IGF 2017 Reporting Template

- Session Title: Workshop 17, Shaping a Greener Digital Environment for all.

- Date: 18 December 2017

- Time: 10:30 am

- Session Organizer: EURid and Oxford Information Labs Ltd

- Chair/Moderator: Emily Taylor, Oxford Information Labs

- Rapporteur/Notetaker: Emily Taylor, Oxford Information Labs

- List of Speakers and their institutional affiliations:
Pearse O'Donohue, European Commission
Dr Sarah T Roberts, UCLA
Giovanni Seppia, EURid
Mohamad Amin Hasbini, Kaspersky, Dubai Smart City
Carolina Aguerre, University of San Andreas, Buenos Aires
Sabrina Abualhaiga, Youth IGF

- Key Issues raised (1 sentence per issue):

The workshop was a roundtable format, to consider four questions. The key points made by each speaker in relation to each of the questions are set out below.

1. **What is the environmental impact of current and future technologies, hardware, software, cloud services and internet of things, and to what extent are consumers aware of it?**

Pearse O'Donohue of the European Commission:

- The EU has a dual mandate of both actively promoting the uptake of digital technologies and of ensuring sustainable development.
- The EU is helping to fund public research to develop technology and standards to ensure that consumer hardware is more sustainable, and that there is a clear path to recycling.
- The 'leaking boat' where not enough focus has been applied is on the environmental impact of Internet usage.
- The industry is already doing simple things, such as 'going to the edge', aggressive caching policies for popular content.
- Public awareness of the environmental impact of Internet technologies is low, with many people believing that there is a low or positive environmental impact, when the opposite is true.

Dr Sarah T Roberts of UCLA:

- We tend to use metaphors when speaking about Internet technologies which suggest a lack of materiality – 'ethernet', the 'cloud' – but there are significant terrestrial consequences and implications of our vast push towards digitalisation.
- One Facebook data centre uses as much energy as a US town of 25,000 people, according to research by Dr Mel Hogan.
- 3.5 billion Google searches are conducted per day – and a handful of Google searches uses the equivalent energy as boiling an egg.
- Global data centres use 3% of the world's global electricity, or 40% more than the entirety of the United Kingdom. Consumption is expected to double in the next four years.
- Data centres, often located in water-restricted areas such as the Utah desert in US, also have an environmental impact through use of water for cooling.
- 'Digital detritus' of unwanted hardware is often sent to developing countries (eg the Philippines) for disposal – out of sight, out of mind from where the waste originated.
- Much of the labour costs (for example for content moderation by the major platforms) are outsourced, and rendered invisible and inaccessible.

2. **How are businesses and governments reducing the carbon footprint of their current and future digital installations?**

Giovanni Seppia of EURid:

- EURid joined a voluntary European Standard, EMAS, in 2011 and has set ambitious targets to reduce the organisation's carbon footprint.
- Adopting the EMAS scheme was initially highly bureaucratice, but it was worth the effort as the annual audits by EMAS help to measure improvements with regard to environment impact on an annual basis.
- Since 2013, EURid has completely offset its carbon footprint every year through official initiatives such as a Ugandan borehole project.
- Since 2011, EURid has proactively addressed the environmental impact of its exhibition booths, ensuring that they are made from entirely recyclable materials, and by recycling roll-ups through a social project in Italy.
- It is disappointing that the UN facilities for the IGF 2017 provided no guidance or means for the recycling of booth materials, or even to recycle the packaging of exhibition stands.

Mohamad Amin Hasbini:

- The UAE has set a target to be 50% solar powered by 2050 and Masdar City is now fully dependent on solar energy and acts as a test bed for new technologies.
- Blockchain, while an extremely promising technology, has a massive environmental impact; as an example, mining Bitcoin requires 90% of a device's capacity, compared with normal use which represents about 20% of capacity.

- It is relatively straightforward to measure the environmental impact of data centres, but difficult to track the impact of individual users on devices spread throughout the world.

Carolina Aguerre:

- The Latin American region is extremely diverse and is receiving a lot of attention from development banks with the aim of developing the energy grids, and consumption is projected to grow by 80% between 2011 and 2030 in Central America, and by 120% in the Caribbean.
- The region has been focusing on eWaste management since 2005-6 with the support of ITU, focusing on recycling hardware, gadgets and smart phones, with more than 20 countries participating in eWaste schemes.
- We are not seeing any focus on the impact of data centres, Internet Exchange Points (IXPs), and content delivery networks (CDNs) which in tropical and sub-tropical regions require substantial energy resources because of the need for strong air conditioning.

3. What are the environmental risks if insufficient action is taken?

Sabrina Abualhaiga:

- In preparation for the workshop, Sabrina interviewed 100 youth including students.
- 30% of those interviewed believed that Internet technologies had no adverse impact on the environment, supporting the view expressed by other speakers that public awareness of the issue is low.
- The reliability and choice of indicators in the Sustainable Development Goals are questionable.

Interventions on the final questions are set out below.

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

None

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

Several participants took up the discussion about blockchain with agreement that the environmental impact of this technology receives little attention and could be disastrous. One participant noted that blockchain is already using more energy than 19 countries in Europe individually. Other alternatives use far less energy.

One participant questioned what is the role and responsibility of major platforms for the environmental impact of user-generated content from which the platforms generate revenue. 400 hours of content is uploaded to YouTube per minute, and that production chain begins with the mining of rare Earth minerals.

Youth are among the heaviest users of the Internet, with some in Latin America spending up to 8 hours per day online, but the evidence is that youth understand little of how the technology works, its environmental impact.

- Please describe any Participant suggestions regarding the way forward/ potential next steps /key takeaways

The workshop asked all participants to consider what actions need to be taken by different stakeholders to ensure that we have an environmentally sustainable digital future, and what factors are preventing sufficient action being taken?

- There was a question from the audience, asking what sort of measures would be most impactful for a company to reduce environmental impact – particularly with regard to data centres. Suggestions included introducing an enterprise level environmental plan and assessment, to be transparent about any actions taken and to use it as a means of market differentiation, and to adopt the official CO_2 compensation process as part of an organisation's overall plan.
- One panellist predicted that in 10 years, people were likely to be less worried about pollution and more worried about their own virtual environment (social media, VR etc). This was viewed by the speaker as a risk to society and the environment.
- Young people are among the most heavy users of internet technologies, but the evidence is that they understand little of the environmental impact of such technologies. There is much to be done at the level of digital literacy and education of younger and older generations.
- For policy makers there is a need for joined-up thinking, so that policies such as expansion of the electricity grid in Latin America also need to consider mitigating the environmental impact of increase ICT usage. We need to think beyond financing eWaste projects.
- Individuals need to start by considering what changes they can make in their personal and professional capacities to reduce environmental impact. This can be more challenging than pointing the finger at others, but only by taking responsibility ourselves can we make a difference. This is not easy, and it takes a lot of persistence.
- EURid has selected data centres that are active in reducing their environmental impact.
- The IGF should actively support the recycling of exhibition stands and associated packaging to promote greater environmental awareness among participants.
- Another suggestion was for policy makers to put in place adequate indicators to monitor the environmental impact of internet technologies, and track progress over time.

Gender Reporting

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

Approx 20 including speakers, moderator and remote moderator.
Therefore the audience comprised approximately 10 people, which was disappointing given that 58 people had signed up to attend the session. It was held on the first morning of the IGF, and people were waiting in line to pass through UN security for up to 3 hours, so many people missed the session.

- Estimate the overall number of women present at the session:

Panel had 50% female speakers (out of 6) and a female moderator.
There were approximately 3 women in the audience

- To what extent did the session discuss gender equality and/or women's empowerment?
N/A
- If the session addressed issues related to gender equality and/or women's empowerment, please