# Is the Internet a common good?

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***Abstract***:
The Internet and Web — the infrastructures underlying most of today's and tomorrow's digital services — have been conceived by their founders as common goods, shared resources open to innovation and the creativity of each and everyone. This characteristic has been a major factor in the explosion of online services since the mid-1990s. But can we, in 2018, still consider the Internet and Web to be common-pool resources? After exploring definitions and interpretations of the commons, the Internet's history is examined to understand how its networks measure up to certain criteria. Attention is then turned to the contemporary digital realm to examine not so much the sharing of resources as the finalities pursued by those who tap these resources.

The Internet is so embedded in our most ordinary and basic gestures, in everyday life ranging from weather reports to romantic e-mails, that we often forget to ask questions about its status, operation and governance. In a way, we have naturalized it as the backdrop for our actions, a landscape unwinding on the other side of the train window of our existence. We live with our minds in cyberspace, an incessantly reconfigured mental ecosystem.[1]

But who presides over these changes? Who orchestrates the performance of these now nearly indispensable digital tools? We are aware of the changes introduced in the services we use (the social media, websites, connected devices, etc.). We know who owns them; their directors are often media figures and multimillionaires. But what about the Internet's infrastructure? Of course, global telecommunications firms own the physical grids and networks. But what about the set of protocols used to make interconnections work? Should we talk about the Internet as a private or, on the contrary, as a common good? At a time when several countries have recognized access to the Internet to be a fundamental right, should we consider the Internet to be a global common good, like the biosphere?

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[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.

# Common goods, a concept and practice with many meanings

Various circles, ranging from social movements and civic organizations to corporations, not to mention the speeches by elected officials, increasingly refer to the concept of the commons.[2] Nonetheless, the public is not well informed about the meaning that researchers and activists give to this word, so often fraught with confusion (LE CROSNIER 2018). This confusion should be cleared up before asking whether or not we the Internet is to be seen as a commons.

Uses of the commons or common goods usually refer to Elinor Ostrom's definition, which this Nobel laureate of economics in 2009 made following thirty years of observations and studies around the world. This definition (OSTROM 1990) brings together three essential characteristics:

● *a)* a shared resource, whether tangible (a microwave oven, an irrigation system or a forest) or intangible (a plant's genome, scientific knowledge);

● *b)* a community that manages the resource, whose number might be limited (the residents of a neighborhood) or very large (the contributors to Wikipedia); and

● *c)* this community's rules of governance for organizing the use of the commons and protecting it from the risks of predation or enclosure, which would restrict access in behalf of a few users. These legal rules support sharing (*e.g.*, open-source licenses) and take account of the common good's use value.

Since then, this seminal definition has received various interpretations depending on the geographic units or communities that refer to it.

First of all, some groups — emphasizing the shared resource itself (a common-pool resource) or the associated, distributed use rights — imagine the commons as a shield for halting the ceaseless expansion of property rights in an unrestrained capitalistic system. For instance, freeware is seen as a digital common good for opposing the rampant reinforcement of intellectual property rights since the mid-1990s. Community land trusts, by separating ownership of the land (which is shared) from ownership of the buildings on it (which is individual), is a response to the shortage of housing for the underprivileged in big cities around the world.

Secondly, other authors or activists have insisted on the community as a driving force, on its sense of agency, its ability to organize itself, to be a force of change in a world where public governance is unable to address the major issues facing humanity. For example, some Latin American countries, to cope with "extractivism" and its effects on nature and the biosphere, have adopted an approach based on the commons. I might also mention the movements that have revived "municipalism", *i.e.*, a "horizontal" management of urban areas in association with local social movements, as in Valparaiso or Barcelona.[3]

A third major (but not final) approach to the commons emerged in Italy at the end of the first decade of the 21st century.[4] It insists on what its supporters consider to be the purpose of the commons, namely the realization of fundamental rights. This approach — more ethics-oriented since it promotes the values represented by the commons — was taken during the 2011 referendum on the water supply in Italy. It has also served to draft a charter of the urban commons, which defines the relations between a municipality and its inhabitants who want to become involved in projects of public interest. Bologna adopted such a charter in 2013;[5] and several other Italian cities have done so since then.

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[2]    See the special issue "Vers un société des commons" of *Dirigeant*, 123, October 2018. Available via http://www.dirigeant.fr/011-1968-Vers-une-societe-des-communs.html.

[3]    Municipality-based movements held their first international congress "Fearless Cities" in June 2017 in Barcelona (AMBROSI 2017).

[4]    In 2007 in Italy, Prodi's government asked the Rodotà Commission to introduce the concept of the commons in the Civil Code, but these plans were foiled (MATTEI 2014).

[5]    *Regolamento sulla collaborazione per la cura e rigenerazione dei beni comuni urbani*, available at: http://www.comune.bologna.it/sites/default/files/documenti/REGOLAMENTO%20BENI%20COMUNI.pdf.

Under the second and third approaches, the commons is a synonym of the common good or general interest, whereas, in the first approach with its emphasis on the shared resource, the commons does not systematically have this ethical dimension. For instance, a software program might satisfy all of Ostrom's criteria (open-source code, thus shared and managed by a community with a form of governance incarnated in its open license) but still be used to manage electronic systems on board warplanes.

## A short history of the revival of the commons in the digital era

Although the commons has probably existed since the first human communities, the concept was introduced in the English Charter of the Forests in 1217 (LINEBAUGH 2009). It made a comeback in the public domain at the end of the 20th century, thanks to digital technology.

Three factors explain the role played by digital technology. First of all, by separating information from its medium (the text from the book, the music from the record), this technology fostered the sharing of information. Intellectual property was thus endowed with the characteristics of an intangible good, namely nonexclusive and nonrivalrous.[6] These "works of the mind" were no longer shared within closed circles of acquaintances but now have a potentially unlimited circulation via the Internet… to the detriment or the industries with business models based on paid access to a material medium. Secondly, thanks to the Internet, deterritorialized communities have formed. Previously, a commons was based on geographical proximity. These two changes account for the emergence of many digital commons, ranging from freeware (the ancestor) to knowledge databases (Wikipedia), geographical data (OpenStreetMap) or information on nutrition (OpenFoodFacts), not to mention the less well-known communities involved in open hardware or open design.[7] This trend has spurred a revival of "open science". A third, no less important, factor is related to the Internet's conception, design and development .

Before dwelling on this third factor, I would like to make the distinction between three things that, for the sake of simplicity, are usually referred to as the Internet: *a)* the physical infrastructure (ADSL, optical fiber) owned by telecommunications companies; *b)* the Internet in the strict sense, namely the decentralized worldwide computer networks that use packet-switching (to send e-mails, videos or information from connected devices); and *c)* the Web, the public system of hypertext that enables users to consult contents with a browser but is only one of the many applications operating on the Internet.

## Open protocols at the core of the Internet and Web

From the start, the Internet and Web have been based on open protocols.

For the Internet, the two basic protocols are TCP (Transmission Control Protocol) and IP (Internet Protocol), both invented during the 1970s by Vinton Cerf and Bob Kahn with funding from the Defense Advanced Research Projects Agency (DARPA). From the very start, the engineers designed a nonproprietary, open architecture for the Internet. The US Department of Defense adopted these protocols in 1982 as the official standards for the armed forces' information networks. In 1985, a first workshop organized by the Internet Advisory Board (IAB, which became the Internet Architecture Board in 1992) invited private businesses to use the Net. Firms such as IBM, AT&T and

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[6]  In economics, a good is nonrivalrous when several economic agents can use it simultaneously; and it is nonexcludable when a user cannot deprive others from using it.

[7]  Like free, open-source software, "open hardware" refers to the physical products and techniques developed in line with the principles of "free resources"; and "open design", to the designing of objects using free patterns, blueprints, etc. (XZ and Arduino, Wikhouse, the 3D-printer RepRap).

DEC were soon developing the Internet while still working, in parallel, on proprietary protocols. We know what happened next!

Tim Berners-Lee and Robert Cailliau designed the Web while working for the European Organization for Nuclear Research (CERN). In April 1993, CERN decided to place in the public domain all the technology (servers, browsers, code) developed for the World Wide Web. The http protocol, the Web's core, was thus spared from becoming proprietary. The release of this set of protocols aroused excitement. By choosing to place these protocols outside the domain of intellectual property rights and to make them common-pool resources, the Web's founders opened the possibility for distributed innovations that engineers from around the world would be able to access and that would be diffused at a speed without precedent in the history of technology.

Should we conclude from this broad outline of the Internet's history that the Net as now currently understood is still a commons?

## A common-pool resource but for what purpose?

If we stick to the first interpretation of the commons, the answer seems affirmative. The Internet is still a commons. The resources — protocols and associated code, including current versions of them (such as https://) — are still open. We have even observed a coalition of private firms (including Google) and nonprofit organizations (such as the Electronic Frontier Foundation or Mozilla Foundation) set up arrangements to diffuse for free the encryption-based certificates for secure protocols (such as https, sftp, imaps and ssh).[8] The governance of these resources lies in the hands of international communities: standardization organizations, such as World Wide Web Consortium (W3C) or the Internet Engineering Task Force (IETF). Each of these communities is organized around its set of rules or standards. For example, the subjects handled by the IETF range from requests for comments (RFCs, proposals for new standards submitted to the community) to the dress code![9] The success of freeware has induced many firms to take part in this movement; and multinationals, such as IBM, Google and Microsoft, have become major contributors (EGHBAL 2016).

This digital infrastructure is, we agree, an open, common-pool resource. But what about its uses and finalities? How do more than four billion cybernauts use this infrastructure?

The founders, when they designed the Internet, were pursuing a "digital utopia" (TURNER 2006). For Tim Berners-Lee, the choice of the public domain ensued from his quite clear intention to turn the Web into a cooperative medium, a place open to everyone for posting information. When the first websites appeared, their designers exchanged tips and tricks so that everyone would benefit from the advances made in the protocol. Millions of amateurs immersed themselves in the many tutorials circulating on the Web (most of them written for free by other enthusiasts) in order to learn the basics that would empower them to make their voices heard. This intention to promote free speech was underscored by the availability of tools, on what was called the Web 2.0 at the turn of the century, that made the transition easier between a typed-in text and the formatted document that presented the text.

This view of technology as a liberating force emerged before the Web. Starting in the 1980s, the communities that were inventing the forms of technology we now refer to as "digital" widely shared this view. At the start of the Internet, engineers, technicians and specialized journalists were all convinced of the inherently democratic value of freely circulating information. This circulation would supposedly reduce asymmetries, increase knowledge and thus empower people — as individuals taken separately. Above all, individuals had to be protected from state control, as explained in the declaration of independence of cyberspace that John Perry Barlow read at Davos in

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[8] https://letsencrypt.or/

[9] https://www.ietf.org/about/participate/tao/

1996. This view's positivism was on par with its determinism: technology could but be a source of progress for humanity.

Does the Internet of the 21st century still hold up to this democratic promise? Does it help us escape from surveillance? Does it protect and reinforce the fundamental rights of citizens on the planet?


## Trouble in utopia…

For the 20th anniversary of the Web in 2013, Rolf-Dieter Huer, CERN's director-general, declared: "*From research to business, and passing through education, the Web has redefined how we communicate, work, innovate and live. The Web is a fine and simple example of how research benefits humanity.*"[10] Four years later, Tim Berners-Lee (2017) published a long article that pleaded for a regulation of the Internet and expressed concern about three major trends: the loss of control by individuals over their personal data; the ease of spreading fallacious information on the Web; and the absence of transparency with regard to political advertising, the opacity of algorithms and the possibility of states using this technology for surveillance purposes.

Although regressive phenomena had been observed earlier, they have proliferated ever faster during the past few years. Many countries have adopted laws allowing the state to monitor citizens in order to fight against terrorism. The public use of biometric technology is spreading (*e.g.*, closed-circuit televisions using facial recognition technology for surveillance purposes). Fake news and conspiracy theories along with political and religious extremism are jauntily circulating over the social media. As the Cambridge Analytica scandal has shown, data garnered for the sake of business (advertising) can be deviated for the purpose of political manipulation.

The digital economy has been built on a distributed technology that was originally designed as an alternative to gigantic monopolies in information and communications technology. The outcome is now a worldwide process of hyperconcentration in the hands of the American and Chinese giants. The platform economy is undoing collective bargaining and labor law. Promised as a new el dorado for innovation, artificial intelligence is riven with ethical problems: risks of discrimination, manipulation, loss of human autonomy, etc. (CNIL 2017). Apart from a few declarations of intent, no concrete proposals have been made to cope with these problems. This list could go on and on, but let me also mention digital technology's inability to address environmental questions — when it does not make them worse, as do the bitcoin energy hogs or the race to find the rare-earth metals needed for manufacturing smartphones.

Nevertheless, information does circulate; and knowledge, despite all attempts at enclosure, has never been as shared as nowadays. Ultimately, the Internet has created a global space open for free speech and sharing. On top of the lower layers of the technical infrastructure designed as a commons has been added an upper layer, namely a cognitive information commons. But for what uses? For what social purposes? According to the artist and essayist James Bridle (2018), "*That which was intended to enlighten the world in practice darkens it. The abundance of information and the plurality of worldviews now accessible to us through the Internet are not producing a coherent consensus reality, but one riven by fundamentalist insistence on simplistic narratives, conspiracy theories and post-factual politics. It is on this contradiction that the idea of a new dark age turns: an age in which the value we have placed upon knowledge is destroyed by the abundance of that profitable commodity, and in which we look about ourselves in search of new ways to understand the world.*" Unlike in the past, when the Dark Age was related to a loss of ancient knowledge, the "*new dark age*" is related to an abundance of knowledge that we do not know how to handle collectively.

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[10]  Quoted in "Il y a 20 ans, le CERN libérait le Web", *ZDNet*, 30 April 2013, consultable at
https://www.zdnet.fr/actualites/il-y-a-20-ans-le-cern-liberait-le-web-39789998.htm.

## Collective responses to the tragedy of an unmanaged commons

Instead of yielding to a paralyzing pessimism, let us recognize that the relations have always been complicated between knowledge and wisdom, the power of knowing and the expansion of democracy. No determinism can bring them together, neither in a blissfully optimistic vision nor in a regressive technophobia. To cope with this technology, which day after day is trying to ever more orient our centers of interest and govern our behaviors, we must reconsider, at the planetary level, how to regulate this commons (the Internet and, more broadly, digital technology) by uniformly relating the conditions for using these common goods to their finalities.

We must also expand the commons to cover other intangible resources, in particular data, so that cooperative efforts can withstand purely competitive drives and open new spaces for shared creativity. By making cybernauts want to build new commons (local or international), the sense of a group can be revived to oppose the rationales of atomization now dividing us. This can mark a return to the dynamic trend at the origin of the Internet and Web. Instead of proposing a realm with an architecture, a "cathedral", we can leave the imagination free and recognize the fertility of the bazar, which has realized the Internet as a global multilingual network of networks open and widely accessible.

# References

AMBROSI A. (2017) *Barcelone à la croisée des communs,* 15 October,
https://vecam.org/Barcelone-a-la-croisee-des-communs.

BARLOW J.P. 1996 "A declaration of the independence of cyberspace" (San Francisco, CA: Electronic Frontier Foundation) available at https://www.eff.org/cyberspace-independence.

BERNERS-LEE T. (2017) "I invented the web. Here are three things we need to change to save it", *The Guardian*, 12, March,
https://www.theguardian.com/technology/2017/mar/11/tim-berners-lee-web-inventor-save-internet.

BRIDLE J. 2018 *New Dark Age: Technology and the End of the Future* (London: Verso).

CERN (1993) "The document that officially put the World Wide Web into the public domain on 30 April 1993: Conditions of use" available at https://cds.cern.ch/record/1164399#.

CNIL [Commission Nationale de l'Informatique et des Libertés] (2017) *Comment permettre à l'homme de garder la main? Les enjeux éthiques des algorithmes et de l'intelligence artificielle*, December, 80p. Available via: https://www.cnil.fr/fr/ethique-et-intelligence-artificielle.

EGHBAL N. (2016) *Roads and Bridges: The Unseen Labor behind our Digital Infrastructure* (New York: Ford Foundation). Available via
https://fordfoundcontent.blob.core.windows.net/media/2976/roads-and-bridges-the-unseen-labor-behind-our-digital-infrastructure.pdf.

LE CROSNIER H. (2018) "Une introduction aux communs de la connaissance", *TIC & Société*, 12(1), pp.13-41. Available at https://journals.openedition.org/ticetsociete/2481.

LINEBAUGH P. (2009) *The Magna Carta Manifesto: Liberties and Commons for All* (Berkeley: University of California Press).

MATTEI U. (2014) "La lutte pour les 'biens communs' en Italie. Bilan et perspectives", *Raison Publique.fr*, April. Available at https://www.raison-publique.fr/article683.html.

OSTROM E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge, UK: Cambridge University Press).

TURNER F. (2006) *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network and the Rise of Digital Utopianism* (Chicago, IL: University of Chicago Press).