku, Chiguru Coop
What is the problem?	● Script/text is a barrier to internet access: more than 3 billion people are not comfortable with written text in any script. ● Many are functionally literate, but ○ prefer narratives to be read; ○ prefer listening and prefer watching; ○ their stories need to be shared; ○ are of all ages. ● Specifics: ○ This experience started from a COW (Community Owned Wireless) called COWMesh ○ By observing conversation patterns, one notices there is no content accessibility problem when there is no written text shared.
Which were the actions taken to address the problem(s)?	● Resolve the issue of the written text using hypermedia towards a social semantic web ○ Hypermedia linking and renarration using “Papad”: an open source media sharing and publishing platform. It allows audio and video uploads to a local server and adds tags in the form of text or images to entire or relevant parts (fragments) of files.
Results / Impact / Lessons learned (what worked / remaining challenges)	● Results: ○ For the past several years Janastu has been working on Community Owned Wireless (COW) Mesh Networks in rural areas, with emphasis on distance learning. Recently, additional attention was given to contents circulated on COWs and created by own CNs ○ Focus on the larger number of people who are not "tech savvy" while also being marginalised by the literates. ● Impacts: we hope to direct attention to local content in local languages along with services on community networks. The effect of such interventions will stimulate economic transformation and situate the dialogue into an ecosystem that leads to a cohesive future of remote communities. ● Lessons learned: policies and regulations need to support development of internet technology services that are internet independent
2023 Follow-up	
Has the problem been solved?	No or rather partially addressed
Did any new problems emerge during implementation?	Lack of reciprocation as there is not a concerted effort by many groups to see the need to bring low-literates on board the Web. New "problems" are our realisation that many more do not see a way to handle these problems and seem to sideline it. This is an internet scale problem and related to human rights, meaningful connection to communities who are low-literate, emergence of new problems is natural.
2022 solutions still work to tackle the problem?	Our attempts are to develop hyper-media archives and renarration tools. We have developed a couple of ways to help initiate a dialog on the possibilities to address the

New solutions needed to be developed?	problem. We further developed what we proposed and also have new approaches to demonstrate a future of possible solutions.
Was the solution scaled or localised to other regions? If so, please share examples	We are still striving to make it easy to use due to tech issues. We worked on scalability and localization and platforms are open for use and deployment.
New milestones:	We have gathered a number of local audio-visual narratives, developed a platform for hyper-media archiving and also for renarration which needs further fine tuning. Two platforms are now available online, which can be deployed in community networks. Stories.janastu.org and sweets.janastu.org We are documenting these as reference implementation of a tech-stack for including low-literates.
New challenges:	It is surprisingly tough to motivate young developers to proactively work on these issues. We are yet to see policies which advocate for inclusion of low-literates in meaningful access discussions.
Lessons learned:	It is important to provide R+D support for such inclusion which is otherwise looked up as meaningless activity. We need to bring explicit focus and bring policy and technology people to see the 3 billion who are not able to search or browse search results of the text heavy Web.
Next steps:	Possibly a larger recognition of this need and collective design and application of mindsets. The next step is to bring a federated approach to allow community expressions to bring in hyper links between text documents, media objects and community wide social networks. This would allow a demonstration of how the Internet today can be annotated by communities, thereby making it an internet for tomorrow that includes low-literate people as first-class citizens of the Web.
Other important matter(s) on the project and not covered above:	At a very high level, for the first time in human evolution anyone can easily record a narrative, store and share in time and space. Historically, lack of this possibility can be seen as the reason for powerful institutions of the past. Bible as a book would create an institute of churches, Quran mosques, Vedas and other texts have created a number of Brahmanical institutes, and the status quo continues this. All of them use these to determine power structures where the knowledge of the book will mean higher in community structures. We have an opportunity now because of technology to bring in new senses for community structures. We may have to also regulate a runaway possibility that restructures knowledge as determined by more powerful computationally and resources wise (e.g., chatGPT like AI).

2022 selected case	
Case 4:	**Habeshaview - streaming platform of African movies in Ethiopia**
Location:	East Africa and Ethiopian Diaspora
Funding:	Private investment (figures n/a)
Responsible institutions / partners / people:	● Habeshaview Technology & Multimedia ○ Focal point: Mrs Tigist Kebede, CEO
What is the problem?	● Making and offering local content in local languages that reflects and dramatises local cultural values, aspirations and societal debates remains challenging in many developing countries. As a result, people accessing local Internet services may not always see themselves and their cultures represented in the available content offered, a factor that undermines meaningful access. ● Specifics: ○ Market failure in local audiovisual production: Meeting the production and marketing costs of local audiovisual content is often more difficult in countries where sources of funding such as government subsidies, hypothecated tax, private equity and bank financing are not yet developed or – when they are – are not tailored to the needs of the local audiovisual content production industry. The result is that local market failure for culturally meaningful content production is not always being addressed. The issue is compounded by the difficulty in constituting and protecting audiovisual works as IP assets that can be leveraged to raise certain forms of collateralised debt financing such as are available in some developed markets. ○ Lack of distribution channels, including online services: the content financing challenges are exacerbated by the difficulties involved in generating revenues from the distribution of audiovisual works across the local, regional and global value chains.
Which were the actions taken to address the problem(s)?	● Develop a sustainable local content production and distribution model. The company specialises in bringing curated Ethiopian films, TV series and documentaries to Ethiopian citizens and diasporic populations. ● The company has built without subsidies in a production hub and an online distribution ecosystem based on a sizeable technology investment, at risk. Services offered include live news and entertainment channels with a 'catch-up' service as well as Video on Demand. ● Culturally relevant content is sourced from a variety of studios and producers and made available in multiple local languages within Ethiopia (most of times in the original language it was created in) and subtitles in major languages such as English, French and Arabic. ● Online offer caters for the different purchasing power of the Ethiopian population and foreign users by offering content through different pricing options (e.g., 24-hours 'all-you-can-eat' subscriptions, pay-per-view, and regular monthly access). There is also free content from producers and studios that are motivated to reach a wider audience at home and in the diaspora. ● By creating an opportunity for local audiovisual producers in Ethiopia to monetise the content they make in local languages, Habeshaview contributes to adding a cultural dimension to meaningful access: the curated content reflects Ethiopian users' own cultures, social issues and creative preferences.
Results / Impact / Lessons learned (what worked / remaining challenges)	● By creating an opportunity for local audiovisual producers in Ethiopia to monetise the content they make in local languages, Habeshaview contributes to meaningful access by adding a cultural dimension to it. The curated content reflects Ethiopian users' own values, social issues and creative preferences.

2023 Follow-up	
Has the problem been solved?	It has been partially solved. In May this year, Habeshaview signed a carriage deal with ethio telecom, Ethiopia's leading ISP and launched the first IPTV service in Ethiopia in October 2023. The agreement gives habeshaview's online platform and its diverse offer of news and locally sourced original audiovisual content, potential access to a user base of 72 million out of which over 38 million are smart phone, data and voice package customers. habeshaview's technology also permits access to the platform by subscribers in other countries; depending on its licence agreements with individual local content producers, it will either make the content available globally, or it will apply geofiltering technology, to respect and protect creators' IP according to the terms of their agreements.
Did any new problems emerge during implementation?	Internet suspensions in the context of civil conflicts in Ethiopia have had some slowing down effect in the capability of habeshaview to reach - and attract - new potential subscribers within the country. Additionally, the rising cost of living combined with an adverse economic climate in Habesha's country of establishment has meant an intensification of the challenges in generating new original audiovisual content for the platform, as the already fragile sustainability of producing local content has been further weakened. Widespread illegal use of audiovisual works - sometimes organised on a criminal scale - is further undermining the ability for local creators and producers of content in local languages, to finance new works. Local creators recognise that this is also a cultural challenge and that there is a need for more awareness-raising campaigns about the link between illegal downloads or physical media copying and the challenges experienced by local film and TV industry workers in making a sustainable living, so they may continue to make audiovisual works that communicate or dramatise relevant local socio-cultural or economic themes and preoccupations. Finally, the local content industry suffers from a lack of specialisation and professionalisation, due to insufficient resources available to training and skills' development and the difficulties for film and TV workers to make a sustainable living.
2022 solutions still work to tackle the problem? New solutions needed to be developed?	To a fair degree, habeshaview has had to adapt its 2022 local content generation strategy to meet the challenges of a tougher economic environment. In the current climate, Habesha either finances a new project 100%, controlling the IP on the finished film or series, or it seeks to share the financial risk by attracting co-financing partners in Ethiopia or further afield, to enable the content to be made and rights to split pro rata of Habesha's and partners' relative contributions. habeshaview has also adopted a flexible business model in dealing with local content creators and producers. It will only buy out all rights in cases when it finances the content 100%; in all other cases, it will either request an exclusive licence for its platform for a maximum term of 2 to 3 years, being mindful of the need for content producers to exploit their works in other markets after that initial window, in order to earn additional revenue; or it will offer a straight revenue-share based on a recognition of the value of the producers' work as well as the value-added of being programmed on the habeshaview platform. To address the threat of the content being devalued through piracy and illegal uses, habeshaview has deployed a bespoke Digital Rights Management [DRM] technology, which allows the platform to protect the integrity of the local creators' works and their economic value.
Was the solution scaled or localised to other regions?	habeshaview's business and social responsibility ethos is based on applying a flexible rate card, with offers adapted to the different levels of subscriber purchasing power and available income, based on the firm belief that culture and entertainment - especially of the kind that genuinely reflects and honours local cultures and languages - sits very high in the pyramid of people's needs.

	To illustrate this approach in practice: within Ethiopia, habeshaview offers a low-priced 24h 'all-you-can-eat' subscription that reflects many local consumers' shifting priorities in the allocation of film/video entertainment needs. It also offers a very discounted monthly 'Silver' package with advertising or a monthly 'Gold' package with the same content available ad-free.
New milestones:	1) habeshaview's May 2023 carriage agreement with ethio telecom makes the company the first IPTV service provider to launch in Ethiopia to provide potential access by 72 million ethio telecom's subscribers to this local film/video content platform in local languages - the extended outreach is the single most important factor in the development of habeshaview's platform and its social/cultural impact 2) A flexible rate card that factors in the economic challenges faced by many local subscribers 3) A strategic approach to original new content financing and production, through 100% upfront financing or via co-financing with third parties 4) A business philosophy that considers the importance of helping local creators and producers of content become economically sustainable in the long run. 5) Option to license the habeshaview's state of the art OTT / IPTV platform to third party telcos, network operators and broadcasters generates revenue .
New challenges:	See reply to previous question/questions.
Lessons learned:	There is a need to consider Internet capacity building and measures to boost the economic sustainability of local audiovisual content as inseparable strategic constructs. Meaningful cultural content in local languages drives demand for Internet connection (be they fixed or mobile) the world over. Governments, civil societies and local creative industries need to work in a joined-up way to address local content sustainability as an integral part of the strategy to develop a meaningful Internet for All.
Next steps:	A lot of work remains to be done to promote economically viable local creation and production of content and the role of platforms such as habeshaview is vital in this respect, as they provide alternatives to globally tailored content curated through larger international streaming platforms. Additionally, habeshaview is very committed to develop its presence amongst expatriate Eastern African communities at large and the Ethiopian Diaspora in particular. Emigration too often results in languages and cultural riches being lost amongst the emigrating populations and subsequent generations. Platforms such as habeshaview perform a socially beneficial service by bringing relevant content from the home countries to communities where underlying demand for content that upholds their cultures is strong.
Other important matter(s) on the project and not covered above:	Very significant progress on meaningful access to this - one of the few - local platforms dedicated to culturally relevant local content in local languages (e.g., Amharic, Tigrinya, Oromo) was achieved through the carriage agreement with ethio telecom, the country's leading telco.

Case 5:	ICANN: Coalition for Digital Africa
Presented at the 2023 PNMA Plenary Session:	**Yes - brief updates included in the Plenary Session report / only these updates were received**
Location:	1st Phase: 10 countries; 2nd Phase: 20 countries
Funding:	ICANN - budget n/a
Responsible institutions / partners / people:	• ICANN in partnership with: • Africa Network Operators Group(AFNOG) • Africa Top Level Domains Organization (AFTLD) • Association Of African Universities (AAU) • Internet Society (ISOC) • Network Startup Resource Center (NSRC)
What is the problem?	Internet penetration in Africa grew from 1.2% in 2000 to 43% in 2022. This explosive growth is driven by a digitally savvy, young, and educated urban workforce for whom the adoption and consumption of online services is second nature. ICANN is committed to ensuring that the Internet continues to grow safely in Africa, and in a stable manner, to bring communities, cultures, and economies together. This can only happen by creating an alliance among the various stakeholders who contribute to and influence the Internet ecosystem in Africa. Collaborating with partners across the continent, the Coalition for Digital Africa will be able to accomplish more than each organisation could achieve on its own, thus creating workable responses to regional challenges and ultimately, serving the global public interest.

Which were the actions taken to address the problem(s)?	• Install 2 ICANN Managed Root Server (IMRS) clusters in Africa - one in Kenya, other location to be announced - in order to:
	  o Add crucial capacity to support the anticipated growth in Internet use across Africa.
	  o Diminish the risk of Internet service disruptions and degradation due to cyberattacks.
	  o Support and enhance the overall resilience of the DNS infrastructure in Africa.
	• Prepare email systems and other communication platforms within higher education institutions for Universal Acceptance (UA) and Email Address Internationalisation (EAI) by:
	  o Creating awareness of and developing capacity for UA and EAI within academic institutions.
	  o Providing training so that these institutions can build their email systems, databases, and websites UA-ready.
	  o Offering information to higher education institutions, enabling them to incorporate UA and internationalised domain names into their curricula.
	  o Encouraging higher education and research institutions to participate in the work of the Universal Acceptance Steering Group (UASG).
	• Encourage Domain Name System (DNS) operators, registries, and registrars in selected African countries to implement and deploy DNS Security Extensions (DNSSEC), while working with network operators to turn on DNSSEC validation. This effort will ultimately lead to the development of a DNS resource portal for Africa. Expected follow-ups in:
	  o Overall improved DNSSEC deployment across many ccTLDs in Africa.
	  o Increased uptake of DNSSEC at the second and third levels of domain names.
	  o An online DNS resource portal and library.
	  o More secure and resilient DNS infrastructure in Africa.
	  o Greater percentage of DNSSEC validation among African DNS Operators

	• Increase (or attract) participation and contribution from Africa in multistakeholderism by engaging National IGF active within NRI in terms of Internet policymaking by: o Offering tailored capacity development activities led by industry experts through online courses, hands-on workshops, and webinars. o Making each ccTLD an asset for the development of meaningful connectivity in their respective country. o Assisting ccTLD registries to establish a sustainable environment for the development of the Internet country code. o Assisting governments, regulators, and selected ccTLD registries in the development of partnerships, growth strategies, and network registrars.
Results / Impact / Lessons learned (what worked / remaining challenges)	• Results: the project has just been launched at the Global IGF 2022 in Addis Ababa. Results (some mentioned above) are expected over the next three years. The first concrete achievement should be the installation of a new IMRS cluster server in Kenya, within a few months.

- **Capacity Development**

2022 selected case	
Case 1:	**Policy and Regulation Initiative for Digital Africa (PRIDA)**
Location:	Continental project implemented by the African Union Commission
Funding:	• Budget - €10 million (October 2018 - June 2023)
Responsible institutions / partners / people:	• African Union Commission • ITU • European Union • African Union Member States

What is the problem?	• Challenges hindering African participation in global digital policy decisions:
	  ○ Capacity gaps at the technical and policy level
	  ○ Lack of synergies between the national, regional and continental processes
	  ○ Gender gap, rural-urban divide and barriers to youth involvement in the digital space
	  ○ 23 out of the 55 AU member states did not have internet governance (IG) structures as at the end of 2019

Which were the actions taken to address the problem(s)?	• PRIDA is responsible for below actions to build capacity of policy officers, Internet community and diplomats of Member States, strengthening the ability of African stakeholders to actively participate in the global IG processes (policy and technical debates) and develop their negotiation skills
	  ○ Set up a coordinated African roadmap for addressing public policy issues on IG
	  ○ Set up and promote an African Union Academia on Internet Governance to build capacity in IG, especially among youth
	• Development of a strategic plan focused on supporting/creating synergies from national, regional, continental and global initiatives
	• A curriculum was developed to support the 23 African countries in the creation of their national IG structures.

Results / Impact / Lessons learned (what worked / remaining challenges)	• Results:
	  ○ A generic curriculum has been developed and used to support around 29 national and regional SIGs (with localised application), available in English, French and Portuguese
	  ○ 16 countries have been supported to hold their first School of Internet Governance (Botswana, Eswatini, Madagascar, Cape Verde, Comoros, Liberia, Egypt, Mauritania, Morocco, Ethiopia, Guinea Conakry, Seychelles, Central Africa Republic, Djibouti, Lesotho and Somalia).
	  ○ Of these 16 countries, 8 (Lesotho, Somalia, Eswatini, Madagascar, Botswana, Liberia, Cape Verde and Ethiopia) have subsequently been supported to hold their first National IGF.
	  ○ The PRIDA IG course has also been used in Togo, Uganda, Nigeria and at the regional IG schools of West Africa and North Africa
	  ○ In collaboration with UNECA, the PRIDA IG course was used to train 80 UNECA youth volunteers who offered support during the 17th Global IGF in Ethiopia
	  ○ Between 2020-2022, 29 training sessions have been held using the PRIDA platform, with an average of 50 trainees per session (ca. 1,500 trained people across the continent)
	  ○ PRIDA has trained around 100 trainers to replicate the knowledge
	  ○ 30 people across the region have been trained on e-facilitation
	• Impact: for sustainability of the course, PRIDA is collaborating with The Pan African University Institute for Governance, Humanities and Social Sciences (PAUGHSS) to offer it as an elective discipline at the Bachelors or Masters level (pilot expected in the

	first quarter of 2023). ● Lessons learned: ○ In all the training we entail to have gender balance at 50/50; progressively reaching the goal ○ Inclusion of all stakeholders and age diversity are requirements for joining the training - about 50% of the participants are expected to be below 30 years old
2023 Follow-up	
Has the problem been solved?	By the time the project closed in June 2023, there were about 35 Schools of IG held across the continent. 16 out of the 23 Countries that did not have IG structures had been supported to hold their first school of IG and about 1,500 people had been trained. There is still a need for more people to be trained so we are far from addressing the capacity and skills gap.
Did any new problems emerge during implementation?	Yes. Sustainability of the training has not been addressed. There is a demand for the developed customised training, but there is a need to have more volunteers to support the training or a model that will ensure that the materials are being utilised efficiently and effectively.
2022 solutions still work to tackle the problem? New solutions needed to be developed?	Yes, this solution is still very applicable. Re-thinking on sustainability is needed to ensure that more people benefit from the model - it utilises youth across the continent to facilitate the trainings. The courses developed and implemented are still very relevant going forward.
Was the solution scaled or localised to other regions? If so, please share examples	The solution has been used in all the five African regions, at the national and regional levels, in more than 30 Schools of Internet Governance (SIGs). Since it is a generic customised course, it can also be applied in other continents. The course is available in French, English and Portuguese.
New milestones:	The project ended in June 2023.
New challenges:	The implementation was smooth all through.
Lessons learned:	The need to have more volunteers to conduct capacity building activities across the continent.
Next steps:	Continue with capacity building work. Encourage more people to volunteer with capacity building work at varied levels.
Other important matter(s) on the project and not covered above:	N/A

2022 selected case	
Case 2:	**Techio Comunitario and National Schools of Community Networks**
Location:	Mexico, Latin American and the Caribbean Group (GRULAC)
Funding:	n/a
Responsible institutions / partners / people:	● Rhizomatica Communications ● APC
What is the problem?	● Low technical skills (installation, operation and maintenance of CNs) of the indigenous communicators that live in remote areas.
Which were the actions taken to address the problem(s)?	● Design of a comprehensive training programme to address the priority issues stated by indigenous communicators, based on the Participatory Action Research (PAR) methodology, as well as the pedagogies practised in the ways of learning and sharing knowledge that occur in indigenous territories
Results / Impact / Lessons learned (what worked / remaining challenges)	● Result: development of "Techio Comunitario", a training programme for technical promoters in broadcasting and telecommunications from Mexico and Latin America, to address not only technical issues, but the social and economic implications of technologies, regulation, and sustainability. ● Impact: ○ Although the programme cannot be fully replicable because all pedagogical processes must be contextualised, currently, the methodology used in the design and implementation of "Techio Comunitario" is the basis for the development of the National Schools of Community Networks in five countries of the Global South (Brazil, Indonesia, Kenya, Nigeria and South Africa), through the training and mentoring from LocNET, an initiative led by the Association for Progressive Communications (APC) and Rhizomatica. ○ The main contribution of this programme has been the building of an international network of peers who have the knowledge and skills to install, maintain, operate and manage their telecommunications projects. Its replicability does not lie in the curricular structure of the programme, but in the methodology used for its design and implementation.
2023 Follow-up	
Has the problem been solved?	This problem of low technical skills of the indigenous and rural communicators that live in remote areas was partially solved, as this program has their limits in terms of resources. First, in Latin America the Techio Comunitario Program has been developed successfully with the ITU in a hybrid format. A total of 150 students from three generations have graduated from 13 countries of the region (45% are women). That is a significant number in terms also of indirect beneficiaries, that are those members of the communities where those graduates live or work, but still there needs to be a big impulse and continuity of this training program to impact more people and their communities. The main impact also is not in terms of numbers of participants, but in the consolidation of a network of technical promoters that help each other. Second, The National Schools of Community Networks (NSCNs), in Brazil, Nigeria, Kenya, South Africa and Indonesia, completed their cycles divided into three stages: program design, training implementation, and support and mentoring of community projects. At least 21 people from 7 communities graduated from each NSCN, for a total of more than 100 graduates from these schools in the global south. The participatory methodology implemented generated very diverse processes in the five cases and allowed for the direct strengthening of local connectivity solutions through capacity building in rural and indigenous communities. Finally, this process generated a solution to the lack of access to useful resources for the development of community networks. This was done through the CN Learning Repository

	(https://cnlearning.apc.org/), which is in the consolidation phase as a Learning Management System (LMS).
Did any new problems emerge during implementation?	- Training must be accompanied by the mobilisation of resources and support for community projects to become sustainable. - Hybrid and online training strategies must be improved to promote better teaching-learning processes. - There is a need to train trainers in the organisations so that they are capable of developing their own training processes. - The inclusion of women and other genders continues to be a challenge, especially when it comes to technical or managerial issues. - There is a need, particularly in Africa and Asia, for a regional initiative that can generate networks of peers who can undertake alternative connectivity solutions in rural and indigenous contexts.
2022 solutions still work to tackle the problem? New solutions needed to be developed?	The solution has been proven to work since 2016, when the Techio Comunitario program started in Mexico. This solution has suffered improvements and updates in terms of curricula structure, instructor and training resources, and as we mentioned in 2022, the programme cannot be fully replicable because all pedagogical processes must be contextualised, but the methodology used in the design and implementation has been the basis for other important training programs in different regions of the world. A hybrid regional training programme is therefore being developed in Africa in coordination with ITU, based on the one developed in LAC. In the case of the NSCNs, it was possible to implement the Participatory Action Research (PAR) methodology as a strategy for the design of training programs adapted to the needs and ways of learning of the target communities. This led to a series of very diverse training processes that allowed the development of local solutions with significant access that could be sustainable over time. Following the methodology itself, after the completion of these training cycles, an evaluation process is now necessary to understand the improvements to be made to the model generated. With this evaluation carried out, it will be possible to address the requests for replicability of the experience in the three regions where it has been implemented. In relation to the repository, the space has already been generated and is being nurtured to solve the lack of access to materials related to CNs, but it needs to be consolidated as an online learning and networking space to strengthen the movement in the global south.
Was the solution scaled or localised to other regions? If so, please share examples	Due to the visible results of the NSCNs and the training program in LAC, replication processes of the methodology have been generated in other contexts. First, there is a growing interest in the creation of similar programs in countries and regions such as Malawi, Francophone Africa, northern Argentina, Colombia, northern Mexico, Central America, the Philippines, etc. Second, the process for the replicability in Africa of the hybrid training program developed with ITU in LAC has been started. In Q3 and Q4 of 2023 we will be developing a regional mapping and consolidating the collaboration with the ITU after the initiative was approved at the 30th meeting of the Telecommunication Development Advisory Group (TDAG). Finally, due to the demand for an online Learning Management System by several organisations, the CN Learning Repository is being scaled up to become an integral space for training in community networks and local solutions with significant access.
New milestones:	A fourth generation of the LAC training program began in May 2023. A record number of applications was broken, receiving more than 700 and accepting 94 participants. This year's bootcamp will be held in late November in Guatemala. Closing cycles and microgrant program of the National Schools of Community Networks (January to August 2023):

	- Brazil: The community communication movement in the region was strengthened thanks to the installation of six online community radio stations, each with an Internet access point that will provide connectivity to the local population. - Indonesia: Ten community projects were developed to use technology to solve local problems, from improving connectivity to the use of AI for fishing and agriculture. The support organisation is planning the Rural ICT Camp 2023, an annual event where they will link the NSCNs with national and international stakeholders. - Nigeria: Training processes were generated to address the lack of digital literacy in the communities with which they work. Projects were generated, in partnership with other organisations, for the installation of access points supplied with solar energy. - South Africa: This was the first school to complete its activities and, after almost a year of training in community project management, the graduates of the 7 supported communities presented their projects to key stakeholders and potential donors in January 2023. - Kenya: They developed a process of on-site accompaniment to the communities they supported, achieving the consolidation of local projects very close to the needs and lifestyles of the population. They are currently generating materials and courses to replicate the NSCN model in Africa. Progress has been made in the development of a hybrid training programme for ICT network managers in Africa in collaboration with ITU. A contribution to the 30th meeting of the Telecommunication Development Advisory Group (TDAG) was submitted in June 2023 and approved by the countries represented in this group. Subsequently, mapping activities of training initiatives and organisations that could be partners in the process have been developed. The CN Learning Repository has more than 100 materials, mostly in Spanish and English, and has gradually grown stronger through its relationship with training programs and courses. This online learning space was launched in March 2023. Several spaces for reflection and advocacy have been generated in international events, such as: - In September 2023 the session “Capacity-building and an enabling policy and regulatory environment to empower communities” will be developed at Africa Internet Governance Forum 2023. - In March 2023, in collaboration with the ITU Office of Digital Inclusion, the session "Capacity Building and Enabling Environments for Meaningful Access in Indigenous and Rural Communities" was held at the World Summit on the Information Society Forum. - In November 2022 the participation of the representatives of the 5 National schools of Community Networks during IGF in Ethiopia sharing during the panel “Lessons Learned from Capacity Building in the Global South”. - In August 2022 the initiative has been recognised during the las Participatory Design Conference held in August 2022, in Newcastle, UK, and received an award for the outstanding achievement in the area of participatory design of information and communications technologies (ICTs).
New challenges:	The most important advocacy action in 2023 related to the project was the approval at the 30th meeting of the Telecommunication Development Advisory Group (TDAG) of the contribution to the development of a hybrid training programme for Africa. As was previously the case when this same action was developed for Latin America, this action allows ITU to consolidate its position as a key partner in the development of a project of this nature.
Lessons learned:	Communities around the world have generated strategies to address their communication needs and achieve ICT insertion processes in a way that is relevant to their development objectives and ways of life. This has been possible, among other things, thanks to capacity building processes aimed at the people who live in the communities and where methodologies, contents and learning goals are formulated based on the specific contexts of the territories where the training takes place. The sharing of the practical and theoretical learning that has been generated in these processes becomes fundamental to achieve more solid training actions that have repercussions in practice. Therefore, the systematisation of experiences, access to relevant pedagogical resources and

	communities of practice are aspects that ultimately allow the achievement of the proposed objectives of digital inclusion and meaningful access. Being able to make knowledge and pedagogical resources available to indigenous, rural and marginalised urban communities is key to strengthening capacity-building initiatives focused on achieving meaningful access conditions in these territories. This implies a series of elements that an enabling environment should contain and in which certain public policies can facilitate the existence and consolidation of these training experiences.
Next steps:	1. Development of a comprehensive evaluation of the methodology and process developed in the NSCNs and the training program in LAC. 2. Redesign and update of the courses taught in the program in LAC. 3. Generation of materials and/or courses for the replicability of the model in other contexts. 4. Development of the collective design and implementation of a continental hybrid training program in Africa in collaboration with the ITU, based on the PAR methodology. 5. Accompaniment and mentoring in the development of training programs specific to the initiatives that have started their own processes. 6. Scalability of the repository to include an online learning platform in which a first virtual course is taught, as well as linking the space with existing training projects.
Other important matter(s) on the project and not covered above:	The development of such capacity building processes in community contexts, as a basis for the development of alternative connectivity and meaningful access solutions, requires the joint efforts of a wide range of stakeholders. Hence, it is necessary to continue building strategies and learning communities around the development of multi-stakeholder pedagogical processes. In this sense, the process of sharing experiences that can take place in a space such as the PNMA group is key.