

Preserving diversity in social network architectures

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At the dawn of the second millennium, the masters of the Net presented humanity with the gift of “Web 2.0”; the face of the world was changed and everyone saw that it was good. Anyone could express themselves on blogs (Skyblog in France, Blogger and so on), and broadcast contents and tag to their heart’s content (delicious and Flickr), and even keep in touch with current friends, old friends, future friends, or friends of friends via social networks (Facebook, LinkedIn, Orkut, Viadeo, etc.), post masses of videos and become famous in a few moments (Youtube), and finally remain permanently alert to “follow” someone on the Web (Twitter). The “traditional” Websites (which were already at least ten years old, which speaks volumes!) were themselves revised from top to bottom to become CMS (Content Management Systems) allowing contributions of all sorts and more flexible administrative procedures. Not to mention all the new applications which made it possible to produce data, maps, to make mash-ups of these, to produce totally new contents. And not forgetting the peer-to-peer arrangements which became part of the landscape, well beyond downloads, since they claimed to replace the classic client-server architecture. When one presents the list of changes in this way, over a period of barely 6 years (2000-2006), the changes are impressive and the new culture with which we are now faced no longer presents the same properties as those of the ‘90s, which themselves represented a culture shock with the emergence of the Web itself.

In short, it is a new architecture in the sense of Lessig [Lessig, 2001] which has thus made its appearance, and which seems to delight the users that we are, but also to allow for a new business with unlimited possibilities for innovation. The infatuation is such that it appears inappropriate to question the technical choices made by private firms that have succeeded in capturing our attention and our activities in such an intimate fashion. Yet, and without adopting a critical attitude *a priori*, which often exempts one from examining the details of these choices, it is necessary to try and understand (after the event), what it is that the chosen architectures “do”. They are not all-powerful, for sure, but they direct us, they make us

behave differently, they are “agencies” which format our ways of thinking or relating to each other. This discussion arises not so much from scientific or civil rights concerns, as from the very real controversies that can be observed, mainly concerning Facebook, about various aspects of its policy of exploiting personal data in particular. But these controversies can sometimes mask more transversal issues that we wish to expose here. This is notably the case concerning the extremely rapid monopolistic effect of a particular social network, Facebook, in spite of the great diversity of social networks observable since 2005. The crushing domination of Facebook over its rivals (the full force of which is still to come, but there is a heavy trend since Facebook has already reached 750 million accounts) seems to mimic that of Google over the other search engines, or that of Youtube over other video providers. By analysing what is at stake in this captivity of all users with respect to a single platform, we aim not only to understand what is at stake in the social networks, but also to open the possibility for a public debate on the status of technical platforms. These now constitute the framework of our daily lives but at no point do ordinary users and citizens have the possibility to decide on their format, unless they adopt a “voice” posture [Hirschmann, 1970] - a provisional protest with little effect in this case - or more radically an “exit” solution, abandoning the platform, with the substantial consequences that this can have.

1) Review of diversity in the ecology of social networks

When Facebook was created in 2004, Myspace had already gained a solid reputation. To the extent that Myspace was taken over by News Corporation (Murdoch) in 2005, which recognised it as a medium of the future. Since then, Myspace has consistently lost its leadership and, in spite of the established success of its Myspace music site, the network effect no longer works in its favour and is now directed towards Facebook in the USA and indeed around the world. Today, Myspace registers 110 million accounts, whereas Facebook claims 750 million. Using this extremely summarized account as a starting point, several analytical elements can be used to pilot this review of diversity. Figures relating to the number of open accounts present obvious empirical limits, since many of these accounts are not active, and the number of single visitors would be just as interesting a measure of accurate activity. Nevertheless, in the world of social networks, these absolute figures relating to accounts remain significant. As Metcalfe's law states, the utility of a network is proportional to the square of the number of users. The attractiveness of social networks functions exactly according to this principle: a "big" network tends to attract more because there is a better chance of finding "friends" or relevant contacts on it. As the growth dynamic was triggered by Facebook it has attracted more participants, therefore multiplying its attractiveness to the detriment of older networks such as Myspace. However, or perhaps because of this peculiarity, Myspace's focus on music has probably contributed to stabilizing its audience. This example leads us to another indicator of diversification mechanism in social networks: around an apparently generalist network such as Facebook, numerous specialist networks are grafted on according to the regions, the languages, the public, or any specific aims.

Finally, the question of the market value of these websites constituted one of the attractive features for the Murdoch takeover. However, the business models and their technical implementation can be very different according to their advertising policy. From this point of view, Facebook's attempts have shown their legal limits when personal data were involved. Nevertheless, the economic principle of evaluating a website market value according to its audience obviously favours these mega-attractors to the detriment of narrower targets.

The difficult survival of cultural differences

Let us take up each of these elements in order to identify the political risks attached to the composition of the world-wide social network infrastructure, that we have witnessed in less than 6 years (since the creation of Facebook).

The raw data plead entirely in favour of Facebook, which has succeeded in gaining a dominant position and therefore has become more attractive for this very reason. Even more important, all the countries in the world have been affected by this breakthrough, even countries where other platforms had registered a certain advance, as in Korea for example where the number of accounts of Cyworld, created in 2001, had reached 24M accounts for a total population of 45M inhabitants! The cultural features put forward by this service (for example the possibility of decorating its universe, Minihompy, which generates revenues) and the technological advance of Korea and in particular its high-speed network, have not been enough to hinder the rise of Facebook, which was nevertheless looked on as merely functional. Other services such as Orkut (100M users), more popular in Brazil or in India, are currently losing out in the same way. We may note however the resistance to Facebook in China, which prefers Qzone (200M users), thanks to the deliberate blockage of the American site by the Chinese dictatorship. Friendster, a pioneer, also remains popular in South-East Asia (115M users), but seems to be no longer progressing.

A limited cultural diversity could have persisted through certain features of social networks: languages, visual cultures, aims of network relations, all these can indeed remain different according to the various cultures. But none of these particularities seem able to resist the attractiveness of Facebook, which ends up being practically synonymous with social network, in the same way Frigidaire became synonymous with refrigerators (which eventually lead to the collapse of the Frigidaire firm). One particularity does nevertheless resist: generations. One does indeed often forget to mention the considerable popularity of the Habbo social network amongst the under-18s (178M users). This site, initiated in Finland in 2000, is characterized by its specific visual environment, close to a virtual world since it is necessary to equip one's room, and is used both as a "chat" and as a game. Can one say that a generation of Habbo fans will be lastingly maintained? This is an important point, because the framework of an initial socialisation can become a convention for the users, who will grow accustomed to using this type of universe which has become so familiar. However, this style of social network seems to be characterized by childish features and therefore becomes a teenage refuge from the worldwide used Facebook. Unfortunately, one lacks longitudinal follow-up data on these users to validate this interpretation. In contrast, the popularity of

Facebook amongst teenagers and young adults constitutes a guarantee of lasting success, because it is in this universe that they become socialized, and do so with an impressive intensity. In this respect, the “audience capture” is perfectly accomplished. According to IFOP, whereas the number of Facebook users reached 43% of the overall French population in 2010 (against 37% the previous year); some 85% of students and high-school pupils were connected to this network in 2010.

Towards a global experience (via Facebook)

These global figures are important for understanding the dynamic of the network effect over time. They do not however reveal the intensity of the activity of these registered users. Facebook itself reveals some figures - to be considered with caution obviously - which do give an idea of the effect of this activity, often described as “addictive”. 50% of accounts connect every day, for a 55 mn session on average. This gives a good indication of the progressive transformation of Facebook into a portal for basic Internet access, a status that Facebook is trying to further develop with the creation of multiple applications concentrated on its website, following here Google’s strategy. The opportunity given to users to post all their personal contents (and in particular an unlimited number of photos) constitutes one of the key stakes in this war, even if Google has a great advantage with its Gmail system.

Similarly, the possibility offered via “Facebook connect” to connect to other sites with the Facebook identifier, manifests the desire to retain the first connection with Facebook whatever the domain of navigation to be covered. The battle for attention goes through social networks and behind it lies the battle for advertising profit. Facebook aims at becoming the original world, the *milieu* in which each web user is immersed. Facebook can follow you in your everyday moves with its “Place” application, which has successfully integrated geolocation in mobile phones: we are witnessing this mutation and the commercial competition that ensues. The degree of connectivity of this social network constitutes the driving attractive element of the website, since each account¹ possesses on average 130 “friends” and participates in 13 groups.

An anti-network architecture

Facebook has succeeded in mobilizing a network of developers for its own service. Indeed, one million developers use the Facebook API Connect and 500,000 applications use FBML to

¹ - This term is probably more appropriate than “member”.

customize web pages. The developers' association model launched by Apple with its SDK is now extended to all these social networks. It captures the demand for developers' contributions as in the Open Source communities. Except that this is not Open Source! On the contrary, it is proprietary code, and the personal data themselves are possessed by the firm which largely profits from them. One has to remember that this development only makes commercial sense if the company can capture all the potential richness of the most ordinary online action, everyday information and personal activities. Far from constituting a networking model which shares and facilitates circulation, Facebook (like Google, for that matter) on the contrary, at the technical level, develops a centralistic model with an anti-network architecture.

The power of these companies simply rests with their servers which host all the accounts of all their members. This requires enormous storage capacities and a large amount of energy, but guarantees in return absolute property of the data and their total technical control. Architecture choices are therefore significant and reveal a major shift in the Internet's culture. The two most widely used platforms, namely Google and Facebook, are both organised around farms of servers which retain all the data and put all the network power at the service of connexions to their servers. The network has no longer any of the distributed character imagined by Paul Baran [Abbate, 1999]. It has now become a massive, centralized client-server system – as centralized as the Minitel once was. This under-optimisation of the network's potential, especially for an alleged social network, constitutes an important deviation which could have been avoided by using a peer-to-peer contact system. This centralized architecture has been imposed for one reason only: to capture the income provided by the data exploitation.

Permanent controversies concerning personal data

The numerous controversies which have arisen around the policies of Facebook have been largely caused by this appropriation of personal data, which has been judged improper and excessive. Targeted advertisements have been installed on Facebook since 2007, and target users according to their sex, age, interests, level of education, or even their political opinions or marital status. The general conditions of use were revised in February 2009 to give Facebook the definitive rights on the contents created by its users. In December 2009, Facebook installed new default confidentiality parameters which allow for the distribution of personal data all over the Web. Since April 2010, Facebook Connect authorizes the exchange of information on the profile and the navigation of each web user with a large number of other

web sites. In addition, as from April 2010, the system “Instant Personalization” authorizes three companies (Microsoft's Docs.com, Yelp et Pandora) to use Facebook users’ data so that any Facebook member connecting to these sites benefits from customized navigation (which means, for example, that a Facebook member that connects on the radio Pandora web site is welcomed by a song from a group he has indicated he likes on his Facebook profile). In May 2010, it was established that the personal addresses and telephone numbers of Facebook members targeted by advertisements are in fact transmitted directly uncoded to the advertising agencies. This practice, which was revealed by Yahoo and Google, was immediately corrected by Facebook. But the underlying tendency doggedly remains: extracting excessive profit from all the traces left, voluntarily or not, by Facebook members, and reselling them to monetize the success of the web site, in complete disregard of the most elementary principles of the respect for privacy. But since everything that one puts on Facebook is both public (although this is less true now) and the property of Facebook, there is after all (some might say) nothing to be surprised or shocked about. Nevertheless, the choice offered by default to Facebook members has always been to make their data public and exploitable to create what Zuckerberg recently called for, “the social web by default”. This turns out most often to correspond to an excessive privilege accorded to the ‘opt out’ principle, whereas everything that is profitable to Facebook is installed by default. It is only after a major member revolt that revisions have been adopted, as in the new Newsfeed in 2006 or the launching of Beacon in 2007 (which allowed the display of purchases made on partners’ sites).

A long tradition of digital lock-ins

Why should there be concern about this policy of Facebook in particular? Indeed, this way of doing things in order to capture the client is after all quite classical in the digital industry, networks and on-line services. The most famous example is undoubtedly Microsoft, which succeeded in creating a winning lock-in by associating its operating system with PC, thanks to which it enriched itself considerably more than its partners at the time, IBM, who manufactured the machines. This digital captivity was further accentuated with Internet Explorer, which was sold as an integral part of its solution. This allowed Microsoft to gain a leading position in the web browser market, before Firefox started to contest this leadership. Aware of Microsoft abuse, the European Commission obtained its legal condemnation, more than ten years after its launch, for forced sales.

These lock-ins [Shapiro et Varian, 1998] have become a crucial issue for all. The creativity of Web 2.0, the communities of free software as well as the dynamic of P2P have, paradoxically,

strengthened the pursuit of regular income in all domains: contents, licences, personal data, etc. Apple does the same thing with its closed system which obliges every user to pass via iTunes. But Google is the most powerful of all in this respect, because its offer, free and extremely varied, makes it possible to create a complete universe where all needs are satisfied (computer applications, documents, sites, email, news, etc...). All the data gathered through these applications are seen as riches stored on its servers and then used to target advertising offers. The general lock-in of internet users by Google presents the specific feature that it has developed thanks to the power of the algorithm of its search engine, which is continually enriched by each click and by each request, which makes it possible to make the responses to future enquiries even more precise and accurate. When 90% of the world population uses the same search engine, one can say that globalisation is functioning to its fullest extent, thanks to cognitive technologies as surely as to industrial products which are distributed on a massive scale. Overall, the strategies of lock-ins, which Shapiro and Varian listed in their work, have all been deployed by these digital network firms; and the regulatory authorities have difficulties in getting around them because, most often, their services are overwhelmingly acclaimed by the users.

The advantages of de facto conventions for “network literacy”

It is indeed striking to note that the protests of ordinary clients and users of Microsoft, Apple, Google or Facebook have remained very weak, and that, on the contrary, the popularity of these products and the brands which promote them has not waned. Certainly, the opinions of the users in question can be severely critical, but it is difficult to induce an evolution in their practices. One can explain this on the one hand by the crushing domination of such systems which renders the alternatives rare and often less efficient, so that it requires a devoted activism to emancipate from their omnipresence; and on the other hand by the system efficiency and the real advantages which stem from this *de facto* standardisation. It is indeed important to recognize and to admit the cognitive cost which comes with a diversity of systems and standards. It is certainly possible to ensure technical compatibility – within certain limits, since the upward compatibility is not always guaranteed even within the same series of software products. But it is above all the compatibility of *usability* [Boullier 2002 and 2004] which remains the key point for the adoption or the rejection of a new system. Now, the habits which can set in because of these *de facto* monopolies are highly advantageous in terms of cognitive costs. Using a single social network, filling out a single profile, getting into the habit of maintaining it and connecting to it in routine fashion, and

knowing that one's friends use the same environment which is quite restrictive as in the case of Facebook – all this amounts to a considerable gain of time and energy. The digital world we inhabit does not put up with constant unbridled innovation – no more than the other social worlds that we live in. In this respect, we have already shown [Boullier, 2001] the importance of these “conventions of usability”, which largely explain this accepted dependency on some digital environments or technical systems. This tendency towards habituation, a cognitive economy by way of habits and routines, makes it possible to understand why the *de facto* conventions created in this way are so well accepted.

This stability is necessary to favour “computer literacy”, which has rather become “network literacy”, made up of a whole range of know-hows: how to navigate, how to create bookmarks, how to follow relevant information, etc... When one has to endlessly relearn new ways of navigating, making requests, tagging, informing data, setting parameters, etc., one is rapidly discouraged. Each of us has therefore got into the habit of constructing our “own internet”, as we said in the course of a study of the first Web users in 1995 [Boullier and Charlier, 1997]. And all these tendencies towards a *de facto* standardisation contribute to creating this impression of a familiar universe, whereas in fact we are dealing with a conventional one which is certainly widely shared but most often imposed *de facto* by the rules of competition and implemented with a series of lock-ins. From this point of view, it would therefore be easy to argue in favour of these lock-ins, on the grounds of their positive effect on cognitive stabilisation and “network literacy”.

This effect is added to the aforementioned network effect: the strong public support for these services, which have become more or less public commodities as they are widely shared and as have penetrated our daily lives – although they evidently remain ruled by the principles of every private enterprise.

We understand better then the strength of these *de facto* conventions which facilitate users' appropriation. Indeed, this appropriation functions in two directions at once: the user-client finds it easier to master his environment which has become standard and almost natural; but at the same time, this public is also captured by these firms. Clients are then considered as a conquered and loyal target, far cheaper to deal with than an unconquered one still to be convinced, and all the while the firms can use all traces of activities left by conquered clients in order to produce their own strategic analysis and benefit from targeted advertising.

Appropriation certainly means taking, but it also means being taken [Boullier, 2008]. It is indeed a coupling [Simondon, 1969][Boullier, 2004] which is taking place, on the anthropological, ergonomic, economic or even emotional levels (“it's my personal space”).

When this coupling, this attachment [Latour, 1992] is solidly built, it becomes very difficult to organise a detachment from it. However, I will not follow some authors in their denunciation of the alienation caused by the social networks. This coupling becomes even stronger when such systems become available on mobile phones, which makes it possible to remain permanently informed of the activity of ‘friends’.

2) Diversity as a desirable and necessary political quality

What is the problem?

In the end, this might mean that we are just dealing with another rather classical business success story, with the particularity that it lives purely through the contributions made by the users themselves.

Against this posture however, a few questions can be raised: the captivity of the public by a single platform; the property of data in the hands of a single private firm; the management of common good rights by Internet governance organisms regarding such firms. Alternative niches and dissidence cannot be answers to these challenges, as this common technical infrastructure should be a collective act of normative choice.

Social Networks, being an “emotional technology”, powerfully engage their users. They have become massively distributed and massively used around the world. It is therefore politically necessary to know exactly who is governing them and how the various services provided can control aspects of human activity.

Reducing the digital divide: reduction of inequalities or preservation of diversity?

The traditional critique of the development of networks and information technology bears on their inequitable effects, since access to resources (computers, software, contents, network capacities) remains unequally distributed. This assessment is irrefutable and has for many years led to the development of assistance and support services for personal computers, Windows operation, and access to the Internet via Internet Explorer, etc. All this has been done in the name of what we identified as a *de facto* convention: it is easier to familiarize the public with dominant technologies in order to ensure access to a conventional environment, than it would be to put them in contact with a marginal environment which is more difficult to master. However, doubts should nevertheless have arisen when it transpired that in the name of equality of access, public financing ended up promoting and developing specific proprietary technologies; as if they had organized sales campaigns to promote televisions in

their day (but that would be to forget that the computer is noble and intellectual, whereas television has always remained on the level of popular entertainment). Fortunately, mobile phones intervened to alter the scheme of things, since in the end it is thanks to their familiarity with the telephone that the most underprivileged groups, including the poorest Third World communities, will have access to digital terminals and not via the computer which will always remain an intellectual tool, as we suggested at the time [Boullier, 2001]. As opposed to what happened with regards Google, with the mobilisation for a European search engine Quaero, no national political authority has seen fit to mobilise concerning the *de facto* monopoly towards which Facebook is tending, in order to try to set up a competing public platform. There is good reason for this: the activities of Facebook fans are socially devalued and viewed as zero degree culture by elitist groups, like so much idle chatter and a waste of attention.

“THE social network” does not exist

The diversity that we wish to demonstrate here, and to preserve in social networks, is not a mere figment of the imagination. We have observed it in all the social networks that currently exist on the market, and it seems impossible that all these particular features could suddenly melt away into a single architecture which, by definition, would be much less efficient if it attempted to do everything. Indeed, the stacking up of functionalities has never been a positive quality in man-machine relations, and each of the social networks that currently exist have attempted to optimise their solutions for particular functionalities, even if this means being less efficient for others. Several traits characterising diversity can therefore be listed, and this makes it possible to see how an innovative milieu, in the ecological sense of the term, produces different species, each of which has explored a course which merits consideration.

Thus, in the course of a study of on-line activities of a community which was spread out in a diaspora [Boullier et al., 2008], we observed to what extent the same community could experiment with different systems, with different formats of social network, each of which put forward a privileged function.

Table 1 – The various platforms used by a diaspora community and their specific features

Platform	Preferred Format	Main Functions	Community Formats	Order of worth
Viadeo	Profile	Consult, put in relation	Transaction	Market and opinion
Facebook	Interaction	Participate, subscribe send, share	Sociability	Domestic, traditional
BZH Network.com	Document	Write, produce	Epistemic	Industrial

This specific case clearly shows that the monopoly of a single platform cannot suit the real activity of collectives that are in the process of being formed, in search of themselves so to speak, on the network. If one wished to extend this approach to a variety of social networks, it would be necessary to call on the pragmatic theory of engagements of Thévenot and Boltanski [Boltanski & Thévenot, 1991][Thévenot, 2006] to understand how various types of engagements can be distributed over different media. In line with Walzer, this theory provides a tool for describing the critical capacity of actors and their capacities for coordination. According to the situation, they have to try and find an agreement on the orders of worth, so that they justify their critique and rank the entities members of their common world. Their close environment could be managed by means of habits and adjustments to the objects and people that inhabit their daily world: in this case, the engagement is no longer public and does not involve a requirement of legitimacy of arguments, since it is above all a question of rendering one's close universe compatible by means of routines and habits. However, there is a whole sector of professional activity in particular which falls under a third regime of engagement, that of planned activity, of strategic action so to speak, which consists of acting in a procedural fashion according to an objective. These modes of engagement in the world are not subject to the same analysis or the same technical equipment, because the actors have different aims, principles and modes of interaction.

- Facebook clearly functions on the basis of engagements with familiarity (regime of close relations and « friends »).

- Viadeo and LinkedIn are in contrast clearly oriented towards engagements of “plan” or strategic action (address notebook).
- Twitter shows the emergence of other systems to serve a regime of engagement that we have added to the Boltanski and Thévenot model, the “alert”.
- Finally, the regime of justification; this regime which involves making agreement explicit can also be found, but in spaces which are designed for this purpose, as shown by the Coopool experience, a political cooperative, invented by Netscouade for the Socialist Party in France.

Similarly, it is easy to observe that depending on the existing platform, specific properties of the technical system are enhanced and meticulously thought out:

- Emphasis is placed on contents on Flickr and on Myspace,
- Profiles on Viadeo and LinkedIn, and
- The wall on Facebook.

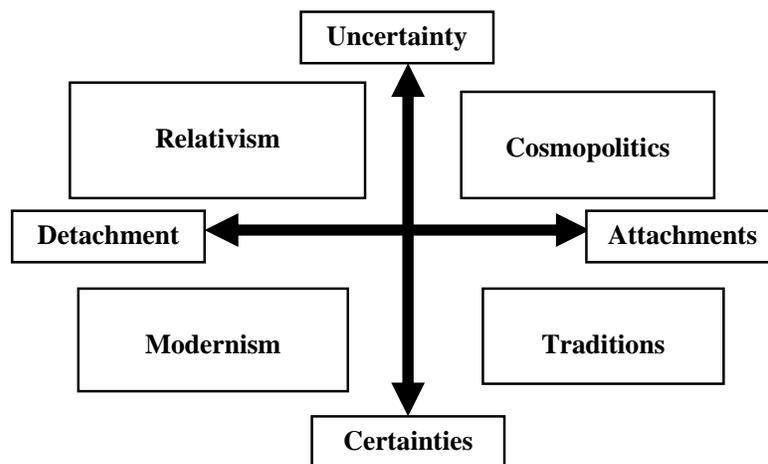
It would be stupid, to say the least, to think that a universal platform could excel in all of these domains, or that it could offer so many possibilities for setting parameters that each user would adopt the functions which seem most important to him by totally reconfiguring the system. It should be noted that it is precisely against this tendency that Facebook won its members, thanks to its fundamental make-up and its streamlined interface; this is no longer entirely the case since Facebook is now attempting to endlessly add new features, both in order to counter its competitors and to offer new modes of valorisation to its commercial partners.

3) Pluralism of architectures and governance in order to preserve diversity

Entry by way of functions and services offered to users is indispensable, and makes it possible to take measure of the specific value of the diversity of social networks. However, this offer rests on technical architectures which are themselves plural and which lead to certain choices of a political nature, i.e. ways of constructing a common world. By progressively distancing ourselves from the sphere of functions that are directly accessible to users, we can draw up a table of the different choices made. In each case, diversity remains possible but in effect ends

up disappearing due to the ascendancy of just one of the options. Each of these options constitutes a policy in itself, and the compass-type format that we are going to use makes it possible to understand what type of policy is being applied. This graphic model aims to illustrate the pluralism of technical and political choices, avoiding any sort of hierarchy or *a priori* judgement. Thus, all the choices are organised according to a semiotic square which makes it possible to show the oppositions between the policies of tradition, of modernism, of relativism and of cosmopolitics [Boullier, 2003].

Figure 1- The cosmopolitics compass



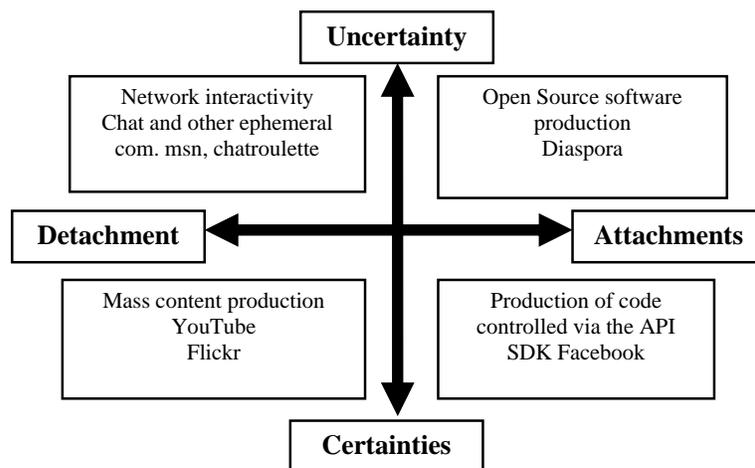
This theoretical framework is derived from the work of Isabelle Stengers [Stengers, 1996] which takes into account uncertainty as constitutive of scientific activity but also all contemporary human activities, and the work of Bruno Latour [Latour, 1992] which shows how our attachment to our cosmos, which is ordinary in traditional societies, has been broken down by the modernist project which has organised our detachment from the world in favour of the overreaching activity of science. But all combinations are still possible, and the degrees of attachment and uncertainty are always very varied in political choices. Some of these favour detachment rather than attachments, as does the modernist project which has oriented all its action towards detachment from traditions, with the aid of all-powerful science and technology [Latour, 1992]. Others favour uncertainty, and accept to live with it as against other policies which seek to maintain or to recover certainties [Stengers, 1996]. Cosmopolitics are not cosmopolitan in the Kantian sense, but take into account our attachment to the cosmos, i.e. to all the beings, human and non-human, animate or inanimate, which populate the world. Cosmos here is opposed to Taxis, to this *a priori* categorisation of the world. With the crossing of these axes, 4 elementary policies appear which are always possible for all

“issues”. For indeed this framework is only of interest on the condition that it is adapted on a case-by-case basis to each individual problem, or each “issue”. It forces an identification of all the positions, even those which are sometimes hardly expressed, in order to bring to the fore possible choices which may have been overlooked or crushed by the obviousness of others. It is therefore, first and foremost, a heuristic tool and not a system for definitive classification and storage. To the extent that each of the policies merits an in-depth exploration each time, because internal oppositions of the same type may be detected, according to a fractal scheme that is potentially infinite.

Pluralism of the formats of contribution

The contributions of internet users are not only part of the general innovative model of Web 2.0, but also constitute resources that can be directly retrieved by the firms who are able to appropriate them. In the case of social networks, it is indeed the internet users who create the networks and who therefore capture new publics and leave traces of all their relations. But it is now possible to contribute to these platforms in a way which is more directly technical, by proposing computer applications, so eventually becoming a pro-am, a professional amateur [Leadbeater and Miller, 2004], integrated into a wide network of developers, following the model of the developers of Free software, but without the same legal and moral provisions. The different solutions that are available in terms of contributions are worthy of being preserved, particularly to prevent one of them from causing all others to disappear.

Figure 2- The pluralism of contributions

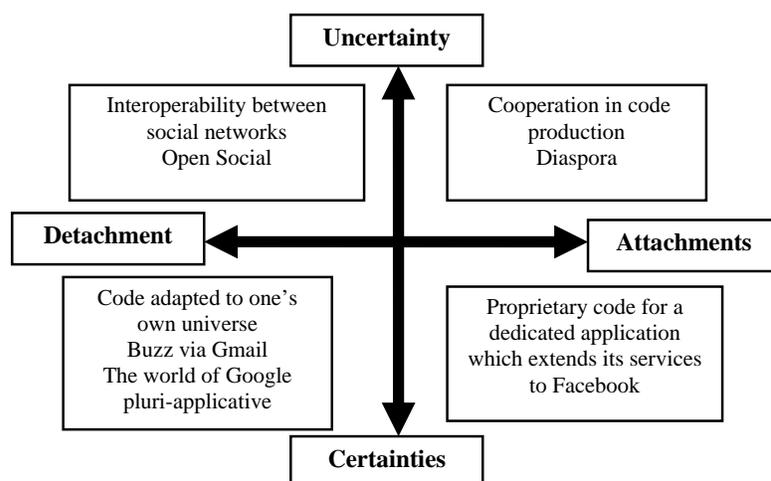


According to the social network in question, a policy of control and capture of creativity is put in place, notably by means of the production of a code which is entirely controlled and appropriated by the firm which makes its API available. This mode of production is a response which is used in particular by Apple, which sells its Software Development Kit and decides which applications it will put on the market out of all those that are proposed. Facebook also offers this type of contribution, which makes it possible to benefit from the effects of spontaneous collaborative production, as can be seen in the case of Open Source software, all the while adapting it to its own proprietary code. Other social network sites, such as YouTube or Flickr, provide a greater degree of freedom of creation, but this is limited to the creation of contents which subsequently, by their aggregation and permanent storage, constitute a source of potential advertising revenues. The control here is less strict but the revenues however are clearly appropriated by the firms. A relativist policy is also possible when the **valorised** productions are transient and do not give rise to storage: this is the case for msn, for chatroulette, and everything that derives from chat, which nevertheless can constitute an important basis for sociability but without real valorisation or storage. Finally, when software production derives from the model of Open Source with its rules of cooperative production, the co-production as well as the valorisation are clearly uncertain, but the communitarian dimensions (and thus the attachments) are at the same time valorised. This is the line taken by the Diaspora project announced in September 2010, which is an architecture of social network in Open Source that conserves personal data on the equipment of each user. We see here that an alternative architecture for the exchange of data is possible, on the peer-to-peer model, which avoids centralisation on the servers of any particular firm. However, the development phase of this Open source social network seems to endure many delays and to stay far from a public use.

Pluralism of the management of inter-operability between social networks

This first approach to architectures can indeed be doubled up by policies of inter-operability between networks. There is in fact no inevitable necessity for all members to be on the same social network in order to be able to exchange, whilst each member has his/her own different cultural habits or specific aims. This makes it possible to draw up a table of inter-operability management, an issue which is the subject of lively debate amongst operators of social networks, because users consider that the profile should be a resource which is independent of the platforms.

Figure 3- Pluralism of interoperability policies



The model of Facebook has made no provision for interoperability; on the contrary, it relies on its power to ensure that all other services model themselves on it, without itself having to modify its policy of proprietary code. However, for commercial applications such as Facebook Connect, it is prepared to ensure indispensable interoperability in the event that this can generate advertising revenues. To a certain extent, Google attempted the same thing with its Buzz, which set its sights on becoming the complete portal for all internet user activities, this application being able to federate the entire data of all Google applications. The failure of Buzz did not prevent Google to enter the social network business in its own way through the Google + solution. The situation here is somewhat different because the multiple nature of services is maintained while the software coherence of a single world, that of Google, is exploited and above all the centralisation of data hosted on the firm's servers. However, Google was strongly aware of the threat from Facebook and attempted a different approach to interoperability with other social networks, an approach called Open Social. This project did not fully come to fruition, but it would have enabled Facebook's competitors to use the same profile data rendered compatible, and enabled members to avoid having to repeatedly upload their personal features. But one other policy exists that would be closest to a model of the common good, one which would base its very development and not only the layer of interoperability on the constraints of Open Code, as is the case with the Diaspora project referred to previously.

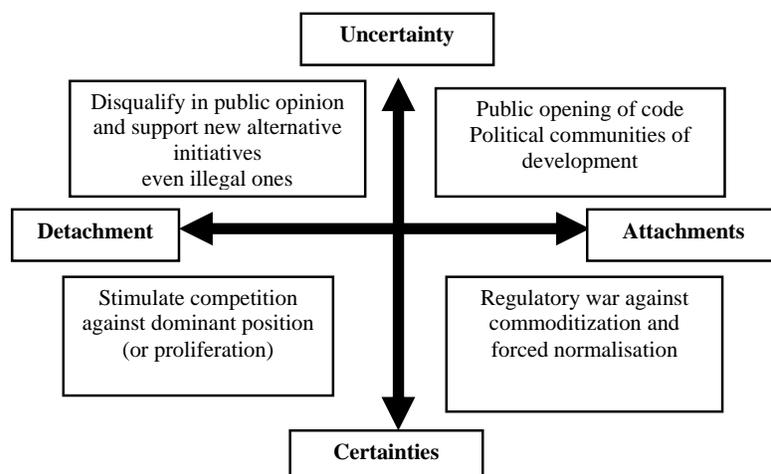
Which governance in order to preserve diversity?

This range of possible policies is not sourced from the imagination but rather stems from realisations which actually exist on the internet at the moment of writing this article. This would plead in the end in favour of the argument for a diversity maintained despite the effects of powerful networks which could favour Facebook. In reality, this diversity of observations prejudices neither their respective weights, nor their permanence. Certain projects such as Diaspora are only emerging now, whereas Facebook has reached 750 million accounts: this difference alone is a measure of the disproportion in resources, including the resources of Facebook to counter any policy which threatens to succeed in its place (even if Zuckerberg is one of the contributors to the Diaspora project!). However, it cannot be said that this is merely a classical remake of the first mover advantage, since after all Friendster and Myspace, for example, were on the market well before Facebook (Friendster in 2002, Myspace in 2003), not to mention Cyworld present since 2001, and the pioneer Sixdegrees created in 1997 [Boyd and Ellison, 2007].

The intervention of a governing authority on these issues of architecture is not a simple matter when the aim is to avoid a loss of diversity of choice for internet users in spite of market trends. Lessig [Lessig, 1999] has dealt with this problem at length in his works, showing how all types of decision can contribute to adjusting the balance and in particular all the technical decisions, since “code is law”. How then to retrieve, in one form or another, a political status for these choices of code? This is a question that we put forward previously regarding the internet in general [Boullier, 2008] and which we put forward here specifically in terms of SNS, social network systems.

The politics of intervention with respect to these architectures are themselves plural and it is essential to act with all possible levers of action, while at the same time recognizing that some of them have less chance of functioning than others, depending on the context. The table of possible policies can be presented as follows.

Figure 4 – Resources of code governance in order to preserve social networks pluralism



Hopefully, this visualisation helps to embrace the diversity of resources and means of action of any governance of the digital sector and in particular that of social networks. It shows the extent to which any conventional strategy by regulation or by the market forces would not be sufficient to ensure that diversity of technical architectures had its chance. That said, these two means of action are themselves for their part very useful. The table represented here is in no way a guide to these choices, which are alternatives with respect to one another. On the contrary, it is a plea for a composition of various modes of governance, direct and indirect, for a sector as sensitive as that of social networks.

Without doubt, the most traditional position would be that which relies on regulations to impose technical standards in the form of normalisation (“regulatory war”), or which goes even further by banning the commoditisation of some of the resources of social networks, personal data in particular. Facebook’s repeated blunders in this domain make it probable that sooner or later there will be a catastrophic betrayal of privacy which will force public authorities (at a national level, and therein lies the problem) to severely regulate this exploitation of personal data. Because it is only once the catastrophe has happened that the judicial precautionary principle will be invoked... too late! The intervention of public authorities in the domain of normalisation remains, for its part, much more difficult to pilot given the close relationship between international level experts with the firms directly involved in the problem. It is undoubtedly with regard to this issue of normalisation procedures that it will be necessary to bring pressure to bear so that States become aware that it is these bodies which ultimately implement the policies which will affect the respective

rights and the societal choices of their own countries. The capacity to promote the emergence of an expertise which is independent of any firms, by mobilising for example academic researchers and by placing value on their expertise, should form a vital asset.

The second position (encouraging competition), closer to a modernist model, would be to trust the market to counter dominant positions and the attendant risks for the diversity of offers and their quality. But it is a well known fact that the market continually generates precisely the monopolies or oligopolies which seek to neutralize the destabilising effects of competition. The whole history of the digital sector is marked, as we have seen, by these lock-ins of various sorts. Encouraging competition and stimulating innovators who can challenge the dominant position is certainly not a classical liberal policy, but in practice it has constantly been employed by States when they mobilise means to support their own industry as soon as a country risks any form of dependence regarding foreign firms in strategic fields. Now, these networks make up the fabric of our daily life: there is nothing to prevent a State or a federation of States from supporting private projects or non-market collectives which would respect other standards than those of the dominant platforms.

The third position favours the use of scandal and discredit to put pressure on the firms, or to threaten their reputation. This dimension is rarely taken into account as a means of governance, and yet at the same time in every political activity, militants spend a considerable amount of time and energy launching media messages to influence public opinion. Now, digital firms all exist in a state of constant concern for their reputation and image since they deal with publics that are particularly mobile and all their efforts are spent precisely in attracting them on a long term basis. Moreover, this media reputation, in the broad sense including the Web itself of course, constitutes the essential reference instrument for any financial economy and can therefore affect, if not the public, at least the shareholders of the firm. Facebook is supposed to go public in 2012 but its expected value (if assessed from the price of the shares that have been sold recently) may look like another dotcom bubble when faced to the recent extreme uncertainty of stocks markets, very sensitive to these reputation effects. All the scandals and problems which a social network platform may encounter, in terms of confidentiality of personal data, controversies concerning its members, commercial agreements that are hidden from or misleading for the client, end up by damaging the reputation of the firm in question. The activists, who launched the « quitfacebook day » on May 31st 2010, are well aware of the influence of this kind of action, especially if it is repeated. Encouraging or at least facilitating the work of such initiatives, or using it at least as

a threat, represents a tactic which hoists the digital economy by its own petard, the opinion trap, since all its wealth is drawn entirely from opinion [Orléan, 1999].

The fourth possible policy is not simply a duplication of production of open source software. To impose by means of regulatory constraint the opening of codes by firms which have already produced their software seems almost impossible to achieve. This would be the equivalent of expropriating certain common commodities such as water. The opening of the code is first and foremost essential for new projects on condition that these developments are not reduced to software for specialists or to a platform that would be capable of doing everything. The conception itself must integrate its users and not simply its developers, taking care to enable the diversity of functions which we have presented. For the objective is not the common good of the code per se, but to ensure that it contributes to diversity or that it allows resistance to loss of diversity and against inappropriate captivity. Collectives and their diversity must also be integrated at the level of conception itself, and represent to a certain extent “a parliament of users” who are able to seize politically the necessary choices, taking care each time not to find the smallest common denominator, nor to stack up functions in a vain attempt to satisfy everybody, but to create a collective world that can be modulated according to the different objectives of the various users.

Conclusion

Inventing levers of action for the governance of networks by collectives

Public policies and the various governing mechanisms of the internet cannot take charge of or be a substitute for the dynamics of collectives, which come within the realm of *empowerment*. On the other hand, these institutional initiatives can take care that the space and the means of development of this policy are preserved. The pluralism of these solutions and procedures for the preservation of diversity must itself be preserved. The models which we have presented therefore take into account levers and ranges of action which are in general alien to the culture of governance. But in the case of the Internet, a different composition of modes of governance is trying to invent itself, and this cannot ignore all the new configurations which “make a difference”, or which act outside instances or entities which are already recognized. This collective, which finds itself associated via the mediation of social network platforms, possesses political resources which go well beyond consumer protest. As soon as our attention and our daily life are affected in depth by these choices of architecture, all the levers of action must be mobilised to give back political purchase to these choices, by refusing all *a priori*

captivity to a *de facto* standard, and to a commercial firm which exploits personal data as it sees fit.

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