The digital transition:
The Jekyll and Hyde of urban and rural planning

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Abstract:
Digital technology, this Dr. Jekyll and Mr. Hyde, is a topic that fascinates and worries us, that has been simplified but is complex, that seems to hold as much promise as dread of its presumed and real destructive capacity. For several years now, it has upended businesses, while not sparing local areas. Local authorities have been overwhelmed by this change that is reshaping borders and boundaries, fields of actions, the ways of doing things, services, and citizens' expectations. Some local areas have actively entered the digital transition whereas others have submitted to it; but all have, willingly or not, been forced into this unstoppable transition. Several questions arise. How to keep the inequality of access to digital technology and the unequal appropriation of this awesome technology from creating ever deeper cleavages in our society and between local areas?

In *The Strange Case of Dr. Jekyll and Mr. Hyde* published in 1886, Robert Louis Stevenson invented a myth that has been taken up many a time in films, plays, songs… and by the collective imagination. When observing everything that digital technology has been arousing for several years now and even more what it is stirring up nowadays, we come to think that the story of the respected Dr. Jekyll and the abominable Mr. Hyde fits the topic to be discussed herein.[1]

The topic of digital technology fascinates as much as it disturbs. It is parodied as much as it is complicated to define. It seems to offer as many promises as threats owing to its presumed and actual destructive powers. Saying (or writing) this now amounts to singing an old tune… but on tone: digital technology has upended everything. No one and nothing has been spared. Seen as a chance by some, as a constraint or risk by others, it leaves no one indifferent. The tune from the recent COVID-19 pandemic does not sound any different. Imagine for a second what would have happened had this pandemic come twenty, ten or even five years earlier! How would we telecommute? How would the schooling of children be organized or teleconsultations with doctors? How would we have kept up ties with family members and friends? What entertainment would we have had? What cultural contents would have been available? All this raises several other questions, in particular: how to make sure that the unequal access to digital technology or differences in the appropriation of this awesome tool not cause a still deeper divide in our society and between localities?

The protuberance of geography… For several years now, this powerful digital transition has not spared the country's various administrative subdivisions. This tidal wave has swept over them, redrawng borders, redesigning the perimeters of fields of action, altering the ways of doing things, of providing services… changing the level of expectations. Some local areas have actively sailed on this trend whereas others have passively drifted with it. Willingly or not however, all have been swept up in a digital transition that cannot be stopped.

[1] This article has been translated from French by Noal Mellott (Omaha Beach, France). The translation into English has, with the editor's approval, completed a few bibliographical references. All websites were consulted in February 2021.

Geographical coverage, the precondition

The very first question to ask: how well does digital technology geographically cover the country and local areas of all sorts? This is evidently the precondition for any "digital transition". We are not likely to find a single elected official or local authority whom constituents have not questioned about better access to the Internet. Improved coverage has even become a leading criterion for choosing where to reside or set up a business. It is a question to which the state and administrative subdivisions at all levels have paid, and are paying, very close attention. Covering the whole territory with high-bit rate access to the Internet has, since 2000, motivated many initiatives by local authorities with the backing of the Caisse des Dépôts and, then, of the Plan France Très Haut Débit (THD).

Once the sector of information and communications technology (ICT) was opened to competition in 1998, the "historical" telecommunications operator had to adapt its telephone network to allow anyone to have high-speed access to the Internet via ADSL. The government assigned the Caisse des Dépôts the task of supporting local authorities with the engineering and investments needed to avoid the disaster of a two-tiered France with the countryside deprived of access to the Internet. Public and private investments were a driving force for ten years. By the end of the first decade of the new century, the ADSL coverage of local areas provided by various service-providers was remarkable. The situation was not the same everywhere, of course.

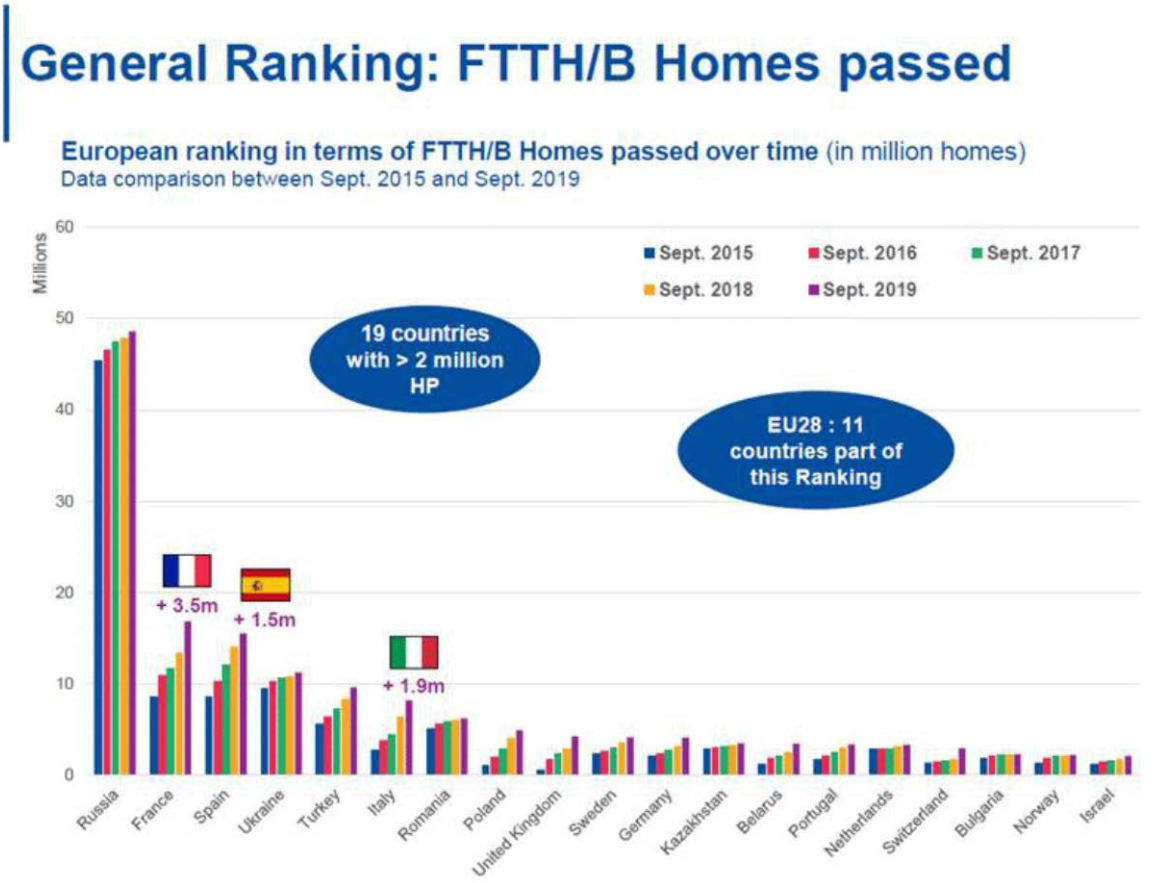
Legislative texts reinforced local authorities's determination for their area to have access to the Internet. These texts were intended to create conditions of legal certainty for local authorities, foster confidence between consumers and firms, boost sharing between networks, repurpose civil engineering installations, reinforce regulatory powers over ICT (via ARCEP: Autorité de Régulation des Communications Électroniques et des Postes), and, more recently, open public data and protect Web neutrality.

In 2010, the French state enlarged its role by adopting a "national plan" that would be renamed *Plan France Très Haut Débit* (THD) in 2013. This plan, launched by the government along with network operators and local authorities, was ambitious: everyone in France should benefit from high-speed access to the Internet of the same quality everywhere, whether in urban, rural or mountainous areas. In practical terms, this meant replacing, in fewer than fifteen years, the 30-some million copper landlines with optical fiber — the only technology that can carry over a long distance flows of data that have been increasing exponentially. The choice was made to deploy this new "essential infrastructure" concomitantly in urban, periurban and rural areas. Whereas urban areas were reserved for private operators, periurban and rural zones, which represent 90% of the territory, received a different treatment. In 2011, network operators selected 3600 communes, while leaving the implementation of THD in the other 32.000 in the hands of local authorities. Nonetheless, the state provided support, both methodologically and financially (€3.3 billion from the *Grand Emprunt* for future investments in 2009).

Investors thus had an opportunity to take interest in a type of asset that had used to be deemed risky. The presence of the Caisse des Dépôts in these plans reassured and stabilized investors. It also increased leverage considerably: for an investment of €1 by the Caisse des Dépôts, a total of €11 would, on the average, be invested. As a result, public works were accelerated along with coverage of the country's surface area.

On the one side, Dr. Jekyll with his deliberate programs; but on the other side, Mr. Hyde since, despite all these efforts, several areas are poorly or barely covered, whence a persistent digital divide. Several studies have pointed out how the availability of high-speed Internet connectivity concretely affects, in local areas, factors such as the creation of firms, the unemployment rate and the area's attractiveness to business. As a study by the Caisse des Dépôts at the end of 2013 has shown, the presence of a Network of Public Initiative (RIP) in a local area was an important factor for the local economy.

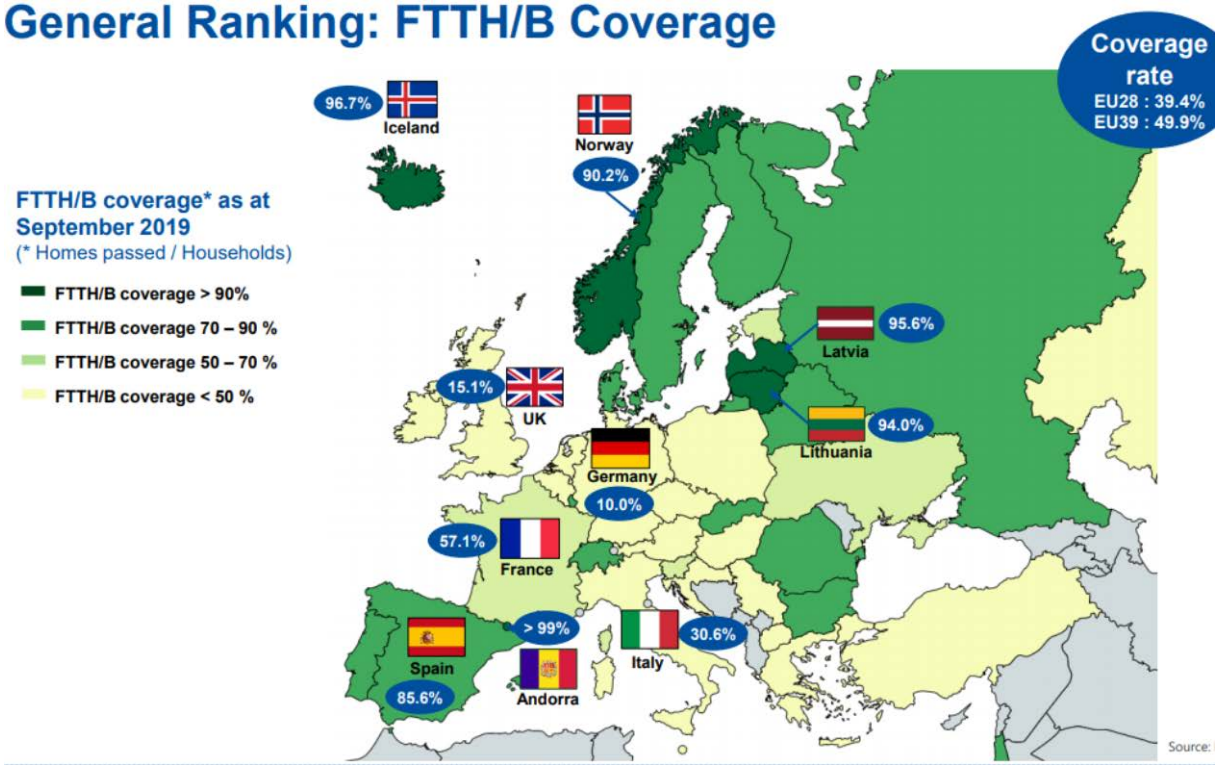
Figure 1:



1*Source*: ®IDATE DigiWorld 2020FTTH COUNCIL EUROPE (2019) "Panorama: Markets at September 2019", 23 April, p. 11.

France's efforts are starting to bear fruit. According to data about the optical fiber market from FTTH Council Europe (2019), the country's position has clearly improved. Among the 28 European countries covered by the study, France ranked first with respect to the number of households connected. It thus moved ahead of Spain, the leader in previous years. This study took into account fiber-to-home (FTTH) and fiber-to-building (FTTB) connections. It is worthwhile pointing out that France mainly uses the first. The situation is somewhat different when coverage refers to the proportion of the population covered, the number of connected households thus being replaced with the number of inhabitants. In this sense, France has a coverage of 57.1%, above the average of the 28 countries (39.4%) in this study and of the 39 countries in Europe (49.9%)

Figure 2:
Source: IDATE DigiWorld 2020



2*Source*: IDATE DigiWorld 2020FTTH COUNCIL EUROPE (2019) “Panorama: Markets at September 2019”, 23 April, p. 13.

Over the past dozen years, elected officials have been constantly preoccupied with mobile telephone coverage. The president has recently assigned priority to the reabsorption of this aspect of the digital divide, which might be more significant than high-speed connections for landlines. For users, poor mobile coverage means that they can neither telephone, nor consult websites nor use roaming applications. The lack of the well-known “small bars” on a mobile phone’s screen signals a degraded level of service or even no service at all. Once again, we have a good example of the Jekyll/Hyde contrast between the lucky (usually in big urban centers) who have access to 4G and those who (in white spots) do not even have a 2G connection.

Narrowing this digital divide for mobile telephony calls for a commitment by the four big operators in France to provide quality mobile coverage. The problem is not exactly the same as for landline coverage, since “lines” (optical fiber) do not have to be laid to the doorsteps of homes and gateways of firms. Instead, Internet service-providers are being forced to meet conditions about coverage, while they have to put to the best use a radio frequency that has been assigned (often at a high price) to them following an auction.

To improve mobile telephone coverage, successive national plans were launched. Finally, in January 2018, the government, ARCEP and mobile telephone operators reached an agreement on widespread quality services for everyone in France. Under this “mobile New Deal”, each operator will target coverage by making the commitment to build, by 2026, 5000 mobile stations (2000 of them pooled by the four licensed operators). These plans call for nearly 10,000 additional relay towers throughout France. They also require operators to make improvements in metropolitan areas.

Under this program for targeted coverage, local authorities play an important part since they set the priority of the locations to be covered. For instance, the priority will be to provide coverage to the population inhabiting white spots, and then in poorly or barely covered areas (touristic areas, economic zones, and places with leisure activities). For this reason, some local authorities are conducting studies to set priorities. For instance, the Hauts-de-France region has launched the mobile telephone application *Tu captes?* Inhabitants in northern France may thus take part, for free, in measuring the quality of the network they use and compare the four mobile telephone service-providers where they are located. The Caisse des Dépôts has helped fund some of these studies and published a brochure about coverage (in particular 4G) for local authorities.[2] One study simulates the following factors in localities: the "right" coverage for 4G mobile data, the existing white spots, and the location of installations for covering the population in these white spots. The next subject to study in relation to mobile telephone coverage will be 5G, which carries the risk of a new digital divide and a new split between Jekyll and Hyde.

Digitized services and smart cities

Following (or sometimes parallel to) the thought being given to networks, municipal and even local authorities have gradually shown an interest in examining how digital technology might help them improve services (whether specifically urban or of any type). These thoughts have crystallized in the idea of a "smart city", a sometimes overused phrase promoted by business interests. Once again: on the one side a good Dr. Jekyll, who imagines a virtuous, economic, frugal, inclusive city genuinely turned toward services and with ample room for citizen participation; but on the other side, a sinister Mr. Hyde who devours urban space by installing a clutter of networks, sensors, cameras and who harvests data while drastically dehumanizing the city.

While some local areas might be tempted by this idea of high tech everywhere, most have been more pragmatic. They are carefully working with local partners (public authorities, firms, associations, universities, laboratories, etc.) in order to start out from actual needs, real uses and experiences. Upstream in this process, they are taking into account the issues related to "digital have-nots" (poorly served areas or groups: the elderly, job-seekers, the "digitally illiterate", etc.) and the exclusion resulting from disabilities. They have understood, as have big firms, the worth of associating start-ups with their quest for innovation.

Nowadays, French plans for smart, sustainable cities have multiplied in big metropolitan areas and are reaching out to medium-sized cities. Each project ensues from an approach followed by urban planners and elected officials, all of them aware of the geographic, economic and cultural factors specific to the local area. Most of these plans seek to optimize public services (water, lighting, wastes), create "multimodal mobility" or even form "relations" with inhabitants.

Financial "performance", it is worth noting, is now far from being the main goal even though some studies have tried to simulate the smart city's return on investment. The Caisse des Dépôts, Syntec Numérique, Advancity and Systematic Paris-Région financed in November 2017 a study conducted by Citizing and OpenCitiz for replying to questions about the usefulness of "smart" projects. This socioeconomic assessment of five concrete smart city projects quantitatively demonstrated that the latter could create collective value (CITIZING & OPENCITIZ 2017). Thanks to more information about city assets, many projects have made substantial savings, whence a positive balance sheet even if the project itself is not necessarily profitable. By adding all sorts of externalities, the socioeconomic balance sheet often turns out to be very positive — Dr. Jekyll!

[2] It can be downloaded from https://www.banquedesterritoires.fr/.

Over the past decades and especially in medium-sized cities, downtown businesses have often borne the brunt of the installation of commercial centers on the periphery. Along with demographic, economic and geographic changes, this trend has bled the commercial vitality out of many a city's center. Stimulating downtown businesses requires new public policies. A national program called *Action Coeur de Ville*, in which the Banque des Territoires is fully involved, has made urban revitalization a priority. Many towns are asking whether it would not be worthwhile to use digital technology for their plans to revitalize downtown areas. Projects for the electronic management of market stalls, for home delivery services or for loyalty cards abound, but their impact on downtown business or on the number of people drawn downtown has not yet been evaluated. A publication by the Caisse des Dépôts helps local authorities analyze how digital technology might help revitalize neighborhood businesses. Without being an ultimate source of information on urban revitalization programs, it offers an essential lever to locals who want to adapt retail businesses to consumption patterns or to make downtown areas more attractive.

Despite these initiatives, we should not lapse into a blissful sense of optimism. Many questions crop up, along with risks lest the urban sphere become the haunt of Mr. Hyde. After all, Google's program *Sidewalk Labs* in Toronto was recently abandoned but not without having stirred up anxiety about the collection and uses of residents' data.

Data management is an important issue for the coming years. In France, cities took the initiative to open their data prior to the adoption at the European and national levels of the regulatory or legislative texts that establish a legal framework for open public data. These local initiatives were soon supported by Etalab, which the state set up in 2011. While the trend toward open public data has spread, the "public data service" (for which Article 14 of the Digital Republic Act provides) is a major issue in French plans for smart cities.[3] It will, hopefully, motivate public utility operators (energy, water, transportation, etc.) who might still be holding back to share for the common good the data they gather under the conditions set in their contracts or licenses.

"Digital inclusion"

Though very important and interesting, these questions about networks and services should not lead us to overlook another, perhaps more critical question: how do citizens adopt and use digital technology? This question is probably the potion most conducive to splitting Dr. Jekyll from Mr. Hyde! Several studies have come up with the same conclusion: 13 million citizens have trouble with digital technology. For those who are digitally illiterate, using this technology often rhymes with failure or missed opportunities — in all fields and especially in relations with public administrations. This pernicious form of "social exclusion" should not be underestimated.

During the current "everything-digital" period with so many initiatives under way, public authorities have to be capable of reinventing relations with citizens. In the past few years, this sensitive topic has drawn authorities toward "tools of digital mediation" for putting something human back into digital technology — for, in a way, "reintermediating" what has been "disintermediated" over the years! An example is the Maisons de Service au Public (MSAP). The names and forms of this sort of establishment have changed over time: *relais de services publics*, *PIMMS*, *visio-guichets*, etc. — all recently replaced with the France Services program, which, designed as a one-stop service, is being deployed throughout France since 1 January 2020.

[3] Act n°2016-1321 of 7 October 2016 for a "digital republic", available at https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000033202746.

The France Services program, the most recent "model" for access to public services in France, seeks to enable all citizens, regardless of where they reside (whether in the countryside or the city), to have access to public services and be (physically) received in a single location where trained personnel will help them accomplish everyday administrative procedures. This program is to assist all citizens with their administrative paperwork and train them to use digital technology. Its offices are outposts for consolidating citizenship, enabling citizens to "learn" computers and the Internet and be critical about what these tools produce. These are tomorrow's issues: to learn how to deconstruct "fake news" and not be confined within the well-known "filter bubbles" whereby algorithms imprison cybernauts (and citizens) by providing them with infinitely customized contents… but this is another question!

Conclusion

At the end of *The Strange Case of Dr. Jekyll and Mr. Hyde*, Utterson, while rummaging through the desk of Dr. Jekyll, came upon a letter wherein his dead friend described his work in detail. By swallowing a potion, the doctor had managed to separate his soul into two parts, good and evil. However the latter, represented by the wicked Hyde, gained the upper hand over the gentle Jekyll to the point that he could not rebecome what he used to be. For this reason, the doctor wrote that he preferred dying rather than incarnating pure evil. Let us hope that digital technology will not lead us into this predicament! Besides this strange case, Robert Louis Stevenson wrote other novels, the best known probably being *Treasure Island*. The various examples of programs and government actions described herein lead me (and hopefully readers too) to nurture the hope that digital technology will lead us toward an "island" with treasures.

References

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