# Governance,
# an issue ranging from the Internet to digital technology

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***Abstract***:
So many forms of governance: of the Internet, of the Web and of its archives, not to forget Wikipedia or the Internet of things, and the question of Net neutrality…. While governance can be imagined in several forms and on several scales (from data to the "network of networks"), the idea of "governmentality" conveys a nuance that helps us grasp, in both theory and practice, the ways of doing and acting in digital environments.

The World Summit on the Information Society (WSIS) in 2003 and 2005, in particular its Working Group on Internet Governance (WGIG), drew up a definition of this governance that has served as a reference for fifteen years now. This definition emphasizes the variety of the parties concerned with governance and, too, the possibility for them to intervene, each stakeholder with its own qualifications and assignments. It also underscores the diversity of the instruments to be used to exercise governance, without limiting them to the law but while also taking account of techniques, the market, and informal standards.[1]

This framework, both practical and theoretical, is still relevant in a digital context where uses, techniques and stakeholders have diversified since the Internet at the turn of the 21st. century. However the key concepts underlying this idea of governance, such as "multistakeholderism", and the actual practices of governing (conferral, negotiations, consensus, etc.) come into play variously depending on whether we are talking about Net neutrality, Wikipedia, Web archives or the R&D infrastructure. This enhances the gamut of possible arrangements and interactions. While this framework of governance is still important, other approaches to this question have emerged, in particular "governmentality". The latter is sensitive not just to power relations but also to the agency of human beings and techniques and to questions of capacity-building and empowerment.

[1] This article, including quotations from French sources, has been translated from French by Noal Mellott (Omaha Beach, France). The translation into English has, with the editor's approval, completed a few bibliographical references.

## From practice to theory

The WSIS and its successors at the UN, such as the Internet Governance Forums (IGF), formulated, for the first time, a consensual definition of governance. In practice however, Internet governance existed much earlier. If we focus on the stakeholders who actually exercised power and made policy (in the broad sense of the word) for the whole "network of networks" or one of its parts, there have been many pioneers in governance, since the first sets of rules for Usenet newsgroups up till the creation of the first organizations, like ICANN, for managing critical Internet resources (MUELLER 2002).

Internet governance must be updated since, within the past few decades, the governance of techniques and innovation has become a major theme. Evidence of this comes from issues related to environmental management, the availability of energy sources, arms control and food security. States play a leading role in negotiating, drafting and implementing agreements. However many of the issues related to scientific and technical governance stretch beyond national borders, extending into many spheres of action and reaching across many jurisdictions, all this owing to the internationalization of these issues, the complexity of these agreements and the globalization of stakeholders. Integrating citizens in technical and scientific decision-making processes is central to this trend, while the monopoly held by scientists and experts has been put in question during social and technical controversies about genetically modified organisms, nanotechnology, etc.

The realm of science has not remained outside this trend. Despite criticism of its position, it has not failed to address these issues in theory. For some authors, "technical democracy" is a way to take up the coming scientific and technical challenges and break free from a model that, decried as being technocratic and lacking in transparency, is being increasingly criticized (CALLON *et al*. 2001). Internet governance interests researchers, whether in political science, the sociology of innovation, or the information and communications sciences. Without dwelling on this history, we would like to point to the pioneering work done by Goldsmith and Wu (2006) and to the still pertinent typology worked out by Bing and Bygrave (2009), who have distinguished between governance by techniques, by the market, by national stratagems, by international and transnational stakeholders, etc. Let us also mention the shades of meaning given by Badouard *et al*. (2012) to a concept that has expanded along with the Internet, its uses and infrastructure.

## Many an inflection…

When talking about Internet governance, many parts of this "network of networks " can be examined, like planets within the universe of global governance. A telling example is Net neutrality (*cf*. SCHAFER & LE CROSNIER 2011 as well as Serge Abiteboul's and Mitchell Baker's articles in this issue).

Since the start of the century, the controversy about Net neutrality can be seen as a concentrate of the broader debate on governance for several reasons. First of all, it has brought around the same bargaining table stakeholders in the digital economy and the Internet's founders as well as representatives of governments, national regulatory authorities and "civil" society. Secondly, it is evidence of the globalization of the Internet and the ensuing issues, but also evinces the diversity of national contexts. Finally, it implicitly raises the question of what values and which parties ought to govern the Internet; and has brought to light various conceptions of governance (states, markets, etc.).

Since its emergence at the end of the 1980s, the World Wide Web (WWW or W3) has faced issues of governance. Created at the European Organization for Nuclear Research (CERN), the Web crossed the Atlantic with its creator, Tim Berners-Lee, a Briton, and became part of the World Wide Web Consortium (W3C) specifically created for it in 1994. French and Asian branches were then set up ( SCHAFER & GRISET 2011). Having been scalded in his efforts to deal with existing organizations

for the governance of the Internet, Berners-Lee chose to set up the consortium for imagining the evolution of the Web. Though not having fully identical forms of governance (RUSSELL 2011), the Web and Internet do share problems related to standardization, openness and multistakeholderism.

The Web relies on a form of multistakeholder governance, as does its archives. Among the many stakeholders in the archives are foundations (*e.g.*, Internet Archive), transnational organizations (*e.g.*, the International Internet Preservation Consortium) and representatives of civil society (in particular, activists and researchers) and of private businesses (*e.g.*, Facebook and Twitter have their own archives). The Web archives have thus arisen out of diverging views based on ideas ranging from the commons to proprietary forms of ownership. The dialectics (specific to governance) generates various practices and sources of standardization, ranging from technology- to market-based, from joint transnational and international efforts to standards and laws, and from geopolitics to the "digital divide" (SCHAFER *et al*. 2016).

The best known online encyclopedia, Wikipedia, can be seen in the light of governance. Though having little to do with corporations or states (even though Wikipedia has its share of political issues), this governance raises questions about the commons, self-organization (FALLERY & RHODAIN 2013) and the autonomy of users when coping with automated decision-making in the digital environment (since robots increasingly make corrections or indicate the tasks to be done). To explain the normative procedures used at Wikipedia, attention has been drawn to the human and technical adjustments that enable individuals to interact and advance toward a "participatory vigilance" (CARDON 2012, CARDON & LEVREL 2009).

To this governance of a knowledge platform (of which Wikipedia is but one example), we might add the governance of an infrastructure for research[2] or for the Internet of things (mentioned back in 2007 by Françoise Benhamou)… so many examples that provide a glimpse of the variety of the digital issues and objects to be viewed through the prism of governance.

## Towards governmentality?

Given mounting trends and techniques (such as algorithms, artificial intelligence, blockchains and the Internet of things), awareness has arisen about how technical devices and procedures can themselves be "agents" ("actants" in the language of STS: science, technology and society) in the processes of governance. The complex networks they form with their developers, users and regulators (or those who intend to regulate them) call for a fresh look at these issues. Without discarding the idea of governance as obsolete, technical elements should be firmly reintroduced in this debate.

The concept of "*algorithmic governmentality*" has been proposed to "*refer very broadly to a certain type of (a)normative or (a)political rationality founded on the automated collection, aggregation and analysis of big data so as to model, anticipate and preemptively affect possible behavior*" (ROUVROY and BERNS 2013, §10). Accordingly, individuals will no longer agree or consent to specific instances of the processing of their data. Instead, they will adhere by default to the statistical practices of aggregating data and predicting behavior patterns — continuous practices that eliminate the time of reflexivity and subjectivation "*without ever asking them to themselves describe what they are or what they could become*" (§10).

This situation calls for reconsidering the mantra "*code is law*" (LESSIG 2000) in the light of these new digital practices. The algorithm-driven processes of aggregation, quantification and classification lead us to reappraise the questions of power and regulation. By delegating to algorithms tasks that cannot possibly be done manually, data analysis is automated; and the results of these analyses automate, in turn, decision-making. This two-step automation process raises questions about the control and distribution (or concentration) of power. Who are the arbiters of

[2] Such as Dariah; https://www.dariah.eu/.

algorithms? Does the act of designing an algorithm assert authority over something other than the algorithm itself? How autonomous are algorithms? What we need to examine is the accountability and responsibility of algorithms as sociotechnical artifacts and of their creators and users.

Questions about power and empowerment have been raised in relation to the concept of governmentality borrowed from Foucault (2004). A study on power in three cases (operating systems, a content management system used for publishing information on line, and the power exercised by Google on website editors) has distinguished three ways of "*conducting behaviors in an electronic environment, in particular on the Internet: incentives, restrictions and a [normative] framework*" (BADOUARD *et al*. 2016).

By clearly placing users back into the game (whereas governance leads us to think more of "civil society" and, thus, of activists or experts), governmentality leads us to dwell on uses, processes, arrangements and practices, even in the most trivial, everyday forms. This concept is not, of course, incompatible with governance: governmentality stems from specific forms of governance, which it acts back upon. Returning to the example of Wikipedia (CARDON 2012), a person is not a born Wikipedian but becomes one through collective practices and interactions with other human beings but also with techniques and technical procedures. We thus see how governmentality is placed at the service of Wikipedia's core activities and values via automated control and monitoring systems. We also see how these systems stem from the evolution of Wikipedia's governance.

## Conclusion

This account of the regulation of the Internet from the lowest to the highest levels, from the infrastructure to the contents, and from the Web and its archives to algorithms lets us observe a transition from governance toward governmentality, two concepts that, though not mutually exclusive, are yet to be closely articulated. Although they both help us think about power and forms of regulation and negotiation, they entail different methodologies of observation and analysis with regard to devices, platforms or the scale of study. Governmentality leads us to study cases with a more limited scope than the macroview provided by governance. By varying our points of observation as in the cases mentioned herein (Net neutrality, Web archives and Wikipedia), we reposition ourselves closer to what is happening in the digital realm and to the issues as felt and experienced by users. Though not necessarily making the distinction between governance and governmentality, users increasingly realize that power is at stake in the technical arrangements, procedures and processes they use day after day.

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