

Inflections of neutrality

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Abstract:

The world has become digital, as economies and societies have been transformed. How not to be satisfied with all the readily available knowledge, the new means of communication, the revolution in retail businesses...? But all of this brings risks. After examining Net neutrality, the idea of neutrality is expanded to Web services and to terminals for connecting to the Internet. These various forms of neutrality are intended to make the Internet into a space of freedom, a fair playing field for business, a common good at everyone's service.

The principles

When looking for services or information, we would like for what is found to coincide as closely as possible with what we want or need. When we propose a service or post on the social media, we would like for our ideas and proposals not to be ignored or not to be made hard to access. Unfortunately, the primary goal of the services used to search for contents, to communicate, obtain information, express our views, etc., is to bring in income to the companies offering them and only secondarily to better serve us (and make us more loyal as customers so that we continue helping to bring in more income).¹

A first source of problems is the business model widely used on the Web. Many online platforms depend on two-sided markets. In other words, they simultaneously attract quite distinct categories of users. This marketplace for bringing into relation buyers and sellers entails different types of interactions with each of these two categories. The income of these platforms tends to come from what we pay on line for services or from the advertising on the platform for capturing our attention. The story could end here. However these firms look for other sources of earnings by selling our data or making recommendations that tout their own services or those of their privileged clients.

Another source of problems is the establishment of quasi monopolies, or oligopolies, for delivering services that have become important. A start-up or an idea will be stifled if search engines, the social media or app stores (for smartphones) deny it the presence it deserves. Intended for millions of customers, and even more than a billion in some cases, the platforms have a literal power of (digital) life or death over economic agents.

The Web initially expanded as a level playing field. This aroused the enthusiasm of cybernauts and stimulated the unbridled inventiveness of firms, some of which have grown up to become the current giants. But is the playing field still level? The most popular platforms try to enclose us in bubbles, the bubble of Google, Apple or some other hulk on the Internet. The Web, unique and universal, risks disappearing to the benefit of these bubbles. With it would vanish our freedom to choose services and the possibility for newcomers to grow.

¹ This article has been translated from French by Noal Mellott (Omaha Beach, France).

It is, therefore, necessary to define the principles underlying the operation of this universal network, new as it is in the human landscape. Some of these principles have been worked out around the idea of Net neutrality. Underlying them is a presupposition that has, since the creation of the Internet (and Web), become a full part of our imagination: this network connects all human beings, firms and societies. In this sense, it is a common good at everyone's service. The foundation of the French Act for a Digital Republic and of the EU regulation on Net neutrality is the principle that the Internet is a means for exercising fundamental human rights.²

Net neutrality

Net neutrality means handling all data streaming over the Internet equally. In compliance with this principle, it is forbidden to discriminate between data packets on the grounds of their source, destination or contents, thus on the grounds of the information they contain. For example, Internet access-providers are forbidden to block or even slow down the streaming of YouTube videos (negative discrimination), and ought not offer access without a forfeit to Facebook if similar services do not enjoy the same advantage (positive discrimination).

From its start in the 1980s, the Internet has been built on this principle of neutrality. In 2017 however, Ajit Pai, chairman of the US Federal Communications Commission (FCC), reversed the decisions (Open Internet Order) that guaranteed Net neutrality in the United States. This neutrality is now at the center of a conflict that is economic, political and international.

For the transmission of electronic data, Internet service-providers (henceforth ISPs, such as Orange, SFR, Bouygues Telecom or Free in France) have to have a major infrastructure — servers but also means of communications with other ISPs and with end users. This is the reason that users pay for access to the Internet. We see two major reasons that ISPs might mention for circumventing Net neutrality: the guarantee of the quality of their applications and the growth of their profits.

Quality

ISPs might want to see to it that other uses of the Internet not interfere with their own applications. They are tempted, at times, to slow down or even, at their own discretion, block certain intensive uses (such as videos) for the benefit of services (like e-mail) that take up less bandwidth. Systemizing such practices (apart from during exceptional traffic peaks, when the Internet is saturated) risks becoming an excuse for ISPs to not invest in a more efficient infrastructure.

It is worthwhile pointing out that uses (*e.g.*, telemedicine) for which the quality of service is very important have often developed outside the Internet. Conducting open heart surgery or steering a driverless vehicle are activities subject to real-time conditions that are hardly compatible with the Internet's current technology, based as it is on best-effort delivery.

Profit growth

ISPs might want to ask content-providers to pay for a more efficient transmission of their data over the Net. This is the crux of the debate, since firms (and ISPs are firms) naturally want to see their profits grow. Pure-play firms on the Internet already pay for the costs of transmitting their data (by installing their own networks or web cache systems). Firms like Netflix install servers directly at ISPs so that thousands of people will be able to efficiently upload the movies they offer.

² Act n°2016-1321 of 7 October 2016 for a "digital republic". Texts of French laws and decrees, as well as as many court decisions, are available at <https://www.legifrance.gouv.fr/Droit-francais>. Texts of European Union law are available at <http://eur-lex.europa.eu/browse/directories/legislation.html>.

Besides the income drawn from providing end users with access to the Internet, ISPs might want Web service-providers to pay more for data transmission. Why should the law keep them from doing so? At first glance, this business question is a matter of the distribution of costs and income streams between ISPs and firms on the Internet. Pushing the question farther: why should the law defend the American giants (Facebook and Google) by forbidding a local ISP to ask to be paid to transmit their data? All the issues stemming from this question have to be gauged!

First of all: uphold COMPETITION BETWEEN SERVICES. The Net neutrality principle is valuable because it keeps the playing field peaceful but also open to competition. The Internet owes its success to this fair playing field. Thanks to it, startups have, from scratch, become Web giants. Everyone is equal on the Internet. Imagine what the Internet would be without Net neutrality. An ISP could demand a kickback from a big firm that offers music on line. And who will assure us that this music firm would not, in turn, require that the agreement concluded with the ISP provide for eliminating an online rival? The Internet would soon turn into an economic jungle, where big players crush the little guys. Our European ISPs would probably be injured since they are too small compared with the Web giants.

Secondly: preserve FREEDOM OF CHOICE for everyone. Let us assume that I want to use a television service with over-the-top content (OTT) delivery³ but that my ISP has decided to give preference to another service. What to do? Should I change television company? ISP? The number of choices is limited. The situation is complicated. We might even suspect that my ISP will influence my opinions by choosing the news or information to which I may have access. Or what if I want to diffuse information that does not “suit” my ISP? My freedom of speech has vanished along with my freedom of choice. Paying for access to the Internet should give me more freedom to choose the services I want.

“With great power comes great responsibility”

Net neutrality is not at stake by itself. After all, what would this neutrality be good for if, the terminals for accessing the Internet (on the one end of the pipeline) and the services offered by oligopolies (on the one end) restrain freedom of choice and curb competition? This leads us to take a look at other forms of Net neutrality.

Let us start by focusing on the Web services. A single search engine, Google’s, controls an enormous share of the market (more than 90%). By ranking its findings, it wields considerable business power. A start-up might be forced to shut down if Google decides to keep it off the first page of search results for certain queries. Where is the competition? This ranking, which determines what we are offered, can influence our opinions and choices. A similar situation exists in the social media, owing to Facebook.

Now shift focus to the other end of the pipeline, the terminals used to access the Internet. At present, the main terminal is the smartphone. Roughly speaking, we have the choice between two environments — Google Play and Apple Store — for obtaining apps with fabulous features. However one of these two might decide to refuse applications we want to use, to optimize one app rather than another, to promote one app over another, or to push us toward preselected applications — anticompetitive practices that restrain choice and restrict freedom.

³ Over-the-top service is the delivery of audio, video and other media files over the Internet without involving a traditional operator (such as a cable, telephone or satellite company), which controls or distributes the contents.

Similar problems crop up with regard to new terminals, such as e-readers, digital displays in cars and virtual assistants. Take the example of Amazon's Alexa. The "personal" assistant answers our questions, plays the music we request, helps us shop, etc. When we ask a question (or request a service) related to music or the movies, the assistant often chooses a single answer for us. What will become of competition in retail business when a few software programs will choose for nearly the whole population the companies for such-and-such a service? This amounts to a restriction on our freedom, a form of condescension. When we accessed the Web during the 20th century, we had to choose, to make up our minds. We controlled what we were doing. This is less and less so nowadays.

"With great power comes great responsibility."⁴ When a single firm controls Web searches or the social media, app stores, connected devices... used by a huge proportion of the population, it can also control the choices of millions, even billions, of individuals. Its responsibility is immense. It is normal to ask it to be neutral in its Web hosting activities and in its recommendations about third-party services. This idea is slowly dawning.

Conclusion

The Internet's growth provides an awesome opportunity for new services, uses and business models that will benefit everyone, whether firms or individuals. As shown however, trends in Internet uses are, day after day, dispelling the original vision of a universal network connecting all human beings, firms and societies, a vision of a common good at everyone's service. If "anything goes", then the universal network risks going away, being replaced with proprietary networks. Various forms of neutrality shield against the factors pushing toward a privatization of the Net. It is not easy to define them, nor to convince others about them. The issues related to neutrality are a political battlefield. They are also a source of problems when searching for information.

How to formally define Net neutrality? How to verify it? After all, it is a daunting task to measure a network's performance, since what we observe depends on so many factors (the terminals used, environment, servers, etc.)? Several commercial means for measuring this performance exist, such as Speedtest.net; and researchers have proposed others, for example INRIA's Acqua. Given the differences observed in the results of these tests however, much more research is needed.

Beyond Net neutrality, consider how neutrality might apply to search engines. To rank findings, a search engine uses an algorithm (PageRank in the case of Google, which is a business secret). It uses confidential criteria and analyzes proprietary data. We can but observe the results coming out of a black box, which depend on a slue of factors (the person making the query, their geographical location, the query's context, etc.). It is never easy to prove that a search engine has, or has not, skewed its findings.

Neutrality is but one facet of what we should encourage. Another issue now being discussed, following the adoption of the EU's General Data Protection Regulation (GDPR), has to do with private data. Yet another issue is freedom of competition. We hear more and more talk about the transparency of algorithms or the concept of loyalty. The Internet and Web are common goods to be defended. But we must collectively define what we want this universal network to become, and oversee the emergence of new properties (such as Net neutrality), terminals and platforms in order to protect values that are anything but new — values such as freedom of choice, freedom of speech and a genuine freedom of competition.

⁴ The words of the character Benjamin Parker in *Spider-Man*.