

Reporting Template for IGF Workshop Sessions

Session title: Internet Fragmentation: Getting next four billion online

Date: Thursday, 8 December 2016

Time: 12:00 – 13:30

Workshop Organizers: Government of Egypt, ICC BASIS, Internet Society

Chairperson/Moderator: Robert Pepper, Facebook

Rapporteur/Note Taker: Hisham Aboulyazed, NTRA, Government of Egypt

List of speakers and their institutional affiliations: Panelists:
Christine Ardia, Government of Egypt
Alison Gillwald, Research ICT Africa
Jimson Olufuye, Africa Information & Communication Technologies Alliance
Stephanie MacLellan, Centre for International Governance Innovation (CIGI)
Yolanda Martínez Mancilla, Government of Mexico
Carolyn Nguyen, Microsoft
Izumi Okutani, Japan Network Information Center (JPNIC)
Karen Rose, Internet Society
Sorina Teleanu, DiploFoundation
Verena Weber, Organisation for Economic Cooperation and Development (OECD)

Key issues raised (1 sentence per issue):

- There are several facets of the concept of Internet fragmentation: technical, political, commercial.
- Developing countries are most impacted by Internet fragmentation trends.
- Trends of fragmentation directly impact how the next billion will come online, and how they will be able to access the same digital opportunities.
- Social gaps between the rich and the poor are extending into the emergence of new types of digital divides defined by affordability, sometimes within the same country.
- Network connectivity is still a challenge as networks are either nonexistent or insufficient in terms of capacity and quality.
- Capacity building is required not just on basic digital skills but also on enabling people to meaningfully participate and make use of the digital opportunities.
- Capacity building for policy makers towards making an enabling environment is essential

If there are presentations during the workshop session, please provide a 1-paragraph summary for each presentation

Christine Arida highlighted the wider dimension of Internet fragmentation in developing countries, defined mostly by the quality of experience users have compared to users in developed countries (caused by disparity in infrastructure development, affordability, and also

language barriers), which enforces the notion of social fragmentation and causes gaps to actually widen; giving examples of cases of OTT apps and its impact on operators' ability to invest in broadband (causing trends of throttling and consequently increased use of VPN walled gardens); and highlighting zero-rating second-class segregated experience; and lastly IOT/cloud policy fragmentation (as policy development is often not coping with the pace of technology, causing protective measures that often result in more fragmentation). Christine finally highlighted the need for enhanced dialogue between policy makers and businesses to effectively address the challenges.

Verena Weber pointed to the OECD work on Internet Openness in the context of the OECD ministerial meeting on the Digital Economy of June 2016, held in Cancun, Mexico. Verena highlighted OECD's approach to degrees of Internet openness as a multidimensional concept based on four pillars: technical openness—such as in the use of open protocols and open standards; social openness—as in freedom of expression; Economic openness—as in ability to connect and affordability of access, including competition as main lever; and lastly the pillar of other elements such as cybersecurity. Examples were given of Mexico and India where competition and business innovation achieved huge leaps in bringing more people online.

Jimson Olufuye stressed the seriousness of fragmentation as a challenge that hinders getting the next billions connecting. Corruption, wrong application of project management concepts and sustainability were identified as key challenges in Africa as well as utilization of universal service funds. Jimson highlighted the need for flexibility with different levels and types of connectivity to give the unconnected a chance to connect to and meaningfully use the Internet. Gap between business sector and government was stressed as a key challenge to bringing more people online in Africa, and hence the need was identified to further promote the concept and application of the multistakeholder dialogue on Internet Governance.

Karen Rose highlighted the linkage between fragmentation and the digital divide, the latter being top on ISOC's agenda. 1500+ input from ISOC's community in 156 countries indicated forces of change to the Internet in the future, which highlighted digital divide and fragmentation, and the linkage between the two, as huge concern. Karen pointed out how the concept of digital divide is transforming beyond the notion of basic access into the disparities in the ability to meaningfully participate on the Internet. Examples covered concerns over communities possibly being left isolated on IPv4; policy fragmentation caused by restrictions on access to the open Internet, or due to government restrictions on use of some technologies over fears of security concerns. Karen underscored the concern over the impact fragmentation may create in the form of digital opportunity divides in the future.

Alison Gillwald introduced the role of applied research on regulatory approaches in making the Internet available to more people, stressing that Internet fragmentation should not be looked at in isolation of other global and national inequalities, as it's amplification of existing ones. Challenging the notion of OTT apps being a hindrance to more investment in broadband, Alison stressed importance of creating the right incentives to investment towards building the required critical infrastructure, and giving opportunity to more innovation including zero-rating or limited services even if it brings people online on not so equal terms. Effective engagement with governments was highlighted as a key measure in addressing fragmentation. Findings by Research ICT Africa on zero-rating in four countries (Nigeria, Ghana, Kenya, and South Africa) were presented indicating the positive role in driving competition and bringing people online, and the role of social media in driving demand.

Sorina Teleanu presented the perspective of south eastern Europe and Romania, and how digital divides remain the top challenge in the region especially as very high broadband speeds are available in some areas but low penetration remains a hurdle, especially in remote areas where commercial interest is not high and PPP is required to build infrastructure in these areas. Measures aimed at blocking online content at the DNS level (from child pornography to online gambling) were identified as challenges and potential causes of severe fragmentation. Geo-blocking was also identified as an example of fragmentation. The fragmentation caused by language use was identified as the region uses languages that are based on non-Latin scripts; although IDNs have been implemented across the region, universal acceptance is still a challenge.

Carolyn Nguyen addressed the importance of ubiquitous and affordable connectivity for everyone to an open, interoperable, and global Internet, and the adverse impact of fragmenting the Internet infrastructure layer on the application layer and the realization of the SDGs. For connectivity initiatives to be sustainable and truly enable local economic development, it is critical to partner with local organizations and communities as they would have the best insights on the local needs. Reference to Microsoft's Affordable Access Initiative grant fund was made, which provides support to select small local companies that have developed solutions that serve local communities but need resources to scale up, in effort to contribute to realizing the SDGs and increase connectivity at infrastructure level. At the application level, Microsoft committed to invest one billion dollar over three years to create a trusted cloud to serve the public good through work with 70,000 non-profits, 900 university researches and 20 communities in 15 countries.

Stephanie MacLellan highlighted the relevance of security and trust to the challenge of connecting the next billions and how this is impacting Internet fragmentation. Reference was made to 2014 study by Microsoft indicating how with increased access, cybersecurity still seems to fall behind, often as new users often are either less educated on digital hygiene or often have access to the Internet through mobile devices that sometimes are less equipped with cybersecurity tools. Building capacity and improving institutions working in law enforcement was identified essential, including by making sure laws include necessary reference to digital security.

Please describe the Discussions that took place during the workshop session: (3 paragraphs)

Izumi Okutani reported on breakout group discussion on infrastructure part of fragmentation, identifying the role of community networks in building infrastructure in remote underserved areas in developing and developed countries. Government seed funding was mentioned as a possible scenario, and reference was made to IETF work on how to combine multiple technologies to implement community networks in challenging areas. Discussion also addressed roles of stakeholders to promote deployment of IPv6 as world deployment rate is only around 8%, which is still significantly low.

Yolanda Martínez Mancilla and Karen Rose reported on the breakout group discussion on capacity building for individuals. Multilingualism was stressed as enabler and foundation for building capacity. It was also highlighted that technical capacity building is not enough when there is need to raise awareness of the opportunities Internet brings to individuals and how they can harness these opportunities. Engaging youth from the bottom up in classrooms was identified as essential element, in addition to encouraging creating local content including on social media platforms. Christina Cardenas echoed the role of education in building skills of

teachers and students to have its impact, in turn, on community at large in being aware of opportunities Internet brings.

Stephanie MacLellan reported on breakout group discussion on government capacity building, highlighting importance of institutional capacity building and specifically the importance of improving government institutions like regulators and education institutions. Affordability was identified as a challenge when government does not have sufficient budget to allocate, or needs further training or encouragement to be able to plan necessary budget allocation. Monitoring and sustainability of government role was identified as key to achieve effective impact, so is working with governments that are less aware of the role of Internet to their economy.

Please describe any participant suggestions regarding the way forward/ potential next steps /key takeaways: (3 paragraphs)

As a foundation, there needs to be more content available in non-latin scripts as this will help support capacity building. The importance of helping people build the skills to create their own locally relevant content was noted and social media was used as an example of how people can build skills and confidence in creating online content.

A comment was made by participants in a breakout group that it is not enough to train people on technical skills and how to use the Internet, but there is also a need for capacity building around what is on the Internet and why people should use it. Discussion highlighted the need for formal education activities and greater focus on ensuring youth engagement in the Internet in school early on. An example from Costa Rica highlighted efforts governments can take to bring more residents online, especially in rural communities. For example, one program provides a laptop and an Internet access subsidy to families in poverty with a child enrolled in high school, while offering computer training for high school teachers so they can teach their students. A suggestion was also made to reverse engineer capacity building from the bottom up as in some cases students may have more digital skills than their teachers.

Participants encouraged raising awareness about technical identifiers and IPv6 to help connect the next billion users. Governments can promote IPv6 adoption as well as the private sector. Consumers can also help promote IPv6 adoption by buying products that use IPv6.