

Global Agenda Outlook

Thriving in a Hyperconnected World

The following materials are excerpts from the conversations that took place in Dubai that were not included in the final publication, Global Agenda Outlook. They summarize content raised by participants, which offers additional context and insights into the issues discussed. The following materials are not direct quotations from the speakers and should not be quoted as verbatim text.

Hyperconnectivity refers to the combination of billions of devices, huge swathes of data, and the interactions between them, which are now shaping our daily interactions. Information and communication technologies are at the centre of a rapid expansion of physical, social and virtual networks, connecting objects, people and processes in new ways and on an unprecedented scale. As Marc Davis and Robert Madelin outline in their chapter in the *Global Agenda Outlook 2013*, the information and communication networks have become a fundamental part of our infrastructure, and can help promote socio-economic growth and development.

In a hyperconnected world, communication does not only take place between people (for example, via SMS or social media), but also between people and machines or machines and machines. The data resulting from these interactions, Davis and Madelin argue, means that “we have very intimate information about people, which provides insights that help us function better in the real world.” However, both authors raise the tension that exists regarding ownership of data. As Madelin explains, “in a democratic society we should collectively decide how we want to manage data.”

Rod Beckstrom

What rights should citizens have over their data?

Robert Madelin

The right we should have in a democratic society is to collectively decide how we want to manage data. I don't know that we can start from a world where every piece of data is owned by an individual, but I would like to know how data about me is being created.

Rod Beckstrom

Should we let people demand of corporations all the data that corporation has linked to their personal identity? Should that transparency be an option for people?

Marc Davis

If you think about the nature of big data and personal data and how they relate to transparency and control, it's useful to think about who has what rights to this information and how that's structured. There is declared information that I can actually produce myself and there is observed information. If you take a photograph of me, we would each have different rights to that; you took the photo, but I am the subject of the photo. Then there is inferred information, where you can take declared or observed data and you can make new inferences from it. The result is that there are cases where data is mine and there are cases where for the public good or on the public domain, the data is effectively everyone's. If you think of this as a 3x3 grid where we have declared, observed and inferred data, as well as individual, public and joint data, you begin to see the space of different types of data.

Analysis of Types and Uses of Data in a Hyperconnected World

A problem arises when we consider how intertwined different types of data are. In their chapter, Davis and Madelin allude to various definitions of big data, and how they can be structured into a more simple and coherent framework for non-experts. Here, we expand on their ideas by outlining definitions of private, public and joint data, each of which can be declared, observed or inferred.

- Personal data refers to any information relating to an identified or identifiable person, where an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his/her physical, physiological, mental, economic, cultural or social identity. From this, we can distinguish between:
 - Personal (private) data is personal data that has not been shared in any format. In reality, this is next to impossible. Your government, employer, bank, doctors, utility companies – and so on – all have some of your personal data.
 - This leaves personal (public) data, which is personal data that has been shared in some format. Most personal data is shared, though individuals choose to share different information with different organizations or individuals.

- Personal data can be volunteered, observed or inferred.
 - Volunteered data refers to information that is created, and explicitly shared, by individuals.
 - Observed data refers to information that is captured by recording the actions of individuals.
 - Inferred data refers to information about individuals that is based on analysis of volunteered or observed by individuals.
- Joint data refers to personal data that has been made public and anonymized to achieve some public benefit.

The grid below provides real-life examples of the different types of personal data. Robert Madelin argues that data becomes especially sensitive when it moves from private to public. "What I do not want is that somebody puts all my data together and creates a profile of me without me knowing and without me being able to access that profile," he says. A proposed solution is to use metadata – data about data – to understand what rights and permissions are connected to each piece of data. As Marc Davis explains, "Being able to track and trace data, and enabling decisions about that data, is one of the things metadata can actually do."

	Personal (private) data <i>For example: your financial data.</i>	Personal (public) data <i>For example: where you live, who you know.</i>	Joint data <i>For example: your medical history.</i>
Volunteered data <i>Information that is created, and explicitly shared, by individuals.</i>	By definition, there cannot be personal (private) volunteered data.	Personal (public) volunteered data includes information you have shared on social networks. For example, posting your date of birth.	Joint volunteered data might include health information that patients have volunteered to further medical research. For example, cancer sufferers may consent to pool their information so that scientists can better understand their disease.
Observed data <i>Information that is captured as a result of actions of individuals</i>	Personal (private) observed data includes location information gathered from your mobile phone, or your browser history from your computer.	Personal (public) observed data includes actions you have taken on social media. For example, by joining different online groups, information can be collected about your interests.	Joint observed data is an extension of joint volunteered data. Using the above example, groups of cancer sufferers might receive different treatments; this data can then be extrapolated to determine the efficacy of new drugs.
<i>Information about individuals that is based on analysis of inferred or observed data</i>	Personal (private) inferred data includes credit scores and predictions of your personal preferences. For example, companies like Amazon and Facebook use algorithms to make suggestions they think will match your interests.	Personal (public) inferred data includes predictions of who you are friends with. For example, if you have friends in common with other people, social networks can suggest them to you.	Joint inferred data is the result of an analysis of other types of joint data. For example, doctors may infer from a cancer sufferer's joint volunteered and observed data that she or he will not respond to different treatment.