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The Technological Offer and Globalized Services

Considering the anteriority of the offer and the fact that without a technological offer there is no usage, it is important to clarify how a technological offer accompanied by a range of different services has gradually been designed and globally established in a very short time. Alongside this consideration of the anteriority of the offer, it must be acknowledged that devices deployed by some users are increasingly present, and the offer does not necessarily mean usage, sometimes it even feeds on social innovations, such as free software or common digital dynamics. It is not about retracing the development of IT which, despite what some literature may say, did not develop without interruption, linearly and without failures. The development of IT since World War II has not been a bed of roses[1].

It is useful, by referring to volume 1 of this series "Computing and Connected Society", to reconsider some features which have brought about the evolution of an important phase of social computerization which: the implementation of the network of Internet networks. Both the founding technical specifications and the discursive

1 In France, the Antiope system illustrates this well. See (Carré, 1994).

productions it brought can be identified in order to understand the development of the offer and its spread over a longer timescale. Similarly, it is important to mention the values which still exist today, such as freedom of expression, sharing and free and universal access, which have somewhat faded or are mixed with more contemporary values. They can be found in the orientations and usage within the guidelines proposed not by simple operators, but by genuine communication giants operating on a global level.

1.1. Importance of the open communication protocol

It is estimated that four time periods have passed since computing began. Each period was influenced by a type of dominant technology, but not only, without having prevented the evolution of other technologies or having substituted some of them, leading each time to new opportunities that are integrated in a social and economic logic and in the strategies of the main actors. Four periods can be identified. The first one was dedicated to hardware; the second, to software; the third, to the network; and the fourth, the current one, to data. This can be illustrated using two examples. It can be said that the Internet would never have been this important in connecting if access equipment such as smartphones did not exist. There is no doubt that miniaturization, the integration of many features on the same hardware, the autonomy provided by batteries, not to mention the decline in prices and the personal ownership of connection devices (which are no longer the property of a family) have strongly contributed to a daily, recurring, mobile Internet usage[2]. It is the same for *apps*[3] (app stores) which,

2 It was the same for the wireless radio which belonged to the household then, thanks to miniaturization, became portable and personal. It is the same for computers (micro-computers, notebooks, tablets).

3 It was Apple who launched this type of application in 2008 with its on-line app store (*Widgets*) for the iPhone.

from a smartphone and without a Web browser, allow direct access to a wide range of content, most of the time for free, on every continent.

As everyone knows, the Internet was born in the United States in 1969 when the ARPA (Advanced Research Project Agency) decided to link its main research centers to share resources, exchange data, and to maintain a communication system in the event of an attack on American territory. The establishment of this network was the result of a study carried out in the early 1960s by the US Air Force which concluded that there was a need to move away from centralized IT architecture, considered too fragile, to design a decentralized meshed network architecture able to remain functional even in the event of partial destruction of the network by enemy forces. With the American army abandoning this network at the beginning of the 1980s, it was given to the National Science Foundation (NSF) and made available to European research centers to promote the establishment of cooperative links between research communities. It was only at the beginning of the 1990s that the Internet was gradually opened to companies and private individuals.

Three technical innovations were to greatly promote its deployment, particularly to the general public:

1) The development of the Web (World Wide Web) that enabled publishing and consulting documents through the Internet via a Web browser.

2) The creation of a multimedia system with a client–server architecture.

3) The implementation of high bandwidth networks facilitating high speed.

In 1995, the Director of Research at INRIA, Christian Huitema, stated:

> "None of us would have imagined being concerned with sales or invoices. The network was certainly expensive, but not more than other equipment, supercomputers or particle accelerators, that the community made available to the researchers for free. It was only to be used 'at best' to advance science." (Huitema, 1995, p. 8)

As for Patrice Flichy, he indicated in 2001 that:

> "For nearly 20 years, the Internet has developed outside the market economy. Free access and cooperation were at the heart of this Internet user culture and market trading was even banned. But, little by little, a new commercial and economic discourse emerged on the network systems." (Flichy, 2001, p. 223)

Thus, after being deployed for the military[4], then among the higher education and research community, the Internet was opened to businesses and gradually since the mid-1990s to the public so that they could search and gather information (via the WWW: World Wide Web, which is based on a system of hyperlinks), access software frequently free of charge (*freeware* or *shareware*), exchange files, and especially – and this is what will be particularly interesting here – connect and communicate (electronic mail, mailing lists, digital social networks, etc.) whether it is on a professional, commercial, administrative or even personal level, while freeing us from the constraints of distance and

4 As were many information and communication technologies, even before they became digital. For example: the telegraph, radio communication, the computer, GPS, among others.

time. Meanwhile, since 2010, the Internet of Things has been spreading, whether in the domestic, professional or leisure spheres. The things, identified and connected, rely on the users' data and location, via various interfaces from which they can communicate. Therefore, mobile Internet uses allow you to think about environments, incorporating networks, applications, goods and services in daily life from which all types of actors, human and non-human, communicate and produce data.

The Internet of Things, also called Web 3.0, is developing in parallel to the Data Web and the Semantic Web, and relies on the interoperability of networks and diverse connecting machines, thus promoting the monitoring of all types of activities. This relies on the basis of the Internet, that is, the dual communication protocol TCP-IP. Its undeniable originality comes from the fact that it is an open protocol which is not dependent on a computer company. This is a common language which allows each station or platform to communicate with all the others. Accessing this global network requires hardware (computer, laptop, digital tablet, smartphone, etc.) and a broadband connection. New actors, the ISPs – Internet Service Providers – provide the Internet connection. Specialized companies or traditional telecommunication operators are able to offer this service which is often accompanied by additional services.

Experts, preachers and gurus of all kinds say that Internet diffusion relied on the following assumption: the global network was going to eliminate intermediaries by encouraging direct connection between individuals, an individual and an organization, or a seller and a buyer, etc. Over 30 years later, it is obvious that nothing of the sort has happened. Instead, more often new actors, who are called infomediaries, control mediations and are more and more powerful especially as the technical systems provide many opportunities to be achieved in a

personalized way, with a maximum number of people in the least amount of time, regardless of the geographic range.

This situation contributes to a process of globalization of trades and services which differs from the more traditional internationalization process. The devices tend to align at a global level to offer messaging services, search engines, digital social networks, e-commerce, connection, video sharing, etc. even if usage differences exist or persist depending on the cultural spheres.

Obviously, the aim is to think of a global governance[5], not only on a technical level, so that the TCP-IP can evolve and respond to a global demand of IP addresses, but also in terms of political and geopolitical issues between countries and pressure groups to co-regulate the Internet. Is this path going against the initial design of a network of networks, for "personal freedom", which has contributed to its social ownership, as Patrice Flichy (2001, p. 223) indicated, or according to Fred Turner[6]? Above all, it is about promoting the dominance of information and communication flows with the evolution of the protocol TCP-IP. The Electronic Privacy Information Center points to a "threat to confidentiality and anonymity"[7]. Monitoring is largely at play on

5 Available at: http://www.voxinternet.org/. See the final research program report supported by the National Research Agency in France, ANR-Voxinternet: c2so.free.fr/report_final_Vox_Internet.pdf. See also Massit-Folléa Françoise, "Uses and Governance of the Internet: for a Socio-political Convergence," in Vidal Geneviève (ed.), *The Sociology of Uses: Continuation and Transformations*, pp. 153–178, Hermes Lavoisier, Paris, 2012.

6 Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism,* p. 396, C&F Editions, Caen, 2012.

7 From 2004, available at: http://epic.org/privacy/Internet/IPv6_comments.pdf.

digital networks, but it would now intervene at the very infrastructure level of the Internet, yet without preventing social, legal and scientific innovation maintaining on-line performance as an open and emancipating network.

1.2. Mediation and industrialization of connection

We no longer only interact with tools, objects, scattered techniques or even machines, but with an interlacing of technical configurations interconnected with each other, running 24 hours a day, all year round and often made available by the servers of companies specialized in storage, (*data mining*), electronic mail hosting services, application hosting (software becoming an online service), blogs, websites and digital platforms hosted most of the time in what are called *Data Centers*.

Companies leading this market offer cloud computing services to their SaaS customers (Software as a Service); in this configuration, the software is installed on remote servers rather than on the user's machine or to IaaS customers (Information as a Service). Experts believe that the market is worth approximately $150 billion and still growing fast.

It should be noted that the main operator is a subsidiary of Amazon, Amazon Web Service (AWS) which holds 33% of market shares globally (source: Synergy Search)[8]. This activity is much more profitable than its e-commerce activity. In 2016, the *cloud* represented a little less than 9% of Amazon's total turnover, but 75% of its consolidated result, or $3.1 billion (source: Amazon's annual report).

8 Google, Microsoft and IBM hold approximately 20% of market shares. One of the only French and European actors existing at the global level is OVH.

We are no longer only faced with the arrangement of technical objects, but with a complex interlacement of the most diverse technologies, which constitute "devices" of mediation, to use the Foucauldian terminology[9]. The characteristic of mediation[10] is that it implies the idea of an intermediary, a third element, which is introduced in the relationship and enables the connection of individuals who would otherwise have never met. Socio-technical devices, which are not strictly technical but also include discursive productions, institutions, rules and meaning creation, register these in a time dimension necessary to understand social issues, as Michel Foucault points out[11]. According to Josiane Jouët (1993), they develop:

> "Around a double mediation […] at the same time technical, because the tool used structures practice, but there is also a social dimension, because mobiles, the forms of use and the meaning given to the practice are replenished in society."

In 2011, she underlined the value of *Internet studies* (Jouët, 2011, pp. 45–90) for taking into account the explosion of online services and of new interfaces, thus reconfiguring the users' relation with time and territories while also renewing a communicational action within social practices.

9 See the writings of Michel Foucault: 1975, 1976–1979, 1994.
10 For more information on the question of the temporality of mediation devices, refer to (Lamy and Square, 2017).
11 Within the Foucauldian approach, Giorgio Agamben develops a more radical approach. He defines the device as "everything that has, in one way or another, the ability to capture, guide, identify, intercept, shape, check and ensure the gestures, behavior, opinions and discourses of living beings." *Qu'est-ce qu'un dispositif ?*, p. 80, Rivages, Paris, 2007.

These technologies undoubtedly play an essential role in the globalization of trade, in two ways as Félix Paoletti mentioned: as a sector with globalized activities and as a sector producing infrastructure which supports the globalization of activities in other sectors (Paoletti, 2003, pp. 43–45). He states that the network promotes trade globalization, because:

> "Globalization is not limited to the creation and development of networks of multinational enterprises, of global networks of electronic business, trade or financial transactions and stockbroking. The ambition of the proponents of globalization goes much further: globalized companies must be able to spread their activities on a worldwide scale, without any constraint, in financial areas as well as in stock markets, in production and marketing of material goods and services. Moreover, the proponents of globalization think that all human activities as well as the products of these activities should become merchandise that can be bought and sold on this worldwide market."

To spread activities across the globe, usually a new type of company appeared with infomediation as a function. Infomediation is about connecting a supplier (of goods or services) with a buyer. The main manufacturers are known under two acronyms: GAFAM (Google, Apple, Facebook, Amazon, Microsoft) and NATU (Netflix, Airbnb, Tesla, Uber). Many of these newcomers have developed a strategy about encouraging a disruption, that is, challenging conventions, regulations, existing socio-economic models, or even the market itself. How can the success of these newcomers be explained? By setting up an innovative technico-organizational device conducive to the

disappearance of entry barriers in a business sector or in a market. Airbnb and Uber illustrate this method very well.

The large mass of users, the considerable volume of connections on a daily basis, the huge quantity of data processed, the multiplication of diversified processes, the rise in power of usage and the effects of usage mean that in order to be able to offer diverse and increasingly personalized services on a worldwide scale, operating all year-round, communication companies have to rationalize, automate, specialize functions, standardize formats and substitute labor with capital; in short, they have to industrialize the connection, strengthening as well as extending the industrialization process to an activity which was deprived of it. As an illustration, Facebook, currently the largest social media network in the world, has almost two billion accounts of which more than 30 million are in France alone. In terms of requests: 30,000 billion pages have been indexed by Google and 20 billion sites are crawled (visited) per day[12]. As for YouTube, the video sharing site, there are more than 1 billion active users on a monthly basis. In France, the visitors are estimated at 4 million unique visitors per day. 2/3 users go on this platform several times a day and 2/3 have access to YouTube from their smartphones[13]. What emerges is an immense technological power, never reached before, to process all these connections and data. The increase in power can be seen at the very heart of the technical process; as for the magnitude, it relates to the abundance of uses.

12 Source: *Business Insider*.
13 Source: YouTube, November 2016.

1.3. Monopolies and dominance

Power and greatness depend more and more on the communication industrialists GAFAM and NATU who embody, as David Fayon notes, USA's global supremacy, not to say hegemony, in the digital arena and on the entire value chain: hardware, software and data[14].

Remember that in the beginning, Google was only a simple search engine. Since then, Google has become a subsidiary of Alphabet and is much more than a search engine today, as it is also an operating system for smartphones (Android), a document storing and editing tool (Drive), an Internet browser (Google Chrome), an e-mail client (Gmail), a geolocation app (Google Maps), a social media network (Google+), a video-sharing network (YouTube) and many other services geared towards advertising, as Chapter 2 will show. As for the quantitative data collected on this industrial group, they are frightening. They would own more than 900,000 servers, and in November 2016, Google's world market share in the field of search engines was 92.9%, Bing 2.7% and Yahoo 2.2% (source: *StatCounter*[15]). In 2015, Alphabet had a financial result of $74.5 billion and an annual profit of $23.4 billion (source: Alphabet, 2016). Undeniably, this Internet industrial group holds a dominant position on a global scale, even if it is only in certain geographic areas, as is the case in Russia where it holds only 49.97% of market shares, followed closely by the Russian search engine Yandex (45%), in South Korea where Google only represents 62.22 % of market shares, and in China where it has only 2% of the market, whereas the Chinese search engine Baidu holds more than 78%.

14 Keeping in mind the importance of IBM, Intel, Cisco and many start-ups, see (Fayon, 2017).

15 It is worth noting that, in Europe, the market share is 93% and in France, it is 94.1%.

If we extend our analysis to the ranking of Web-based companies, in the top ten, seven are American (e-commerce, search engine, social media network, travel, video on demand), and three are Chinese (e-commerce, search engine, social media network). The first European company comes sixteenth, the German company Zalando (e-commerce). BlaBlaCar, the French start-up world leader of long-distance carpooling, with more than 20 million users spread in 20 countries, is very far behind. It should be noted that this start-up is not the source of this application software which was created in 2006 via the free website covoiturage.fr. BlaBlaCar acquired this site which was stagnating when renewing the connection processes between drivers and passengers.

The hegemony does not stop there: to better realize its importance, it is necessary to identify the location of the Internet's root servers (highly strategic servers). Following research, ten are set up in the United States, two in Europe and only one in Asia. This demonstrates how the United States of America with GAFAM and NATU dominates the world market except for a few geographical areas, as seen earlier.

In this context, France and Europe play a less significant part. By way of example, on the IaaS market (*public cloud*), France and Europe are absent. The United States dominates the world market with: AWS (Amazon), Google, Azure (Microsoft) and, to a lesser extent, IBM. Only China seems to be able to withstand American hegemony even if it is only in its own territory and in Southeast Asia for the moment[16].

16 As David Fayon states, *op. cit.*, p. 175. China's strategy was built in three stages: 2003, filtering and blocking of unwanted foreign sites took place; 2006, a parallel system to the Web, to manage domain names with, was instituted, along with the formalization of censorship by keywords; and finally "sinicized" Web tools emerged: Baidu (in place of Google), Youku (modeled on YouTube) and Renren (which is like Facebook).

This country has understood the strategic importance of IaaS infrastructures. As proof, the Aliyun company (Alibaba Group) massively invests in this type of infrastructure and is beginning to spread overseas. China has developed its own "GAFAM", the BATX: Baidu, Alibaba, Tencent and Xiaomi.

By analyzing the setup of data centers, it shows that the large majority are also located in North America. Focusing only on the 24 largest cloud operators on a global level, 45 data centers are located in the United States, eight in China, seven in Japan, five in the United Kingdom, four in Australia and four in Canada (source: Synergy Research, 2016).

North-American hegemony raises a tricky question about the digital sovereignty of our infrastructures, our connections, our data storage and our processing. What would happen to a country that does not master the technological devices being used? What could happen to data in the event of a serious crisis? Understandably, this raises another question, that of collective and public security, since personal data (including names) is "sensitive" data enabling direct identification, and increasingly even in an indirect way, of any physical person[17] via the digital traces (connection IP address, navigation trails, geolocation, etc.). Some even give access to information on the habits of Internet users. This collection of personal information is usually done without the users' knowledge. Therefore, it is of the utmost importance to question these terms, because, where the data is stored or processed, with few exceptions, the law of the country that hosts the servers applies.

17 Such as the name, date of birth, social security number, genetic fingerprint, and also a vehicle registration document, debit card statement, among others.

How can the hegemony of the United States be explained? There are several factors to consider.

First, it has a capacity to innovate and master innovation in a general manner and digital innovation in particular. For example, Google owes its success to its search engine which incorporates an innovative algorithm: PageRank, an information filing system. When a document is pointed to by many hyperlinks, its PageRank increases, and the higher it gets, the higher the probability of being displayed in the first ten results of a research. According to Dominique Cardon, this system gives an indication of the "authority" of the document among the other documents on the Web. Therefore, the more a site is listed by others, the more weight its recognition of others has in the calculation of authority. This method, as the author recalls, borrows

> "from the system of values of the scientific community, particularly from the scientific reviews rankings which give more weight to the articles most cited by others […] this recognition measurement has greatly proved that it is one of the best approximations of the quality of information." (Cardon, 2015, p. 26)

All this is governed by an algorithm and by a business model which is based both on the promotion of keyword advertising via AdWords AdSense and on the principle of the auction for advertisers. This manufacturer keeps innovating. The latest innovation is to interconnect all the services offered by Google with the aim of analyzing the activity of any author regardless of the application and possible promotion of the website connected to the Google account in the search engine results. Netflix, a media provider that offers films and series on demand or by subscription whatever the connection medium (television, smartphone, tablet, computer, game console), also derives its success from

the development of an algorithm, but this one predicts the tastes of the spectators from automated learning (machine learning) of the traces left by Internet users on the site in order to better advise the viewer on their future choices. It is the same with Amazon which has developed a predictive technique that can make purchase recommendations. Most sites, particularly in e-commerce, use algorithms of recommendation based on comments, notes, likes and similar profiles.

All these connection industrialists give an important place to innovation and have developed sophisticated algorithms to establish themselves in a particular activity. Algorithm design is becoming strategic and necessary and allows a company to become established in a business sector.

Algorithms are not a recent innovation, but their links with big data and global networks, their sophistication and the place that they hold, give them today a capital importance because they are able to operate at very high speed, using huge amounts of data, to prioritize information, guess what we are interested in and select what we prefer. To paraphrase Dominique Cardon a little, we could say that we manufacture algorithms but in return they build us up (Cardon, 2015, p. 7). Digital technology is definitely an absolutely essential tool to standardize calculations and quantification, but for this author:

> "Since the neo-liberal policies of the 1980s, we have witnessed a generalization of calculability and a systemization of the benchmark policy. The presence of quantifiers in social life is felt everywhere. Barometers, indices and charts start to put numbers on activities which, until then, were not measured or for which quantification was not the object of constant attention." (Cardon, 2015, p. 9)

Next, to understand American hegemony, we must consider the capacity of economic actors to integrate "the network effect". The digital world has a low tolerance for competition, due to a "law" of its own. The premise can be summed up as follows: the utility of a good or service grows with the number of users; hence, the importance of very quickly acquiring a mass of users so as to be in a dominant position over competitors. This generates exclusivity in the market. In this case, as the economists point out, *the winner takes all*. Thus, there is also the necessity to acquire innovation very quickly instead of developing it in-house while acquiring expertise and offsetting any potential competition[18]. That is what GAFAM and NATU did. Therefore, monopolies are created and the main emerging feature is that the acquired companies become part of the buyer's offer while still existing autonomously. This is the case, for example, with Linkedln and Skype (Microsoft), or YouTube and DoubleClick (Google). This tendency is certainly not new, this process of acquisition, of concentration, although in different forms, had already been identified by Patrice Flichy[19]. In the 1970s and 1980s, the electronics industry went, in 20 years, from a largely competitive market to an oligopolistic market. This trend had been thwarted in France by the government which at the time set limits on this concentration or nationalized the sector. The same concentration can be seen in the sectors producing cultural goods. What about the famous "two hundred audio-visual families within French capitalism"? And as this author always indicates, is it not widely known that cultural industries have "two centers of the World: Hollywood and Sony City?"[20].

18 It should be noted that Google has purchased more than 150 companies, as of today.

19 See *The industries of the imagination. For a socio-economic analysis of the media*, p. 38, PUG, Grenoble, 1991.

20 *Ibid*., refer more particularly to Chapters 7, 8 and 9.

Hegemony can be explained by the capacity of American start-ups to mobilize venture capital and make a stock market valuation. Take the case of Uber. The last fund-raising campaign raised $68 billion while this company, since its creation, has reported a loss of over $5 billion. Does this seem beyond understanding? Not for digital start-ups. Actually, investors gamble on the future by taking a risk. They do not rely on financial results, but on the forecasts of future profits. In a way, they bet on the ability of a start-up to be the future world leader of an activity. In Uber's case: booking a car with driver. Fund-raising is tied to a business strategy which aims to gain market shares as quickly as possible, since the hallmark of the digital economy, as seen before, is the network effect. In fact, the only assets Uber has are its app, its brand and its market shares. It should be noted that some specialists begin to wonder if unicorns (start-ups with a value exceeding a billion dollars) are not overestimated and fear a financial bubble[21].

To conclude, it is necessary to remember the infomediaries' ability to establish their dominance by providing a free service that allows them to value the uses thanks to the multitude of data they collect and sell. According to David Fayon, if we summarize his remarks, web firms usually use two main logics[22]: the *leader* logic, which is the ability of an actor to become dominant in a new market, and then to monetize their audience, even if it means waiting years after launching the offer on the market to reap the benefits. Google illustrates this perfectly. The logic of the *ecosystem* is the ability of an actor to develop a flagship application which then becomes a platform while offering open APIs (an interface that ensures the interoperability of applications) to attract a community of developers – and volunteers if possible – who will offer

21 This is the case, for example, of Will Gornall and Illya Strebulaev (2017).
22 Fayon, 2017, pp. 47–48.

services that rely on the platform, while taking advantage of the data provided by Internet users. Alibaba has adopted this approach. Offering its first application to its home market, this Chinese company has developed what is called an "ecosystem of comprehensive services" to extend its grip on other markets in order to keep hold of the maximum number of users. It is a double strategy: offering many services for free or at a very low cost to attract the greatest number of users, and encouraging developers to propose new applications and services while enriching the platform of this communications giant.

American hegemony is reinforced by the fact that the big companies usually practice tax optimization while exonerating themselves from any participation in content financing: this greatly improves their profit but weakens some public policies. This happened to existing cultural policies. Like other platforms, Uber uses a mechanism of tax optimization, which is called, in this case, the "Dutch sandwich". Payments are channeled through the Netherlands, then through different tax havens, thus largely evading tax. It should also be pointed out that it bypasses social rules, does not pay for a license and offers carpooling services which evade regulation. According to the European Commission, tax fraud and evasion costs the European Union €1,000 billion in tax revenues (a large part of which is from digital technologies). This is equivalent to the entire health expenses of the member countries of the European Union. It should be noted that the European Commission has recently ordered American firm Google to pay a fine of €2.42 billion for abusing their dominant position. This sanction was imposed after a seven-year investigation. The multinational was reproached for promoting its price comparator "Google shopping" in the search engine results, thereby penalizing other actors in the sector. However, the Commission's services also focus on other activities, particularly its online advertising platform AdSense and its

mobile operating system Android, also for abuse of a dominant position. We should emphasize that France and Germany have just taken a joint initiative at European level to obtain taxation of all GAFAM platforms and other pure players[23].

The technical offer associated with a multitude of services, as seen before, is involved in the technologization of social and professional life, especially as Internet users can communicate at any time, in any place and are able to publish instantly what they want to share, reaffirming the practices of writing and reading. It is important to remember that what has been called Web 2.0 (also called participatory and contributory Web) is not, contrary to a widespread or advocated idea, a new innovative technique that would replace Web 1.0. Indeed, when physicist Tim Berners-Lee invented the Web, this possibility existed. However, it is the rise of bandwidth and the spread of broadband that blessed the participatory and contributory direction. From a technical point of view, there has not been a second Web generation, even if this term has strongly contributed to promoting a Web orientation.

With this global network of exchanges and communication functioning 24 hours a day, year-round, undeniably the question of the irreversibility of the use of these socio-technological devices no longer seems relevant, since they bring anything, anytime, anywhere, on any device. Hyperconnectivity makes digital disconnection impossible and even if the situation may give rise to criticism, digital injunction creates conditions of non-disconnection, all the more so when Web 3.0 is spreading, which relies on the semanticization of data (called the semantic Web, based particularly on the qualification of data and its

23 The case of Airbnb is enlightening. In 2016, this platform only paid €92,944 in France, even though it is the second largest Airbnb market in the world.

categorization) and the Internet of Things (each object having an IP address). Moreover, users' skills allow them to escape as much as possible the grasp of their devices, to avoid being permanently under injunction, nonetheless without disconnecting. Therefore, a question arises: how can we explain the rapid success and diffusion of a technical offer associated with connection services of communication companies on a global scale? This will be covered in Chapter 2.