



Outcome Document

IEEE Thematic Workshop

at the World Summit on the Information Society (WSIS):

How to Make Tech Development Work for Sustainable Development

Tuesday 7 July 2020 14:00 – 15:00

Please find more information regarding the workshop at:

<https://www.itu.int/net4/wsis/forum/2020/Agenda/Session/263>

- 1) **Session title:** How to Make Tech Development Work for Sustainable Development
- 2) **Name of Organization(s) organizing the session:** IEEE - Partner for Specific Activities
- 3) **Relevance with the WSIS Action Lines – please specify the Action lines C1 to C11:**
C1 - The role of governments and all stakeholders in the promotion of ICTs for development.
- 4) **Did your workshop highlight any issues related to COVID-19? If yes, please explain.**
IEEE has received over 100 proposals from around the world in an effort to combat COVID-19. Moreover, IEEE is [funding 73 grassroots IEEE member projects from 25 countries](#). Local responses and action are required to help implement sustainable development: an example is Uganda's response to IEEE's call for proposals, as they helped refugees in Sudan obtain masks.
- 5) **Key achievements, announcements, launches, agreements, and commitments**
- 6) **Main outcomes highlighting the following:**

- I. **Debated Issues**

Please capture highlights of the main issues discussed and interactions with audience:

- Technologies are essential tools to enable sustainable development. They hold promise to help overcome existing challenges, ranging from attaining climate sustainability to combating diseases and hunger. Panelist Sasha Rubel (UNESCO)



pointed out that [one study](#) showed that AI can enable the accomplishment of SDG targets.

Technologies are instrumental to ensure people:

- Have access to energy that is clean, affordable, reliable and sustainable through energy efficient technologies and technologies that use alternative energy sources
- Have access to clean water through water purification, efficiency, delivery and sanitation technologies
- Live in less toxic environments by putting in place alternative agriculture and industrial technologies
- Live in more sustainable environments by mitigating the effects of climate change through energy efficient processes
- Have access to education, health care, ...
- Green growth of ICT is needed. Panelist Supavadee Aramvith (Chulalongkorn University) explained that technologies such as AI, block chain, IoT, 5G, and drones could help us in achieving the SDGs— for example, AI-based technology could help provision food, health, water, and energy services. These technologies could also enable smart and low carbon cities. She and other panelists emphasized that we have to consider, however, that such technologies can increase our energy usage, saying “the green growth of ICT technology is essential.”
- Sasha Rubel (UNESCO) noted that the large computing centers needed for these technologies have a very high energy requirement and carbon footprint.
- New financial models to deploy energy infrastructure equitably are needed. Panelist Maike Luiken (IEEE Canada) pointed out that using technology to help achieve the SDGs depends on the availability of reliable, preferably clean, energy



supply. While we have the technology to produce sufficient power in an affordable manner in most locations, a critical hurdle we have not addressed is the financing and, potentially building of new financial models, to actually deploy this energy infrastructure equitably in many jurisdictions around the world.

- Build in ethics-related standards. Panelist Mina Hanna (IEEE) said that IEEE is building standards to make sure that it is addressing all of the ethical concerns around AI and it is thinking about the standards becoming a way to build this into policies and regulatory mechanisms. Similarly, they can be built into the diplomatic activities of governments, bringing together multi-stakeholder groups to have discussions like WSIS and the IGF Forum, he said.
- We need to be sure to recognize the impact of these technologies on parts of the world that do not necessarily have the technology infrastructures and the standardization infrastructures in place to support local creativity and innovation as technology progresses.
- Nurture locally-sourced technology. Mei Lin Fung (The People-Centered Internet) noted that if technology originates in first world countries, developing countries will not necessarily be able to use the technology for their own purposes because their needs will not necessarily have been taken into account. Fung pointed out that IEEE is actively seeking to nurture local ideas by funding innovative local technology projects proposed by members around the world through its Humanitarian Activities Committee.
- Panelists agreed that we need to focus more on designing, developing, and highlighting solutions that respond to local problems in diverse communities, so we're adapting and not just transferring technologies. Rubel stated that “We need to ensure that we develop a deep understanding of the 132 regions and cultures to increase the likelihood of development, design, adoption, and success in other parts of the world other than the global north.”
- Some technologies can reinforce dominant culture values to the detriment of society as a whole. Rubel explained that a March 2018 [survey](#) on gender and technology conducted by Liveperson found that only 8.3% of respondents said



they could name at least one female leader in technology. Of this 8.3%, only half could actually provide a name when asked to do so in the follow up question. Of the group that tried to provide a name, one quarter said Siri or Alexa as female technology leaders, which means that the most famous female technology leaders in the world are voice assistants. “Why is this important?” She said, “It means that what we're learning about gender equality and women's presence in the public sphere is being taught by voice assistants, and this is why UNESCO published [I'd Blush if I Could.](#)”

- The title comes from the fact that, previously (it has now been corrected) when you ask a voice assistant [something inappropriate] or you call them a rude name, the voice assistant would respond saying “I’d blush, if I could,” instead of, for example, saying “this is a completely inappropriate comment.” “But this is a huge issue,” she said, “because it points to the fact that a lot of the technologies that are being deployed right now are being developed largely by men largely in the global north, and so, technology is a product of the culture in which these technologies are created.”
- Considerable value will be left on the table if we do not include women from the beginning. We need to start by being sure women are included from the beginning. Two percent of startup funding goes to women founders. Given this is the case, the kinds of issues that women consider most important don't get funded. “We need to really think about who is doing the design to make sure that the technology really does create a sustainable world.”
- The OECD recently estimated that 70% of ICT patents in 20 countries are obtained by women, and only 10% of technology startup companies seeking venture capital funding were founded by women. So there is a huge issue as it concerns capacity building and encouraging women in the ICT sector, but also ensuring representation in the design phase of the emerging technology development. We need to invest in diversity.
- We need to identify bias and curate inclusively to avoid magnifying society’s biases. Machine learning algorithms uncritically trained on regular news articles will inadvertently learn and reproduce societal biases against women and girls



that are embedded in current language. Rubel stated: “In order to address these issues and ensure that these technologies are harnessed for sustainable development. We need to identify bias. We need to curate inclusively. And we need to develop conscientiously.”

- In the broader sense, the panel agreed that we need to work with all of the stakeholders to develop ethical principles and guardrails for technology development, based on use cases and realities on the ground. We need to bring together the technical communities, like IEEE, the private sector, and not only the Ministry of Science and Technology, but also the Ministry of Culture, the Ministry of Education, and civil society.
- The lens we use to measure affects what we see. Mina Hanna (IEEE) observed that estimations of the economic value AI will create are huge, but wondered if the gains lift everybody equally? Give everybody access to food and nature and shelter? Or will the benefits be distributed to only part of the community?
- Fung believes that one of the biggest issues in this discussion is that our measurements of success are too often based solely on monetary value. We actually should be measuring other things—Is the level of poverty being reduced? How much are we making progress against the 17 SDG goals? As the chair of the IEEE pre-standards working group on social impact measurement, she suggests socio-technical test labs within communities and networks of innovation sandboxes. With the internet of things and mobile phones, you can track what is going on, and what is working and what is not, using technology that assists people to compare and share together, so all can learn faster what works.

Please highlight key achievements and challenges shared by the audience and/or panellists:

Achievements:

- New development strategies and innovative resource mobilization, as well as the innovative use of existing and emerging technologies.
- Fast growing technologies can have a significant, positive impact on society, the economy and the environment.



- Technological breakthroughs offer hope for a sustainable future.

Challenges:

- The transformative technologies present new and unique ethical and equity-related challenges, which can undermine trust, thereby hindering advances in sustainable development, especially related to bias around gender, equality and digital skills.
- Governance and financial models governing these technologies are lacking.

II. Quotes

Please provide two important quotes from the session and the names & organisation of the person you are quoting:

“Policy tools for sustainable development must retain the agency of people, and give people the opportunity to grow within their economy.” (Mina Hanna, IEEE USA)

“One of the prerequisites for deploying ICT in a connected world for all is the availability of affordable, accessible sustainable clean resilient energy to operate these systems.” (Maike Luiken, IEEE Canada)

III. Overall outcomes of the session highlighting

Main conclusions reached during the discussion:

- Technologies are essential tools to enable sustainable development.
- There is a need for affordable, clean energy for everybody. Green growth of ICT is needed, along with new financial models to finance deployment of energy and ICT infrastructure equitably.
- We need to nurture locally-sourced technology.
- We need to build in ethics-related standards.
- We need inclusive and diverse ways to design, deploy, and govern new technologies.
- We need to seek diverse voices, starting from the very beginning stages of technology development.



Vision for implementation of WSIS Action lines beyond 2015:

- "Regional Innovation sandbox" as nodes of a global network platform for advancing sustainable development that involves local communities.
- Continued dialogue among all stakeholders is essential for achieving sustainable development.
- Guidelines are essential when implementing the SDGs.

7) Main linkages with the Sustainable Development Goals (please specify the SDGs)

- **SDG 5:** Achieve gender equality and empower all women and girls. ICT tools can empower women's participation. If women are involved, they not only can benefit directly from the technologies, but their voices and ideas will form part of the solutions moving forward, thus reaching an even broader section of the population than is currently being reached.
- **SDG 7:** Ensure access to affordable, reliable, sustainable and modern energy for all. In order for many of the benefits of innovation to reach people, power is needed. As well, all should push for greener ICT solutions.
- **SDG 11:** Make cities and human settlements inclusive, safe, resilient and sustainable. New technologies help make city infrastructure systems more efficient and safe. We need to ensure that those new systems treat the populations fairly, and handle personal data with care.
- **SDG 17:** Strengthen the means of implementation and revitalize the global partnership for sustainable development. Panelists pointed to the importance of organizations working together on issues of diversity and ethics in technology and development, along with the need for multi-stakeholder input.

8) Emerging Trends related to WSIS Action Lines identified during the meeting

C1. The role of governments and all stakeholders in the promotion of ICTs for development. Governments can better ensure that the benefits of technologies are reaped by more of their citizens, and potential harms are avoided, by encouraging the involvement of diverse voices in the entire process. Nurturing local ideas from underrepresented populations can pay off in more than dollar terms. Government policies, regulations and programs, such as open access networks, financial incentives and/or support, are essential.



9) Suggestions for Thematic Aspects that might be included in the WSIS Forum 2021

- Youth and ICT
- Ethical ICT - Do No Harm! - Avoiding harm by design, to protect children
- Tools and support for SDG measurement and reporting by local communities
- ICT infrastructure in a circular economy
- How can we work together - manufacturer, government, provider, user ... - to ensure a safe ICT environment for the user? 135 Thematic Works