

## 1. Crossed Perspectives



# Internet, territories and centralities

Between Benjamin Bayart (Ingénieur-e)  
And Boris Beaude (Géographe)

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Boris Beaude, a geographer, and Benjamin Bayart, an engineer and ardent supporter of freedom of expression, discuss the tensions that have arisen concerning the internet, the main platform for virtual mobility. Designed as something without a centre, which could not be fully controlled and would free people from regional limitations, the internet seems unable to deliver on these promises – as a result of pre-existing constraints.

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**01. Over the past decade, Internet activity has experienced a kind of organizational (Google, Facebook, Wikipedia, etc.) and territorial hyper-concentration (massive datacenters in a few places, etc.). How do you explain this?**



Benjamin Bayart

To understand this hyper-centralization, we must first reconstruct the chain allowing us to separate the causes and the effects. Effectively, massive datacenters are a result of the concentration of traffic delivery points. This concentration at just a few sites is a consequence of two phenomena: the first is the centralization of services, which is quite unexpected for people who have known the Internet for a long time. The second is the central role phone operators have managed to claim in a network that historically did not interest them.

The centralization of services is the best known, and probably most analyzed phenomenon in the "mainstream" press. It stems from a combination of factors, the best known of which is a form of audience immaturity. In a market where consumers are less informed and do not seem constrained by a budget, the mode effect and the announcement effect in marketing can influence choices much more rapidly. Typical analyses in the digital world call this phenomenon "the winner takes all."

The other element that underlies this centralization is the classic functioning of a market economy. When a sector appears, many companies offering very different services are founded. The market quickly "consolidates" and only a few large groups remain. Digital technology accentuates this phenomenon but does not change its nature.

The second phenomenon is less known to the general public. The Internet was created over and above telecommunications operations. It was created on top of them. We used the infrastructure leased to telecom people, but these actors played no role in the network's functioning. When the Internet access market became sufficiently visible for them to understand that this was where the future lay, regulation failed to ensure that the market remain open. Very quickly, both in Europe and in the United States, the market was dominated by the historic operators, either telephone or cable. Until regulators got involved, several dozen public access providers in France shared the market in a fairly harmonious manner. After major regulatory efforts, only three or four remain. This concentrating of the network also tends to reduce points of interconnection.

Finally, there is a technical factor at work, but more marginally. It turns out that doing things simply is complicated. In computer science, designing a lightweight system with no (or few) central points is complicated. You have to have ruled out many complex but intuitive solutions in order to find the right, simple but unintuitive solution. Large groups generally do not make this effort simply because it is considered useless as it would keep the market open which, from their point of view, is negative.



B. B

I feel it's important to relativize the concerns regarding this concentration of networks among only a few operators, given that the bulk of innovation and value creation shifted from connection to services over this same period, which caught most of the world's operators off guard. Google and Facebook are undoubtedly heirs of the Internet, but these companies developed independently of telecommunications operators. Nowadays, they even aim to destabilize them, to the point of offering their own connection packages in developing countries, as well as provocative and experimental projects in the United States, like Google's offering in Kansas City.

On the other hand, I'm not sure that this hyper-centralization of services is due to the public's "immaturity" or volatility, or to mode or announcement effects. On the contrary, it seems to me that network (club) effects and economies of scale explain the tendency for domination of the actors who play a central role.



Boris Beaudé

This concentrating is real, but inconsistent with the initial conception of the Internet, which was to share computing resources and means of transmitting. The Internet was supposed to make computer networks more efficient and more 'resilient' by ensuring that a local malfunctioning did not affect the overall functioning. The privatisation of the Internet in the 1990s largely challenged this principle.

This is due to the combining of two complementary logics, which exploit one of the major characteristics for transmitting digital information: extremely low transmission, operation and duplication costs. To begin, economies of scale - that is to say the reduction of marginal production costs with an overall increase in production - are quite substantial. Secondly, the network (or club) effect - meaning the increasing interest in a network the number of its users - finds its purest expression. The combination of these two logics has given rise to economic models based on free use, in order to increase economies of scale and network effects and achieve centrality which can then be easily financed.

However, unlike strictly territorial practices, such economies of scale result in almost unlimited centrality. The spatiality of Google, Facebook and Wikipedia indeed use the potential of Internet connectivity that, unlike territory, is not affected by the constraints of contiguity. Whereas a supermarket chain must increase its locations in order to establish itself and be close to its customers, a website is potentially one click away from anywhere in the world. The challenge therefore is having a central position, maintaining it and increasing it as much as possible. Local variants exist, of course, but with the exception of very specific needs (video games or tele-surgery), they mainly consist in adapting to legal and cultural specificities. Wikipedia is a perfect example of this, with linguistic versus territorial variants.

## **02. Why would it be advisable to avoid these American hyper-centralities at the global scale and at the Parisian scale in France?**



Benjamin Bayart

This hyper-centralization has harmful effects that have long been identified by a number of actors from civil society, but are only now beginning to be perceived by the general public.

The first obvious effect is the absence of competition. The concentration of operators makes it such that the idea of competition is illusory. The example of mobile phones is striking: there has only been strong competition at two times in the past 20 years: when Bouygues arrived [on the market] and wanted to carve a niche between SFR and France Telecom, and when Free arrived about 15 years later. The rest of the time, the market was perfectly oligopolistic, incapable of innovation or evolution, with each player living off its returns.

The second effect we are now seeing is that all communication goes through a small number of easily controlled, easily monitored points. Mass surveillance of the population is only possible if everything goes through a handful of players who are too big to bother bickering with governments. The example that comes to mind is the NSA's easily dipping into the data of American giants, but that's not the only one. Any country that wishes to monitor its population operates on the same model. From the Tunisia of Ben Ali to modern-day China, when you want to monitor or control a population, you ensure that there are only few players and that the Government has a direct, strong means of leverage over the latter.

The third effect, still too poorly understood, is to privatize the police and the justice system. For example, a censorship or banishment decision made by a large platform is virtually impregnable. Just try to file a lawsuit in California (or Delaware) from Paris, Berlin or Cotonou. [It's so difficult] that our governments find it interesting to underplay their sovereign obligations by asking platforms to self-regulate by eliminating nasty content themselves.

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B. B

I totally agree with Benjamin Bayart's analysis of the oligopolistic situation and the interest of this situation for monitoring and politically controlling digital activities. However, I feel the theory of delegating justice and law enforcement to platforms is contrary to what we've seen in recent years, and in recent months in particular. Europe, and France even more so, increasingly want to play a role in platforms' practices, the management of their privacy, their definition of what is appropriate and, more generally, all their violations of national sovereignty.

Allowing platforms to intercede in indisputably illegal acts is one thing. Allowing them to have binding rules that do not conflict with legal measures is another. Shirking one's sovereign obligations, however, seems like an entirely different thing altogether. It is not clear that Facebook and Google will really benefit from such power in the years to come.

We are witnessing an administering of procedures to accelerate action. This trend is highly questionable, but aims precisely to intervene more rapidly when practices violate the law.



Boris Beaudé

Hyper-centrality is power. At present the United States dominates the contemporary digital environment. But the problem of American hyper-centrality stems from a more general problem that is true for all forms of hyper-centrality. As such, in addition to economic, political and cultural problems specific to American domination, this hyper-centrality is a problem for all individuals, and results in unprecedented and unacceptable control over individual practices. Effectively, an increasing proportion of our practices are associated with digital mediations that are controlled by a few companies, essentially American, Chinese and Korean.

But people living in the United States are also victims of this hyper-centrality. Such concentration grants these companies one of the greatest powers, especially in the contemporary economy: control of information. The exceptions of China and Russia are real. These countries actively resist this domination. But their local grip is no less problematic for their own populations (Baidu and Yandex are also home to most local information retrieval practices).

France, as well as the European Union, resent this domination by the United States. However, the situation would be just as disturbing if these few companies were European or French. What we would gain for the economy and intelligence, in a context of extreme tax optimization and unprecedented attacks on privacy, we would lose all the same in terms of freedom and innovation. Which is why Paris's centrality does not raise the same issues. It is significantly less important because much of the infrastructure and innovation is located outside of Paris, even in France. Above all, it does not raise the same political problems. It's unfortunate, but not dangerous.

### **03. What policies could be pursued, especially with the arrival of fiber optics in France, to meet these challenges?**



Benjamin Bayart

The construction of the fiber optics network is an opportunity, already missed, of a political choice in the literal sense of the term, of land use, and thus, societal choices.

The spread of fiber optics is a must. Other networking techniques will soon run out of steam, whereas fiber has just started warming up. The expected benefits are partly unchanging: a territory not adequately covered by the network is a dead zone, like a territory not covered by telephone or road networks in the late 20th century. This benefit will then take place regardless of the method of coverage.

What could change, however, is the distribution of the digital economy within the territory. Either we adapt the network to the major operators, and they don't change their structure - engineering will remain in Paris and call centers in North Africa - or we adapt the network for use by small operators in coherent economic conditions, and encourage skilled SMBs to emerge locally in the territory concerned. And hence a pool of expertise [forms], not only in providing access to the general public but, above all, techniques that directly or indirectly affect the network. Thus do we encourage the creation of a local ecosystem around digital technology.

In the early days of work on fiber optics, between 2005 and 2007, the ARCEP [Autorité de Régulation des Communications Électroniques et des Postes] made strong statements about certain topics. I remember a sentence that was stressed by the then-president: "It would be unacceptable to have to move to change fiber optics operators. We won't allow it."

Ten years later, and here we are. The normal situation is that in areas covered by Orange, you have to move to change operators.

The operators, who are the first investors in these networks, have managed to impose their will on the regulatory body and Government, ensuring that the resulting arrangement is adapted to their needs and effectively excluding any risk of local competition. The method for imposing their will is irrelevant, only the result is interesting. France will be fibered, which is a good thing, but with a hyper-centralized system that will continue to drain all the skills to Paris or the United States, transferring the growth sources associated with digital technology outside of the territory - which is a negative point - while reinforcing the dominant positions of economic players whose size alone is enough to make them dangerous.

Too big to fail. We learned the expression from banking in 2008. We obviously didn't get it.



B. B

These issues are indeed important. However, I think that a discussion should definitely be initiated regarding the political, economic and cultural concerns of digital technology, beyond the bandwidth race. Most of the issues concern bandwidths that don't require FTTH (Fiber To The Home). Yet, Wikipedia, crowdfunding, crowdsourcing and all content that doesn't require high bandwidths represent a significant portion of the Internet, its interests and its uses. HD and 4K are undoubtedly interesting innovations but should in no way be the focus of Internet issues. The United States has poor infrastructure and bandwidths but dominate services (Google, Facebook, Twitter, Airbnb, Uber, etc.). Europe has much better infrastructure, especially in France, but has not seriously invested in the services these infrastructures enable.



Boris Beaude

Paradoxically, optical fibre is the least of the problems we're facing. The issue of infrastructure is important. It highlights the 'territorial divide". But, despite popular belief, this divide is considerably less important than the social fracture. France in particular is among the most advanced countries in this field, whereas the United States, has relatively mediocre infrastructure. A more active infrastructure policy could be pursued, but if it doesn't take services into account to a greater degree, this approach could be counter-productive. It could further reinforce the already considerable hyper-centralities.

As was the case at the dawn of the Internet, before the 1990s, a more active policy could be pursued with regard to the respect of standards and the neutrality of the Net. The Internet's richness is built on open protocols, like the TCP/IP protocols, but also email and the web. Some attempts at closure have been made by Microsoft and Adobe, but the Internet has resisted relatively well so far. We must extend this approach by more seriously reflecting on changes in the way it's used. Social networks and the multitude of instant messaging systems should be based on a standard. Facebook would lose out with such an initiative, and Google would be affected by it, but the rest of humanity would come out of it freer, by taking control of that which is most private: social ties.

Devising this on an Internet scale is nonetheless a sizeable feat, though the actors involved have substantial resources to defend their dominant position and States have different conceptions of what is right. Today, the Internet is at the heart of contemporary life. Preserving the power of individual expression and collective organization in all of this is a major political challenge.

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Benjamin Bayart

Ingénieur-e

Benjamin Bayart is an IT engineer and for 15 years was president of the French Data Network, the country's longest-standing supplier of internet access. He defends the right to freedom of expression and is a supporter of the web's neutrality and its free software. He has also delivered conference papers on subjects such as "Internet freedom or Minitel 2.0?" and "FTTH – Fiber To The Home and regional development."



Boris Beaude

Géographe

Boris Beaude is a researcher at the Chôros laboratory of the École Polytechnique Fédérale de Lausanne (EPFL). His work focuses on the spatial dimension of telecommunications and, more generally, the spacial context of social interaction. He is interested in the resources used by individuals to take control of the space around them and, in particular, the internet – as a unique form of co-existence. His book "Changer l'espace, changer la société" was published in 2012, followed by "Les fins d'internet" in 2014.

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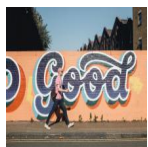
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