IGF 2022
Policy Network on Meaningful Access

From Policy to Implementation: Lessons and Good Practices to Advance Meaningful Access

PNMA Output Report
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Executive Summary

The Policy Network on Meaningful Access (PNMA) is a type of intersessional activity under IGF created to establish an expert-led framework network on broad Internet governance topics, making room for in-depth multistakeholder efforts. It aims to formulate impact-driven, concrete, and actionable policy recommendations on how to achieve meaningful and universal Internet access aligned with the Secretary-General's Roadmap for Digital Cooperation and the Sustainable Development Goals.

In 2022, the PNMA focused its work on agreed three overarching thematic workstreams: Connectivity (Infrastructure & Business Models), Digital Inclusion through citizen approach (accessibility & multilingualism: local services and contents in local languages based on local needs and resources) and Capacity Development (technical skills training). To discuss the topics and look for successful solutions, a Call for Inputs was published, open to the IGF community and any interested stakeholder. All submissions, regardless of the focus area, could refer to newly established, ongoing, or previous projects, showcasing what works in their approach, what has not worked, and lessons learned from the experience. The information was collected and analysed via standard forms and questionnaires. In that way, the Policy Network could identify whether policy actions have facilitated or encouraged increased meaningful access.

The output report includes selected contributions from Latin America, Africa, Eastern Europe, and Asia. From the listed good practices, one can observe the presence of international organisations (e.g., ITU, WAN, WIPO, ICANN) as collaborators in the projects. These institutions are indeed PNMA's partners and share the mission of connecting everyone, everywhere - a sample of their work is equally listed in this document.

At the IGF 2022, the PNMA held a hybrid session to discuss the report cases with a multistakeholder panel. Both the report and the session outcomes point to the same direction: meaningful access is indispensable to comply with the goal of giving Internet access to all citizens of the world; appropriate public policies elaborated in a multistakeholder way and management of frequency spectrum in the public interest are needed to achieve this goal. The main obstacles to be solved are affordability, adaptability and security - all including an important, intersectional gender dimension.

Finally, plenary participants concluded that connectivity is key to enacting policies from the community's point of view and for their needs, in their own languages, investing in partnerships and organisations that share a long-term perspective in the region. The examples included in the report confirm such statements.

List of Acronyms

AAU	Association of African Universities
AFN	Ads for News Initiative
AFNOG	Africa Network Operators Group
AFTLD	Africa Top Level Domains Organisation
APC	Association for Progressive Communications
AUC	African Union Commission
BTRC	Bangladesh Telecommunication Regulatory Commission
CN	Community Network
COW	Community Owned Wireless
DACD	Development Agenda Coordination Division
DNS	Domain Name System
DNSSEC	DNS Security Extensions
DSO	Digital Switch-Over
DTT	Digital Terrestrial Television
DTTB	Digital Terrestrial Television Broadcasting
EAI	Email Address Internationalisation
EMF	Electromagnetic Field
GARM	The Global Alliance for Responsible Media
GoS	Grade of Service
ICANN	Internet Corporation for Assigned Names and Numbers
IG	Internet Governance
IGF	Internet Governance Forum
IIG	International Internet Gateway
IMRS	ICANN Managed Root Server
IP	Intellectual Property
ISOC	Internet Society
ISP	Internet Service Provider
ITU	International Telecommunications Union
NSRC	Network Startup Resource Center
NTTN	Nationwide Telecommunication Transmission Network
NUPEF	Núcleo de Pesquisas, Estudos e Formação
PNMA	Policy Network on Meaningful Access
PRIDA	Policy and Regulation Initiative for Digital Africa
SIG	School of Internet Governance
SME	Small and Medium Enterprises
SMS4DC	Spectrum Management System for Developing Countries
UA	Universal Acceptance
UASG	Universal Acceptance Steering Group
UGC	User Generated Content
WAN-IFRA	World Association of News Publishers
WIPO	World Intellectual Property Organization
WRC	World Radiocommunication Conference

1. Introduction

About meaningful access

The concept of **meaningful access** has emerged in response to the growing body of evidence that even when people have connectivity, they might not have been fully benefiting from the Internet. How one gets connected to the Internet is an equally important challenge to the experience that person will have once they are online. While access to infrastructure is critical, without this access being inclusive, useful, sustainable, affordable, and linked to human capacity development and relevant content that can make it so, it will not achieve its full, positive potential. Many of the efforts on access, unfortunately, are only focusing on bringing connections to final users and treating them as consumers, without taking into consideration the potential of the Internet as a way to create, communicate and produce contents and services locally and in local languages - acknowledging users as citizens with their own online civic spaces.

About the Internet Governance Forum (IGF)

The Internet Governance Forum (IGF) is a global arena, convened by the United Nations Secretary-General[1], where governments, civil society, the Internet technical community, academia, the private sector, and independent experts exchange information and share practices around Internet governance and policy issues.[2] It brings together different stakeholder groups as equals, working as a facilitator of a common understanding of the Internet opportunities and threats.

In 2022, the seventeenth annual meeting of the IGF explores the overarching theme "Resilient Internet for a shared sustainable and common future". The meeting is hosted by the Government of Ethiopia and takes place from 28 November to 02 December, in Addis Ababa and online.

About the Policy Network on Meaningful Access (PNMA)

The Policy Network on Meaningful Access (PNMA) is a type of intersessional activity under IGF created to establish an expert-led framework network on broad Internet governance topics that create spaces for in-depth multistakeholder efforts. Its foundations are grounded on:

- the IGF mandate at paragraph 72 of Tunis Agenda, for the exchange of information and engagement of stakeholders - in particular from developing countries - as well as capacity development in Internet governance;
- the paragraph 93(e) from the United Nations Secretary-General's Roadmap for Digital Cooperation as it envisages a strengthened IGF with a view to making it more responsive and relevant to digital issues, and streamline priority areas (global connectivity, digital inclusion, capacity building);
- Our Common Agenda First Commitment ("Leave no one behind") and Seventh Commitment ("Improve digital cooperation");
- the Global Digital Compact future engagements.

The PNMA officially started its activities in June 2021, aiming to formulate impact-driven, concrete, actionable policy recommendations on how to achieve meaningful and universal Internet access

[1] The resolution adopted by the UN General Assembly on 16 December 2015 (70/125), "Outcome document of the high-level meeting of the General Assembly on the overall review of the implementation of the outcomes of the World Summit on the Information Society", extended the mandate of the IGF as set out in paragraphs 72 to 78 of the Tunis Agenda.

[2] IGF website: http://www.intgovforum.org. The IGF is one of the key outcomes of the World Summit for the Information Society (WSIS).

aligned with the Secretary-General's Roadmap for Digital Cooperation and the Sustainable Development Goals. At IGF, the network is preceded by several previous discussions: BPFs Local Content and Gender; the Proposal about Sustainable and Affordable Internet and the CENB 4 Phases; DCs and NRIs, to name a few.

The 2021 PNMA cycle has set the foundations for building a firmer, more impactful process and stronger, long-term cooperation networks. The first step was building a 'network of experts' named the Multistakeholder Working Group (MWG), with the goal of supporting the transformation of the community's views into concrete actions, such as outputs and actionable next steps, by assessing and gathering good practices and policy recommendations already discussed at the IGF and other fora. The MWG also vows to create opportunities for the voices of those who are affected by the lack of meaningful access to be part of policy debate and development. Lastly, the policy network has initiated or strengthened connections with other fora and intersectional work.

In 2022, the PNMA MWG focused its work on agreed three overarching thematic workstreams: Connectivity (Infrastructure & Business Models), Digital Inclusion through citizen approach (accessibility & multilingualism: local services and contents in local languages based on local needs and resources) and Capacity Development (technical skills training), with attention to the highlighted goals and proposed outcomes.

2. The 2022 PNMA process

Objectives

- Tackle challenges to achieving universal meaningful connectivity and access to the internet, by focusing on urgent areas that need multi stakeholder attention
- Document good practices and case studies of experiences that can inform concrete actions and interventions to advance universal meaningful access
- Facilitate collaboration, partnership and networking among actors from all stakeholder groups concerned with this topic, including those involved with the Global Digital Compact and Digital Cooperation efforts

Focus Areas

Building upon last year's process, the 2022 PNMA chose the following focus areas:

- Connectivity (infrastructure and business models, analysed within the framework of the Roadmap for Digital Cooperation)
- Digital Inclusion (accessibility and multilingualism), with special attention to local contents in local languages, helping the digital transition of existing experiences
- Capacity Development (technical skills training)

Work plan and methodology

As stated in 2021 IGF messages, the PNMA efforts are not directed at "producing a unique definition, but [aim] to identify, map and understand the properties that those in the field identified as key"[3] to meaningful access. Starting from the previous database of stories and case studies collected throughout the last year, the PNMA MWG can shed light on the reasons why known, effective policy solutions currently lack scaling in their implementation. The work plan aims to analyse the above-mentioned focus areas by asking the following questions:

- What has been done so far? Analyse gaps in policy
- How to improve affordability, meaningful connectivity, and the social elements that support meaningful access?
- What is connectivity used for? How to reinforce those usages that could produce positive social and economic impact?
- How to improve the use and quality of connectivity to support civic engagement?
- What (national, regional) impact does connectivity have?

[3] IGF 2021 Report, p 45. Available at https://intgovforum.org/en/filedepot_download/223/20706

- How could digital inclusion be strengthened through the prioritisation of local contents and services?

- Do capacity development efforts take intersectionality into account?

The MWG is especially interested in gathering successful cases of good practices on multilingualism/content in local language. The PNMA community plays an important role in highlighting these initiatives and bringing attention to creative solutions derived from marginalised groups.

To address the collation of such examples, a Call for Inputs was published, for ample participation of the IGF community and any interested stakeholder. All submissions, regardless of the focus area, could refer to newly established, ongoing, or previous projects, showcasing what works in their approach, what has not worked, and lessons learned from the experience. The information was collected and analysed via standard forms and questionnaires. Hence, the policy network can identify whether policy actions have facilitated or encouraged increased meaningful access.

Selected contributions are included in this output report (Chapters 3 and 4). All complete and appreciated submissions will be added to a forthcoming public repository of good practices, which will be made available on its webpage. It is expected that this directory is kept up to date with the publication of similar calls in the next few years.

3. Case studies per focus area

One of the main goals of the PNMA is to identify strategies, analyses and best practices that could help in building a more inclusive access to the Internet. In this sense we have collected among many suggestions, brought to our attention through a bottom-up process with the participation of the PNMA community (the 2022 Call of Inputs), those examples that have the best potential to be replicated elsewhere and to be adopted in other contexts. For each focus area, the examples are presented following standard assessments derived from the chosen methodology for this year's process.

3.1. Connectivity

3.1.1. Background

Under this focus area, the PNMA community has chosen five good practices that can be replicated and localised. Contributions come from Eastern Europe, Latin America, Africa, and Asia. Each of them features collaboration with different stakeholder groups.

The first case presents a community networks project initiated by the private sector, which has sparkled the interest of the country's national government. The second case also deals with community networks in remote areas, this time in Latin America - here, the collaboration involved academia and private institutions, under the lead of the government. Public initiative is also the responsible factor for the success of the third contribution, by connecting remote areas for their own technical and economic development. Notably, national governments have the power to enact policies that benefit the disadvantaged, which in turn benefits the entire population - the fourth contribution describes one of such policies, recently enacted in South Asia. Finally, as an alternative to community networks, the fifth contribution presents a mobile access point which can be simultaneously connected to dozens of devices.

3.1.2. Analysis

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 highlands ● MSMEs and CN have to be regulated minimally and state will give the non-regulated areas the last mile ISPs of 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.

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.

Case 3:	Internet access point 'Cybercase de Popenguine'
Location:	Popenguine, Sénégal - African Group
Funding:	n/a
Responsible institutions / partners / people:	● His Excellency the President of the Republic, Maître Abdoulaye WADE
What is the problem?	● Provide a pilot/experimental laboratory to enable the State to launch and test ICT projects for Senegaleses living in disadvantaged areas. ● Specifics: ○ Laboratory 60 km from the capital in a rural environment made up of 3 large villages of ca. 15,000 inhabitants ○ Gender-focused
Which were the actions taken to address the problem(s)?	● Implement an internet access point to promote ICTs for local development and ensure their democratisation
Results / Impact / Lessons learned (what worked / remaining challenges)	● Results: ○ Opening of an Internet room with a community radio and services for online administrative procedures ○ Free remote training offers in French, Arabic and Wolof in an interactive e-learning platform ○ Issue of electronic chip cards for financial inclusion (withdrawals, deposits or purchases) ○ Quality telemedicine services offered to local and surrounding populations ● Impact: ○ Improvement and modernisation of economic activities of women and young people in rural areas via training ○ Telemedicine consultations generate local jobs as the suitcases/computers are handled by young people and women trained for this purpose. ● Lessons learned: we lack multistakeholderism in the management of such infrastructure. We need advice on how to implement an adapted business model to resurrect internet access points in a rural area.

Case 4:	One Country One Rate
Location:	Bangladesh - Asia-Pacific Group
Funding:	n/a
Responsible institutions / partners / people:	● Bangladesh Telecommunication Regulatory Commission
What is the problem?	● The Bangladeshi government provided internet infrastructure to rural areas, but a considerable amount of people is still unconnected due to the high prices
Which were the actions taken to address the problem(s)?	● BTRC, in consultation with interested stakeholders (e.g., telecoms), proposed the adoption of a unified internet tariff across the country, regardless of use in urban or rural areas
Results / Impact / Lessons learned (what worked / remaining challenges)	● Results: ○ The unified price guarantees intersectionality. ○ Along the "One Country One Rate" tariff a Grade of Service (GoS) was also implemented for internet service providers (ISPs), international internet gateway (IIG) operators and nationwide telecommunication transmission network (NTTN) operators. Each ISP, NTTN and IIG shall be obliged to maintain a GoS and ensure quality of service under provision of penalty conditions falling short of the grade. ● Impact: complete implementation of the single internet tariff across the country will bring visible change to the IT sector, increasing the number and size of industries such as ICT incubators. ● Lessons learned: it can be promoted as an acceptable business case for the ISP industry on how to maintain affordability and expand services to stakeholders in rural areas.

Case 5:	Sustainable Development by Internet Backpack
Location:	Democratic Republic of the Congo (DRC), Liberia and Costa Rica
Funding:	n/a
Responsible institutions / partners / people:	• Syracuse University School of Information Studies (iSchool) partners and with support from the National Science Foundation's (NSF) Division of Engineering, and Computer and Information Science and Engineering (CISE)
What is the problem?	• The cost of services and the lack of infrastructure in the above-mentioned countries prevent most people from accessing the Internet - operation costs are high starting from ISPs, which use satellite bandwidth use • No other approach to community networks has been tested
Which were the actions taken to address the problem(s)?	• Creation of the Internet Backpack: a portable Wi-Max network covering a range of 5 miles, fully chargeable by solar energy, and able to simultaneously connect dozens of devices. Internet access is ensured by low-orbit satellites paired with the backpack. Each device costs USD 13.000 ○ Designed mainly to cover areas at risk of natural catastrophes, in order to reach the rural population disconnected from the electric grid or telephone networks • Implementation of pilot studies with community feedback and user responses in the DRC, Liberia and Costa Rica.

Results / Impact / Lessons learned (what worked / remaining challenges)	• Results:
	  ○ Emergence of a new type of community network: the 'Pop Up Community'
	  ○ In Costa Rica, for instance, the Internet Backpack allows up to 50 users and 250 devices to share connectivity and device resources, anywhere, with a field set-up time of 4 minutes
	• Impact:
	  ○ Capable of supporting the original design of 'worst case scenario survival as a service', as well as affordable resource-sharing for education and remote indigenous community access in less extreme circumstances
	  ○ Currently, 20 pilot studies are being implemented in 8 countries, on 4 continents.

3.1.3. Summary conclusions

Selected cases confirm that multistakeholder collaboration is key to provide solutions to the unconnected. Actions need to be localised, but can be expanded and tested out in different areas. Community networks are still the preferred business model to establish access in remote areas - not only for the different ways telecommunication services can work with them, but also because it services the target population as they seem fit, catering to local services and local languages.

Alongside academia, private sector and non-profits, national governments are responsible for enabling environments that encourage access, with the proper regulation to ensure safety and affordability. Being the only agent with such a mandate, the public sector is indeed an important player and should be actively involved in connectivity efforts with both investments in infrastructure

and enactment of policies. Finally, academia has the means to research innovative solutions to bridge the digital gap - as the internet access point that can be used outside of the electric grid and provides satellite connection to remote areas.

3.2. Digital Inclusion

3.2.1. Background

Under Digital Inclusion, five cases caught the attention of the PNMA community, geographically distributed between Africa (3 cases), Asia-Pacific, and Latin America.

Two of the selected cases are studies that try to define and solve concrete issues related to Internet access, namely a sustainable business model for digital local contents and the barriers that the absence of local languages online create to local communities and the digital economy.

Another two selected cases are concrete examples of how communities that have been able to deal with the issue of access (i.e., creating community networks), immediately have to face the issue of contents to be accessed - what is already online do not correspond to the needs and priorities of these communities. Besides improving the upload of local content in local languages, a successful practice could also be to provide access based on voice chat, voice fragments, audio or video publications, hypermedia, and conversations.

One of the contributions here presented is an initiative entirely financed by the private sector, a streaming platform exclusively reserved to African movies in their original language, and based in Addis Ababa, Ethiopia. A female entrepreneur believes that a digital market for African movies exists and can be economically sounding and robust in a short span of time.

3.2.2. Analysis

Case 1:	**The Digital Music Market in West Africa**
Location:	West Africa
Funding:	n/a
Responsible institutions / partners / people:	● WIPO ● Local governments - Ministries of Culture ○ Focal point: Paolo Lanteri, WIPO
What is the problem?	● African music is becoming an essential element in local creative economies, albeit without user/creator knowledge about communication tools or business models in digital technology. ● The lack of more interest in content distribution is due to the low income of music sector stakeholders and the restrictive value chain imposed by telecom operators, indispensable for network access and mobile payment means. ● Given low rates of banking, music downloading and/or streaming, services are purchased via postpaid telephone credit or mobile money. With telecoms involved, the value chain costs are over 63% bigger than the copyright royalties, with the remaining balance going to platforms and producers. ● Internet coverage and access are relatively limited in West Africa, at least until the arrival of 4G, social networks and access to low-cost smartphones. Mobile telecom operators use music as leverage to attract more users to their data packages. ● Specifics ○ International platforms lack interest in the specificities of African music. ○ There is no special attention in state cultural policies to supervising, legislating and promoting guarantees for private investment in the music industry.
Which were the actions taken to address the problem(s)?	● Transition to digital transformation through digital music platforms created by Africans for Africans. Local platforms are solutions that are suited to an appropriate (fee-based) premium subscription for local music and are different from international streaming services and traditional social networks.
Results / Impact / Lessons learned (what worked / remaining challenges)	● Results: creating awareness about the value gap problem in digital music distribution. ○ The value gap is the difference between the revenue that UGC platforms, streaming services with and/or without advertising, and telecom operators get from music and what they pay to authors and other music stakeholders. ● Lessons learned: ○ It is a major hurdle to stand up to Internet giants and force them to pay royalties for the benefit of rightsholders. ○ There is an urgent need of training for all music stakeholders in order to consolidate their professionalisation and their involvement with the value chain, enabling a significant increase in their income. Training will also guarantee a better chance for a sustainable artistic career. ○ The lack of digital expertise in these new business models - imposed by digital transformation and designed to develop the local music economy - can be addressed by bolstering cultural enterprises through a less onerous tax regime and the introduction of guarantee funds to stimulate investment in the music sector. ○ The rise of a professional music ecosystem will be beneficial to all stakeholders in both the music and digital industries.

Case 2:	Are We Together?
Location:	Uganda – African Region
Funding:	Internet Society Foundation
Responsible institutions / partners / people:	● Pollicy ○ Focal point: Meital Kupfer
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.

Case 3:	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.

Case 4:	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

Case 5:	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.

3.2.3. Summary conclusions

The panorama offered by the five examples is very wide, not only geographically (because it goes through all regions where the majority of less developed countries are), but also in conceptual terms. The first message that can be drawn from the analysis is that preservation of roots and cultural identities is a precondition to make the transition to digital transition possible to communities that do not want to lose their identity. To include the billions of unconnected that do not communicate via script, it will be mandatory to adopt their forms of expression. That means mainly non-text based communications, such audio and video files/messages, and other intuitive forms of expression. Physical access to the Internet in itself is not enough, if it does not solve and tackle the other barriers that prevent many citizens from using an internet tailor-made for their skills and needs.

Language barriers demonstrate how the (un)availability of services and materials over the Internet in dominant languages is a threat to non-dominant languages, which could be condemned to marginalisation. A situation that would bring about a progressive disaffection during the digital transition and put them at risk of extinction, while condemning their users to be excluded from the benefits of the digital world.

Lastly, the two cases dealing with African local content stand on opposite sides of the digital economy: on one end, there are the reasons for the weakness of the economic model of the diffusion of African music over the Internet, mainly focused on market and technological conditions. On the other end, there is the confident entrepreneur of a digital movie market made in-house and in local languages. Both could benefit from a renewed role of intellectual property protection in the digital world.

3.3. Capacity development

3.3.1. Background

For this call, PNMA was looking for stories, case studies, local experiences, and implemented practices under the broad area of capacity development with a more focus on technical skills. Inclusivity in the intervention areas is critical to ensure bridging of the existing gaps including gender, age, rural/urban and even stakeholder groups.

3.3.2. Analysis

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 Bachelor's 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

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.

3.2.3. Summary conclusions

The two cases have demonstrated the need for contextualised training and involvement of the local communities. The PRIDA training course can be replicated globally. It leverages on the local expertise who are able to contextualise issues that will lead to local solutions, not missing a diverse knowledge exchange.

To ensure capacity development actions are inclusive and sustainable, the public sector needs to offer a coordination role as the focal point while other stakeholders can convene/organise the schools in collaboration with the government. Countries who have implemented this model have been consistent with their training. On a regional level, economic communities have played a crucial role in knowledge exchange - for instance, ECOWAS actions can be replicated in other regions.

4. Intersectional works: ITU / WIPO / WAN-IFRA / ICANN

Meaningful access can only be achieved in collaboration with varied stakeholders. The international organisations highlighted in this section (International Telecommunications Union - ITU, The World Intellectual Property Organisation - WIPO, The World Association of News Publishers - WAN-IFRA, and the Internet Corporation for Assigned Names and Numbers - ICANN) are close partners and supporters to PNMA. They have sent the following contributions in as examples of their intersectional work.

4.1. ITU-D: ICT Infrastructure Maps

4.1.1. Background

The Future Networks and Spectrum management Department (FNS) under ITU-D has developed a digital mapping platform displaying internet traffic roads, in order to visually identify digital infrastructure gaps and assess possible solutions to bridge them. The infrastructure mapping set of activities provides decision makers with tools to assess connectivity gaps, and opportunities through the visualisation of networks and demographics as well as other relevant information for investments in network deployment - for example, in connecting communities, schools, health centres, and other public services. Better mapping benefits everyone: customers, builders, investors, and policy makers.

4.1.2. Analysis

Case 1:	**ICT Infrastructure Map**
Location:	Global
Funding:	Ca. EUR 200.000,00 yearly since 2016
Responsible institutions / partners / people:	• FNS/ITU-D
What is the problem?	• Lack of global broadband/infrastructure activities mapping, with which regulators and operators can assess service availability and quality locally, nationally, and regionally to inform better decision making • Lack of information on connectivity and infrastructure level of schools • Add resilience to infrastructure and develop sustainable financial models for universal digital access
Which were the actions taken to address the problem(s)?	Mapping performed under the following steps: • 1 - Data collection: made available in open access, to assist harmonisation of infrastructure attributes across regions and avoid duplication of financing as subsidies can be allocated to areas truly affected by market failure and regulatory needs linked to market regulation • Collection on existing and planned broadband infrastructures, services offered, demand and investment, gaps of broadband coverage, quality of service level and suitable areas of investment. • 2 - Visualisation: an interactive online mapping application that aggregates and visualises various dimensions of global data related to broadband networks (fixed and mobile). The map includes many important layers of geographic context, such as topography, population, disaster risk, fibre nodes, submarine cables, transport

	infrastructure, and connectivity statistical indicators. ● 3 - Analysis: draw analytics of connectivity gaps on the mapping platform to drive potential correlations. Offer network design and planning to assess the amount of investment required to fill the gaps. Telecom manufacturers, operators and other stakeholders have a vested interest in such insights to facilitate the deployment of next-generation networks, simplify their operation and reduce cost to provide affordable connectivity in rural areas.
Results / Impact / Lessons learned (what worked / remaining challenges)	● Results: production of ITU Transmission Maps / Mapping Platform ○ It helps to increase the understanding of ICT infrastructure presence around the globe, with focus on researching terrestrial fibre reach at national and international scales. ○ As of December 2021, the database contains the following information on global terrestrial fibre and microwave links ■ 4 million km of fibre and microwave links ■ 44,000 transmission links ■ 27,000 nodes (access points to backbone fibres) ■ 596 operators ○ Data supports ITU's partnerships - such as PRIDA - in estimating the amount of effort to close connectivity gaps and in how to better provide Internet access to communities, schools, financial hubs, and others. ● Impact: ○ It brings together several available global data layers relevant to infrastructure in a single user-friendly platform. This includes a combination of compiling and collating relevant public domain datasets, and selectively acquiring key proprietary datasets using internal surveys from ITU members. ○ It facilitates and amplifies use of other ITU indexes and data portals, such as: ■ National mapping systems (NMS) survey. ■ G5 Benchmark ■ ICT Regulatory Tracker ○ The platform also contributes to SDG 9 by helping to build resilient infrastructure, promoting inclusive and sustainable industrialisation, and fostering innovation. ● Lessons learned: the maps showcase that broadband data, combined with in-situ data as well as other sources (population, macro-economic indexes etc.), can provide a real benefit to end users by helping reduce investment risks and assess where networks need real build-up.

4.2. ITU-D: Last Mile Solutions

4.2.1. Background

The Last Mile Connectivity Toolkit developed by FNS in ITU-D provides ways of identifying the unconnected areas and selecting sustainable technical, financial and regulatory solutions to ensure affordability and accessibility to relevant connectivity services.

4.2.2. Analysis

Case 2:	**Last Mile Connectivity (LMS) Solutions Guide**
Location:	Global
Funding:	Ca. EUR 250.000,00 yearly since 2019
Responsible institutions / partners / people:	● FNS/ITU-D ● Ministry of Science and Technology, South Korea (MSIT)
What is the problem?	● Low benchmarks availability for designing middle and last mile connectivity networks. ● Data/tools to support decision-making and assist designers when selecting technical solutions are often proprietary. ● Importance to assess economic feasibility and cost of connectivity to build solutions.
Which were the actions taken to address the problem(s)?	● Identify key technologies, policies, and business models to build and expand last mile connectivity, especially in rural and remote areas. ● Build a comprehensive database of connectivity parameters working across ITU-D regional offices. ● Build software tools to simulate design and cost of networks. ● Develop methodologies for topology and cost estimation. ● Produce empirical modelling of network's technical and financial aspects. ● Use open data and collect data from regulators and stakeholders in various countries. ● Simulate projects using real data.
Results / Impact / Lessons learned (what worked / remaining challenges)	● Results: ○ Publication of Last Mile Connectivity Solutions Guide, featuring ■ Key challenges to address the connectivity gaps for scaling and sustaining the connectivity. ■ Key technologies, policies, and business models to build and expand last mile connectivity. ■ Collaborative strategies to ensure that people at the bottom of the social pyramid achieve reliable and meaningful connectivity. ■ Case studies of successful rollout of last mile connectivity projects deployment. ○ Establishment of LMC products - e.g., https://connectschools.online, a school community broadband calculator ● Impact: ○ Development of additional resources to help member states address last-mile connectivity challenges, including a database of case studies (LMC Case Studies Database), capacity-development courses on last mile connectivity, and interactive last-mile connectivity diagnostic and decision-making tools. ○ Building broadband access networks and local area networks (LAN) in localities ○ Connecting schools and hospitals to broadband transport backbones.

4.3. ITU-D: Spectrum Management

4.3.1. Background

Wireless technology has drastically changed our lives and became one of the main drivers of economic growth improving contemporary quality of life. With the introduction and expansion of new wireless services, the use of computers in the spectrum management process is now important for most administrations who are faced with an ever-increasing use of the radio frequencies.

Several aspects of this process, such as frequency coordination, administrative procedures (registration and issuing of licences) and notifications of assignments to the ITU according to the Radio Regulations, are necessary in the establishment of a computer-automated process.

4.3.2. Analysis

Case 3:	**Spectrum Management System for Developing Countries (SMS4DC)**
Location:	Global
Funding:	Ca. EUR 250.000,00 yearly since 2015
Responsible institutions / partners / people:	● FNS/ITU-D ● Ministry of Science and Technology, South Korea (MSIT)
What is the problem?	● No shareable effective spectrum management tools and experiences for sustainable economic and social development, including developing computerised frequency management and monitoring systems. ● Assistance to the transition to digital terrestrial television broadcasting (DTTB)
Which were the actions taken to address the problem(s)?	● Development of a spectrum management software/tool (SMS4DC) ● Direct assistance in spectrum management including cross-border frequency coordination ● Development of national roadmaps and guidelines for DTTB transition ● Digital Switch-Over (DSO) database maintenance and update ● Spectrum management training program ● Compilation and analysis of the regulatory policies concerning human exposure to electromagnetic fields (EMF) for authorising the installation of radiocommunication sites ● Awareness on the effects of EMF from radiocommunication systems, and on technical regulations on the limits for maximum exposure
Results / Impact / Lessons learned (what worked / remaining challenges)	● Results: ○ SMS4DC assists governments of developing countries in performing their spectrum management responsibilities more effectively. The software has continuously been updated and published reflecting the decision of the World Radiocommunication Conference (WRC) ○ Available general interface tool to implement network planning for optimization of spectrum monitoring networks ○ Regional and national spectrum training workshops for developing countries in collaboration with several projects such as PRIDA, with advice and country-level recommendations ○ Self-paced spectrum management training course via the ITU academy platform.

4.4. WAN-INFRA: Ads for local news

4.4.1. Background

One of the main victims of the digital transformation is local information. Newspapers and magazines that once depended on local advertising have seen the resource moving to online platforms. Hence, alternative solutions need to be identified to support the transition of former traditional local media into the new digital world. Ads for News tries to provide a solution for that by providing a curated portfolio of trusted local news websites – screened by local partners to exclude content unsuitable for brands, such as disinformation. The purpose is to make it easier for brands to reach audiences on trusted media, support real journalism and spend towards those who have earned it while experiencing the unparalleled benefits of advertising in quality news environments. It is a non-profit initiative; its service can be accessed free of charge.

4.4.2. Analysis

Case 1:	**Internews' Ads for News Initiative (AFN)**
Location:	Global, with a focus on APAC, EMEA, LATAM
Funding:	● Internews, USAID, private/other donors ○ Focus point: Chris Hajecki, Director, Ads for News (Internews) ● Founded in 2018 / Rebranded in 2021 ● Budgets of approximately UDS 250.000,00 yearly
Responsible institutions / partners / people:	● Internews ● World Economic Forum ● World Association of News Publishers ● GroupM
What is the problem?	Local news is being cut out of digital ad spending, forcing many local news outlets to close and preventing others from starting up. In turn, local communities are losing access to culturally relevant information and voices that hold those in power to account. In many places around the globe, people now live in news deserts. These are defined as communities without a local daily news source. In freedom-restricted and ethnically diverse countries, the lack of trusted local news can be especially harmful to people, removing the information they need to hold to account those in power and make informed decisions about their lives. Additionally, brands are missing the performance benefits and reach of trusted local news environments. They are also missing diverse consumer segments that the inclusion of local news audiences can provide. These recent realisations within the ad industry are key to AFN's growth in 2022 and beyond.
Which were the actions taken to address the problem(s)?	Ads for News vets news websites, by country, according to journalism and advertising industry standards (including the GARM Brand Safety Standards). Then, AFN delivers trusted local news inclusion lists to global and national programmatic advertisers.

Results / Impact / Lessons learned (what worked / remaining challenges)	Results: demand for programmatic ad inventory on trusted local news websites is boosted, resulting in increased programmatic ad revenue for publishers. Impact: ● Improves access to quality news and information in countries indexed ● Helps local journalism survive and thrive ● Addresses disinformation and curbs the spread of fake news and hate speech by helping defund websites that publish these types of content ● Helps news outlets in diverse communities produce culturally relevant information ● Sector collaboration: AFN has contributed with over 8,000 local news URLs in 30 countries for GroupM's Global Local News Marketplace, following its Responsible Investment Framework. The framework aims to rally global brand clients and their ad spend approaches around brand safety, data ethics, diversity, equity, inclusion (DE&I), responsible journalism, and sustainability.

4.5. WIPO: Enhancing the use of intellectual property (IP) for apps in the software sector

4.5.1. Background

The aim of the project was to enhance the use of IP in the software sector to support economic growth in the three beneficiary countries (the Philippines, Kenya, and Trinidad and Tobago) by providing/testing tools that could also be used in other countries. The project was articulated in the following phases:

a) Development of a scoping study that assessed the situation in each of the participating countries and inform project activities, deliverables, and targets.
b) Development of a WIPO publication on IP and Mobile Applications.
c) Delivery of capacity-building activities on IP commercialization, key contracts in the mobile applications sector, and mediation and arbitration in the software sector.
d) Development of basic awareness raising material targeting computer science students at secondary schools, universities, and other research institutions in beneficiary countries.
e) Fostering the exchange of knowledge and experience among software sector stakeholders on the use of IP.
f) Conducting mentoring programs connecting experienced business leaders and specialised lawyers volunteering to assist software start-ups in the beneficiary countries.
g) Development of an IP toolbox.
h) Delivery of an online platform to foster international exchanges of IP knowledge and good practices in the software sector.
i) Delivery of other workshops, coordination meetings, and video conferences.

4.5.2. Analysis

Case 1:	**Project on Enhancing the Use of Intellectual Property for Mobile Applications in the Software Sector**
Location:	Kenya, Trinidad & Tobago, Philippines
Funding:	WIPO - budget n/a
Responsible institutions / partners / people:	● Senior Counsellor and the Associate Program Officer of the Development Agenda Coordination Division (DACD) at WIPO in cooperation with the national governments of Kenya, Trinidad & Tobago, and Philippines. ○ Focal point: Paolo Lanteri
What is the problem?	● Improve software sector stakeholders' knowledge and expertise on when and how to use various intellectual property (IP) tools in support of developing and commercialising mobile applications ● Create linkages between IP offices, ICT hubs, research institutions and industry within the beneficiary countries and amongst them

Which were the actions taken to address the problem(s)?	● Participatory approach to the problem: ○ Pilot and knowledge from Kenya defined the elaboration process in other countries. ○ The design process was executed by in-house experts, member states representatives, relevant communities, and relevant audiences. They participated in several steps by providing knowledge and experience, with constructive discussions that helped to refine and further strengthen the project before final approval.
Results / Impact / Lessons learned (what worked/remaining challenges)	Results: ● Since April 2020, all tools and resource materials can be found online. By mid-January 2022, the website had had a total of 9,453 visitors and 17,922 downloads, demonstrating the success of the tools, learning resources, research, and infographics. It had an average of 47 downloads per month during its first 8 months of operation, which increased exponentially in December 2020, and reached its peak one year after its launch, with 642 downloads between April 18 and May 2, 2021. ● A few numbers on the project tools: ○ The *Handbook on Key Contracts for Mobile Applications – a Developer's Perspective* had the highest number of visitors - 3,381 hits by the end of the project. ○ *The Scoping Study* was the tool with the most downloads - 4,742 times, followed by the *WIPO Guide on Alternative Resolution for Mobile Applications Disputes* with 1,475 downloads, and the *IP Toolbox for Mobile Applications Developers* with 1,241 downloads. Impact: ● Countless advances have been achieved or promoted by WIPO in the three implementing countries. Some of them are tangible and were included in the logical framework of the project, such as the tools created for developers, entrepreneurs or lawyers; the tools on IP practical management, financing, commercialisation, and tools to raise awareness and knowledge on IP. Other achievements identified in the evaluation phase are: ○ Developers have started to think about IP as an option to protect their interests and generate income streams, whereas at the beginning of the project they were mainly interested in selling their products without making real use of IP. ○ The project has broadened the horizons of all the developers, lawyers, entrepreneurs, and researchers who have participated in it; a mentoring program allowed them to easily interact with each other and with potential partners. ● Interest in organised business representation: a movement has been reported to create app associations in the implementing countries to defend the interests of app developers, help them better advocate for their interests, have a more regulated environment, and better representation in international forums. Specific impacts forthcoming. ● The website reached audiences beyond the original 3 implementation countries. There were 1,600 visits from the USA - it is important to note that, technically, these numbers include visitors from the entire Caribbean region, and hence from Trinidad and Tobago. This is followed by India (930,000 visits) and the Philippines (889,000 visits). Visitors from Kenya appear in seventh place with 288,000 accesses.

4.6. ICANN: Digital Africa Initiative

4.6.1. Background

A global public-benefit corporation, ICANN has a mandate to serve the Internet users of the world. With regard to the African digital economy, ICANN has an overarching goal of supporting the growth and sustainability of the region by ensuring a stable, resilient, and secure Internet. To achieve this, the Coalition for Digital Africa will roll out local activities in partnership with governments and other stakeholders, offering capacity-building workshops, providing ad hoc advice on Internet matters, and supporting participation in multistakeholder policymaking processes.

4.6.2. Analysis

Case 1:	Coalition for Digital Africa
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 multistakeholder 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.

5. Issues for IGF consideration and action

Some ideas about the possible role of the IGF in promoting solutions identified by the PNMA activities emerged during the Network's session at the Global IGF in Addis Ababa. They reverberate the discussions which took place among the PNMA community during the 2022 work process. Here is a non-exhaustive list of those ideas, around which the report would like to open a public debate:

- Actively promote the good practices that have been identified by the Policy Network in the 3 areas (Connectivity, Digital Inclusion and Capacity Building) across all the stakeholder groups and through the Digital Cooperation initiative. The network of the Leadership Panel could be tested at this occasion.

- Connect different stakeholders in order to promote common actions within the same country or region in implementing the identified good practices.

- Connect the protagonists of the identified good practices in a given country or region with other countries regions in need, where such pilot experience could be localised and tested.

- Promote the good practices identified in this document through IGF's institutional partners (such as the EU, the AU, and the OAS), in order to favour their replication and adaptation in other countries or regions.

- Help international organisations that are promoting capacity building activities (such as those described in chapter 4) to extend these actions to other regions of the world, also considering assistance, support or cooperation of other global or regional actors.

- Bring all the achievements and solutions identified through the PNMA activities into the future Digital Compact Initiative, writing a specific contribution in this sense for the public consultation.

- Keep the repository of the identified successful practices functional over time, to create a reference point for all activities in the field of meaningful access.

- As a next step to the identified successful practices, focus the PNMA work on the project implementation lessons and policy/regulatory conditions that supported such achievements, under the lens of intersectionality, scalability, and localisation.

6. PNMA & IGF 2022 Session: key messages and concluding remarks

During the IGF 2022 in Addis Ababa, the PNMA hosted a hybrid plenary to discuss the draft report and the case studies included in it.

IGF 2022 Policy Network on Meaningful Access session

From Policy to Implementation: Lessons and Good Practices to Advance Meaningful Access

Thursday 01 December 2022, 12:15 - 13:45 UTC

Session Summary/Report and Recording

Multistakeholder discussion panel:

- Vint Cerf – Chair, IGF Leadership panel
- Sofie Maddens - Head of the Regulatory and Market Environment Division, ITU BDT
- Carlos Rey-Moreno - Co-lead Local Networks: Policy and Strategy - Association for Progressive Communications
- Poncelet O. Ileleji, Lead - Jokkolabs Banjul / The Gambia NRI
- Margaret Nyambura Ndung'u - Senior ICT Regulatory and Internet Governance Expert - PRIDA, AUC (Policy and Regulation Initiative for Digital Africa, African Union Commission)
- Onica Makwakwa - Head of Africa, Global Digital Inclusion Partnership
- Chris Hajecki - Director, Ads for News, Internews
- Tigist Kebede - CEO, Habeshaview Technology & Multimedia.

The session was moderated by Sonia Jorge and Giacomo Mazzone, co-chairs of the PNMA, with the assistance of Roberto Zambrana and Daphnee Iglesias. There were various vivid interventions from the floor such as those of Laurent Ferrali, ICANN; Túlio César Mourthé de Alvim Andrade, Brazilian Government; and Bertrand Mouillier, Narval Media, to name a few.

The two key messages expressed from the discussion were that meaningful access is indispensable to comply with the goal of giving Internet access to all citizens of the world; appropriate public policies elaborated in a multistakeholder way are needed to achieve this goal. The main obstacles to be solved are affordability, adaptability and security - all including an important, intersectional gender dimension. Public policies at the national, regional and global level are needed to encourage and implement the good practices that have been identified during the session and in the report (community networks, production of local contents, spectrum use for common good etc).

The hybrid discussion identified four main elements that are indispensable for a successful meaningful access:

Affordability - the actual access costs are still out of the reach for populations of many developing countries. Various solutions could be used to solve this obstacle, such as subsidies from the users or

the ISP (e.g., the richer area paying higher tariffs than the poorer ones), from the states, or encouraging the creation of community networks. An option for the latter is to integrate the internet networks with energy distribution networks.

Adaptability - unlike ever before, there are more and more technological solutions available that could provide answers to different needs: from 4G and 5G networks, to low orbit satellites networks, to frequency sharing between different kinds of users.

Inclusion - all access solutions need to integrate a mechanism to avoid the risk of leaving behind the most vulnerable, such as the disabled or the illiterate. Currently they are nearly 1 billion of the world's population.

Reliability and security - the worst could happen for those newly connected, e.g., to fall victims of attacks or cybercrime. In this sense, one of the preconditions for the future meaningful access will be a global consensus on what is criminal on the internet.

These conditions are essential to the three dimensions in which meaningful access is articulated, such as Connectivity, Digital Inclusion and Capacity Development. The discussion held in the plenary added some new facets into the arguments included in the report - as it is case-based, it does not exhaustively cover all the aspects of the problem. One of the questions that emerged from the debate was that affordability does not mean accessible connectivity costs only, but also affordable devices. Under this topic, Vint Cerf mentioned that a few possible solutions have been already identified in the international debate and mentioned: "one of them is driving cost out by design, another possibility is using local manufacturers, and a third one is on the supply-Side. Some ISPs and some telcos could offer a device at no charge at all as long as you sign up for a long enough period of subscription".

An aspect underlined by the speakers intervening on Digital Inclusion was that the abundance of foreign contents and services coming from abroad can sometimes create a risk to the local expression and the cultural diversity, by killing local products. Among the possible solutions identified and suggested there was, for instance, the Canadian example, where local legislation imposes limits to the circulation of non-Canadian contents within the country, exactly with the aim to preserve its own local culture: "this is a key way of making the Internet meaningful in local contexts", complements Vint Cerf.

A concept that was echoed in the examples of Habeshaview and Ads for News (in partnership with WAN), is that it is worth trying - through innovative technical and marketing solutions - to preserve the local ecosystem, conveying the growing local digital demand towards local products and services in local languages. Additionally, the gender dimension was mentioned by many speakers as one of the key aspects to build an inclusive and successful internet, underlining the difficult exercise to localise content given different sensible issues that need to be observed across the regions and different communities.

The role of international organisations specialised in digital cooperation was particularly underlined in the discussion around Capacity Development. It was highlighted that ITU, ICANN, and ISOC, to name a few, are using their recognized expertise and accumulated know-how to organise knowledge transfer and capacity building actions in favour of poorer and fragile governments. Some exemplary projects such as PRIDA (AU/EU) and Digital Africa from (ICANN) were cited as reference. As examples of distribution of knowledge, the speakers mentioned the Last Mile Connectivity Solutions Guide and ICT Infrastructure Maps (both from ITU), which aim to provide local administrations with easy-to-adapt and implement measuring tools to define and develop localised, tailor made policies.

Plenary participants unanimously agreed that Connectivity is key to “build policies from the community dimension and for the communities, in their own languages, investing in not-for-profit entities that have a long-term perspective”, as for the examples included in the report and proposed by APC and NUPEF. It is equally important to take into consideration the need to rethink from scratch how to approach the Internet and to bring into the discussion some assumptions that are very often taken for granted. One of these is the dominance of the Latin alphabet or of some languages over others; another is the use of written patterns of communication instead of the oral forms that are native to certain indigenous cultures. Lastly, the use of spectrum for general interest purposes and the use of taxation leverage were also identified as very powerful tools to shape public policy for meaningful access.

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Annexes

Annex I: 2022 PNMA Process and Work Plan

- Link: https://www.intgovforum.org/en/filedepot_download/256/22302

Annex II: 2022 PNMA Call for Inputs

- Guidelines: https://www.intgovforum.org/en/filedepot_download/256/22303
- Submission form: https://forms.gle/ksbMiS8qgNizEkVY6

Annex III: 2022 Global IGF - PNMA Report Session

- Link: https://www.intgovforum.org/en/content/igf-2022-pn-meaningful-access-from-policy-to-implementation-lessons-and-good-practices-to

Annex IV: Contribution Global Digital Compact

- The PNMA suggests all contributions to the Call for Inputs to be sent to the GDC. This is the link for the raw data of all inputs and supporting material of the selected contributions (featured in this report): https://drive.google.com/drive/folders/1cHP9qq4epWVyjxfFHmRtcbMwgBxSWG-iCEtpl0F9wzJPcHQAs1Hwl-WX_gO_IHithH5AP6Lk?usp=sharing