



# Redefining Connectivity. Implications for Local and Regional Governments

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In particular, the present paper has contributed to Chapter 6 on 'Connecting', which focuses on the multiple interventions and programmes that increase the linkages between and within cities and citizens, and the role of local and regional governments in the governance and planning of more equitable transport, infrastructure and digital connectivity.

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# 1. Introduction

COVID-19 has been a breaking point for all of us bringing a profound transformation to our daily lives. This transformation has undoubtedly redefined many aspects of the way we move, communicate, and socialize impacting on the very structure of our social fabric. Working became remote, so did education. The long-term implications of these changes are yet to be seen, and which of them will become permanent and which will be transitory is being decided in this post-pandemic world. However, the acceleration of existing tendencies and the new understandings emerging from the rupture caused by the pandemic will be the building blocks of our future.

In this Working Paper we will closely examine these changes with a view on policy implications for local and regional governments. We will look at them as seeds of an ongoing construction of the new realities that cities and regions are experiencing.

This Working Paper is divided into four parts, each dealing with one of the four main aspects of this transformation. Firstly, connectivity. Connectivity is one of the main areas that underwent a redefinition during the pandemic. Secondly, we consider services. The scope and depth of digital services also exploded during this pandemic. Thirdly, we look at our idea of citizenship and the associated rights and ways of exercising it. And finally, we consider policy, the amount and speed of change that the pandemic brought created not only new needs but also showed the limits of the existing ways of defining, establishing and enforcing policy.

### 2. Redefining Connectivity

COVID-19 dramatically increased our need for higher Internet speeds, not only by moving high-bandwidth services such as education or remote working online, with the continuous use of online conferencing services, but also because of confinement and the subsequent need to rely solely on home entertainment.

All this redefined our notion of connectivity which in many areas was below 100Mbps and suddenly this became the minimum speed necessary to function in this COVID-19 society. Videoconferencing services rapidly evolved to 4K and this, along with the multiple and continuous use of them in every home escalated bandwidth demands to hundreds of megabits per second. 1Gbps connection stopped being a rarity to become, in many places, the new normal.<sup>1</sup>

This redefinition of connectivity did not only imply radical changes in terms of speed but also in terms of devices. The boundaries between home and work, where large screens and detached keyboards are the standards, dissolved. Suddenly, home was the place where work and education were done, and this demanded the same large screens and powerful computers that we used at work. Not only that, lighting and quality microphones rapidly became common in many households.

This double redefinition of connectivity in terms of both speed and equipment created a new divide between those who could afford it and those who

**could not.** The consequences of this divide are yet to be seen. In years to come we will probably be able to observe in more detail the impact that many families experienced in the decrease of quality of education.<sup>2</sup>

Furthermore, many activities could not be done remotely. Such is the case of many industrial or servicebased activities that require physical presence, such as supermarkets, convenience stores, riders, hospitals, or industrial work. The experience of the pandemic has clearly been different for white-collar workers than for the rest.

1. Allam, and Jones, "Future (post-COVID) digital, smart and sustainable cities in the wake of 6G: Digital twins, immersive realities and new urban economies."

<sup>2.</sup> Kuhfeld, Soland, Lewis, and Morton. "The pandemic has had devastating impacts on learning, What will take to help students catch up?"

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The need for speed surfaced many of the infrastructure deficiencies of countries and operators and uncovered outdated regulations and ones made to protect the interests of the telecommunications industry. However, this has not been the general case. Some countries where fiber was already common, used the pandemic as an opportunity to leapfrog both their infrastructure and standards. In these countries speeds of more than 300Mps were the norm and the definition of high bandwidth was raised to 500Mps-1GBps, while in others - like in the US - high-speed broadband is still defined as 25Mbps (25Mps download, 3Mps upload) or in the case of the Department of Agriculture 10Mbps (10Mbps download, 1Mbps upload), speeds that seem slow even in last century terms.<sup>3</sup>

#### Post pandemic remedies come from a diversity of places, obviously one of them is subsidies for broadband. There were however interesting policies and new technologies worth discussing.

First, we encounter the American policies set up by the Biden Administration. The fact that the telecommunications industry tends to form natural monopolies that reduce competition is very well known. This is particularly damaging in areas where the market is not large enough to support even a minimum number of competitors. In these cases, we encounter a very limited offer, often restricted to one provider, along with no incentive for competitors to enter and deploy alternative infrastructure.<sup>4</sup>

Over the years there have been some well-known solutions to this type of problem, the most common one being opening the loop, granting competitors access to existing infrastructures for a fee. This remedy benefits competition in terms of price on the existing infrastructure but does little to incentivize its renewal. which faces the obstacle of the limited return on investment characteristic of sparsely populated regions. The Biden Administration is opening the door to another stream of solutions in order to increase competition and infrastructure deployment in these regions, by granting licenses to muni wifis, which are non-profit organizations or cooperatives. These organizations work on logics that are different from market logics. Mostly, they share the cost of the infrastructure among participants and share the infrastructure itself through Wi-Fi for example. , operating in Catalonia (Spain), with close to

Online education. (Source Thomas Park via Unsplash)

3. Felazco, "FCC calls 25Mbps 'broadband' speed. The push is on to up it to 100."

 Wheeler, "5 steps to get the internet to all Americans. Covid-19 and the importance of universal broadband." 40K nodes covering 70K, is probably the best example of the capacity of this type of organization for covering sparsely populated areas. Their advantage comes from linking nodes where each node covers or shares the infrastructure cost. If aerial deployment of fiber using existing power poles were allowed, fiber does not interfere with power lines, both deployment costs and environmental impact will be greatly reduced. Therefore, small changes in legislation can radically transform connectivity allowing bottom-up organizations to enter the market, even if in limited terms, geographical areas or capacity to compete.

As happens with wireless technologies that have completely changed connectivity in regions with little infrastructure such as India or Africa. there are new technologies that promise to bring a similar degree of change in terms of connectivity.

First, we have a range of wireless technologies from SuperWifi,<sup>5</sup> wifi through TV bands which allows for longer distances with little interference, to deployments of 5G. They promise to bring fiber speeds to broadband thus allowing the efficient handling of a large number of simultaneous connections.

There is a previous infrastructure (3G-4G) already in place and its upgrade

is under the tech-war between China and the US for the dominance of connectivity. Therefore, this upgrade can unfold at high speed and under conditions of political confrontation for the market and standards dominance. In short, it can go faster than anybody can anticipate, particularly in developing countries, which are the territories in dispute for tech dominance.

Not only that, but there are also new technological developments that hold the promise to change the rules of the connectivity game. Among them Starlink, Elon Musk's venture, which promises universal connectivity with a constellation of satellites around the Earth. Today Starlink has 1,323 satellites offering speeds close to 100Mbps with a potential to reach 600Mbps and latencies around 30ms and is therefore competitive with other technological offers. Startlink v2 promises voice and text messages using normal smartphones and new developments such as BlueWalker3 promise full 4G connectivity on normal smartphones.<sup>6</sup> These developments may look far away; however, we must consider that the economies of scale once deployed are huge. Thinking of a future with wifi connectivity in buildings and campuses, 5G in metro areas and satellite anywhere else, looks not only feasible but likely.

5. Singel, "That New Super Wifi? What's in it for you?"

<sup>6.</sup> Phillips, "BlueWalker 3 is Huge."



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# 3. New Digital Divides

The fast transition to a fully digital environment where sophisticated applications were the norm created new digital divides forcing many to jump into a world for which they were not prepared.

Suddenly we all needed to deal with a myriad of videoconferencing options including Zoom, Teams, Google Meet, Chime and Skype among others. Not only that, but also collaborative boards such as Miro or pooling apps such as Mentimeter have become the norm in many organizations.

Presenting in online environments became common, using not only PowerPoint, Keynote or Prezi but also virtual cameras such as Ecamm or mmhmm and tools like Prezi video. A new kind of competition in areas such as education appeared. Being a competent teacher, salesperson or attending a job interview suddenly required a new range of skills for which many people were not prepared.

Moving into sophisticated applications was not only a question of connectivity but also of having access to advanced hardware. As an illustration of this need, let us take the example of education, which moved almost entirely online. Following classes with a smartphone or a tablet is certainly difficult and the quality of the equipment, and particularly having access to large screens, really matters. Similarly, a silent room, a good camera, good lights, and a decent microphone will probably enhance your opportunities for participation. Many families cannot provide all this simultaneously to their children while the parents are also working online.

All this happened in the context of a shrinking job market, with increasing competition for the remaining jobs. **These new digital divides, created by a combination of the availability of hardware and proficiency in the use of software, are here to stay.** 

The fast pace of moving existing services online is probably going to slow down once vaccines are widely available. Services like gyms, theaters or education will go back to normal, although not completely. Online and hybrid education will probably become an integral part of the courses offered by most universities. However, aspects such as videoconferencing or remote working are most likely here to stay.<sup>7</sup> Along with them and born of the same need that the pandemic created, we will witness an increase in online services such as wearables, telemedicine, and public services. New applications benefiting from the social integration of online services into our daily routines are likely to come.

We often tend to think that developing countries are at a disadvantage in this process and this is not entirely true. For sure, the lack of infrastructure. sophisticated terminals and equipment and a population less savvv in navigating the digital world poses tremendous challenges. However, we have also witnessed how the lack of a functioning retail banking system opened the way to electronic money and online financial services in China and the rise of M-Pesa in Kenya, for example. In general, empty space provides opportunities for new services that, instead of evolving from the past, invent a new future or redefine the most modern alternative, many times leapfrogging developed countries which are locked in inferior but working alternatives. An example of this are credit cards versus WeChat Pay in China.

It is therefore important to aim policies towards incentivizing the emergence of these services and their scale up. Innovation policies are fundamental in order to be able to take advantage of this new situation which is full of opportunities.

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# 4. Digital Services

Digital services are probably those which are subject to the deepest transformations, and the ones that underwent a higher acceleration due to the COVID-19 pandemic. We will examine these transformations from two points of view, that of new Digital Services and also the new opportunities that artificial intelligence (AI), Cloud and technological advances in general have opened up.

There is however an underlying tension in these transformations. On the one hand we can observe how the new opportunities for influencing both individuals and social discourse are being used with impunity. On the other hand, there are significant opportunities for changing governments and reinventing citizenship.

This is not a minor issue, it is a battle between social control and societal empowerment. In fact, how societies resolve this issue will shape not only their freedom and institutions but also their markets and individual opportunities.

# **4.1** New Digital Services & New Tech Opportunities

We have witnessed the emergence of new digital services because the administrations are overstretched and building apps is a cheaper and easier way of getting jobs done.

As an example, **Tel-Aviv** (Israel) has a in place that alerts you when beaches are open for dog walking, as well as informing about events in the city. These services are really popular and widely used by the population.

These new services, however, do not come only from the side of public offerings done by the administration. **We have also seen an explosion of bottom-up services, particularly in times of conflict or tension**. This has been the case of communication services in **Hong Kong** (China), which bypass censorship and detection through a peer-to-peer system, or in Taiwan, where apps were used to locate mask supply points. In **Barcelona** (Spain) we have seen the use of social networks to build and install PCR testing robots by

All these and many more are examples of grass-roots digital services or new uses for existing services which enable a level of mobilization and bottom-up organization so far unseen.

This explosion of new services is in its infancy. Three forces are behind it. First, the digitalization of local and regional administrations in particular and of governments in general. Administrations deal mostly with information: therefore, digitalization is not only easier but well-known or easy to copy by taking a page from the financial sector book for example. Secondly, basic components such as ML routines are increasingly pre-packaged and available both in commercial platforms and opensource offerings. Therefore, using them in projects is more a matter of "plumbing", connecting existing pieces, than AI development. Finally, digital services are an easy way to increase the offer of services by local and regional administrations, therefore an obvious target for politicians with short-term goals in mind.

Besides new services we also encounter new technological opportunities ready to be used. We will discuss two of the many that have emerged: the potential of blockchain and AI for fairer and easier public services.

Blockchain has generated a lot of hype in the tech industry in the last years, obviously in part due to the continuous rise of bitcoin and other digital currencies, but also because of its capabilities. Two characteristics of blockchain make it unique: firstly, its capacity for implementing traceability linked to small batches of even individual products. For example,



Nestlé deals with small batches of coffee in order to get the best quality by using blockchain to implement traceability,<sup>8</sup> which is a valuable quality in public sector services. The second characteristic, which comes from Smart Contracts, is the ability to link the transaction and the information transfer (including financial transfer) linked to this information, particularly well implemented in Ethereum. Therefore, a permit can get automatically activated after several transactions take place, such as the payment, the transfer of information. etc. One cannot exist without the other.

The use of AI in local and regional governments is a broad subject that touches many areas, from central management of mobility infrastructures to crime detection and prevention or the improvement of traditional services as mundane as garbage collection.

There is however one, often forgotten, aspect that opens unexpected possibilities. With AI we encapsulate procedures that are normally supervised and managed by humans into code executed in the cloud. By doing that we gain total and immediate scalability and a marginal cost close to zero, so the cost of managing one more document or one more user is practically zero and decreases manyfold at scale.

Because Information processing does not have decreasing returns on scale but many-fold increasing returns on scale, the incentives to move procedures to code in the cloud are also increasing. We can therefore imagine a future where most of the bureaucracy is done by code in the cloud without any human intervention, similar to any order processing in any e-commerce company today.

However, huge as these benefits are, there are other important benefits of moving administrative procedures to code in the cloud. Among them a significant one is the ability to encapsulate complexity. Let us use an example as an illustration.

We are all familiar with school registration systems. They all try to be fair according to different parameters such as distance to the school, brothers and sisters in the same school, qualifications, interests, etc. In fact, there is always a tension between achieving fairness and at the same time having simple, easy to follow and easy Hong Kong. (Source Red John via Unsplash) to understand procedures. The case of **Boston** (US) was a bit extreme, the number of rules to take into account when registering was unusually large and complicated. In an attempt to be as fair as possible the number of rules and exceptions increased over time resulting in a rather large list printed in a similarly large book. Far from being useful and fair it became burdensome, ill-suited to its purpose and created a divide that favored the most educated people whilst isolating the ones less savvy in navigating bureaucracy. Making it simpler came at the price of making it less fair. Was there a solution for this problem?

The City Hall set up a project with that consisted in digitalizing the rules and encapsulating its complexity to make them look simpler to the occasional user. Citizens were no longer confronted with all the exceptions but only the ones that concerned them. In fact, this version does not use AI, but we can easily imagine that AI could bring the process one step further to solving the tension between complexity and fairness by doing all the information gathering, calculations such as distance and travel time in normal hours and weighing them up in order to rank requests. This capacity of reducing complexity and simplifying the user interface by adapting it to the needs of the user is also a promise of AI, often neglected but in terms of public services it is absolutely of importance because it is about serving citizens and reducing their burden while complying with the social mandate of equality and fairness.

## 4.2 Biases, Nudging and Transparency

Richard Thaler, the Nobel prize in economics, popularized his research on behavioral economics in the very popular book *Nudge*, published in 2008.<sup>9</sup> Nudging means using behavioral economics to alter people's behavior in a predictable way without forbidding any options or changing the incentives. A common example is the use of defaults to convey actions that are in the public interest such as organ donation. Humans are more prone to use defaults and you can of course opt out.

Nudging went a long way and in social networks behavioral economics has been transformed into incentive management with architectures such as "Hook" where a trigger such as some content that you see in social networks triggers an action such as "sharing" this content and liking it, thus creating a variable response, represented in this case by the number of likes and an investment in terms of digital reputation shown by the number and quality of followers. This mechanism has two effects, firstly inducing a cascade of network effects that trigger growth and secondly capturing your attention and keeping you in the network. Both effects align very well with the objectives of social networks in terms of growth and retention for presenting ads.

The frontier between nudging and engineering incentives is thin, diffuse, and easy to break. Therefore, it is often trespassed not only by private services whose objectives are not aligned with the common good but also by public services because their immediate incentives are better represented in terms of the number of citizens using the services and retention, in exactly the same way that the private ones, even if their end goals, are opposite.

#### However, incentive manipulation and nudging are not at the center of the discussion. This position is occupied by two main areas: biases and transparency.

Biases enjoyed widespread visibility thanks to image recognition applications, particularly when used by police departments to identify and track subjects of interest. Racial differences and the fact that algorithms have been developed and trained using the predominant racial type are at the root of these biases. But biases go well beyond image applications.<sup>10</sup>

Biases cover selection biases, data biases, algorithmic biases, interaction biases and activity biases. All these biases exist when we have humans carrying out administrative procedures and many of us have endured them. It is common that if you speak a minority language in a country or a language that is not the official language of the state, you are discriminated against and forced to speak the common language and/or your cases are attended to with a bias, not only in the case of minorities, but also with women, immigrants, foreigners, etc. We are all aware of these situations.

However, digitalization brings a new twist to these biases. **The fact that administrative procedures are moved to code also implies that whatever bias these procedures have it will be applied consistently and universally without exception.** This is a fundamental change with respect to the previous situation where biases were normally distributed across the population and therefore you only had a certain likelihood of coming across them. If moved to code, and you are a target of these biases, it will be not a probability but a certainty.

The remedy is obviously to remove biases; however, this has been more difficult than expected, particularly with applications that use Machine Learning algorithms which are trained using a sample of the population. If this sample has minority biases, racist biases, or any other, then the algorithm will be trained with them. Verifying the whole sample is not only very difficult but very expensive. Because no automated solution exists, the issue remains open and it will become more widespread as applications are being moved to code, as has been the case during the COVID-19 pandemic.

One type of biases is particularly important and difficult to detect, these are the interaction biases. When the interaction is designed for a certain level of digital savviness assuming conventions that even if normal in the majority of the population are not completely internalized, then we create applications that work well for a group of people and progressively less well for other groups or **minorities.** It is difficult to detect and eradicate because application designers tend to use tech standards for the user experience that are pretty high-end and respond well to techies but less well to a more general public. Remedies go in the direction of adaptive interfaces of different applications.

# 4.3 Government as a Platform and Opening the APIs

There are however opportunities in this transformation and in this expansion of public services. We have already mentioned one, that is the expansion of public services at no additional cost benefiting from the fact that the construction of digital services is cheap, relatively easy and fast.

Another opportunity comes from the concept of government as a platform, transferring the idea of platforms that had so much success in the private world.<sup>11</sup>

Platforms orchestrate the infrastructure and the basic building blocks, but the ones that provide the services are the participants. This is the case of Uber or Lift where the platform does not own any car, or Airbnb where private users own and manage the apartments.

Similarly, cities and regional governments could manage the data

#### and the backend services opening Application Programming Interfaces (APIs) to the public so that the actual service could be managed by third

**parties**. Let's see a very simple example of this, paying a traffic fine. Cities could open the APIs so that any organization such as all drivers' associations around the world could manage the payment in the name of the driver. Following the same pattern, we can imagine customized front-ends for specific languages or communities or specialized software that deals with tasks such as taxes (e.g. Intuit software in the US).

Government as a platform looks natural in digital services because of its modularity and the fact that distributed APIs are already widely available across the industry and microservices the emerging way to deliver software. However, this is not restricted to digital services. Decomposing services into parts is very well known. For example, Uber broke the taxi services down into several parts: locating a cab, hiring it, giving the destinations, getting an estimate of the fee, paying for the ride and sending feedback. Of these parts all but one, the ride, can be translated to digital functions. In a similar way, gov functions can be decomposed and the framework of gov as a platform applied. Not only that, functions can be carried out not by the administration but by third parties.<sup>12</sup>

We have seen how Digital Services is an area full of problems but also full of opportunities. How to materialize the opportunities while avoiding or at least minimizing the problems is the key question to solve. In order to solve it technical capacities in the administration must be in place. without that opportunities cannot be materialized and the difficult problems such as biases confronted. However, this is not enough, because digital services will in many ways redefine the way that the administration designs and provides services. This requires market and institutional designs to be created, validated and have the room to evolve and this also requires a society that can sustain and contribute to this process. Of course, this is not the only way. As we can observe, centralized and authoritarian solutions also exist and may have more chances of designing and implementing these new running services than democratic societies, and this poses an additional challenge to the process.

#### 5.Digital Citizenship

The digital disruption changed many things and among them was the way we socialize. This has probably been even truer during the pandemic where even the relationship with our close family was via Zoom.

However, digital citizenship did not change as much as our understanding of all other ones. There have been, however, explorations in three areas that are worth mentioning. Firstly, in terms of digital rights that have been very present during the pandemic. Secondly, in terms of participation and how to structure this participation using digital tools. And finally, in what it means to be a digital citizen and with respect to online contribution.

Digital rights have certainly been at the forefront during the pandemic. Rights of free movement, free speech... But some not so obvious ones appeared. This has been the case of housing rights which exploded in many parts of Europe and which lead to rent limitations in several cities as a measure to make housing more affordable.

However, digital rights in terms of privacy, data protection and algorithmic transparency have been at the center, leading to a proposal for EU regulation of AI by banning imaging recognition in public spaces and the identification of high-risk systems which will be subjected to assessment, logging, documentation and human oversight. Governance and enforcement are also contemplated with some relevant omissions such as algorithmic biases.

Probably more relevant for local and regional governments has been the attempt to evolve citizen participation to digital participation. Although Zoom meetings have replaced face to face ones all over the planet, this has not been the case for citizen participation.

One interesting project worth mentioning is , an open source participatory platform being used in **Barcelona** (Spain), **Helsinki** (Finland), **New York City** (US), **Mexico City** (Mexico) and many other cities around the world. Also, runs "Decide Madrid" and projects in many other cities in Spain and Latin America.

All these platforms feature proposals, debates, online voting, collaborative legislation and participatory budgeting and have been tested in many pilots with varying degrees of success. Although all these platforms show a level of UX that is not a match for established commercial platforms, their main problem is citizens' incentives to participate. It is often difficult to see real results and valuable contributions coming from the considerable amount of time invested.

# Platforms for massive online participation remain an open field

of study. The problem of offering a fast snapshot of the discussions that are happening in the platform or recommending where your participation will be more valuable, are among others, problems not yet solved once you scale up the number of participants. Also unsolved is the fact that these platforms often get kidnaped by the most vocal participants, particularly if they have a specific agenda, thereby silencing the majority. There is no doubt that Al will help to solve all these problems at some point, however we are not there yet.

#### A completely different approach has been taken by **projects that seek to integrate citizens in the tasks of the city and by doing that lowering costs while providing a sense of increasing ownership of the city, of renewed citizenship**.

An example of this type of project is "Adopt a Hydrant" from **Boston** (US). Because of sudden snowfalls hydrants become damaged. Identifying which ones are in working condition and which are not is a huge task that can be solved easily with citizen collaboration. This is where the idea of "Adopt a hydrant" comes from. If only a few citizens take responsibility for the hydrant in front of their houses, they can be asked by text to report if any of them is not in working condition. Because a hydrant will be adopted by more than a single citizen, errors and inconveniences to citizens are minimized and in a few minutes all the hydrants in the city are checked.

This app has been exported to other cities with different purposes, such as adopting a bench. However, the idea is always the same, to crowdsource some of the work of the city, in this case with the explicit participation of its citizens.

We also have apps that allow implicit participation. For the sake of the example, we can mention another app, also in **Boston** (US), that automatically detects potholes and prioritizes them while you drive, using your mobile as a sensor.

A different interpretation of Digital Citizenship is the "Social Points" program in China, where citizens are awarded digital points for their behavior, and they are taken away in the case of infringements that can be as simple as crossing a red light or inadequate comments in WeChat. Not everything is negative, there are also some pilots that award points for recycling correctly or contributing to the community.



Hydrants in Boston according to BostonMaps Open Data. (Source City of Boston)

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# 6. A New Digital Policy

#### The Digital Disruption brought by technologies such as AI and Cloud and greatly accelerated by the COVID-19 pandemic had implications in terms

of policy. Firstly, by showing the limits of existing regulations. Secondly, in emerging new social goals and the need for new remedies to the novel problems that appeared. Thirdly, by questioning the policy instruments themselves. And finally, by asking for new ways to orchestrate the digital ecosystem. Therefore, the Digital Disruption was also a disruption in terms of policy, that is still not closed.

During the last years, partially because of the pandemic but not only, we have witnessed the limits of regulation. Privacy has probably been the most notorious right in check. COVID-19 exposed the use of image recognition cameras in many countries and to what extent our data and lives in general are exposed. All this was well-known but its use in some countries to enforce confinement surfaced the worst aspects of it.

However, it was not only privacy incidents such as "Volkswagengate" that showed the importance of algorithmic transparency particularly in the case of algorithms used by the Public Sector, particularly police, but not only them.

On the other side of the Atlantic pressure has been mounting on social network companies with respect to their role in information, particularly in two areas, firstly as echo chambers. Social network companies aim to capture user attention by diffusing popular messages, messages that will resonate with each of us. This automatically leads to avoiding any cognitive dissonance and favoring messages that are coherent with our views of the world, leading to echo chambers, where all the messages that we receive go in the same direction and with a similar content. The use of fake news in these echo chambers. exacerbated the situation even more. We all watched in amazement and disbelief as the consequences of these echo chambers in situations such as the attacks on the Capitol unfolded.

All this led to mounting pressure on the EU to regulate the use of AI. At the time of writing, a draft is already out for public consultation. This new regulation addresses some of the risks regarding privacy, transparency or bias, with bold moves such as banning public face identification in Europe.

#### However, problems such as the new digital divides, fake news, echo chambers, digital natural monopolies and most significantly the inequality brought about by these monopolies are still unsolved.

Challenges to policy however did not stop policy goals, and the limits of regulation and policy instruments themselves are being challenged. This is not new, arriving at a consensus on regulations and hoping that it will work in complex and moving contexts has not been working well for a long time. For example, you create a policy and businesses rapidly find a way to bypass it, then it takes years until a new policy is put in place and weeks or days until it is bypassed.

However, if the aspects that are not working are few or at least nonessential, administrations are used to dealing with outdated regulations which are then circumvented in order to obtain results.

Data-driven and experimental policies as new ways of solving these problems have been around for a long time, and by this stage we know a lot about how to implement them. Unfortunately, the way that legislation is created does not align with any of these methodologies. COVID-19 has put regulations around the world to a severe test and the result has been disappointing. Agility in policy is needed if we want not only to face the next pandemic but to have an efficient administration that can deal with and shape the objectives and the complex environments of this century.

On top of this, a solution needs to be found to the needs that emerged in the Digital Disruption in terms of data governance, data commons, public APIs and in general public governance of all these new instruments. **Policy needs to become digital too in order to face the realities and the demands of a world that is becoming increasingly digital and is innovating at the speed of light.** 



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