Digital Single Market

Reports and studies15/11/2013

ICT for Excellent Science - Human-scale: Access to information

The main goal of this session, as stated by chair Nicole Dewandre (Advisor for Societal Issues at DG CNECT), was to explore how ICT has changed and continues to change our methods of scientific data acquisition and interchange of knowledge between scientific and regular community. Also it served to identify challenges that this rapidly changing environment provides and discuss possible methods of tackling the problems.

At first, Kirsti Ala-Mutka (Digital Science Unit at DG CNECT) introduced **Digital Science,** which is about the changing paradigm of research, making it more efficient, collaborative and closer to the society and citizens through the openness and tools made possible by ICT. Horizon2020 supports these new ways of research in all areas, and especially has established **Open Access** as a requirement for all publications resulting from projects funded by Horizon2020 and supports sharing research data through the Open Data Pilot and supporting e-infrastructures. Adding to that, Dewandre mentioned the EU data portal, which is openly accessible and is constantly filled with data from various European research actions.

The first of four speakers, Dr. Judith Simon (University of Vienna & Karlsruhe Institute of Technology) began the talks with the social sciences dimension of the digital world. Currently, social sciences are viewed only as an ethical pillar of technology development and its other aspects are ignored. The design of technology is culturally biased, either voluntarily or involuntarily, and can lead to unusable products even after a costly development. Dr. Simon stated that ICT and humanities have joint responsibility in creating better technological solutions calling for thinking about 'Really Responsible Research and Innovation' and really focussing on the interplays.

The second speaker, Heather Joseph of Scholarly Publishing and Academic Resources Coalition (SPARC), discussed the wide ranging positive impacts of making scientific research freely available as both data and scientific articles. She made the case that opening research could fuel economic growth by generating new ideas, accelerate scientific discovery, improve education, engage new users of information and encourage collaboration. Almost all of these objectives could be illustrated through three separate stories: Matthew Todd – a malaria researcher who uses open access as a way to tackle the rapidly changing infective disease and reduce time of drug development; Jack Andraka - a student who at the age of 15 developed a new pancreatic cancer detection test that is far faster and cheaper, facilitated by his access to OA content, and Daniel Mietchen - who is able to aggregate OA content and centralise it on Wikimedia Commons where it can be used as a resource to enrich

Wikipedia articles.

Professor Muki Haklay of UCL elaborated on Citizen Science, showing how it is not a new concept and has been used by scientists like Charles Darwin. However in the last few centuries the rise of professional scientists had pushed aside the amateur or citizen scientist but now ICT developments was bringing the citizen contribution back to the scientific arena. The examples of massive social data collection and/or processing in archeology, astronomy, ornithology have proven effective. There are different levels on which citizens can be part of the scientific process, reflected by concepts such as volunteer computing and volunteer thinking which were elaborated upon.

Finally, Jacqueline McGlade of the United Nations Environment Programme started her talk with the question “How do we unlock open data?” and discussed the topic from the viewpoint of policy development. Not only do huge amounts of data empower research, but also change the social intelligence. “We are creating a planetary neurosystem.” said McGlade. Not only informational exchange, but also the need for sustainable progress was indicated. Africa's rising role and importance was introduced as a current goal of development; effectively, an internet business should be able to be built on renewable local resources in rural Africa that would in essence be indistinguishable from an internet business in Manhattan. That kind of equalising connectivity should be targeted.

These four talks catalysed a number of questions that were highly appreciated by the speakers. Many varied points were addressed, including: possible low quality of open access journals; cost of publishing in open access journals; the dangers that EM radiation that Citizen Science data collection systems create; ways to avoid biased results in Citizen Science arrangements and prejudices that scientific community currently has with these results; and the danger of "haves and have-nots" when it comes to data, data surveillance and privacy.

Concluding the session, the speakers gave enlightening remarks. Scientists usually view their data as too complex for citizens to handle and analyse but the landscape is changing. The broader involvement of the wider community should be bigger than has been imagined up to now and it requires us to be more deliberate and develop longer perspectives. Since data is increasingly open to be gathered and accessed by anyone, like free and open oceans from the 17th century, it is being split into territories by private parties while public governing organizations are not yet prepared to legally develop in this way. A larger; more inclusive approach to these developments is urgently needed.

This session served as a bit of an oasis of thoughtful and introspective approaches to ICT, provided a welcome contrast to the hustle and bustle of the overall ICT2013 event. All in all, a fascinating topic, a stimulating set of presentations and an lively and thought-provoking discussion!

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