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No. 188 Spectrum allocations: challenges & opportunities at the edge

Workshop Format. Please click [here](#) for a description of available Workshop Session Formats.

Roundtable

Duration of proposed workshop

90 minutes

IGF 2015 subtheme that this workshop falls under

Critical Internet Resources

Description

Several forms of wireless technologies became essential to disseminate connectivity at the edges of the Internet. As a consequence, the relevance of pluralist participation in radio spectrum regulatory policies cannot be overstated. With increasing demand for access to mobile communication services, efficient and equitable allocation and use of spectrum is essential to ensure widespread benefit from access to this critical asset of the commons.

Recent developments in radio technologies and the upcoming (or already present) transition to digital television open up significant opportunities for local governments, local entrepreneurs and communities to create innovative applications.

Of particular interest to communities at the edge of the Internet which this workshop will address in a dialogue using the roundtable format are:

- monitoring on actual/effective use of already allocated spectrum chunks at the local level;
- opportunities and challenges derived from the worldwide transition to digital TV, regarding community-level use of spectrum in the VHF/UHF bands reallocated or freed up in that transition;
- regulatory and legislative processes which might affect various forms of spectrum usage (light licensing, shared spectrum and secondary use) for local entrepreneurs, communities and local governments, in view of the latest advancements in cognitive radio technologies.

Name, stakeholder group, and organizational affiliation of workshop proposal co-organizer(s)

Carlos A. Afonso

Civil society

Executive director, Instituto Nupef, Rio de Janeiro, Brazil

Dr Lisandro Z. Granville

Technical community

Board member, Brazilian Internet Steering Committee (CGI.br), Brazil

Mike Jensen

Civil society

Association for Progressive Communications (APC), South Africa

Has the proposer, or any of the co-organizers, organized an IGF workshop before?

yes

The link to the workshop report

http://www.intgovforum.org/cms/wks2014/index.php/proposal/view_public/91

Subject matter #tags that describe the workshop

#openspectrum #access #diversity

Description of the plan to facilitate discussion amongst speakers, audience members and remote participants

The workshop will start with 5-10 minute concise presentations by experts from the academia and regulators to assess the theme's main issues. Emphasis on the current state of regulation in the TVWS/"digital dividend" bands and the perspectives for community use on this chunk of spectrum for broadening local access to the Internet. Half of the time will be dedicated to exchange of views among participants.

These issues are very relevant to Internet governance, as they refer to the possibilities, challenges and opportunities for universalization of access and digital inclusion, as well as innovative provision of Internet access services, using new radio technologies and taking advantage of spectrum space freed up by the transition to digital TV.

Names and affiliations (stakeholder group, organization) of the participants in the proposed workshop

Catherine Middleton, Ryerson University (Canada)

Adriano Belisário, Nupef (Brazil)

Steve Song, Village Telco (USA/South Africa)

Rodrigo Zerbone, Anatel (Brazil)

Robert Nelson, FCC (USA) - video

Gregory Taylor, University of Calgary (Canada)

Mike Jensen, APC (South Africa)

Veridiana Alimonti, Intervezes (Brazil)

Harold Feld, Public Knowledge (USA)

Giacomo Mazzone, EBU (Switzerland)

Name of in-person Moderator(s)

Maximiliano Martinhão, Ministry of Communications of Brazil

Name of Remote Moderator(s)

Provided by CGI.br

Name of Rapporteur(s)

Carlos A. Afonso (Nupef), Vinicius W.O. Santos (NIC.br)

Description of the proposer's plans for remote participation

The workshop will count on the support of the executive secretariat of CGI.br to ensure efficient means for remote participation. We will try to bring people interested/informed on the theme from abroad to join the dialogue in the second half of the workshop.

Background paper

[background paper](#)

Agenda

Tentative agenda

1. Introduction to the theme by the moderator and presentation of the speakers/discussants -- 5 min
2. Presentation by Catherine Middleton 5-7 min
3. Presentation by Lisandro Granville -- 5-7 min
4. Presentations by regulators (Anatel, OFCOM, FCC, Industry Canada) - 30 min
5. Presentations by Steve Song and Mike Jensen -- 12 min
6. Roundtable dialogue -- 35 min
7. Final remarks of the moderator -- 5 min

Key Issues raised (1 sentence per issue):

- Effective use of spectrum in most cities may be around 50% of available/designated spectrum
- New software radio technologies open up relevant possibilities for innovative use of spectrum
- Relevance of enabling local governments, entrepreneurs and communities to deploy new spectrum technologies for networking at the local/community/municipality levels
- Regulatory policies on TV white spaces should enable innovative uses of spectrum for data transmission and broadcasting at the edge, enhancing right to communicate at the local level
- Innovative use of digital TV and digital radio broadcasting at the community level — regulatory policies needed to facilitate these initiatives, particularly for non-profit and local government applications
- Optimal combination of fiber backhaul and innovative radio techniques at the edge to universalize and democratize access
- Pilot projects in innovative uses of white spaces at the edge being developed in Brazil with experimental licences from Anatel and support from the Ministry of Communications - relevant as reference practice
- Use of idle bands, or secondary use of spectrum, among techniques viable with cognitive radio technologies; need specific regulatory practices to facilitate these
- VHF/UHF frequencies ideal for long-range applications; deployments in Canada to reach rural communities are relevant references
- Current disputes between telecommunications companies and media companies as reflected in the 2015 ITU World Radio Conference may result in additional barriers for community use of VHF/UHF spectrum bands; need for stronger mobilisation from civil society and other community interest groups
- Protection of spectrum users at local level: privacy rights and surveillance

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

Among the many relevant issues:

- Measuring effective use of spectrum at local level, in order to evaluate options for regulatory policies which would improve and expand on spectrum usage and enhance prospects for application of wireless services in developing digital municipalities. Low-cost technical resources exist today for the community itself to carry out this monitoring.
- Seeking regulations and incentive policies regarding innovation at the local level in deploying wireless services, particularly involving innovative use of spectrum (including new technologies, facilitation of secondary use, light-licencing or free limited use of available VHF/UHF channels and so on). In short, flexibility in spectrum access for innovation and digital inclusion at the local level.
- Making sure that disputes involving big players (large telecommunications companies, dominant media companies) for grabbing as much spectrum as possible do not preclude communities to gain access to spectrum for innovation, digital inclusion, and local services.
- Importance of organized civil society (together with technical community) presence in regulatory policy formulation and decision-making: proactively advocating for (and getting involved in) multistakeholder processes regarding these issues.

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

- Powerpoint presentation by Gregory Taylor (Univ.Calgary) — detailed review of the case of remote rural broadband systems in Canada, as examples of use of cognitive radios to reach sparse communities.
- Video presentation by Robert Nelson (FCC) - overview of US regulatory policies regarding the transition to digital TV and use of white spaces for local network services.

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

The main focus of the roundtable was on sharing information and experiences regarding regulatory practices and policies in several countries. One of the objectives was to stress the importance of the issues related to spectrum allocation and usage at the edge as crucial part of the broader critical Internet resources' theme.

The ensuing dialogue and interaction among participants resulted in several parallel initiatives to continue the dialogue and follow-up on ongoing and future experimentation being carried out in several countries. One of the organizers, Nupef, has been involved on the issues related to the roundtable for a number of years and has a continuing program on the subject, in collaboration with civil society organizations and movements in the field. Likewise, APC has several initiatives on the same issues and the roundtable served as well to enhance collaborative agreements.

Of particular interest are the pilot and experimentation projects, as well as upcoming regulatory practices, involving community use of the spectrum being made available with the transition to digital TV.

Estimate the overall number of the participants present at the session:

40 people.

Estimate the overall number of women present at the session:

Less than half of the participants were women

To what extent did the session discuss gender equality and/or women's empowerment?

It was mentioned briefly in the presentations and discussions

If the session addressed issues related to gender equality and/or women's empowerment, please provide a brief summary of the discussion:

The issue was mentioned in the dialogue on universalization and digital inclusion using new wireless technologies at the community level, but only in passing.

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