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STATE SOVEREIGNTY AND CAPITALISM'S RELATIONSHIP IN THE DIGITAL AGE. A CRITICAL ANALYSIS OF PLATFORM CAPITALISM, COLLABORATIVE GOVERNANCE, AND BIG DATA.

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Abstract: The aim of the research is to analyse the relationship between state sovereignty and market capitalism starting from the '80s in the western countries, after the advent of the new Information and Communication Technologies (ICTs). In order to do so, the thesis will display a schematic critique of the new forms of platform capitalism, platform urbanism, and big data analysis. The chapters will follow the three power relations between state, market, and citizens, assessing the various problems concerning the use of big data, such as security issues, exploitation, extraction of value, and democratic accountability. Apart from an organic critique, the following research's main thesis is that collaborative governance is a new conjunction ring between capitalism and state power, that brought into existence a new market of public service delivery and a sell-out of state's political legitimacy. In the first chapter I will outline the historical framework that brought the diffusion of the ICTs, marking out the economic and political changes following the '80s. The second chapter will analyse the power relation between State and citizens. Following the two cases of Cambridge Analytica and Edward Snowden, I will discuss the evolution of state security and the riskiness related to big data for the democratic accountability. The third chapter will discuss the power relation between citizens and the market, discussing the platform capitalism, the gig economy and the new forms of extraction of value related to the use of big data. In the fourth and last chapter I will examine the platform urbanism and the critiques concerning the Smart cities. With a critical perspective about collaborative governance, I will assert that in the last decades a new market based on the public service delivery has expanded, creating accountability and legitimacy issues for the western democracies.

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The process of continuous neutralization of various domains of cultural life has reached its end because technology is at hand. Technology is no longer neutral ground in the sense of the process of neutralization; every strong politics will make use of it. For this reason, the present century can only be understood provisionally as the century of technology. How ultimately it should be understood will be revealed only when it is known which type of politics is strong enough to master the new technology and which type of genuine friend-enemy groupings can develop on this new ground.

Carl Schmitt – The concept of the political (1932)

Introduction

Starting from the studies of Michel Foucault, the following research draws a critical analysis of the latest tendencies concerning state sovereignty and market capitalism, identifying the new information and communication technologies (ICTs) as their quintessential instrument in the last few decades. A discussion about state's power without an economic critique can be rightly considered partial, but it could be just as partial without an analysis of ICTs. Data gathering and analysis today are everywhere, they are used to move votes, to empower multinationals, to build our cities and earn money from us even having us not knowing when. The present study has two aims: the first is trying to draw an organic overview of the impact that ICTs, in particular big data analysis, have had on the relationships between state, market, and citizens; the second is to show that collaborative governance is a new conjunction ring between capitalism and state power, that brought into existence a new market of public service delivery and a sell-out of state's political legitimacy.

The thesis uses a political philosophy framework, even though many instruments coming from the political sciences have been implemented. The baseline conceptual instruments for state sovereignty and power relations come mainly from Michel Foucault and even though he will not be widely discussed, an explanation of the main notions will be provided. The research uses the conceptual framework drawn by Michel Foucault regarding the biopolitics and the "*gouvernamentalité*" as analytical tool, to direct the structure of the thesis. In fact, the research's structure follows the power relations between state, market, and citizens, with the belief, inspired by Foucault's "*journalisme philosophique*" (philosophical journalism), that the focus of the philosopher should be to give a diagnosis of the reality nowadays, opposing the imposed power. Recalling the two courses that Foucault held to the "*Collège de France*" since the 1977 to 1979 (Foucault, 2005a, 2005b), I outline some of the main concepts that will be used during this research. The first above all, is the concept of power. Power is not a thing, rather it is a relationship, and only the opposition to it makes it visible. Resistance shows power relations, and power seeks dominance through strategies that research constantly new devices to achieve it. Hence, the power structures that are most difficult to understand and analyse are the ones in which opposition is hidden or does not exist, featuring people that accept,

fear, or worship that kind of power. The second concept is "*gouvernamentalité*". With this term Foucault identifies three things: first, the set of institutions, analysis and reflections, calculations and tactics, typical of the specific form of government which has population as its purpose, political economy as a privileged form of knowledge and security as the essential technical tool; second, the long-term trend in the West of the primacy of power in the form of government over others, such as discipline or sovereignty, with the consequent development of related tools and knowledges; third, the process by which the medieval state of justice, which became an administrative state during the 15th and 16th centuries, gradually turned into a "governmentalized" state. To govern is not to reign, nor to legislate, nor to command. Governmentality has marked our era since the 18th century, however I will not go too much into historical details. What is crucial for us is that already in the '70s Foucault outlined the state as dependent by the economy as knowledge tool, and it is not a case that he described widely the new neoliberal and ordoliberal tendencies speaking of biopolitics. Since the '80s, a new economic model has spread in Western countries, followed by a government's tendency to go deeper and deeper into the citizens' lives. Politics invaded the particular and personal lives of people, having as main target of knowledge and dominance the population and the civil society. The concept of biopolitics represents this trend, featuring the state governing the *bìos* of the citizens and erasing the boundary between private and public (Chignola, 2014). Targets of the biopolitics are the birth and death rates, the citizens' data, and their conversations. This tendency has grown during the years with many implications that will be analyzed in the following chapters.

The chapters will be divided following the power relations between state, market, and citizens. The first chapter will draw the historical framework of the evolution of technology. Starting from Turing to the advent of the internet, I will disentangle the process, not granted, that created the prerequisites to the digital age. The main historical period taken in exam starts from the '80s to nowadays for several reasons. Every process does not start and does not finish in a precise moment, rather it is something that in a certain period of time gains relevance for a number of reasons and become more "visible". The '80s have been a cleavage period from both political and economic perspective and constituted the fertile soil for the expansion and instrumentalization of the ICTs. I will draw a red line through the neoliberalism, the weakening of monopoly laws, the dot.com

crisis and the 2008's crisis, explaining how these events have created the opportunity to the birth of Silicon Valley's multinationals and the implementation of ICTs as mean of high risk – high profit for start-ups and enterprises. The last two decades of the 20th century have also seen the implementation of new forms of governance, in which the state, under the will and the request of more and more services has begun to delegate to the market the most part of the infrastructural works and implementation activities. State power and market capitalism have a new link in the governance, and they use the new ICTs as outstanding instrument. The statistic of the biopolitics has evolved thanks to the analysis of big data and the market of public service delivery has grown as main field of the national and multi-level governance. The second chapter will describe the power relation between state and citizen, focusing in particular on the problem of security and state control. Many are the problem related to state's control over ICTs, but the aim of this research is not to disentangle every state and democracy issues related to the ICTs, such as cybersecurity or digital democracy, rather to understand the power structure that these new technologies have created between modern states and their citizens. In order to do that, the chapter will go through two of the most important scandals of the last two years: the National Security Agency's (NSA) information disclosed by Edward Snowden, and the Facebook-Cambridge Analytica case. The first case will be used to problematize the mass data gathering due to enforce security control, and the power that state can have on citizens without democratic accountability, while the second case will show the use of citizens' profiling to create political mass consensus, to show the fragility of democratic legitimacy in front of mass data analysis. The third chapter will examine the value extraction's methods used by the new ICTs' firms. Crowdworking, gig economy, platform capitalism and surveillance capitalism will be dealt with in this part. An organic overview and categorization of different forms of platform will be supported by a critique of the methodology used on workers and citizens in order to have a profit. The research will categorize the different forms of employment and the effects on workers, and the transformation of the citizen-subject in mere profiled user. In the chapter will be examined specific multinationals and their functioning such as Amazon, Uber and Facebook. The fourth and last chapter will show the power relation between state and market, focusing on platform urbanism and Smart cities. Starting from a critique to collaborative governance and the changes related to the public service delivery, I will try

to underline how important it is to understand the new forms of urbanization and how this affects power control over the citizen and the territory. In this chapter too I must underline that the issues concerning state and market related to ICTs are not only the ones linked to urbanization and governance. But the research's aim is not, as I have already said for the first chapter, to examine all existing issues related to state and market relation, rather to show the new trends of the power structure surrounding them, which are represented by the platform urbanism and collaborative governance. The conclusion will sum up the findings and draw the red line of the research.

Chapter 1. The spread of the ICTs. An historical framework

1.1 The creation of a new intelligence

Since the beginning of the thought about AI there were two main fields of study. The first, focused on the AIs, wanted to create an instrument capable of understand and use a form of language, the second, the cybernetic, had the aim to merge machine and human body in order to enhance this latter. The Alan Turing's project, one of the fathers of computer science, was to create a computer in order to develop intelligent machines. Studies on AIs begun to create a language that would make humans able to "talk" with machines. The new language was constituted by algorithms and tried to communicate and control the machines, but soon problems transpired (Numerico, 2021). The work of Alan Turing on the AIs had the aim of erasing the uncertainty of human mind creating a perfect logic machine, this has completely changed today. While the initial aim of the AI was to create impartiality, today is to be efficient; while at the beginning its purpose was to ameliorate human thought, today it is to recreate and foresee it.

In order to create a machine that thinks, Turing had to create a "memory". However, this memory was not just a storage of information, but was created to have the capacity to extract the demanded data from the list, in this way was created the ability of sorting. The evolution of the sorting is exactly the capacity of the machine to adopt dynamic solutions and orders. This evolution has been seen in the programs that accomplished to defeat opponents in games such as Chess or Go. On the other hand, the cybernetic and its creator Norbert Wiener had another objective: analyse devices' communication and control possibilities. Until the new century the cybernetic branch had far more success than the one concerning AIs, giving birth to some of the most successful innovations in informatic, for example the object-oriented programming, featuring the possibility to click on icons and the division in thumbnails, windows and groupware. To make a difference between the two, it can be said that while AI was interested in the recreation of the mind, cybernetic was focused on the brain (Numerico, 2021). In 1968 an article written by Joseph Licklider and Robert Taylor (Licklider & Taylor, 1968) fostered what later would have become the internet. The idea that computers could become a means of communication between other computers and humans gave birth to the ARPANET that in the Information Processing

Technique Office (IPTO) of the Advanced Research Projects Agency (the future DARPA) became the beginning of the experimentations on human profiling to foresee human behaviour.

At the end of the last century the world wide web faced two opposite models: one was that of Tim Berners-Lee, that had its roots in the scientific field, and the other was that of the venture capital firms. The first model was based on the gratuitousness and sharing of its contents, anchored by the cybernetic thought that information was a process and not an ownership, the second model saw in the world wide web an opportunity for profit. Today we know that the second model is the most present but it is important to underline that it was not predetermined, rather it was a specific economic system that evolved this way. In fact, at the beginning, between the March of 2000 and the October of 2002, the incapacity to monetize from the content brought the informatic market in the so called dot.com crash, and the use of Big data for profit purposes begun after this crisis of the sector. In this period a new profit-based model created by Tim O'Reilly called "Web2.0" started to circulate in order to revitalize the economic attractiveness of the internet. The model that displaced the free one of Berners-Lee, was based on two main characteristics: giving to everyone the tools to create digital contents, and the management and standardization of the latter, in order to make them available to the masses. In fact, before these years the creation of contents and the internet was mostly exclusive to the ones that had the right informatic abilities. The Web 2.0 has given birth to platforms such as Facebook, Twitter, Youtube, ecc, namely platforms that profit from contents generated by users that are sold to other users. Amazon and Ebay use the same categorization and standardization for their products. The tools to profile and categorize the users and their preference have evolved, the first to monetize on them being Google, through the users' research, while Facebook was the first to invent the reactions, so to say a wider qualification of the users' categorization. Berners-Lee and others noted the criticisms related to this business model, even for the fact that the platforms had the tendency to take ownership of the users' contents and bind them to them. This is something that today has become clearer and clearer, having platforms to contend the creators' presence to attract users. Being for money, gratification, or followers, each platforms has the aim to aggregate the largest number of people in order to collect their data and sell their behaviour. The process has become quite clear: standardization of contents, profiling of

the users, and ownership of the data. To understand the difference between selling a product before this process and after, we could say that before was like selling a shop's window, trying to be on the more frequented streets, today is like having the specific product in which the person has shown interest, that walks directly to him.

It is important to outline that advertising was not the initial aim of the profiling models and technologies. It all begun with social studies, that were born exactly to study people's behaviour and societies structures, in order to understand but also control them. In fact, internet was born from a military defence office. In this sense we could say that a statal power device for knowledge has become a device for value extraction by the market.

1.2 The economic framework

As previously outlined, the transition in the new system of power has been relatively long, in fact even if I used the '80s as decade of reference, the process has ideologically started with the '68's movements, and economically with the crisis of the '70s (Mezzadra & Neilson, 2019). Furthermore, the use of the ICTs that is analysed as an essential part of the new power asset hasn't taken this connotation before the dot.com crisis at the beginning of the new century. Systems change slowly, even if there are certain events considered historical turning points, these are just social agreements, this is just truer talking about economical or power systems. New social and political systems always bring certain assets from the previous system, but with time the old assets become less and less influent.

In the book "The new spirit of Capitalism", Luc Boltanski identifies three "spirits of the capitalism" in order to give an organic evolution of the economical industrial system, taking the France as case study of the western countries (Chiapello & Boltanski, 2014). Before the Wall Street crash of 1929, the bourgeoise strongly relied on their patrimony to do business, in fact their earnings as members of an organization were not called "salary", because the term was only referred to the working class. In the middle of the '30s many people of the middle class were afraid of unemployment and of the possibility of a communist revolution carried on by the working class exploited in the factories made more real by the strikes of the '36 and went towards the fascisms. The inflation of the '20s and the '29's crisis had greatly reduced the big patrimonies, making the middle

bourgeoise become wage earner, mostly as engineers, and moving the high bourgeoise towards the stock market as actionists. Their lifestyle became much poorer adding themselves to the request of social security. In fact, the working system went from a system based mostly on the stability of the familiar nucleus to one that relied on social security assets for employees. Pension schemes for the cadres, increasing importance of the study title to access to the most ambitious positions, easier and more regular progress of personal career, introduction of the public health insurance, more stability of the incomes following price adjustments, and other assets gave the possibility in the second post-war to have a bourgeoise lifestyle even for the employees. These assets begun to falter in the '80s, in particular the relevance of study titles, the stability of careers and the retirement's insurances. In short, three periods can be identified:

1) Before the second post-war: a system built on the ashes of the aristocracy, with high patrimonies and based on the families' economies. The main figure is the businessman, captain of industry, and conqueror, moved by a deep belief in human capacities, with a specific focus on speculation, risk and innovation.

2) Until the '80s: a system of public insurances based on the management of the cadres, that gave access to a larger part of the working class, enlarging the bourgeoise. The system begun to collapse ideologically with the movements started in May of the 1968 and economically with the crisis of the '70s. The main figure is the big bureaucratic firm, an organization of men and not a single individual, run by the manager, who does not seek a personal profit but the enlargement of the organization. These industries were focused on economy of scale, mass production, and enlargement of the market with new marketing techniques.

3) After the '80s: a system based on the neomanagement, with forms of auto control and a less hierarchical structure. The system that at the beginning of the new century found in the new ICTs the perfect instrument to reproduce and enlarge the capital. The main figure is the worker performing project-based jobs focused on decentralization, meritocracy, and objectives-focused management. The new firms seek flexibility, innovation, and high specialization.

Each of these systems needed legitimization[1]. The capitalism of the '20s and '30s grew with the opposition between bourgeoise and working class, the '60s saw the contraposition between the liberal system of the United States of America and the planned economy of the socialist countries, instead the '90s have seen the globalization and the creation of a multipolar asset, with the entry first of the Japan and later of China. Since the '80s the neoliberal system has not seen neither a strong political legitimization nor a strong ideological and political opposition, most part of social movements pursuit only the humanitarian dimension, usually evading the political one. This is justified by many factors, such as the delocalization of the working class, however it can be noted that the need and justification for new social movements are present, and that many of them have already been created, even if a strong political movement capable to change the system, as it happened during the '60s and '70s, is far to be seen.

The main critiques found in the management literature of the '60 are two: the high dissatisfaction of the cadres and the gigantism of the companies. The cadres, especially the young ones, have the feeling to represent modernity and criticize the excessive bureaucracy given by centralization of increasingly large enterprises, requesting more autonomy and a less pyramidal chain of command. The neomanagement is the fruit of a class of cadres that saw themselves as the emotional representation of modernity and the bureaucracy as the cold, calculated, and inefficient representation of the familiar-based economy. Bureaucracy and control became something to dismantle, creating a new ideology based on the clients' satisfaction as top ideal to reach. Neomanagerism features forms of auto control and more horizontal structures, giving the clients the power to evaluate workers based on reputational mechanisms. However, the request of more flexibility and autonomy have brought also less security for workers. The national labour agreements stipulated during the '60s and '70s have been deprived by the creation of numerous new forms of work that are difficult to be ascribed in the old legal framework, leaving many workers without rights. Many of these neomanagerial assets have been

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[1] Speaking of the neomanagement, Boltanski underlines that the new system features a very weak security asset for the work, based mostly on projects and creating many possibilities of precariousness (Chiapello & Boltanski, 2014). In this regard, he outlines that a system like this cannot go on for much time, lacking a steady system of legitimization. However, I have to underline that these problems identified in the '90s have only become bigger in the last two decades, showing that a system, even if unstable, can still work for a long period, without a strong social movement that forces it to change. Furthermore, speaking about neoliberalism, Foucault outlines that this presents a system that gives more and more freedom to people leading them in a constant research for security (Foucault, 2005a). I am inclined to assert then, that the last decades show that the weak security for work is actually an asset of the actual capitalistic system, and that is not an indicator of a near change.

enhanced to the extreme by the new ICTs as we will outline in the next chapters[2]: auto control and reputational systems will become constant evaluation for the workers, the project-based model will create microtask's systems and Crowdworking, horizontality will be transformed in the disintegration of the regular careers' perspectives, flexibility will give employers more power on the employees, creating more easily formed precarious groups, and so on.

The new capitalism has been built on the ashes of that of the '60s, dismantling many achievements of the previous generation. The firms, in order to cope with the tougher economic situation, have found new ways to engage cheap workforce, bypassing the labour regulations, fighting labour unions, and creating new forms of Taylorism in order to enhance the work chain to the detriment of the employees. Since the '80s subcontracts, temporary works, and part-time jobs have become more and more used in order to evade regular employ contracts. Firms turn into complex and variegated system, in which many different contractual typos come together. Differentiating the typologies of the workers is used to weaken social struggles too: in order to create compact lobby groups, workers need to fight for the same demands. However, different contracts create different pressure groups, dividing the workers' political requests. This can be easily seen by the different groups working in the contemporary gig economy or Crowdworking: it is difficult for the legal framework to create new legal typologies that can bring them together. The new model of work is based on projects and on the creation of networks. Emotional, social, and soft skills became more and more important for workers to get recruited. The tertiary sector turned into the main field of employment. Services grow into the largest working sector of the western states, relocating many manufactories and industries in the less developed countries[3]. Adaptability turned in the most requested ability, leaving the most fragile groups in eternal research for temporary jobs. Immigrants, old and less formed workers, have been systematically rejected, creating more and more sharp division in the

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[2] Another thing that can be noted is that the change of these economic structures can be easily related to the evolution from the disciplinary state to the biopolitics outlined by Foucault (Foucault, 2005b, 2005a), furthermore the project-based management of the '90s has given birth to the collaborative governance, and it is easy to see that the evolution of the public management has gone deeper and deeper in the citizens' lives, showing a deep correlation between the economic structure outlined by Boltanski and the power structure described by Foucault. However, this will be better discussed in the next chapters.

[3] Delocalization has brought the formation of new relations and power systems related to forms of colonialism, and western capitalism is still deeply dependent from this latter (Mezzadra & Neilson, 2019). New ICTs have had a huge impact exacerbating the division between first and third world. Industrial production and raw materials come almost exclusively from the developing countries, creating new forms of enslavement and rougher systems of surveillance. However, unfortunately, this differs from the aim of this research and will not be deepened here.

working system: one part with a certain security and the other in a situation of constant instability. The only countertrend is represented by the women, that have seen generally a growing employment rate. Work unions have weakened since the '80s, attracting less and less members, fighting for more and more general demands and accomplishing less and less results. This has been due the counteractions of the firms, a general political disengagement, and a dilution of the classes. Quoting Pierre Rosanvallon, Boltanski (Chiapello & Boltanski, 2014, pg.364) asserts that since the '80s social classes have merged: income, culture, and profession, are not strictly intertwined as before. However, instability and economic disparities have been growing.

The crisis of the '70s have been generated by the oil crisis and by a deep crisis in the American manufacturing due the overproduction. On the 15 August of 1971 Richard Nixon suspended the convertibility of the dollar in gold decreeing the end of the Bretton Woods system. Germany and Japan have been the first to be dragged down by the USA, bringing a recession that lasted twenty years. In the '90s western economies were seeing a slow recovery, with the only exception represented by the bubble of the industries related to the new ICTs and internet (Mezzadra & Neilson, 2019; Numerico, 2021; Srnicek, 2017). Technological development is essential for capitalism and the creation of new forms of value extraction. The boom of the ICTs sector was built by the commercialization of the internet, which since then had been for most of it without the aim of profit. Between 1997 and 2000, tech stocks triplicated their value, reaching a market value of 5 trillion dollars. At its peak, almost the 1 percent of the USA GDP was represented by the risk capital invested in tech firms (Srnicek, 2017). This boom gave the possibility to create infrastructures that sustained the diffusion of the new ICTs and the wide scale commercialization of the new devices, first of all the personal computers. Then between March 2000 and October 2002 the bubble exploded. This was caused by the inability of the tech firms to earn from the advertising and by the users' activities. This created the need to research new way to profit from users. However, the tech firms have always had shares with high risk but high profit possibility. When in 2008 the USA real estate market crashed together with the American bank system, it has brought national government to adopt forms of austerity. However, the banks used monetary measures to revive national economies, taking the interest rates low, this direction brought the investors willing to earn more money towards more risky assets, represented by the tech

sector. Austerity and monetary policies have strengthened the tech firms that have become giants, thanks to workers' exploitation and tax evasion activities that were perfect for their nature, given that they have only to transfer their intellectual properties in other fiscal jurisdictions in order to evade law enforcement. As can be seen in figure 1.1, the amount of money held by tech companies in offshore areas are enormous. However, the new forms of value extraction from both workers and users will be explained in the next chapters.

	Reserves (billions of USD)	Amount held offshore (billions of USD)	Amount held offshore (per cent)
Apple	215.7	200.1	92.8
Microsoft	102.6	96.3	93.9
Google	73.1	42.9	58.7
Cisco	60.4	56.5	93.5
Oracle	50.8	46.8	92.1
Amazon	49.6	18.3	36.9
Facebook	15.8	1.8	11.4
TOTAL	568.0	462.7	81.5

Figure 1.1 Source: 10-Q or 10-K Securities and Exchange Commission (SEC) files from March 2016 (Srnicek, 2017).

In sum, the ideological fights of the '68 and the crisis of the '70s have created the neomanagement and an economical and industrial structure with more flexible and weak workers' unions and organizations, dismantling the previous standardized careers and contracts. The dot.com crisis and the 2008 crisis, started from the Lehman Brothers' bank, built the fertile ground for the mass production and diffusion of the new ICTs and digital devices, bringing what has been called the digital age, with its flaws and its merits. This research tries to draw an organic and schematic critique of the main tendencies creating new power structures that have arisen from these specific developments in the western countries.

1.3 Big data and algorithms' issues

Information is not something that came up with 20th century, it has always been important for most aspects of human societies. However, new technologies have created tools that can easily transform information into data, gather massive amount of them, and, most importantly, analyse them in order to extract patterns of behaviour. The term "Big Data" indicates data sets so large that cannot be dealt with traditional processing software, they could be described as "the capacity to search, aggregate and cross-reference large data sets" (Lyon, 2014). Big Data give people, actually to small groups of people, a capacity of forecasting that has never been possible before in human history, allowing them to understand the behaviour of specific masses of people related to the data gathered and their aim. Big data can be used to sell you toothbrush or to push you to vote a specific political party, and the dataset used would be the same. In this paragraph I will outline the major problems that will be discussed in detail in the next chapters.

To understand which problems are related to big data, I first need to explain what they specifically are and how do they work. Big data are not normal data sets, they have specific and peculiar characteristic that could not appear in data sets before the ICTs' contemporary development. Big data are data sets that present huge volume, high velocity of production, wide variety, exhaustivity in scope, with the aim to capture entire populations of systems, high detail, able to connect different data-sets, flexibility (Lyon, 2014). The use of Big data is not based on models, but on correlations. That means that what is important is not the overall sense and the analysis does not research it, rather they are processed in order to find a pattern in the massive quantity of raw data and in this way to predict a behaviour. In fact, one of the risks related to them are the spurious correlations, so to say arbitrary relationships that are meaningless from a real variables' interdependency perspective.

The data can be of three main types depending on their sources: directed, when a person obtains the data; automated, when a system's routine gather the data without a human operator; volunteered, when the users give out their information. The union of these three sources creates a massive quantity of data that can be used for different purposes, hence both political and commercial, thanks to their ability to be linked with different relations and subsets, resulting then in different final correlations and new information.

The extension of these bulk data creates a completely new potential in their possible uses. There are at least three consequences that can be foreseen (Lyon, 2014). The first is automation. The availability of these massive amount of data at a relatively low price will incentive the use of algorithms and automated systems not only in surveillance field. People will give more and more importance only to the management and maintenance aspects of automated systems. The second trend is the anticipation. Since the 1990s risk-management and insurance techniques have become more and more complex in order to predict possible outcomes. Anticipatory surveillance has become increasingly important from both a political and economic point of view. Big Data give systems the possibility to "connect the dots" and calculate a much more precise probability that a certain event might happen. This capacity is positive from a certain aspect, because allows to prevent a wide range of incidents and to create more efficient policies, on the other hand, however, it creates automated decision-making's practices, underestimating the role of discretion and creating more clear-cut social divisions. The third consequence is adaptation. As can be noted, what the National Security Agency (from now on NSA) and Google do, for example, is essentially the same thing: they gather metadata and use them for their purposes, in Google's case for economical aim and in NSA's case for surveillance finality. Metadata can be used in different fields depending on who is analysing them. The trend that has been seen is that more and more often data will be adaptable for different purposes by different agents, making their sole existence a possible harm.

After having explored what are big data and some of the tendencies that their gathering can create, I will sum up the main issues concerning them that will be explored during all the research. To do so, the best way is to divide the problematics between the big data's gathering, processing, and use phases.

The main issues related to the gathering phase are:

1) The safeguarding of the citizens' privacy – it is important to notice that privacy does not mean only personal privacy. In most cases, actually, to whom gathers personal data is not important the single name, rather the correlation in a mass of people. It is not important that one person does something specific, rather that many have the same behaviour. This means that privacy must be intended in a broader sense in order to defend, first of all, the use that companies and states do of mass gathered data.

2) The creation of an automated and uncontrolled system of data gathering - some tools, once invented, shape the structures that use them. The power that data have acquired is changing our social structures creating automated forms of data gathering in each aspect of our life.

3) The inadequacy of the data gathered - there can be several issues related to the unsuitableness of the data: the presence of old data, the impossibility occasionally to relate data with different gathering methods, the partiality of certain sets, and the malicious use of them for political and economic purpose.

On the other hand, the problematics related to the processing phase of the big data are:

1) the unverifiable and unsecure system of machine learning - the data science has as specific aim: not to understand the data sets, rather to recognize the future pattern of a specific data series. To do this, machine learning tools are used, and the most successful one is that of deep learning. The pattern recognition does not research a cause-effect correlation, rather a generic link between two data series.

2) the creation of a new type of archive of knowledge – the methods used to gather and process data represent also our new way, as a society, to create and store information. Paraphrasing Foucault, the archive of a society is the complex of processes and regularities that creates the system of discursivity, that ensures that whatever is said makes sense in the wider meaning of social significance. The way of process and store data shapes this archive of knowledge, so it is of primary importance that this is not held by those who just want to profit from this processing.

In the end, the most important and critic phase is the use of big data. Big data can be used:

1) for political purposes, mining democratic accountability and elections - before the 2000 who collected data was also the one that used them for scientific purposes, but today that is not true anymore, and this can be a problem as, for example, the Edward Snowden's case will show in the next chapter.

2) to extract value from workers and users – to make an example, the data are sold for profit to a lot of actors. The first party data owners, so to say the platforms that collect them, and the second party that receive them directly from the users, sell a large quantity of data to the third-party owners, also called "data broker".

The data brokers use these data, frequently with many flaws, and use them for information transactions that impact our lives. These profit activities go from retailing to telecommunication, financial, public, and media services. In fact, since 2019, the Vermont has bound these firms to be publicly registered. (Numerico, 2021).

3) to control employees – as it widely happens in Amazon, just to mention a name. Information disparity means power disparity, and contractual power of workers most of the time depends on the fact that the owner needs them. However, having many data on workers means to have the power to foresee their behaviour, to select the easiest to subjugate, and to use specific strategies to make them work harder but with lower prices.

4) to create a new power structure, difficult to retain just and accountable to citizens – this is evident in how difficult is for the legal system to control the new platforms using the old legal framework's categories.

Chapter 2. State sovereignty and data control. The power relation between State and citizens

2.1 State security, privacy, and democracy

Michel Foucault took the concept of Panopticon from Jeremy Bentham in order to describe a society in which we are constantly overseen and controlled. In his book *Surveiller et punir* the philosopher is talking about the two models of state security, the one of leprosy and the one of pestilence (Foucault, 1975), but today panopticism is used also to describe, maybe even with a stronger analogy, the constant surveillance of western societies on citizens through the ICTs (Manokha, 2018; Scholz, 2012). However, unlike the Panopticon, people know that they are overseen but accept this system and even welcome it. The philosophical discourse concerning privacy dates back to the early 1970s, and features two different points of view, one seeing privacy as a matter of control, and the other as a matter of access (Macnish, 2018). To better explain, one opinion is that privacy means to have control over one's data, the other is that even the access to personal data exceeds in a loss of privacy. These are not the only definitions of privacy, however, they are the most popular. In his article, Macnish argues that access is enough to undermine privacy and he makes reference to the NSA's case and state surveillance. Over the years principles to defend privacy and data protection have been created and implemented in legislations. For example, the statement on "Personal Privacy, Awareness and Control" by the IEE-USA outlines four fields of importance (Isaak & Hanna, 2018):

1) Public transparency - all parties that collect and use data have to be transparent for the public, giving access to the information about which data, how, and for what purpose have been collected. All data gathering mechanisms need to be visible to the public, including web beacons, and all tracking instruments of users' activity. All contents uploaded on users' devices must be clarified, even in their purpose.

2) Disclosure for users - each website and application must show to the user all the information taken from his activity, and if these data have been ceased to third-parties.

3) Control - the request of not tracking one's activity's information must be respected, blocking disclosure by third parties' cookies (small data sets used from websites to register and enhance users' activities on the platform that are uploaded on the users' devices). Users need to explicitly accept each data used in that sense, including partners, cloud services, and collection devices. Even after having accepted, the user must be able to delete his personal data from any of these platforms, in a way that is easily accessible to anyone. Users need to have the possibility to delete any content or application created on their devices, these contents need to be transparent, and easily findable, in order that anyone can uninstall and delete them in case they want to. Data collection needs to remain on the single user, avoiding information about his friends or contacts, given they did not consent to that. Minors need to be protected, creating a legal age under which should not be possible to release their private data.

4) Notification - users should be held informed in case of misuse or loss of their personal data and, if possible, it should be clarified the nature of the violation of their data and the responsible subjects. Advertising should be transparent and noted as paid content's supporter.

Data gathering for surveillance purpose has grown since 1990s, however the turning point in legislation and state surveillance, in particular in U. S. administration, was the war on terror after 9/11 (Mccoy, 2016). Actually, war on terrorism has always been an excuse to tighten up state security and enlarge police actions' freedom, since the anarchist terrorism in Europe at the beginning of 20th century. On the other hand, colonialism has been its testing ground, as for United States in the Philippines (Mccoy, 2016). Paraphrasing Carl Schmitt, who decides upon the relationship between friend and enemy is the one that holds political power, and security, in particular international security, has always been an easy target for political parties. However, what can be used against terrorists can be used to control citizens too, that is why it is important to impose legal boundaries, even though executives may exceed them, such as President Bush, who in the October 2001 went against FISA law, pushing the National Security Agency (NSA) to spy through the national telephonic companies the conversations of private citizens without witnessing a warrant. When we talk of surveillance we intend, in a more general way, a systematic routine of personal data gathering for a specific aim, in this case state security and

citizens' control. This is something that already existed before Big data, but they changed surveillance in two main ways (Lyon, 2014): the first is that contemporary surveillance, thanks to the new techniques, grows exponentially, and at the same time makes surveillance organizations more invisible; the second is that the expansion of citizens' daily lives' data gathering nourishes the system of data research, in a bulimic run-up to the detailed access to their information.

The cases that will be examined not only in this chapter but in the next ones too, will clearly show that not only access to data violates privacy, but also that the specific use that is made of big data gathered from the masses is the key to identify possible issues. The same data sets can be harmless or used to control people, depending on the analysis made, that is because big data are collected without discrimination and with unaccountable processes. That is why it is important to make whatever act of mass data gathering politically accountable.

2.2 The National Security Agency and Edward Snowden

In May 2013, Edward Snowden, a 29-years old employee of defence contractor Booz Allen Hamilton, entered in contact with a journalist of *The Guardian* with the intention of disclosing secret information gathered during his work inside the NSA. Snowden stole approximately 1.7 million highly classified documents attesting the implementation of secret surveillance programs with the aim of spying and gathering intelligence against its own citizens, foreign nations' leaders and other targets. Snowden sent the documents to *The Guardian*'s journalists in order to leave them the judgement on which information disclose to the public and which not. The publishing of these data brought in fact possible dangers to people that worked under covered or for the state itself, however had a massive impact showing the surveillance system that had been created.

The first document was published by *The Guardian* on 6 June 2013, but before going more into the details of the documents we have to understand better NSA's history and position (Verble, 2014). NSA was created by the cinders of a code and cipher decryption unit existing since World War I. On October 1952 the NSA took the place of the Armed Security Agency with the aim of managing military cryptology agencies and computer technology and communications infrastructures. Their role was sometimes in conflict

with the CIA and the Department of Defence. Even though after the Second World War Military and Intelligence Agencies were being scaled down, the Korean war led them to a rapid expansion, reframing the NSA as the intelligence manager of several conflicts made by U.S. troops. The NSA is today one of the biggest governmental organizations for people hired and fundings, with nearly 40.000 employees estimated and an annual budget of about 11 billion dollars (10.8 in 2013). To make a comparison, the U.S. intelligence community employed in 2014 was nearly of 107.000 people, including the CIA and the National Reconnaissance Office (Verble, 2014). The NSA was cited in various scandals during the years linked to data gathering, such as the 1975 Committee held by Frank Church, that brought to the creation of new policies to contrast domestic spying, for example the Foreign Intelligence Surveillance Act (FISA). However, these policies spared both the CIA and the NSA, and after the terrorist attack of September 11th, 2001, the NSA was granted more powers in order to fight terrorism. From Bush to Obama the NSA gained more freedom, in particular with the extension of the FISA Amendments Act of 2012, the Congress "specifically authorized intelligence agencies to monitor the phone, email, and other communications of US citizens for up to a week without obtaining a warrant, provided one of the parties to the communications is outside the US" (Verble, 2014).

This brings us to the leak of 2013. Edward Snowden, after using a web crawler software that rapidly followed the links of the net and copied everything on a simple USB, left for Hawaii and then to Hong Kong at the Mira Hotel from where he contacted Glenn Greenwald, journalist of *The Guardian*. After the journal disclosed the documents, U.S. government, at that time led by President Obama, quickly defended the NSA. After that, Snowden gained asylum in Russia where he stays still today. The charges against Snowden date back to June 14th, 2013, by the Eastern District of Virginia and invoke Theft of Government Property, Unauthorized Communication of National Defence Information and Wilful Communication of Classified Communications Intelligence Information to an Unauthorized Person. The NSA's secret program called PRISM was created having access to data from digital private companies such as Apple, Google, and Facebook, collecting mass data about citizens' communications. But the disclosed files did not talk only of the US NSA, in fact on June 6th *The Guardian* revealed that also the Government Communication Headquarters (GCHQ), the UK equivalent of the NSA, had

access to the data gathered with the PRISM program. The heads of the executives over the years, starting from Obama, have never entirely condemned the NSA.

Edward Snowden's scandal was pretty divisive as we can see from the newspapers, even though the shortly after polls showed that the majority of US citizens were against federal government policy. Public press has not answered in the same way to Edward Snowden's files. In the UK for example we have three different examples (Branum & Charteris-Black, 2015): *The Guardian*, that has published the files, has attacked state surveillance and defended its decision to publish the documents; however, we have also journals as the *Daily Mail*, which focused on the personal life of Snowden, or *The Sun*, which defended the state's action and supported state surveillance. *The New York Times* followed the same line of *The Guardian*, while *The People's Daily*, Chinese party's official newspaper, used the case to legitimate its own government without supporting digital whistleblowing, even though China presented contrasting opinions in the articles of *The South China Morning Post*, labelling Snowden rather as a hero or a villain (Di Salvo & Negro, 2016). The newspapers were not the only divided on the argument, even the scholars and the organizations that were supportive to extreme measures for antiterrorism denied the existence of state surveillance (Simcox, 2015). On the other hand, other scholar studied other states inspired by Snowden's revelations (Tiainen, 2017), even accounting his actions as a case of civil disobedience similar to Thoreau, Gandhi, and King, seeing the whistleblowing as a type of disobedience that is needed and shaped by the globalization.

Another example of citizens' respond are the debates started in UK about security transparency after the Snowden case. In 2016 the pressures towards the government have led to the Investigatory Powers Act, that put together all the powers related to data gathering from communications of the divided system of law enforcement, surveillance and intelligence agencies, in order to create a more accountable and clear regulation on these powers. The debate revolved around the concept of digital citizenship, in the sense that digital policies influenced all aspects of social life and citizens should have been made accountable for them (Hintz & Brown, 2017). When a wrong use of Big Data is acknowledged by the public opinion and the consequences are visible, that is a good indicator of democracy's accountability, but to make issues visible a clearer and more legitimate system of state powers on data gathering is essential.

2.3 The Facebook-Cambridge Analytica scandal

During the first decade of the 21st century Online Social Networks (OSNs) became the most used communication and information platforms above all. In 2017 nearly 2.46 billion users used social networks, reaching the 71 percent of all internet users of that year (Rehman, 2019). Social Networks gather users' data transforming a free service in a massive earning source mainly thanks to advertising. The main claims that have risen through the years are obviously related to privacy problems, the property of such a massive amount of data gives an immense power to these platforms' owners. The most important scandal related to this topic occurred in 2018 and involved the political consulting firm Cambridge Analytica and the social network platform Facebook. The Cambridge Analytica case is as important as that of Edward Snowden but it is pretty different. The NSA's program used data gathered by ICT's companies to control citizens as a governmental organization, on the opposite hand, Cambridge Analytica attempted to sway electoral preferences as private, even if political, organization, collecting directly data from the users and using a system of microtargeted advertising. Before going more into depths of Cambridge Analytica case we need to analyse the meaning of the term microtargeting. Microtargeting can be defined as a personalised communication based on specific indicators collected from mass of people, that appears as specific for each individual of categorized group of individuals sharing the same characteristics. In this specific case microtargeting was used for political purposes but it is widely employed for profit advertising too. Microtargeting was not born with internet or social media (Heawood, 2018), but it obviously flourished with them. Such as many social studies and analysis tools, the new capacities of data gathering owned by the machines have widely changed, even though not in its core, the implications and use of microtargeting. From the beginning of overproduction, producers tried to reach the supply with the demand, targeting the specific groups that could be interested in their products. Mass media were one big evolution of targeted advertising but, obviously, digital media have overwhelmed that reality. Which are the issues related to microtargeting?

1) Exploitation of personal data - as Jonathan Heawood efficiently points out in his article: "In the past, political campaigners might knock on your door. You might choose to open the door or not, and you might choose whether to listen

to what they had to say. Now, the campaigners are already in your house. (Heawood, 2018)" And it could be added that they are in your house and they already know all of it. The problem is not about consent, but about profiling in itself.

2) Advertising concealment - microtargeting makes communications change according to your data, hence it is never the same for everyone and it is difficult to identify.

3) Often contains errors and lies - in order to make specific users like a specific product or political party microtargeting can just change the reality, even just to receive attention or to push away the target from the competitors.

4) Creates more polarized opinions - microtargeting is based on showing you what you already like, this means that users face their own opinions time after time, usually even in a more extremist way.

Cambridge Analytica is a clear example of misuse and abuse of microtargeting advertising for political purpose, and it started with a quiz. The application myPersonality, presenting a personality quiz by academics of Cambridge University, gathered data from the users and gave them to hundreds of researchers. The data were linked through an unsecure website that left open to illegal access those information for four years, furthermore, the firms collected data not only from the users that agreed to the service's sharing rules, but from all their Facebook friends too. The myPersonality app was programmed by David Stillwell in 2007 at the Psychometrics Centre in the University of Cambridge and until 2012 it collected data from 6 million volunteers and used it in 45 scientific publications. The test called OCEAN selected five personality traits (openness conscientiousness, extraversion, agreeableness, and neuroticism) that then were used to understand users' behaviour thanks to the analysis of the massive number of different profiles linked to them. This research took 350 thousand U.S. participants' data and crossed with their Facebook profiles. It is not clear if the results of this first attempt were shared with Cambridge Analytica, however the aim was to create a methodology to analyse psychographic profiling without the usual instruments but with indicators taken on the social network's categorization activity of the users. Note that social network's activity can give access to personal preferences, browser research, online purchases, and a lot of other personal data that with the OCEAN analysis consented a microtargeting of

the individual users (Isaak & Hanna, 2018). A massive problem if used to convey political preferences, and that's exactly what Cambridge Analytica did later. The political consulting firm Cambridge Analytica (CA) was created as a subsidiary of the Strategic Communication Limited group. In 2014 the data scientist Cristopher Wylie working for this group came in touch with Steve Bannon ex vice president of CA, former chief strategist of the White House and, most importantly, former head of Donald Trump's 2016 election campaign. Financed by Robert Mercer, the idea was to link personality traits to political preferences in order to create personalized advertisements. To gather users' data CA relied upon Aleksandr Kogan, colleague of the creator of myPersonality application. Kogan created a new app called "thisisyourdigitallife" that, exactly as myPersonality, recorded results from the users' and users' friends' Facebook accounts. Paring the users' results of the quiz and their "likes" on Facebook, they micro-targeted people with personalized messages.

The Global Science Research, in collaboration with CA, used the personality quiz on Amazon Mechanical Turk and on the survey platform Qualitrics, accessing to the participants Facebook's accounts and to their friends' personal data, approximately 87 million users, creating microtargeted messages to sustain Trump political campaign. The aim was to enhance the client's supporters' preference and discourage the not favourable ones to vote for the client's opponents. It is important to outline that not having a Facebook account does not mean protection: available data sources are many and the analytics processes can refer to other indicators too. Furthermore Facebook, today Meta platforms (or just Meta), does not own only the platform Facebook, rather gathers data from Instagram, Whatsapp, Messenger, Oculus, Onavo, and others. Microtargeting messages were delivered touching the specific personalities of the electors, using their preferences, and weaknesses. The messages were divided for thirty-two types of personalities that were used by Donald Trump to win 2016 Presidential elections. Mark Zuckerberg, creator and CEO of Facebook, condemned CA's actions and developed new restrictions on data harvesting, however the legal and political implications of this case are still going on and several legislations have been created and discussed to defend citizens' privacy (a schematic chronology of the events from the Facebook point of view is offered by Hinds et al., 2020 in figure 2.1).
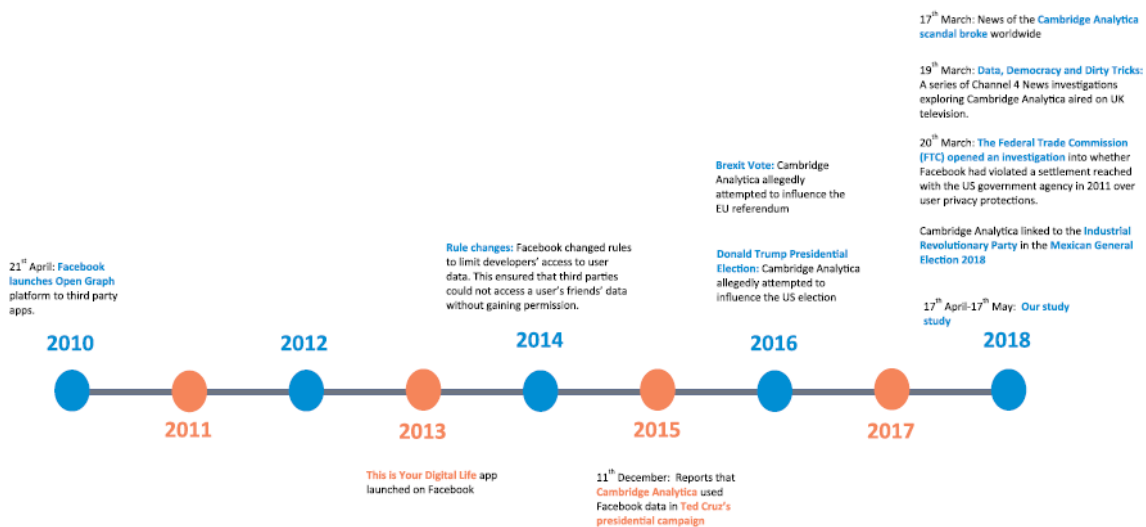
Figure 2.1. Timeline of Facebook policy changes, events and news stories related to Cambridge Analytica (Hinds et al., 2020)

After Mark Zuckerberg's hearings in front of the House Judiciary, Senate Judiciary, and Commerce Committees, a few senators tried to put forward bills in order to create solutions to the privacy issues. The hearings were quite peculiar and became quite popular on the internet, showing the opposition between Zuckerberg's testimonies' revelations about the use of data, quite well known by a lot of people, especially the younger generations, and the senators' questions, made clearly not knowing how the platform worked. US senators were not particular, in reality they clearly showed how the legislative apparatus is slow in grasping a such fast societal evolution. However, the dominant bill came out from the offices of Senators Richard Blumenthal and Ed Markey (Isaak & Hanna, 2018). The CONSENT Act, or "Customer Online Notification for Stopping Edge-Provider Network Transgressions"[4] claims privacy protections established by the Federal Trade Commission (FTC). The bill Facebook and the other digital platform to require the users' consent in order to sell their information for advertising. Furthermore, the bill establishes a duty of notification in case of data selling to third parties. In case of violation the FTC has the right to prosecute the violators, given that these acts are compared to unfair or deceptive actions. A similar bill is the Social Media Privacy Protection and

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[4] https://www.congress.gov/bill/115th-congress/senate-bill/2639/text

Consumer Rights Act of 2018[5] put forward by Senator Aby Klobuchar, but adds some protections, such as more difficulties in changing privacy terms, more possibilities of withdrawal of consent, and more obligations in case of privacy violation, such as notification, data elimination, and lock in the collection of more data. Moreover, singular states have reacted differently, California being the most advanced in privacy regulation. The federal state granted to its citizens more rights, such as a legal age of consent, platforms cannot sell data of users younger than 16 years of age and prevented firms from blocking services to the users that deny consent or exercise their rights.

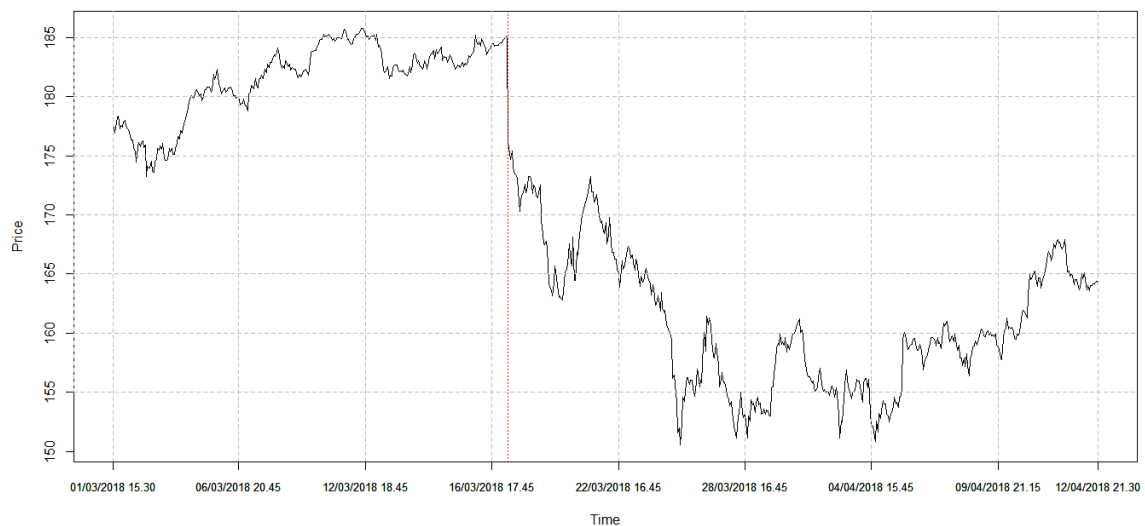Another effect of the Cambridge Analytica scandal is the huge impact over Facebook market's stocks.

Figure 2.2 (a)

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[5] https://www.congress.gov/bill/115th-congress/senatebill/2728?q=%7B"search"%3A%5B"Social+Media+Privacy+Protection+and+Consumer+Rights+Act+of+2018"%5D%7D&s=3&r=1
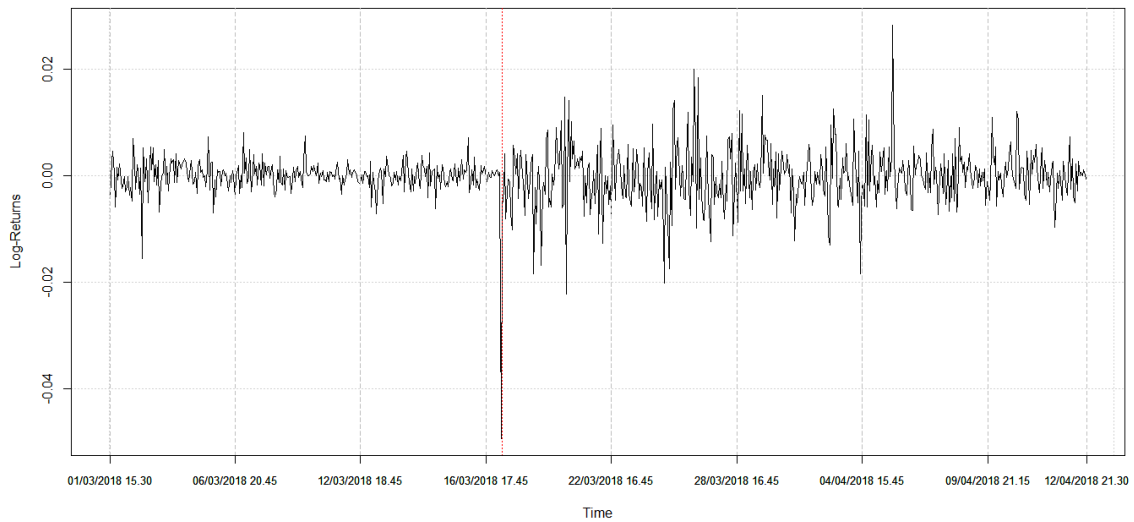
Figure 2.2. (b) Bloomberg intraday time series for the Facebook (FB) stock. (**a**) Time series for the price. (**b**) Time series for the log-returns. The Cambridge Analytica (CA) event happens at time 313 (the first observation on March 19th, 2018 in the price chart); notice that after the CA event, the price of the stock decreases and its volatility increases (Peruzzi et al., 2018)

The scandal had an enormous effect on the platforms' market. It can be seen that after CA scandal not only Facebook's stocks' price dropped but also that its volatility increased. The biggest impact was on Facebook, with an increase of the 165 percent of Facebook's stocks volatility and 15 percent volatility of all assets taken in exam (Peruzzi et al., 2018). Making a parallel between stocks volatility before and after CA, we can notice a presence in the first 10 of Facebook (now Meta) and an increase of firms related to technology, from 3 to 6 Figure (2.3).

Top-10 Highest Volatility Stocks					
Before CA			After CA		
Stock	Industry	SD(x)	Stock	Industry	SD(x)
DLTR	Consumer Services	0.01031	SHPG	Health Care	0.01013
ESRX	Health Care	0.00757	TSLA	Capital Goods	0.00857
JD	Consumer Services	0.00732	MU	Technology	0.00721
ADSK	Technology	0.00724	NFLX	Consumer Services	0.00704
MU	Technology	0.00703	NVDA	Technology	0.00684
ALXN	Health Care	0.00671	FB	Technology	0.00668
ROST	Consumer Services	0.00576	AMZN	Consumer Services	0.00640
WYNN	Consumer Services	0.00533	LRCX	Technology	0.00623
ULTA	Consumer Services	0.00496	AMAT	Technology	0.00564
LRCX	Technology	0.00477	INTC	Technology	0.00563

Figure 2.3. The table reports a ranking of the 10 highest-volatility stocks in the NASDAQ-100 before and after Cambridge Analytica (CA). Volatility has been computed on two samples of 15-minute intraday returns consisting of 311 observations each (Peruzzi et al., 2018).

This represents that the scandal had an effect not only on Facebook's stocks, but on all the stocks related to technology.

However, even if volatility increased momentarily and the stocks' value dropped for a certain period, Meta is still today one of the most valuable and powerful firms on the market, in fact over the years it regained everything that was lost. As you can see from the stock market Facebook (then Meta) value has dropped in 2018 due to the CA scandal but its value grew after that, especially during the pandemic's period of COVID-19. Generally, its value dropped after the pandemic, also due the partial failure of the rebranding, however we can see that on the long run Meta did not receive a notable damage from the CA case, at least not on the stock market (Figure 2.4).

Figure 2.4. Facebook (then Meta) stocks' value since March 2018 to today. (https://tradingeconomics.com/fb:us)

Obviously, the effects of the scandal are not just verifiable on the stock market, in fact as we have seen, various legislations in defence of users' privacy have been adopted. But let's see what happened regarding users' opinion.

Studies show that generally people are more concerned about institutional privacy than to social privacy (Afriat et al., 2021). More specifically institutional privacy can be described as the use and misuse of information made by larger organizations, such as statal organisms, firms, and banks, while for social privacy is intended the sharing of personal information with other citizens. To sum up, people are more concerned of their neighbourhood's knowing their personal behaviour than the state or the platforms. There could be many explanations for this to happen, such as lack of social and political awareness, resigned pragmatism, or a sense of helplessness, however, recent studies indicate a more structural motivation, namely the idea that there is not an alternative to privacy violation, and that people are forced to accept the trade-off between their personal data and platforms' services. It is quite indicative the answer of an interviewed that gives

the name to one of the articles taken into exam: *"This is capitalism. It is not illegal"* (Afriat et al., 2021). Platform capitalism and surveillance seem to be well known by the majority of the society, in fact, many interviews show that young adults did not think that CA would have destroyed Facebook, furthermore even after the clear show of privacy loss that was the scandal there were not particular changes in people's opinion, showing that the problem was known even before, but not faced. Platforms seem to be considered essential for social life, thus giving them immunity. This also explains why institutional privacy is taken so little into consideration, because it is considered indefensible. Similar conclusions come from the interviews collected by Allison Brown (Brown, 2020). In fact, even though a little part of the interviewed deactivated their Facebook accounts, the majority did not change anything after the CA event, implying that a trade of data was necessary to receive social networks' services. Even though people think that an exchange of personal privacy is inevitable in order to receive platforms' services, it is interesting to notice that other studies indicate that generally people consider themselves immune to microtargeted advertising, despite confirming the other articles' discoveries about social tendencies (Hinds et al., 2020). This is something that will be reencountered also in the next chapters, and that is not only linked to users' services. The political and social legitimacy of digital platforms come from a wide range of services offered more and more often in accordance and with the help of statal power. It is important to outline that these platforms do deliver services that are important for the society, but the power structure that they create in order to take control of people's data is something that needs to be faced as soon as possible by the political structure.

Chapter 3. Citizens, workers, or users? The value extraction of platform capitalism and the invisible work. The power relation between market and citizens

3.1 Value extraction and gig economy. Critical background and conceptual framework

The issues related to state's surveillance are actually just a small part of the critical points arisen during the digital age concerning the democratic institutions. The evolution of capitalism features a specific structure of power in which the relationship between state and market presents three power links:

1) State needs ICTs' multinational and their instrument of data gathering and analysis. As we have seen in the first chapter statal intelligence organizations have approached the new ICTs as a tool to implement security and surveillance. However, the Edward Snowden's files have disclosed a truth that has not changed at all. Statal intelligence nowadays rely heavily on bot internet and telecommunication technologies in antiterrorism and security matters, in a strict alliance with the ICTs multinational. The new multinationals of big data are essential for the state surveillance system, hence they gather political legitimacy in the institutions. In return for their services, statal security services granted digital firms a certain grade of autonomy and secrecy. This became clear after the terrorist attack of the 11th of September 2001.

2) State is unable to control, stop or alter the spread of the new multinationals' power. Juridical and legislative power are powerless in front of the fluidity of the big data's multinationals. Old legislative frameworks cannot grasp nor sanction these firms for various reasons, such as the fact that their capitals rely on intellectual properties and digital data that can be moved easily in other legislations, or that the new technologies' potentialities have been comprehended and hided by the specialists that take advantage of them, or even more that the new globalized market offers many offshore possibilities in order to hide, control, and increase liquid capitals.

3) State executives' planning rely heavily on the private market for public service delivery and urbanization. Since the '80s the neomanagement has not changed only the industrial market but also the public planning. Nowadays, more and more often states rely on public fundings and applications not related to structural planning, leaving private organizations, from the third sector's associations to the big firms, to solve social problems. This is related to the fact that the biopolitical tendency to control every little aspect of citizens' lives have overfilled public administrations and executives of requests. The new public management has tried to solve this with forms of collaboration between states and private organizations, hence the collaborative governance, that has enhanced a market of the public services' delivery. Private firms provide what has been requested to the states by the citizens, they earn political legitimacy and a new market to expand their businesses. Furthermore, public service delivery means also the creation of infrastructures, obviously with the use of ICTs that enhance data gathering and analysis. It is important to understand that the aim of the firms is not to solve the citizens' specific problem, but to provide the service requested by the public administration. This could apparently seem as the same thing, but it is not, such as the delivery of a service is not a structural plan to solve a specific problem. Moreover, the main ideal of private firms is efficiency, not accountability; in providing infrastructures and services they have the aim to enhance and spread their tools of data gathering. Everything under the compelled approval of the state.

I have analysed the first relationship in the first chapter, while the second relationship will be discussed in this and the third in the last chapter. This overview was needed in order to introduce the basis on which the power relation between market and citizens unfolds.

The 21st century has seen a drastic change in all the aspects of our social life, in particular the advent of the information and communication technologies (ICTs) have changed our politics, our economies and, obviously, our jobs. In the new century, the tertiary sector has become the most important part of the economy, with service delivery representing

more than the 60 percent of the world GDP (World Bank data[6]). The service delivery market has become increasingly important and diversified since the 1980s creating new forms of collaborative governance between State and private actors, referred as New Public Management, and new forms of work, such as the so-called gig economy, the Crowdworking (or crowdsourcing), or the digital labour (Wishart Robert, Lepanjuuri Katriina & Cornick Peter, 2018). In this chapter I will analyse the forms of value extraction from workers and users, I will draw an organic categorization of the digital platforms and I will identify what are the legal tendencies to overcome these issues and the alternatives created by different social groups. Before going deeper into this analysis, however, it is needed a further specification of the conceptual framework that will be used.

The first conceptual framework used is the one drawn in the book "The politics of operations" written by Sandro Mezzadra and Brett Neilson (Mezzadra & Neilson, 2019). Analysing the three predominant areas of economic activity of extraction, logistic, and finance, the authors outline the rationality of modern capitalism, underlying the crisis of national systems, the rise of globalization, and the capitalist root of colonialism. This thesis does not go into detail in the global implications of the new power structures, however it will outline that economic and power relations do not follow statal boundaries, if anything they use statal powers to invade new areas or create new exploitable groups of workers. Highlighting the global structure of capital is needed in order to follow the next chapters. Moreover, Mezzadra and Nielson outline the importance of territory for the capital because territory is the instrument to organize the relations between space and power, as we will see in the fourth chapter. Another concept that comes from that research is the extractive nature of capital, not as a mere extraction of raw materials, but of everything "outside" the capital that is used to implement, sustain, and expand it. Extraction is not described as something new, suffice to think to colonized populations and territories, however nowadays it has evolved. The analytic management abstracts the work with both its tasks and the evaluation processes, used as reputational risk. As the Taylorism, the microtasking extracts value from a further specific division of work, however, in opposition with Taylor's scientific management, platform capitalism erases the division between work and life, so to say the unity of the working day, exploiting time

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[6] https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS?end=2021&start=1960&view=chart

and spaces that do not fall in the traditional workplace. This is very evident, as the authors outline, in the gig economy.

Another conceptual framework that will be used is the one proposed by Shoshana Zuboff in her book *"The age of surveillance capitalism: The Fight for a Human Future at the New Frontier of Power"* (Zuboff, 2019). The research presents the system called surveillance capitalism and the concept of behavioural surplus. Starting from the concept of surveillance capitalism, this can be defined as a "new economic order that claims human experience as free raw material for hidden commercial practices of extraction, prediction, and sales" (Zuboff, 2019), but also as an economic parasitic logic, that sells data for the prediction of human behaviour creating a new market that she calls "behavioural market". The concept emphasizes the surveillance aim of both market and state. However, as I have already shown and as I will further explain, I disagree on two of the characteristics of this concept. The first is that Zuboff presents the surveillance capitalism as a "pirate mutation" of the capitalism, but as I have explained in the first chapter the new ICTs did not create the economic system in which they were born, they became perfect instruments of an already existing economic system, that is the neomanagerial capitalism. Zuboff asserts that the difference between capitalism and surveillance capitalism is in the methods and the aim of the data gathering. If a firm asks for the user's consent and uses his data to make its services better, then it is normal capitalism. At odds with this view, I show that data are just a tool, and the aim is always to increase profit. If a firm controls its workers with the use of data, in the Zuboff's conceptualization that is not surveillance capitalism, because the data are used not specifically to extract value but to ameliorate the service, even if it happens worsening the working conditions of the employees. However, it is clear that Surveillance capitalism is not focused on the changes in the jobs' organizations, even if she talks about it. The second is that she gives much importance on the surveillance aim, while the sources outline that the aim of the use of ICTs is always the same as before: the mere reproduction of capital. Surveillance, control, and political legitimacy are things that big firms have always researched in order to enhance their power and be freer to enlarge their interests. This is not about surveillance; this is about power to extract value. The second concept that I will take from Zuboff is the one of behavioural surplus. Behavioural surplus is what remains after that the data gathered are used to enhance firms' services. This complex of

raw data is worked by data analysis systems and engineers in order to extract value. Behavioural surplus is the aim of the services provided by the platforms, it is the oil of the 21st century.

Another conceptual framework that will be needed in this chapter is the one regarding the new jobs' organizations. I write organizations and not forms because we are not seeing new forms of work, rather new forms of arrangements of the workers. The logics that abide behind these new jobs' plannings are always the same, even though the ICTs have allowed an evolution of them. More broadly, these jobs are identified as "gig economy", even though it is a big generalization. There are different definitions of gig economy and different names too. The term "gig" comes from the music industry and refers to a short-time job with no particular connections (Abraham et al., 2017). The gig economy, also called sharing economy, collaborating economy, crowdworking, access economy, on-demand economy, freelance economy, 1099 economy, and platform economy, can be broadly defined as: "[the one that] involves the exchange of labour for money between individuals or companies via digital platforms that actively facilitate matching between providers and customers, on a short-term and payment by task basis" (Kalleberg & Dunn, 2016; Wishart Robert Lepanjuuri Katriina & Cornick Peter, 2018). More specifically, the gig economy consists in a job provider, represented by on-demand companies, and numerous "autonomous" workers that can easily access to the paid jobs, specifically divided in little tasks. Gig economy is based on three main characteristics (Tan et al., 2021):

- The use of digital platforms
- Structures that transform work into small and distributable tasks
- A system that enables more flexible, short-term, and heterogeneous working arrangements and relationship

However, a more specific and deepened analysis of the different terms has been made, and it can help to better understand the complexity and diversity of these forms of work (Heeks, 2017).
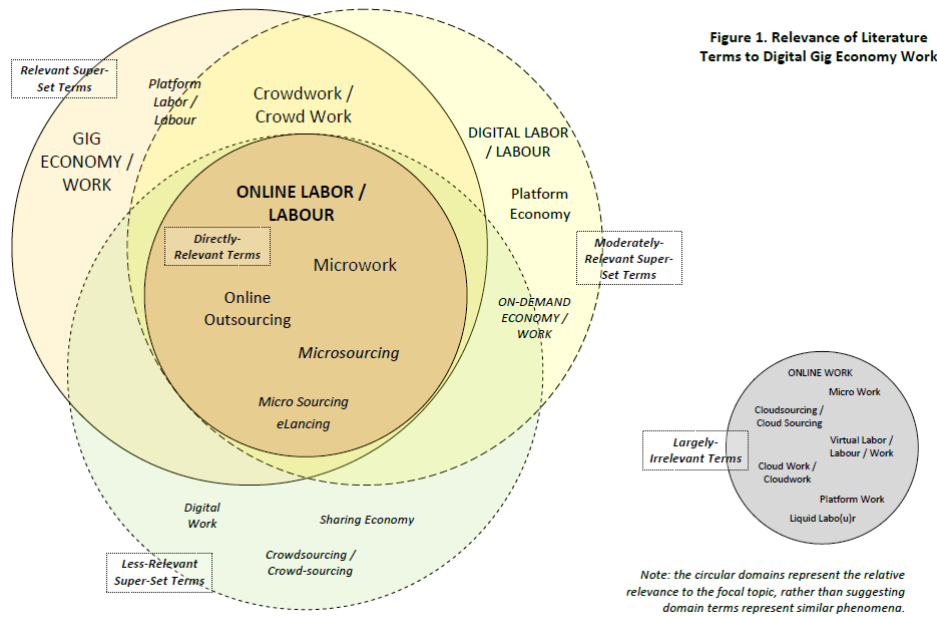
Figure 3.1 Relevance of Literature Terms to Digital Gig Economy Work (Heeks, 2017).

As can be seen by the scheme (figure 3.1), the terms used are not exactly synonymous. In order to clarify I will go deeper in the more used ones:

- Gig economy is the economic market that relies on these new jobs' organizations based on microtasks and online platforms.

- Platform capitalism is the specific form of capitalism that has been created by the systematic proliferation and enhancement of digital platforms' firms.

- Microwork is a job based on a microtask, so to say an activity that can take even just some minutes to be concluded, and that is paid as singular task and not as a complex set of activities (De Stefano, 2015).

- Crowdworking is the job's organization based on the employment of a vast number of workers that perform microworks. They are easily employed, scarcely paid, without insurances, nor rights, and easily discarded. They are also difficult to defend, difficult to put together, and difficult to categorize from a legislative point of view.

- On-demand work is an activity made relying on a digital platform.

- User is anyone that uses a digital service.

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In the next sections I will divide the two issues regarding the power relationship between citizens and market as follows: first the problem of data gathering and the extraction of value from them, then the point regarding the new jobs' organizations. It is important to outline that the two issues are related but not the same. Data extraction is made out of citizens whether they work in the platform capitalism or not. And platform capitalism affects workers independently from the value extracted by their data, but more specifically by the new way in which their jobs are organized. There are two power issues in the system concerning citizens and market: the one of the extraction of data and the one of control of workers.

3.2 Value extraction and behavioural surplus

The first thing that needs to be said about the extraction of data from the citizens is that it happens everywhere, most of the time with methods that cover it up and are sold to a numerous amount of third parties that are difficult to track. The informational asymmetry between citizens and firms is one of the most powerful assets of the platform capitalism, and it is defended by strict non-disclosure agreements for the employees. Just to make an example, in 2008 two professors of Carnegie Mellon, analysing normal privacy policies' contracts, have discovered that to read the normal number encountered in a year would have cost seventy-six working days, the equivalent of 781 billion dollars for the nation, and it would be even more today. Hence, it is not surprising that the 74 percent of users that access a new online service accept a "quick access", bypassing the consent and the privacy policy (Zuboff, 2019). The methods of extraction are numerous, and they do not always start from our activity on the web. The control of real spaces and resources is used in order to have more control on the digital fluxes, then the data gathered are used to acquire power in the real spaces. Everything is linked to the cities as we will see in the fourth chapter, from the market's legitimacy to the control over the data. To understand how these firms extract data I need also to explain how they took the lead of the global market.

On the 9th of August 2011, while Apple was surpassing Exxon Mobil as the firm with the biggest capital in the world, the Spanish citizens were manifesting in the streets the "right to be forgotten" on the web, in particular by Google (Zuboff, 2019). Apple begun

inserting itself into the market of music, catching the requests of the young generations that had new ways to access to music. The firm caught this desire and with iPod, iTunes, and iPhone, it gained a vast amount of profit. Three days after iTunes went out, in 2003, one million users had downloaded it buying as many songs. The number of downloads grew even bigger: five million after one month, ten after three months, twenty-five after half a year. In January 2007 there had been two billion downloads and in 2013 twenty-five billion. As the number of downloads went up, also Apple's profits did the same, and in 2008 the firm became the biggest music seller surpassing Walmart. Apple was just one of the firms that eavesdropped the market's change, but their success brought light over the economic potentialities of the digital market. At the same time was happening what has been described in the first chapter, the neoliberalism and Neomanagerism had set the basis for the development of the platform capitalism. In 2000 the U.S. workers employed in public jobs was half the amount of the '70, and in 2009 the public enterprises were half the amount of the 1997, at the same time in 2004 Gmail, property of Google, was scanning the users' mails for advertising and in 2007 Facebook created Beacon which allowed to the advertisers to track users' activities without their consent (Zuboff, 2019). Beacon was closed after many protests; however, the data gathering was just evolving in a more suitable way.

Zuboff gives the title of inventor of Surveillance capitalism to Google: it is for Surveillance capitalism what Ford Motor Company and General Motors were for managerial capitalism. Google was born in 1988 by Larry Page and Sergey Brin, two Stanford ex-students, just two years after that the world wide web was available to all the users with a computer. However, it was just in 2001 that Google begun to transform the data gathered, expanded with user profiling, in behavioural surplus, in a short period its profit went to 86 billion dollars (more than 400 percent of the previous year) and begun to earn money for the first time. In 2002, with the conjunction between licences and behavioural surplus, begun the rise of Google. In the same year the earnings arrived at 347 million dollars, to one and an half billion in 2004, and to 3.2 billion in 2004, same year of its stock exchange listing. In less than four years the profits went up of 3590 percent of their previous value. In 2016 Google was dominating the internet, with 40.000 query processed per second, so to say more than 3.5 billion research a day, and in 2017 3000 billion all around the globe. The first price system was the "click through" based on

how many clicks did an ad receive and not on the number of views, this content-targeted advertising was named AdSense. With better previsions came better online auctions, and then more profits. Advertisers wanted more clicks, and Google invented new ways of getting them. In 2004 AdSense had a flux of one million dollars a day, and in 2010 gained 10 billion dollars a year. The advertising system of AdWords and AdSense became as important as Google Search. In 2016 Alphabet, Google's Holding firm, earned the 89 percent of the profit from targeted advertising.

After becoming a colossus in the market Google became also an unassailable fortress. It did this with four acts, that became an example for all the big firms in the sector:

- Google demonstrated that it had irreplaceable competences for electoral campaign. Facebook did the same later and this brought to the Cambridge Analytica scandal.
- Erased the division between private and public interests, thanks to lobbying activities extremely targeted and aggressive. This has become a widespread tendency in all the market, attacking privacy rights or laws that tried to restrict data gathering.
- Created a system of exchange between Google's personnel and the one of the Obama administrations during the period that went from 2009 to 2016.
- Infiltrated the academic and cultural discourse, to analyse and soften public and political opinions.

Platform capitalism is based on extraction such as Fordism was based on production, political support is used to assure that the raw data are free to be gathered without legal restrictions. Meanwhile, the extraction of behavioural surplus expands, taking more and more aspects of the citizens' lives. In 2008 Google created Android, an open and free platform for mobile devices. Android's license was given for free to the mobiles' producers because its aim was not to get paid, but to push more users towards Google services and erase any distance from the consumers.

To understand how fast and widely the surveillance capitalism spread, Zuboff reports some interesting research. The first analysis was made by Tymothy Libert of the University of Pennsylvania in 2015 on the first most popular sites. The results were quite indicative. The 90 percent of them allowed data leaks to 9 external parts on average, who

used to take and exploit their data for profit. Of these sites a 78 percent made transfers to Google, a 34 percent to Facebook. Another research made by Steven Englehardt and Arvin Narayanan of the Princeton University in 2016 analysed casually a million sites. They found 81 thousand third parties, of which only 123 were present on more than one percent of the sites. Of this more present group 12 of the first 20 were of property of Google. Google, Facebook and Twitter were the only third parties present on more than 10 percent of the sites. One year after, a group of Chinese scholars analysed 10 thousand mobile apps and discovered that certain apps triggered other apps in background, especially on Android. Of the first 1000 top app of one of Chinese platforms, 822 triggered the launch of 76 other apps on average, and of these the 77 percent were activated by push services on cloud given by Google. One last research of the same year made by the no-profit organization Exodus Privacy and by the Yale Privacy Lab identified 44 in more than 300 apps for Android, some of which were programmed also for Apple's operative system. These apps have been downloaded billions of times, amplifying exponentially the spread of tracking software. To make an example, the ad tracker FidZup had the possibility to connect a broadcasting device to a smartphone, allowing to identify the presence of a smartphone, hence of its owner, using an inaudible sound for the human ears. Any user who downloaded for example the app *Bottin Gourmand*, that gives a guide for restaurants and hotel in France, will have their movements tracked and shared to the readers of cars' magazine called *Auto Journal* and the tv guide *TeleStar*. The consent system has any impact on this system of extraction and instruments created to cease it are inevitably hidden and destroyed. For example, the app *Disconnect* tried to block users' tracking and was not included in Google Play, app catalogue for mobile devices. The legal case brought by Disconnect to the antitrust had little consequences.

Zuboff codified the methodology of expropriation as a four-phases cycle. These phases are incursion, addiction, adaptation, redirection.

- The first phase, incursion, is the unilateral appropriation of a space, such as personal computers, mobile devices, and so on. Block the incursion is difficult for various reasons. First of all, defend digital spaces is not like defend physical spaces. It is difficult to identify and locate the intrusions, because just few experts have the abilities to scan the devices, common people cannot, and they are also the victims. On the other hand, it is important to outline that most of

these spaces are invaded "with consent". The services that are provided by these firms are almost essential to be on the internet, and being on the internet nowadays is not optional. Work, communication, and social life have expanded on the net and the new ICTs are mandatory to live them. However, digital spaces are their territory, and if the internet is not "reconquered" by a political and democratic will, it will always be.

- The second phase is addiction. While the cold war's generation of engineers tried to bring the man in the space, the last generation of engineers is focused on getting us on the internet for the longer they can. It is not something new that digital firms have studied through the last three decades new and more advanced forms to create sense of addiction to their platforms. A part of these techniques is also used in order to enhance workers' dedication to their jobs, with forms of gamification. The addiction phase makes people accept the incursion in their personal space, with services, games, desperation, or hopelessness.

- The third phase is adaptation. Not all incursions are accepted entirely, and some instruments or actions need to be adapted in order to be accepted or elude legal and political enforcements. One example is the one of Beacon by Facebook that has already been cited.

- The fourth phase is redirection. Whichever action has been adapted or erased in the previous phase, it is than redirected in order to achieve the goal prefixed. The same methodology used after the scandal of Gmail in 2004 has been used by Google with Street View in 2007. The aim is clear and their way to avoid legal enforcements evolves, while the legal framework limps far behind them.

The case of Street View is quite indicative. Street View was created by Google in 2007 with the intent to draw a 360 grades' map of the world. The project, had been declared, would have been executed in the respect of the passers-by's privacy. However, that was not the case. Numerous protests arose and in 2010 the German federal commission for data protection declared that Google Street View was hiding a theft of private data. Street View's cars used to collect personal data from the private wi-fi connections. In 2012 a dozen countries started to investigate Google's actions. Just in the U.S. 38 States started investigations and many class actions arose. Google gave all the fault to an error of an

internal engineer without naming him. The numerous requests of collaboration by the U.S. Federal Communications Commission went unheard, and Google's Lawyers used an old law concerning wiretap to win the case. At the end, Google paid the laughable amount of 25 thousand dollars for having hindered the investigations. The legal framework demonstrated its inadequacy. Two are the reasons that made Google the winner: the first is the time and the second is the scapegoat. From the case in 2007 and the end of investigations in 2013 have passed six years, in which Google had all the time to prepare itself and tire public and political opinion. Moreover, the excuse of the error of an internal engineer was enough to bypass the legal judgment, diverting the attention from the structural extraction of data. Even if Street View was forbidden in some countries such as Czech Republic, Greece, India, and Lithuania, it did not slow down, reaching more than 65 of the 200 countries of Google Maps. Furthermore, it is interesting to see how Google acquires from other programmes what it does not already possess. In 2013 for example it bought the Israelian start-up Waze, that used to map thanks to users' contributions, and used this technology to evolve Street View. The mapping was not limited to the streets, in fact they evolved with programmes capable of tracking the interiors too, such as Cartographer. This instrument was included in the Street View's campaign in order to gain the consumers' trust. All these technologies were obviously linked to all other Google's services. In September 2016 *The Register* revealed that the Google Play app preinstalled in the last Android's versions used to continually send data about the users' localization to all other Google's apps and servers.

In 2012, the internal engineer responsible of the data gathering was leaked, named Marius Milner. The interesting fact is that Milner was not expelled by Google, instead he was inserted in a group working on a virtual reality programme. This programme would have been the basis of a new system of data extraction based on a game: Pokémon Go. Pew Research analysis outlined that in 2013 the 74 percent of smartphones' users used apps that required geolocation, two years later the percentage raised to 90 percent. And exactly from Google Map was born Pokémon Go by Niantic Lab. Pokémon Go was a free game, without advertising, financed by Google, Nintendo and Pokémon Company, published the 6 July 2016. In one week, the app became the more downloaded and with more profits in the U.S. More than the 60 percent of the users accessed daily. Just to make an example of the impact, a pizzeria in New York paid to make in-game features appear inside its

restaurant and had an increase of the 70 percent of revenue. Obviously, no advertising on the app hided a deep extraction of users' data.

Back in 2004 Google became an example for all the online industry that was coming out of the dot.com crisis. In the same year Mark Zuckerberg published Facebook, a platform that offered the same service of the telecommunication's firms, but for free. In 2007 Facebook was opened to everybody also outside the university. However, as told in the documentary "The Social Dilemma": "If you are not paying for it, you're not the customer; you're the product being sold." In fact, in the same year Zuckerberg created the already cited Beacon. The "like" option introduced in 2010 was one of the first instrument that upgraded the extraction of behavioural surplus by Facebook, hiding the installation of cookies, whether used or not. Numerous leaks unveiled that the platform continued to track users' activity even when closed. Facebook continued to deny everything and after a year the contestations ceased in intensity, making the "like" button a widespread instrument on many platforms. In 2012 Facebook expanded the insertion sites' access to users' information. Facebook openly declared that email, personal mobile numbers, likes interactions, and private massages would have been scanned to find third parties links and data to sell to advertisers. The expropriation's system was set, and profit came with it. The Financial Times praised the 71 percent growth of Facebook in 2017, with almost half billion dollars of capital and two billion users a day. In the same year the firm arrived seventh in a ranking of the 100 most important companies while the year before it was not even in the first 100. Obviously, the revenue came almost completely from advertising, most of it for mobile: 9.2 billion dollars of 9.3. Similarly to Google, Facebook created a fortress. Between 2009 and 2017 increased the lobbying expenditure of the 50 percent, arriving to 11,5 million dollars. The donations during the political campaign of 2016 have reached 4,6 million dollars. Everything to defend its advantage, in particular in the biometric field. In 2017 Facebook had two billion users for month, that uploaded 350 million photos each day, reaching, in their words, the capacity to recognize faces in nature with a 97,35 percent accuracy.

Other firms followed in changing their core business towards the data extraction. Microsoft begun in 2014, using Bing and the creation of the digital assistant Cortana. All these core systems, would it be Microsoft or Google, invited strongly users to not deactivate these services with the excuse of possible malfunctioning, weakness to

malware, or deactivation of the services. However, later on investigations by *Ars Technica* and Electronic Frontier Foundation unveiled that it did not matter whether Cortana was enabled or not, it would extract and transmit information to Microsoft either way. In 2016 Microsoft moved on mobile social network, buying LinkedIn for 26,2 billion dollars. Now Cortana did not know only your personal information, but also your professional network. As for Facebook, the turn towards surveillance capitalism brought profit. Since 2014 to 2017 Microsoft shares' value went from 34 to 65,64 dollars, with its market value raising from 315 billion to over 500 billion dollars. The second wave of firms joining the surveillance capitalism was constituted by the telecommunications and telephonic companies. The tendency did never stop, reaching smart televisions and even toys for the youngest. In particular, Genesis Toys sold numerous toys linked to a mobile app that "understands the baby". Meanwhile, the app has access to all the mobile phone's functions. The app requires personal information, such as the localization of the baby's home. The baby's words are analysed by a software of voice recognition owned by third parties that uses them to train an AI, and the questions asked are answered with online instruments such as Google Search. In 2017, the Federal Network Agency has prohibited the sale of the Cayla doll as device of illegal surveillance and has invited parents to destroy it. In many places the doll is still in circulation.

From the behavioural surplus have born firms that analyse data in order to provide services to other firms. This type of business is called software as a service. For example, certain apps can instantly establish if a person can access to a loan or not. Insurances systems are based also on the data about citizens' health, in fact many big firms are moving towards the health system with the excuse of enhancing people's health. In 2016, more than 100 thousand apps for healthcare were downloadable on Android (Google) and iOS (Apple). In the U.S. these apps are not subjects to health privacy legislation. In the same year research of the Journal of American Medicine analysed 211 apps for diabetic people. In 65 of them just the download authorized immediately the gathering and use of sensible information. The 64 percent of these apps modified or erased data, the 31 percent took the mobile's status and personal identity, the 27 percent gathered localization data, the 12 percent spied on the Wi-Fi connections, the 11 percent activated the personal camera and had access to personal photos and videos. Between the 4 and 6 percent of them did even more: reading the addresses, calls personal saved mobile numbers,

modifies mobiles' contacts, reads the calls' history, and uses the microphone to register the users' discourses. The research also outlined how the privacy policy had no impact on these activities. Another use is in for employers or rentals, who can ask to access to the other part's personal information in order to evaluate if their suitable. Everything is based on forecasting and behavioural control, and the invaded spaces are more and more, always nearer to the individuals' lives. Just to make an example, the market of smart devices for homes has gone from a value of 6,8 billion dollars in 2016 to 14.7 billion dollars of the following year. In 2018, Amazon has signed contracts with some house builders in order to install Dot boxes in the ceilings, Echo devices in the keyholes, switches, and security systems, everything enhanced by Alexa. Everything to channel data concerning all the services requested in the houses.

Back in 2014, Facebook had already a system of emotions' detection, however it was not the only one aiming at users' emotions. The market of affective computing was valued billion and firms needed software in order to channel emotional data to sell to advertising companies. A firm called *Affectiva*, created by Rosalind Picard of the MIT Media Lab, had the aim to use affective computing to help and assist children affected form authism. However, the corporate sponsors – Pepsi, Microsoft, bank of America, Nokia, Toyota, Procter, and others – had different purposes in mind. After several requests in order to use the system to analyse their clients, Picard was expelled, and the software was reused for advertising purposes.

In conclusion, Zuboff gives us a set of reasons to understand why surveillance capitalism has spread and emerged victorious as power system:

- Lack of precedent: ICTs and the new firms were something new, but it took a long time for us to understand it. For a long period, they seemed just like the old firms.
- Invasion through declaration: the new firms have created a system in which much is hidden but a lot is just accepted by the majority. The tendencies of surveillance capitalism have created legitimacy declaring that the expropriation of personal data was not theft. In some way, they are similar to the first that enclosed a ground and said "this is mine"[7].

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[7] This is how Rousseau describes the creation of civil society and of property, and the origin of inequality, in the "*Discours sur l'origine et les fondements de l'inégalité parmi les hommes*": "The first man who, having enclosed a

- Historical context: as described in the first chapter capitalism was the fertile ground of surveillance capitalism. The Neomanagerism and neoliberalism are its creators and basis.
- The fortifications: as already said the big data firms have created fortresses of political and social power, built with state and citizens' legitimation and consensus.
- Expropriation cycle: these firms have evolved their techniques of expropriation, creating a system not limited to their organizations.
- Addiction: free services, social networks, and platforms have established themselves as necessary and needed. Many aspects of our societies, willing or not, today revolves around them.
- Personal interest: these firms did not act alone. Many joined them and earned from them.
- Inclusion: social links revolve around digital platforms. Whether it is an affective or a professional network, today it is built on these platforms.
- Identification: these capitalists present themselves as heroic innovators.
- Authority: these companies represent the major aggregate of the new generation of scientists in the world and present themselves as authorities for whatever will happen in the future.
- Social persuasion: these platforms are everywhere, all the time, in each aspect of our life.
- Elimination of the alternatives and Inevitability: it is a common belief that things cannot change, technologies cannot be avoided, and alternatives are not possible. This is part of a deep activity of destruction of the will of alternatives created by capitalism.
- Ignorance and ideology of fragility: the methods of surveillance capitalism are complex and intertwined to numerous factors. Many are not informed; many

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piece of ground, bethought himself of saying This is mine, and found people simple enough to believe him, was the real founder of civil society. From how many crimes, wars and murders, from how many horrors and misfortunes might not any one have saved mankind, by pulling up the stakes, or filling up the ditch, and crying to his fellows, "Beware of listening to this impostor; you are undone if you once forget that the fruits of the earth belong to us all, and the earth itself to nobody." (Rousseau, 1755, pag. 23)

believe that people are too irrational to decide. This is always part of the creation of an ideology of acceptance spread by the capitalism.

- Speed: surveillance capitalism changes fast and moves its capitals even quicker. Legal and political frameworks struggle to follow and understand, failing to control them.

3.3 Categorization of platforms and the gig economy

Gig economy has been growing exponentially in recent years, and even though it is difficult to estimate the number of workers in gig economy, some data are required to underline the relevance of the phenomenon analysed. In 2017 there were an estimated 1.1 million people in the UK working in the gig economy. 8 percent of population in US worked on digital labour platforms in 2016 and it is predicted that by 2025 one-third of all labour transactions will be mediated by digital platforms. In 2017 over 70 million people around the globe found work in the gig economy. (Woodcock & Graham, 2020). Other research try to measure the number of workers for platform, but these firms change number continuously (see figure 3.2) (De Stefano, 2015) In the first paragraph I will try to resume the general issues concerning the gig economy and how the political and legal actors have in most cases dealt with them. However, it is important to notice that gig economy takes the place of traditional employment just in certain fields, especially in well-paid consultations and technological fields, and for the labour-intensive traditional work, such as construction(see figure 3.3) (Friedman, 2014). It can be noted that gig economy is used for two main things: make the capital flow go faster or exploit huge number of people for simple tasks. Another thing that must be faced is the belief that automation or new technologies eliminate workers, making them useless. But this is just not true. Just to make an example, it is enough to confront the rates of occupation and automation of the most industrialized countries of the G20 to see that the states with the higher rate of automation have also the less percentage of unemployment(Casilli, 2020). New technologies do not erase work, they transform the power relations. Many traditional works have disappeared or require nowadays far less workers than before, but the workers have just changed place. Today, workers work with the machines, often even for them. The new organizations of work have created different structure of exploitation,

digitalization creates a situation of externalization of the standard productive activities ruled by a new structure called "platform".

Principal platforms and apps in the gig-economy			
Name	**Field**	**Size of Workforce**	**Operating Areas**
Uber	Transportation	160,000	International
Lyft	Transportation	50,000	U.S.
Sidecar	Transportation	6000	Major U.S. Cities
Handy	Home Services	5000	U.S.
Taskrabbit	Home Services	30,000	International
Care.com	Home Services	6,600,000	International
Postmates	Delivery	10,000	U.S.
Amazon Mechanical Turk	Crowdwork	500,000	International
Crowdflower	Crowdwork	5,000,000	International
Crowdsource	Crowdwork	8,000,000	International
Clickworker	Crowdwork	700,000	International

Figure 3.2. Number of workers in some specific fields and platform in the gig economy (De Stefano, 2015)
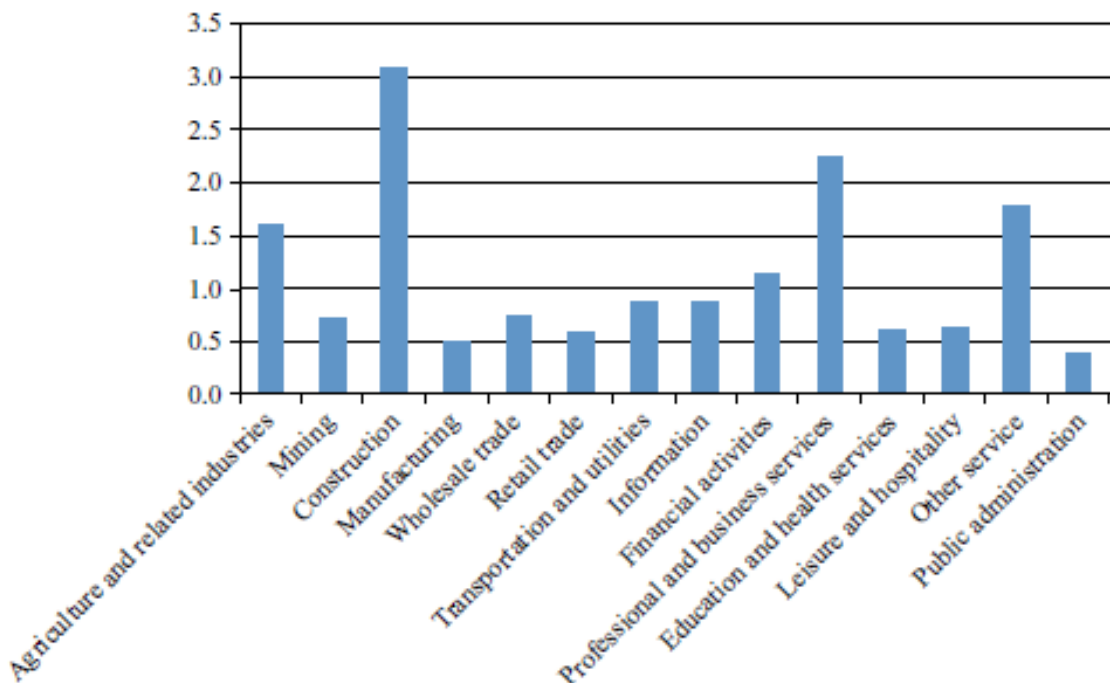

Figure 3.3. Relative use of alternative labor by industry – ratio of share of workers under alternative contracting to the national average, 2005 (Friedman, 2014).

Over the years many regulations and policies have been applied to the gig economy in order to ameliorate workers' conditions and to manage a phenomenon still hard to grasp. Gig economy issues are multiple and can be summarised as follows (Wardhana et al., 2020):

- Licensing. License to operate is particularly important with platforms involved with local regulations. Licensing requirements certify quality and safety standards regulated at local level and gig economy platforms have difficulties in proposing an alternative because they present themselves as technology platforms not service companies. An example of this issue is the Italian taxi system and Uber.

- Externalities. Issues that affect a third party are also a widespread topic in gig economy regulations. Platforms rarely take account of problems such as unsafe vehicle, noise or traffic.

- Misclassification. One of the most relevant problems for workers is their categorization as independent contractors or employees. The difference results in different rights for workers and legal obligations for the platforms. Many scholars have suggested the use of a new hybrid category (De Stefano, 2015; Dubal, 2017; Todolí-Signes, 2017).

- Benefits. The most of gig economy workers do not receive benefits at all and this issue is often related to misclassification problems. Workers' benefits gained during the decades of industrial economy are based on direct employees' working under a "contract of service" (Riley, 2017).

- Taxes. It is largely reported that on-demand platforms are difficult to tax because they can be easily delocalized, and most workers fail to declare the income from them.

- Safety issues. Safety issues interest both workers' and consumers' sides. User liability and insurances are recognized to be growing in importance in the new regulations (Bajwa et al., 2018).

- Privacy issues. All gig economy platforms have one advantage among traditional service delivery companies: data collection. All platforms collect workers and consumers' data in order to grow their business and ameliorate

their targets. Data collection is one of the most important issues for regulations, given its novelty and difficulty to be grasped by legal frameworks.

- Discrimination issues. Workers are not protected from discrimination even though various platforms present anti-discrimination policies in their rules. Many gig workers are migrants, because on demand platform offer an easy access to work, but in the end migrants are also the most weak group when trying to demand rights and benefits (Novitz, 2020; van Doorn et al., 2020).

- Wage problems. Wages of gig workers have issues related to misclassification and employment relationships' problems. Given the status of independent workers they are usually excluded from minimum wages and traditional law's standard requirements (Aloisi, 2016).

- General insecurity. Gig economy workers are easily employed and easily replaced; they live in a constant state of insecurity that makes them vulnerable to employers' power. This is particularly true for young employees that are more common to work in gig economy but have also less savings to counter an eventual dismissal (Robert MacDonald, 2019). The lack of benefits and the microtasking destroy the system based on social security contributions, leaving workers to rely only on the will of the employer (Corujo, 2017).

However, platforms are not all the same, and do not work in the same way. To understand the impact that platform capitalism has on workers a specific categorization of platforms is required in order to outline the differences in value extraction and workers' exploitation.

The first categorization is the one proposed by Nick Srnicek in "Platform capitalism", dividing digital platforms in five typologies:

1. Advertising platforms (e.g., Google, Facebook): the first type extracts users' data, analyses them, and then uses them to sell advertisement spaces.

2. Cloud Platforms (e.g., AWS, Salesforce): the second type has as core business the rent of their own hardware and software.

3. Industrial platforms (e.g., GE, Siemens): the third type uses digital instruments to enhance traditional manufacturing with internet-connected processes, lowering production costs and transforming goods into services.

4. Product platforms (e.g., Rolls Royce, Spotify): the fourth type earns by subscriptions and fees coming from platforms that transform goods into a service available in digital spaces.

5. Lean platforms (e.g., Uber, Airbnb): the fifth type uses digital platform to provide a service reducing its own ownership of the needed means by connecting supply and demand.

This categorization can give an useful sight on the different types of platforms, however it is not adequate enough to draw an organic scheme of the different platforms for two main reasons: the first is that, as Srnicek explains immediately after, these analytic distinctions often coexist in the same firm: Amazon for example, falls within multiple of these typologies; the second is that this categorization gives importance only to the type of business without focusing on work's organization, that is much more important for the value extraction.

The second categorization, that I consider more adequate, is the one provided by Antonio Casilli in *"Schiavi del clic: perchè lavoriamo tutti per il nuovo capitalismo?"* (Casilli, 2020). The book focuses on the different organizations of digital labour, dividing them in three main categories:

1. On-demand work (Uber, Deliveroo): mainly based on the lean platforms already described by Srnicek that put together supply and demand, this type of organization of work features the user-worker doing real-time manual jobs, such as transport, housing, delivery services, and many others. However, on the deeper level there is a constant activity of data gathering, just as in any other digital labour, but in this kind of work the data are gathered through the action of the workers that requires an additional physical effort and cannot be mistaken with a pastime activity.

2. Microwork (Amazon Mechanical Turk, Clickworker): as already said, microwork describes the fragmentation of work in basic tasks that can be achieved even in just few minutes. This fragmentation is then used through digital platforms to outsource work to many delocalized users.

This typology is also called crowdwork, because of the mass of workers that are continuously employed in the microtasks.

3. Social networking (Facebook, Instagram, LinkedIn): based on the participation of the users on the social network's platforms, these are tasks that are hidden and confused with pastime, creativity, and social sharing. Here, the focus is not on the data extraction made by the platforms' owners, such as in Zuboff, but the categorization focuses on the activity made by the users on the platform by his own will, that is described as a, often unaware, work task.

Let's go into the details of each category and make some examples. The on-demand work does not require high qualifications and is linked to precise territories. The worker depends on the platform, sometimes even with a contract, and are paid usually with an hourly wage or a subcontract. This type of work's organization appears as a form of independent work in which the user can be paid for a single activity without respecting a working continuity. However, this is just an illusion. Platforms reward workers that are always available and disadvantage casual users, this happens because the providers need a constant workforce, always available and spread over the territory. Flexibility of the working hours is just an illusion, furthermore the time that the users utilize compiling the requests on the platform and that they lose waiting for the next task are not waged. Platforms attract with fake flexibility, then give the tasks mostly to the workers that are always available, moreover they extract value from the processes that both the users and the workers spend on the digital application. Data extraction and surveillance over the workers are not secondary aspects of this typology of work organization. Both users and workers are constantly monitored, and they are pushed to judge each other, in this way the platform uses reputational risk as a form of control on both the user and the worker. Data gathered are then used not only for advertising but also to replace the traditional service providers, for example Deliveroo uses the data to create new restaurant strategically more powerful taking advantage of the information that the other restaurant do not have, and Uber uses the data to train self-driving car.

Uber is the perfect example of this category of work organization (Abraham et al., 2018; Berger et al., 2019; Jeff Kenner et al., 2019; Zwick, 2018). In a sentence in 2015 the firm

was accused by a group of drivers of hiddenly deactivate their account, practically firing them, because their acceptance rates were too low (Casilli, 2020). The application is willingly created to be dull in order to make necessary more time on it to make it work. Just to make an example, drivers have the right to receive a refund if the customer erases his request within five minutes, however the app does not show the time passed, so to ask the refund are necessary complex operations on the platform and the use of other apps. Anyway, the application hides much more: the work on the application fuels the evaluation between drivers and clients, takes the data from the users, track their itineraries, it is the virtual place of the transactions and of the relations between clients and workers. Uber creates a real network where drivers and clients meet, while the platform extracts value from both of them with a relatively low managerial work. The reputational mechanism plays an important role in this: drivers are obliged to maintain good relations with the clients because a low rating means the deactivation of the possibility to work. The shady categorization of the drivers, that are neither employees nor independent workers, makes their situation difficult to defend legally. Furthermore, for some workers Uber really constitutes an opportunity to earn more and have more flexibility, this until when they get sick, or need an insurance, or find another part-time job that makes their acceptance rates go down. Practically, as long as you are perfect for Uber, Uber is perfect for you, but as soon as you are not, Uber fires you. Much of the drivers' time is spent searching for customers on the app, these periods are called by the workers "dead miles" and can take even two thirds of their workday. The dead miles are not paid by the platform, which anyway does earn from drivers being available and doing activities on the app to earn visibility. Uber uses the data gathered not only to sell them, enhance their services, and train AI, but also to determine the equilibrium between the supply and demand of clients and drivers, that through the "surge pricing", an algorithm of automatic charging, that changes continuously the price of the services. This makes Uber not only a firm that can control the drivers' work but also a firm that regulates the prices between workers and clients in this specific market. To make an example, after a concert many people will need a way to return home, many will use other means, but many others will open the app Uber. The application will read the number of access and see that they are in the same zone, because the users are constantly geolocated, however there are not enough drivers available in that zone for everyone. Hence, the algorithm will

rise the prices, calculating supply and demand, from 1 to 50 times. The price increase will be seen by both the clients and the drivers, the first ones will try to find other transports on other apps, move to less crowded places, or wait to make the cost go down, while the seconds will be more available. This makes both of them to stay on the platform and produce data, and Uber's algorithm will automatically confront the prices with the alternatives and meet the price, at the same time gathering precious data. Hidden as tool of coordination, it is in reality a tool to make the passenger do a digital labour and produce data that are sold to third parties. Moreover, it is important to understand that Uber takes a percentage, from each run, that arrives even to the 25 percent. Uber, as many others of these platforms, take control of the market of their services, but is strictly linked to certain specific territories. To make an example, figure 3.4 clearly shows how fast Uber expands in a city, in this case London.
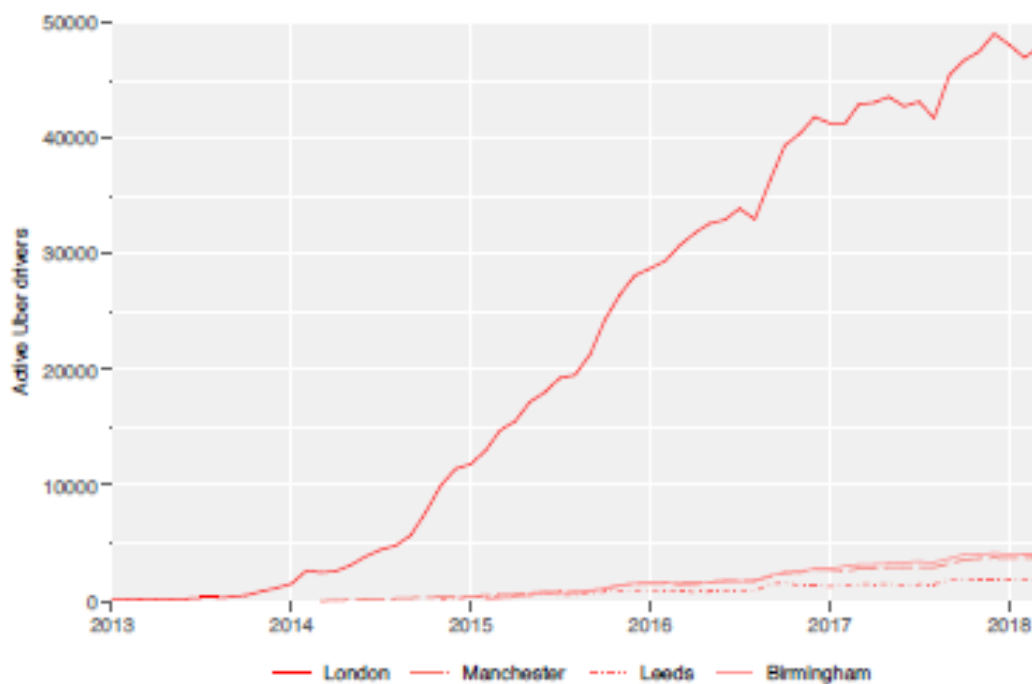

Figure 3.4 This figure displays the monthly number of active drivers in Birmingham, Leeds, London, andManchester based on internal aggregated administrative data from Uber. Active drivers are defined as those providing at least four trips in each respective month (Berger et al., 2019).

I will not go too much into details of the number of workers or their earnings because the data would be specific of certain areas, while this paragraph is giving a general and organic analysis of the structure of this type of work organization. Uber is just one of the many platforms that exploit on-demand work.

The second type of work's organization, the microwork, is strictly related to the human-based computation, which is the operation of assigning to workers activities that the machine cannot do alone, in a process that gives to the owner the most of the earning and to the workers small remunerations for small single tasks, that can consist in the most disparate activities such as watching videos, filing documents, or categorize products of an e-commerce. Workers receive from a small number of cents to some euros for each task, with the platform holding, such as in the on-demand work, a percentage of the payment. The tasks are made by the workers to third parties that can be organizations or privates, with the platforms providing the connection. However, the tasks are not related to a territory and can be made everywhere and everywhen, offering a real flexibility at the cost of any rights' reclamation. The tasks often present a high amount of gamification, which is the organization of tasks and remuneration in order to create a sense of "game" and entice the users to see the tasks as a pastime more than a work. The platforms are often used by firms and privates that need a high number of workforce that they could never have to perform simple activities, than the client evaluates the result and can accept or refuse the work. In this second case the worker does not receive any payment and his evaluation on the platform diminishes. The fact that the client can refuse the result at its discretion is another effect of the gamification and reflects the little importance that the platform gives to the payment. In fact, it is called reward and not wage. Usually, the platform does not take the role of mediator in case of conflict, giving clients and workers just two options in case of dispute: call each other directly or use the evaluation on the platform. While in the on-demand work eventual conflicts create troubles for the platforms that have to take responsibility, the microwork platforms earn from the tension between client and worker, because they sell evaluation and data of one to the other and vice versa. The work of qualification made by clients and workers through the use of reputational risk as control tool, creates another instrument of earning for the platforms. The contractual form used by microwork evades traditional legislation, in fact it is called "Participation Agreement", and as in the on-demand work the workers are considered

independent providers. Another thing that gives power to the owners and weakens the workers, is that the boundary between the workers contribute and the machines' one is made blurred by the platforms. The processes that accomplish the activities in their entirety are a combination of tasks made by machines and humans, but the platforms hide where the work made by the firsts ends and the one made by the seconds begins, in order to create a cloudy space where is easier to exploit the workers. Behind each avatar presented by the platform as worker are hidden various workers. Moreover, profits often clearly divide the workers in two groups: a very small group earns the majority of the revenues, while the vast majority receives just few dollars a month. This is the case of Upwork, where the majority of the workers struggle to receive tasks by the clients and earn very little. Upwork and the other microwork platform take advantage to employ delocalized workforce from places where a few dollars are not only enough, but even an improvement for the ones that cannot find a job (Green, 2018). It needs to be highlighted that this is not an improvement for these people, but just another instrument of colonialism. In fact, microwork employment follows the lines tracked by the globalized market. Only half the global manufacture has a stable employment with a traditional contract, moreover in south-east Asia and in the sub-Saharan Africa it reaches the 20 percent (Casilli, 2020). On the global scale the 46 percent of the active population works in autonomous employments or in familiar activities. The microwork activities are presented as freelancing services, when in reality are just precarious enslavement. Another Chinese platform, "Zhubajie", presents an even worse picture. Casilli shows that almost the 80 percent of the workers has earned less than 10 dollars in six years of activity, while a small groups, around the 0,4 percent, makes even thousands of dollars. This small group is divided by the rest thanks to a reputational baggage created in years of activity on the platform, that allows them to receive more complex and paid tasks. These tasks are then divided by the same "elite" and delegated to the others, less paid, workers, with a pyramid scheme created autonomously by the workers and encouraged by the platform. This structure sharpens the hierarchy of the workers even because the tasks are received by informal channels that the small group of older members own. This type of structure has been also called algorithmic management, because of the use of computational and data tools to organize it (Bucher et al., 2021; Duggan et al., 2020; Wood et al., 2019). In sum, the platform exacerbates conflict and exploitation by the workers to the other

workers, gaining from them. Obviously, also these platforms sell both the clients' and the workers' data to third parties too. Microwork is excellent as instrument to analyse and categorize the massive amount of raw data gathered by all the firms nowadays, an example is the same Amazon that for a long time had a problem in eliminating the doubles in their catalogues. In 2005 from this need was born one of the most important firms in the microwork system: Amazon Mechanical Turk. Amazon is predominantly known for its services of e-commerce, but actually there are many firms that turn around it, such as the already cited Amazon Mechanical Turk and Twitch. Before going more into details of Amazon Mechanical Turk it is important to understand how Amazon's e-commerce works, because even if it is not entirely definable as crowdwork, Amazon created the basis of many of the structures featured in the digital labour, such as gamification, microtasking, and technological surveillance upon the workers (Newlands, 2021). The e-commerce activities of the firm rely on around 200 establishments globally (Delfanti, 2021). As already seen, automation is present everywhere following the chain of activity however it is human force that make the machines work: without labour Amazon cannot exist. In fact, with 1,2 million employees (as of early 2021) Amazon is one of the biggest corporations in the world, second only to Walmart that counts over 2 million workers. It is interesting to notice that in 2011, ten years before, Amazon counted only 30 thousand employees. Amazon was created by Jeff Bezos in 1994 as an online bookstore, with the aim to digitalize commerce through mail-orders catalogues. Many companies had the same ideas, such as Sears in the U.S., Postalmarket in Italy, or Eaton Co. in Canada. Amazon grew rapidly and exponentially, in 2005 was already selling music and DVDs, alongside which soon appeared home goods, toys, and videogames; at the beginning of the 2000s Bezos started to commercialize also health and personal care products, gourmet foods, sports items, and outdoor goods. In 2005 Amazon launched the subscription Amazon Prime. Nowadays, Amazon is everywhere and sells everything, from technology tools to food, and represents the majority of the e-commerce market. In Italy, for example, its shares represent the 60 percent of e-commerce (Delfanti, 2021). Only Chinese Alibaba and Tencent can be compared to Amazon's size. Amazon's workers suffer of many of the problems highlighted at the beginning of the paragraph. They are controlled by an algorithmic system under physically punishing rhythms, and when they became unusable, they are discarded. Data from the U.S. Census Bureau show that half of its employees in

the warehouses are under the age of 35, the majority coming from racial minorities. Amazon has a fast flow of workers coming and going form the establishments, that are built in the periphery near urban centres, to use the centre's services but benefit from periphery costs. Workers are monitored, constantly evaluated, and encouraged with gamification mechanisms and rewards. The warehouse features a highly hierarchical composition with the managers having total control over the workers, they know how much work the single employee has done, and they can decide if they will maintain the job or not. The more precarious workers, that represent also the majority of the employees, know that their job has an expiration date. There is a constant turnover of workers, that in some facilities arrives to the 200 percent of the workforce per year. After all, it is not that workers are not paid well, but that they do not have a career opportunity nor benefits for when they will be fired. In fact, Amazon offers benefit for those that are willing to leave when they are old, it just does not want workers to reach retirement age while they work for them. A widespread opinion is that the problem of value extraction by workers is how much they receive in terms of wage, but that is just a part of it. Exploitation happens even when the wages go up, because the power structure is based on control not only on poverty. Precariousness and poverty are tools to have more malleable workers, but the main problems remain control and alienation. Coronavirus pandemic of 2020-2021 boosted Amazon profits, thanks to the enhancement of the requests in the e-commerce market and the high rates of unemployment that pushed workers towards this firm. In early 2021, Amazon had increased its workforce by 62 percent compared to two years before, and its revenues went form 280 billion dollars to 380 billion dollars in the same period.

Amazon soon became more than an e-commerce company, in fact, it expanded with Amazon Studios, which creates movies and tv series, Amazon Go, a chain of automated convenience stores, Whole foods, which provides organic food for supermarket, the already cited Twitch, a streaming platform, Amazon Games, and others. However, the majority of the firm's profits do not come from there but from Amazon Web Services, under which appears also Amazon Mechanical Turk. Amazon Web Services (AWS) is the biggest provider of web space and computational power in the world, their servers are used by, among the others, firms like Netflix, Pinterest, Airbnb, and Uber. Each dollar invested by Amazon operating AWS generates ten times profits. Moreover, Amazon

Mechanical Turk allows to anyone to hire crowdworkers and perform the tasks I have already talked about. This structure has strategies that can be compared to that of the labour factories of the second industrial revolution, for example the clients to pay the tasks have to go through the use Amazon Payment, a system that transforms Amazon into some sort of bank. The credits bought on Payment have to be spent on Amazon Mechanical Turk, and their value has to be higher than that guaranteed to the workers. The use of Amazon Payment is imposed to the workers too, through the rewards that are given in form of platform's credits. Furthermore, Amazon sells surveillance technologies to the Government, technologies that are indirectly, and sometimes directly, used on its own employees.

However, there is another way, sneakier, to externalize work, outsourcing it directly to the customers. More specifically, the platform gives operations of data management or calibration of the algorithm during the daily navigation on the internet. The free microwork was implemented by Alphabet/Google better than others, due to the numerous critiques that the firms received on data exploitation. A perfect example is Crowdsource, a project launched by Google in 2016 that asks explicitly to the users to contribute with specific tasks to the improvement of Google's AIs. Neither the users nor the owners "earn" from the work on the platform. Obviously, Google gains from it. The users can choose their tasks and can evaluate each other's work. Instead of a wage the users receive the possibility to change "level", just as a game. Crowdsource reaches the peak of gamification and reciprocal evaluation. Another, more used, application that implements free microwork is Google Translate. The application is used to automatically translate words or phrases from a language to another, and the platform encourages users to evaluate the translations or propose alternatives, transforming them in not waged translators. In particular these tasks are used to train the firms' AIs. Another example is the application "Quick Draw" that invites you to upload your drawings in order to help the AI's autonomous learning. Even here the gamification is used as a nudging system in order to invite users to work for free. Another system to extract value form free microwork is the RECAPTCHA, widely known because used by Google. With the excuse to verify that the user is not a robot, the system requires that the user performs tasks, such as image recognition, that are then used to train AIs, just as the one of Waymo for autonomous vehicles. However, it needs to be noted that this mechanism is not hidden by

Google, because the addiction to the platform is widespread. For the users RECAPTCHA is a bore task to be allowed to the research, while for Google analysts it is a small contribute to the creation of a complex AI.

In the recent period internet has seen the proliferation of applications that draw new images created by AIs following the users' indications. Users use them for entertainment, spreading and training the AI, however a big controversy has risen in the artist communities because these AIs use the drawings posted on the platforms to create the new images. Obviously, the artists are not paid for their pieces, that are stolen by users and platforms. Many artists nowadays use platforms and social networks to share their works and invite people to buy their products, but given that their product are visuals, they are easily deprived of the product of their work. This was even easier for the musical market, in fact Apple arose by selling the availability to a product, the music, that was already "free".

The third category outlined by Casilli, the social networking, based on the extraction of value by users that stay on social network platforms and do activities on them. It is important to outline that the dimension of value extraction from data described by Zuboff is just a part of the structure of value extraction on social networks as Facebook and Instagram (that are both under Meta). The activities made by users on these social networks, such as categorization, evaluation, and uploading new contents, are an important part of the power relations created by platform capitalism. This kind of work is much more difficult to be analysed because it is difficult even to recognize its nature as work. While it is easy to see the issues concerning the data extraction outlined by Zuboff, there are different opinions concerning the activity on the social network. Mainly, one party considers the activity on the social network as work, hence the appropriation of the contents created by the users is easily recognized as exploitation, while the other party consider it just as expression of a personal research of pleasure given by the sociality of the platforms. The latter obviously disqualifies this activity as digital labour. I will not go too deep into the differences between the two groups, however the academics and thinkers that sustain that the social networking is not work justify their categorization with two reasons: the activity on the social networks is free and it is made willingly by the users, that receive joy by doing it. Casilli clearly shows where these two argumentations fail, the first assuming that free labour is not labour, and the second matching labour with

exploitation, assuming that work cannot be done gladly or receiving gratification by it. Social networking is a work, while posting, or categorizing on a social network, the user makes an activity from which the owners gain surplus. The situation could be seen also as a deal of sharecropping, featuring an owner that offers the social network's services and the user posting and categorizing. Even so, there is the little difference that the user could even not post or make any activity on the platform and not make any work for it. However, the situation of exploitation remains, without forgetting that even without working on the platform at all it gathers the users' data and sell them.

The social networks' strategies are based on attracting users and creators hiding the system of value extraction with gamification and social gratification. YouTube, for example, proposed different programs for the most active users, even cash prizes. However, the owners soon understood the risks to make the users see the activity as a work, in fact called them in many ways, such as "hobbyists" or "volunteers", then the term became "Youtubers", however they were never called "star", "experts", or "employees". Social networks fear the experts and welcome the amateurs. Experts with high number gather big number but are difficult to control, while amateurs work with little rewards[8]. YouTube, as many others, allows to users that have a certain number of views to "monetize" their videos thanks to partnerships with advertisers, but it is difficult for it to sustain the big creators that threaten to start creating contents on other platforms. For example, it is known that Twitch, the streaming platform owned by Amazon, makes a loss over the big creators on its platform, either way Twitch cannot refuse them because they gather a lot of people on that platform and not on the competitors. Hence, when a user becomes an expert it gains contractual power, however this works only for the bigger ones. All the other creators are just "YouTubers" with little rights and payment, sustained by the followers' donations. Obviously, this creates a precarious situation for what is, after all, the largest part of the artists nowadays. Just to give some numbers, it is estimated that the value of a like on Facebook goes from 0,0005 dollars (value calculated with the downward auction mechanism between a social platform and advertisers platforms) to 174 dollars (according to the estimated cost of acquiring made by a potential customer by

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[8] The same situation happens on the platforms that offer pornographic contents. Professionals learn from amateurs and not vice versa. The main sites rely widely on amateurism (Casilli, 2020) and it is not a case that a platform as OnlyFans, not created for that purpose, became the perfect place for pornographic contents. Amateur creators found a better platform to independently sell their products and they used it for that.

a marketing agency); the value of a tweet can be evaluated from 0,001 dollars (on the basis of its contribution to the enhancement of the company Twitter) to 560 dollars (if it is a firm publishing it for an event) (Casilli, 2020). Data created from digital labour can be evaluated observing its use for three objectives: qualification (and categorization), monetization, and automation. Qualification means that users online evaluate and categorize whatever they see from goods, images, and even people. Monetization refers to the advertising aim of the activity online. In the end, automation pertains all the data that are used to create new technologies and enhance the actuals.

Social networks are "fake free" because they actually feature a situation where a part of the users find a way to be paid. Facebook or Instagram are just the biggest ones, which present a large percentage of not waged users. In summary, the biggest the social network, the largest part of free workers. This happens because their wide number of members elevate the level of the service they offer, hence, it is easier for them to attract users that accept to not get paid in order to use their platform. On the other hand, a social network with few members is simply useless, that is another reason why social networks tend to create a monopolistic market: it is highly difficult to create an attractive formula and sustain it long enough to attract a sufficient number of users. Many formulas have been tried, for example the American social network Tsu created a system in which the members received directly a part of the payments that the advertisers had to pay to the platform in order to see their contents. In practice, Tsu redistributed part of the earnings in order to attract members. Obviously, Facebook blocked any link on its site redirecting to the competitor.

3.4 Legislative solutions and approaches

Scholars argue that regulations should focus on two main issues: antitrust policies and state's control of the platforms (Pulignano, 2019; Steinbaum, 2019). In the last forty years workers' contractual power has diminished. Between 1948 and 1979 median wages followed workers' productivity, but this was lost afterwards, leaving median pay in stagnation. Inequality in the distribution of labour income has widen, workers' bargaining power has diminished and there has been a reduction in labour's share of national income. These outcomes were caused by the erosion of antitrust law and by state's inability to

control the implications of ICTs in economy. The erosion of the direct employee status has given the ability to employers to evade the obligations related to their position. The new forms of employment divide workers in specific closed tasks and increasingly move away them from the decision-making entity. But why previous legal framework could not grasp this new economy? For three main reasons (Ződi & Török, 2021):

1) Tripartite relationship. Employees have not only a relationship with company anymore, but with customers too. Workers are vulnerable to both the demands of the on-demand platforms and of the daily changing customers (Pacella, 2017).

2) Code and data control. As already underlined, data have a main role in the new economic forms of employment, and issues related to data are particularly difficult to grasp. Data gathering has two main implications: the information collection of both employees and employers and the faculty of "emulate" the market changing continuously in relation of real-time changes of the demand. The algorithmic architecture creates a specific situation for workers of continuous surveillance in which there is a wide information asymmetry between them and the employers and are isolated from the other co-workers.

3) Network effects. On-demand platforms easily reach very large pieces of the market mainly thanks to the associated economies of scale. As consequence they easily exclude the competition from the market, creating monopolies or oligopolies. Therefore, new antitrust regulations are required.

On demand platforms are especially difficult to regulate not only for the use of ICTs, but also for their highly transnational level, two characteristics that our legal frameworks struggle to grasp (Novitz, 2020).

In most states, gig workers are regulated as autonomous workers and there is a general trend to grant a minimum level of protection (such as minimum wage, illness grants, state's contributions) without categorizing them as employees. To allow a more specific condition for gig workers, most of the governments are thinking about creating a new model between autonomous worker and employee. There are three different approaches in doing so (Giorgiantonio C. and Rizzica L. 2018):

1) Jurisprudential approach. In 2016 the London Employment Tribunal in the United Kingdom has decided, related to the case Uber, that people working using an on-demand platform could not be considered autonomous workers. This was motivated by the fact that the platform had the power to modify the contract's condition and the service condition according to its wish. In a similar way has happened in the United States.

2) Negotiation approach. In Belgium SMart and Deliveroo signed a contract that granted a minimum wage and a contribution to the vehicle to the workers. In Denmark in 2018 was signed an agreement between Hilfr and 3F Union, that granted some protections and benefits to the workers.

3) Legislative approach. In France in 2016 the *Loi travail* provided a "social responsibility for the platforms" with which some rights were granted to the on-demand platforms' workers.

I will try to show how different political scenarios faced the gig economy in their specific way. Gig economy has widespread all-around Europe and has become an important piece of Member States' economies(Huws U. and al. 2017) (Dazzi, 2019).
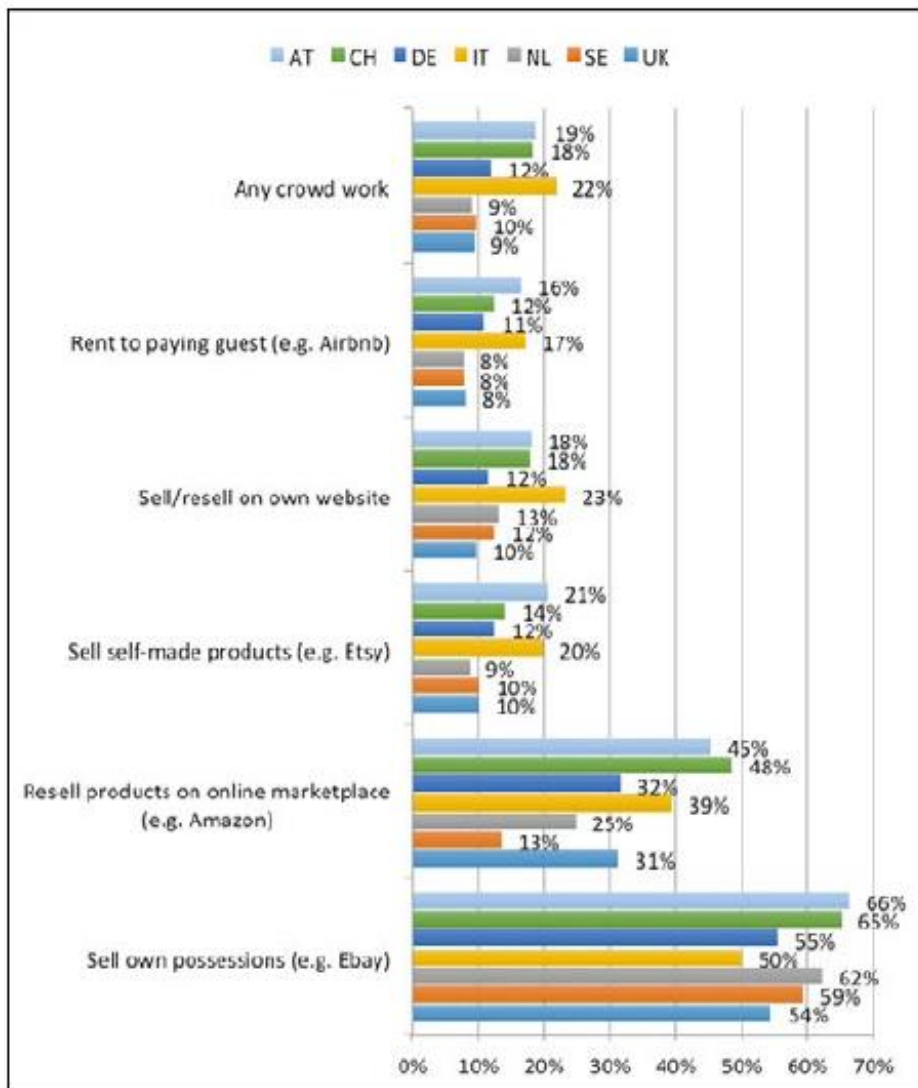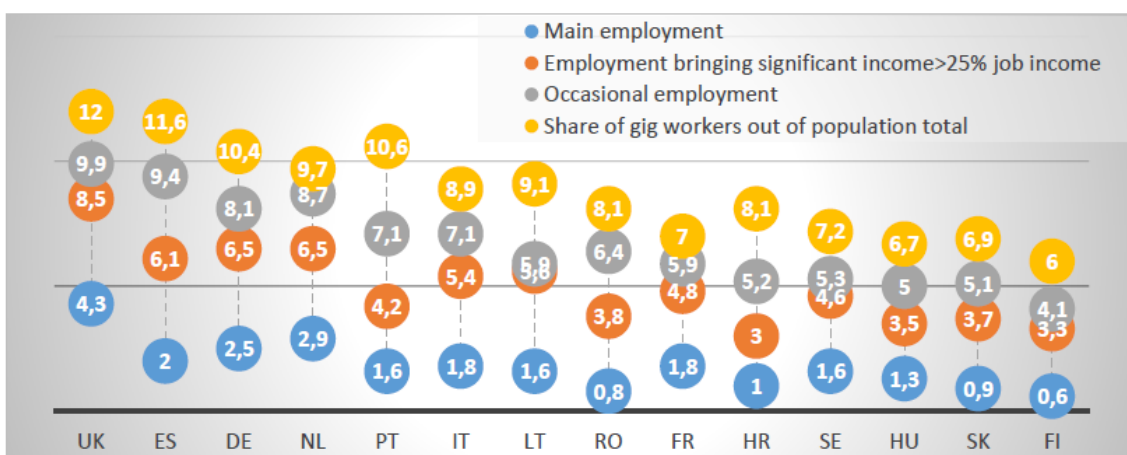
Figure 3.5. Impact of gig workers on the active population in the labour market and among internet users. Source: Ires Emilia-Romagna data processing based on COLLEEM dataset, European Commission.
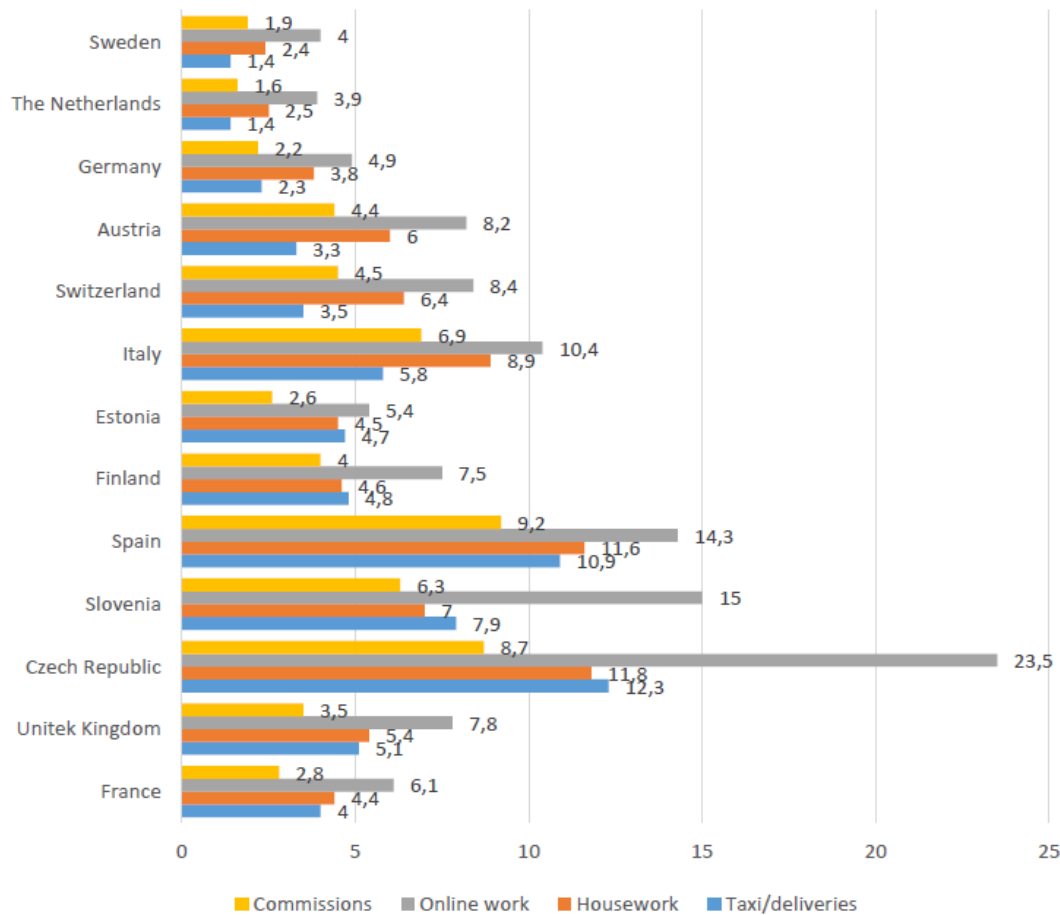
Figure 3.6. Share of the active population carrying out different types of platforms work at least weekly. Base: 2155 respondents in France, 2226 in the UK 2019 survey, 1991 in Czechia, 1990 in Slovenia, 2173 in Spain, 1996 in Finland, 1978 in Estonia, 2185 in Italy, 1995 in Switzerland, 1955 in Austria, 2171 in Germany, 2118 in the Netherlands, 2139 in Sweden and 2234 in the UK 2016 survey(weighed). Source: Huws, U., Spencer, N., Syrdal, D., Holts, K. (2017), The Platformisation of Work in Europe, Results from research in 13 European countries, FEPS, UniGlobal and University of Hertfordshire (2019).

Even though the issues presented persist in most of the cases, European Union approach to gig economy is different depending on the state. We will try to outline some of them (Dazzi, 2019):

- Austria. Some studies have highlighted the will of the Chamber of Commerce to propose a collective bargain for on demand platform's work, especially the one about food delivery. In 2018 the Austrian confederal trade union (ÖGB) proposed

to introduce the transition from self-employment to employee. In this way it should be applied to gig workers the national collective agreement, once more than 100 hours of work for a platform.

- Belgium. At the beginning of 2019, a member of the national trade union confederation CSC, the CNE trade union, created an experimental initiative of self-employed workers of the platform. Apart from this, it seems that the debate is quite slack, probably because of the existence of cooperatives in the digital world that offers services and protection to the freelancers. This has been seen as a "third way solution".

- France. The El Khmori Act is the first labour law in online platforms (2016), granting to platform workers the rights to strike, association, and collective bargaining. However, trade unions try to compensate where the law lacks with initiatives such as the union trade platform created in 2016 by the CGDT, giving services and advice to self-employed workers.

- The Netherlands. Collective actions have brought Deliveroo to transform the form of work from subordinate and autonomous. Self-organized workers have created a "Riders Union" supported by the FNV union, that has entered collective bargaining with Temper.

- Spain. Forms of worker self-organizing representation have developed, such as the case of RidersXDerechos, demonstrating a strong capacity of networking at the European level. The more traditional unions have created digital information tools for gig workers, such as the portal UGT created in 2017. They also have helped lawsuits and in 2018 have activated labour inspectors with the "colectivo conflict process" against Glovo. In 2018 a first agreement was signed between Deliveroo and the Spanish Association of Riders (ASO).

- Switzerland. At the beginning of 2019 Syndicon, the Siss ICT trade union, and its employer counterpart, the SML Swissmessengerlogistic, signed a contract for riders and couriers covering different benefits.

- Germany. Trade unions and primarily Ver.di and IG Metall have developed methods to grant inclusive bargaining, dialogue, and services for workers. Particularly interesting is the case of Delivery Hero, that after a legal action was forced to transform in Societas Europea and to include a European supervisory

committee of six members, three of whom are members of the work council and one a rider.

- Denmark. It presents two collective agreements of interest. The first in 2018 between Hilfr cleaning platform and the trade union 3F, introducing a minimum wage and other benefits. The second between Voocali, a Danish interpreter platform, and the trade union HK in which they agreed not only some benefits but some organizational aspects of the workers too.

In Italy in 2019 the Government introduced law provisions for platform workers, declaring a presumption of "quasi-subordinate" and introducing some benefits (Act 128/2019). Five can be highlighted as interesting points (Giorgiantonio C. and Rizzica L. 2018)(Dazzi, 2019):

1) Riders Unions and local bodies are strongly interconnected. Between 2016 and 2018 several public protests were self-organized in the main cities, such as Turin, Milan and Bologna (Tassinari & Maccarrone, 2017).

2) In 2019 self-organized unions, the Municipality of Bologna, some food delivery platforms, and the local unions (Cgil-Cisl-Uil) signed the Charter of Fundamental Rights of Digital Workers of Bologna, an agreement granting minimum wage standards, and linking them to the sectoral, information and insurance CCNL (Contratto collettivo nazionale di lavoro).

3) The CCNL for transport and logistics signed by CGIL, CISL and UIL creates and regulates the figure of the "rider".

4) In 2019 a company agreement signed with the unions and LaConsegna (a food delivery company in Florence) recognizes the subordination of the riders, becoming a landmark for all Tuscany.

5) In 2018 a Charter signed by Assodelivery, a federation of platforms between Deliveroo, Glovo, JustEat, Uber Eats and Social Food, reaffirm the formal autonomy of the riders and the right to a fair wage.

It must be noted that the food delivery platforms are the most diffused, given that transportation services, such as Uber, have been blocked due the need of licences and the protests of taxi drivers.

Another interesting case is Australia, that has seen a rapid growth of the gig economy in the last years. In 2016 only a number under 80,000 workers, around 0,5 percent of the workforce, were engaged in gig economy platform such as Uber, Airtasker and Deliveroo. Three years later, in 2019, a Victorian State Government's Inquiry found that on a large-scale survey the 7.1 percent of the sample were working for an on-demand platform or had done so in the last 12 months, and an additional 6 percent had worked in the gig economy more than 12 months preceding the survey (Forsyth, 2020).

For the most of it, Australia's government has welcome gig economy's arrival in the country. At the beginning, in fact, gig work allowed benefits for employees, such as flexibility and the possibility to supplement income. However, these benefits brought issues such as the ones that we discussed in the first chapter and Australian unions begun to rise concerns to which the Government had to answer. Several inquiries at both federal and state level have been carried out, two of which will be taken in exam. In 2017 the Report on "Corporate Avoidance of the Fair Work Act" made by the Education and Employment References Committee of the Australian Senate highlighted that gig economy was creating insecure and unstable conditions for the workers, erasing generations of political conquests[9]. The Report also stated that this type of business was avoiding protective regulations included in the Fair Work Act. However, these points were not implemented by the government, bringing innovation costs as motivation. The second Inquiry took place in the 2018, demanded by the state government in Victoria to examine the On-Demand workforce conditions. The inquiry has reported many problems, one of which is that 45.5 percent of platform workers were not provided with insurance coverage for injury or professional indemnity.

The biggest response came from union, also because employment conditions for private sectors are regulated by federal law and not state law. The most important Unions have been the Transport Workers Unions (TWU), Victorian Trades Hall Council and Unions New South Wales. From a wide survey released in 2018 by TWU has resulted that a driver for Uber, Ola, Taxify and DiDI earned on average 16.00 dollars per hour, which means that 67 percent of drivers working full-time hours received less than the Australian Bureau of Statistics average weekly wage, at the time of 1586 dollars. Many campaigns have

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[9] "The gig economy is normalising labour conditions it took generations of political struggle to stamp out in this country: precarious circumstances in which a person may not know where their next few dollars are coming from: insecure, unprotected, sporadic work" (Forsyth, 2020)

been started by Unions, highlighting concerns about legal misclassification's problems. In 2019 the Council of Trade Unions (ACTU) held a campaign to the federal elections proposing a new regulatory framework. First of all, they proposed the creation of a new category of worker between employee and independent. These moved also the Labour party and the Greens in broaden the Fair Work Act in order to include the new typology of workers, however neither of these proposals were implemented and the new coalition government did not face the question (Forsyth, 2020).

It can be noted that the most important problem for the gig workers is their boxing in a legal framework that does not recognize their situation. This happens because it is new. Digital platforms are a fruit of the digitalization, and the legal framework is having many troubles in regulating everything that concerns internet and ICTs. Data gathering and sharing has completely changed our economy and politics struggles to categorize and to create a framework in order to regulate what comes from it, most of the time with little results. From Smart Cities to on-demand work platforms for services and to social networks, technological and social innovations escape most of the times the politics' control. However, the key to solve the problems that rise is to understand them. Understand which are the characteristics of the new typology of economy that allow to create new categories for workers and new regulations to make everything work better. Either way, it seems that societies are still changing very fast such as ICTs, so it is needed that political demands look at the future to understand and effectively change the present. Democracies have to face this power structure in order to be accountable and make the market accountable, and this process can begin only with a renovation of the legal and political frameworks, recognizing these tendencies.

Chapter 4. Platform urbanism and Smart cities. The public service delivery's market and the sell-out of state's political legitimacy. The power relation between State and market

4.1 Collaborative and algorithmic governmentality

The advent of the New Public Management as new technique of governance in the 1980s has brought new forms of collaboration between the institutions and the private actors in the western states (Blanco, 2015). Given the decentralization and the need of more widespread public action driven by the new neoliberal trend, numerous governments found in the new form of "collaborative governance" an effective technique to supply the public demand. Collaborative governance is nothing more than the implementation of the neomanagement trend in the public policies' actions. Private actors such as firms, enterprises, multinational companies, third sector's associations and so on, became the main actors of the service delivery financed by the State. The partnerships between public and private actors transfer the risks in the public and the profits in the private, creating a specific union that enhances a market of the public service delivery. Delegating public services to the market, the state is not only financing it but also giving away its legitimacy. Private actors gain fundings, legitimacy, and the space to implement their businesses, while public actors receive the risks, given that the private actors remain unaccountable in most cases, and the capacity to supply to the public demands. Just to make an example, in certain African States such as Nigeria, Kenya, and South Africa, Mastercard has a partnership to emit the identity cards of the citizens. In addition to provide services of personal and official identification, the cards inscribe the person for the access to credit and money through Mastercard systems. The official justification is that this allows to excluded parts of the population to became financially active, however it is clear that this is a system to implement Mastercard's business through public policies. Another example, underlining the importance of strategic places, is the concession of the management of the port of Piraeus, in Greece, to Cosco (China Ocean Shipping Company), a Chinese firm affiliated to the state. The firm responds directly to Chinese state and earns economic authority over a part of Greek territory through the

implementation of the public governance, in particular this concession was a part of the implementation of the Chinese infrastructural expansion's programme known as Belt and Road Initiative. Moreover, in some areas private companies perform military and security activities, earning the delegation of the state's monopoly of violence (Mezzadra & Neilson, 2019). The big cities' infrastructures are created and planned by private companies that earn the control of the citizens' spaces and data. Jobs become more and more precarious, featuring a "city of projects", based on networking enhanced by the new ICTs provided by the same technology firms that build the public infrastructures (Chiapello & Boltanski, 2014).

The control of territory is crucial in both the governmental technologies analysed by Foucalt (Foucault, 2005b) and the new techniques of value extraction. After all, to create value it is necessary to have work, workers can be decentralized but will still live somewhere. New organizations of work have diluted the connection between workers and territory, creating also the weakening of political power that cannot avoid acting on a limited space. In particular, the processes of financialization have an important role in disrupting national economies. (Mezzadra & Neilson, 2019). In fact, new forms of political power have raised in order also to control the international capital flow, most of the time turning in its vectors more than controllers. For example, back in 2015 the start-up Realeyes won 3,6 million euros from the European Commission for a project named "SEWA: Automatic Sentiment Analysis in the Wild" with the aim to read the emotions of a person looking at a content, in order to understand his appreciation or disapproval. The year after the firm won the prize Horizon 2020 for the implementation of this technology for advertising purposes (Zuboff, 2019).

Before going into details of the new form of urbanization it is relevant to add a last piece to the conceptual framework of this research, outlining the idea of algorithmic governmentality, or *"Gouvernamentalité algorithmique",* coined by Antoinette Rouvroy (Rouvroy, 2020; Rouvroy A., 2016; Rouvroy A. & Berns T., 2013; Rouvroy A. & Stiegler B., 2016). With the notion of "algorithmic governmentality" Rouvroy tries to outline the new form of government featuring the processing and analysis of big data, and their economic use, as main core, rather than politics, law, and social norms. Practically, the concept highlights almost all the tendencies that have been presented in this research retaking the Foucauldian notion of *"gouvernamentalité"*. In particular, the algorithmic

governmentality outlines the new regimes of truth based on data and economic values, that surpass the old regimes of truth based on politics and law. The concept can be useful to understand that the various processes are not unrelated and go towards a specific power structure based on algorithm management. The notion of *"gouvernamentalité"* features a shift from the political to the market field. In Foucault the concept was related only to the actions of the government, that used economy as verification tool, hence as first method of decision-making. On the other hand, Rouvroy is focused specifically on the new regime created by the capitalism and the evolution of market. This may seem as an error but actually, as already outlined, the shift of the concept resembles the fact that governments rely more and more on private actors for public governance. The division between private and public is erased, and the political power deprived of authority. Governmentality nowadays cannot be thought as a statal prerogative, rather presents a multiplicity of actors from both the public and private spheres.

It is important to underline that this is not only a western trend and that it has not raised in all western states nor with the same development, however we can notice three common features: the creation of a new market of public services, the spread of digital technologies, and the planning of a new "smart" urbanization in numerous cities. In the following pages we will underline some of the critics that have been brought towards this trends, quoting some of the most known examples.

4.2 Smart cities: only a neoliberal product?

Smart cities represent the more visible, even if not the only one, product of the collaborative governance and the use of ICTs in the public service delivery. The main critiques that have been made with regard to collaborative governance, and more specifically to the smart cities, can be summarized as followed (Reuter, 2020):

1) Overemphasis on technological solutions. The digital and technological tools are seen as the focus of the majority of the policies, sometimes without questioning if these tools are effective or not in that particular situation. One of the criticisms that has been moved to this trend is that ICTs' firms hold in reality the monopoly in many of the public service delivery and that are preferred above all the others. Digital and technical tools can be very useful but the focus

of public service delivery, following the critiques, should be to solve a problem not to make a specific tool useful and therefore profitable (Bunders & Varró, 2019; Jucevičius et al., 2014). The spread of technological tools often is correlated by activities of data gathering that are used, officially, to enhance the services, but more properly to implement the value extraction assets already outlined in the previous chapter.

2) Top-down implementation and technocratic governance. Another critic is the lack of democracy in the process of agenda setting. In particular, it has been studied that even if the service delivery should be opened to all non-institutional actors, usually small groups of corporate-government alliances are created and completely exclude citizens' inputs or smaller actors. Public service delivery shows oligopoly tendencies in the most important fundings' applications, with a substantial lack of accountability. The governments' tendencies to avoid structural plannings brings a situation in which structural infrastructures are delegated to private actors, while social problems are destined to third sector's or religious organizations unable to solve the issues.

3) Corporatization and privatization. More and more public functions are handed over to private actors that have as main objective their profit maximisation, this affects state local democracy and legitimacy. In particular, it has been shown that private actors' planning is focused on small periods of time, lacking the ability to structure interventions on the long period, a capacity that political institutions should have (March, 2018).

4) Reinforces divides and inequities. In the more specific case of smart cities, the scientific literature underlines that in most cases the private actors' services tend to reinforce digital divides, inequalities and power asymmetries, exacerbating the already existing differences in the big cities (Colding & Barthel, 2017).

5) Surveillance and privacy violations. Both States and Smart cities use data gathered and profiling information to support surveillance, service delivery and problem solving. However, the spread of data gathering from both institutional and private actors can be a big problem for privacy and democracy. The new tools enabling predictive profiling, social categorization and citizens' behaviour influence, have been the focus of the biggest scandals of the past few years,

such as NSA's revelations by Edward Snowden or Cambridge Analytica analysed in the second chapter (Sta, 2017).

6) Security concerns. The new urban systems and the digital instruments created, are potentially vulnerable to hacking and cyber-attacks, building an unstable environment.

Reading the numerous researches on the economic ideology behind the smart city outlines two main different positions: one arguing that smart cities are a natural product of the neoliberal market cooperating with the local government with the only aim of multiplying the capital (Grossi & Pianezzi, 2017), and another point of view asserting that smart cities are the natural product of scientific and technological progress implemented by the new forms of urbanization to make citizens' lives better. These two points of view have referred to two different economic models: the neo-Keynesian perspective, that sees a more direct action of the government as the solution to contrast the overpower of the private actors, and the neo-Jacobsian perspective, that emphasises the endogenous dynamics of urbanization as an auto-innovative machine. The concept of "start-up state" (Moisio & Rossi, 2020) analyses the two models of economic governance, arguing that both do not get to the point. The authors analyse the new economic trend as "an ideologically intricate neoliberal project, […] that brings together people, government, firms, technologies, organisations and governmental technologies in the name of economic growth, innovation and national success" (Moisio & Rossi, 2020, pp.3). In their point of view the new processes of urbanization go beyond the dichotomy government-governance, with the state seeking to capitalise with new form of entrepreneurial urbanization.

New forms of urbanization as the smart cities in their multiple forms are difficult to be labelled with the old categories. With the new public management and the different forms of collaborative governance, private actors are more and more part of the state's governance. A separation between private and public is more and more difficult to draw, such as a clear separation between actions driven by profit or political purposes. An analysis of the scientific literature shows that new models are needed to read the new form of governance, featuring a new link between market and state (Melgaço & van Brakel, 2021).

4.3 Data security and Platform capitalism: a threat for the citizens?

Since the end of 1970s Michel Foucault with his concept of "biopolitics" (Foucault, 2005b) (Foucault, 2005a) had already underlined the government's trend of going deeper and deeper in citizens' lives, translating more government's actions in *governamentalité*, gathering more and more information in order to control the population. The concept of *governamentalité* is not the same of governance, but the collection of citizens' data by both the state and the ICTs multinational companies is factual (Colding et al., 2019; Galdon-Clavell, 2013). There are several problems, not only related to the privacy right, to be assessed, but first of all we need an overview about digitalization trends, and how digitalization affected data gathering. The new devices are not just tools, in fact a tool generally does not do anything if not used. On the other hand, our society transformed from a tools-based technology environment to an addiction and manipulation-based technology environment. New devices are meant to attract users and to nudge their behaviours[10].

There are four major factors that have changed digitalization spread: the spread of wireless broadband access; the diffusion of smartphones and mobile devices; the declining cost of moving, processing and storing data; and the diffusion of social media and platform business models (van Winden & de Carvalho, 2017).

The number of OECD inhabitants owning a mobile broadband access rose from one to three in four in the period of time going from 2009 to 2013 (figure 4.1).

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[10] This is a topic discussed in the documentary "The Social Dilemma" (2020) by Jeff Orlowski.
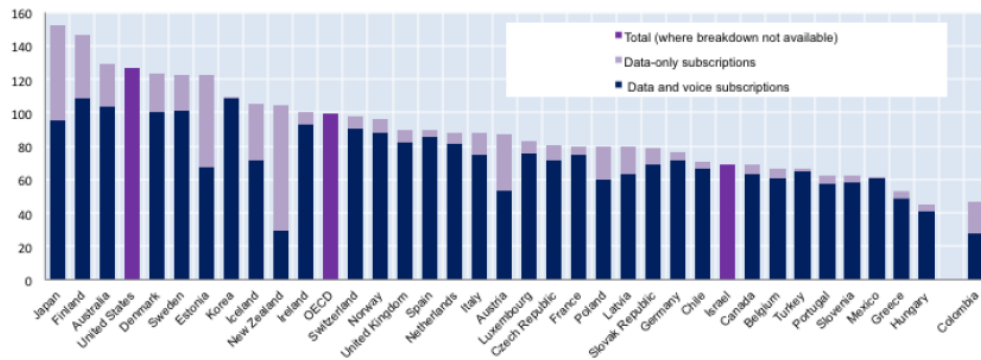
Figure 4.1 OECD Mobile broadband subscriptions per 100 inhabitants, by technology, December 2016. Source: OECD Broadband portal (van Winden & de Carvalho, 2017).

A related trend is the spread of smartphones in society, meaning that almost every citizen has a minicomputer moving, processing, and storing data, in their pocket all day long (figure 4.2).
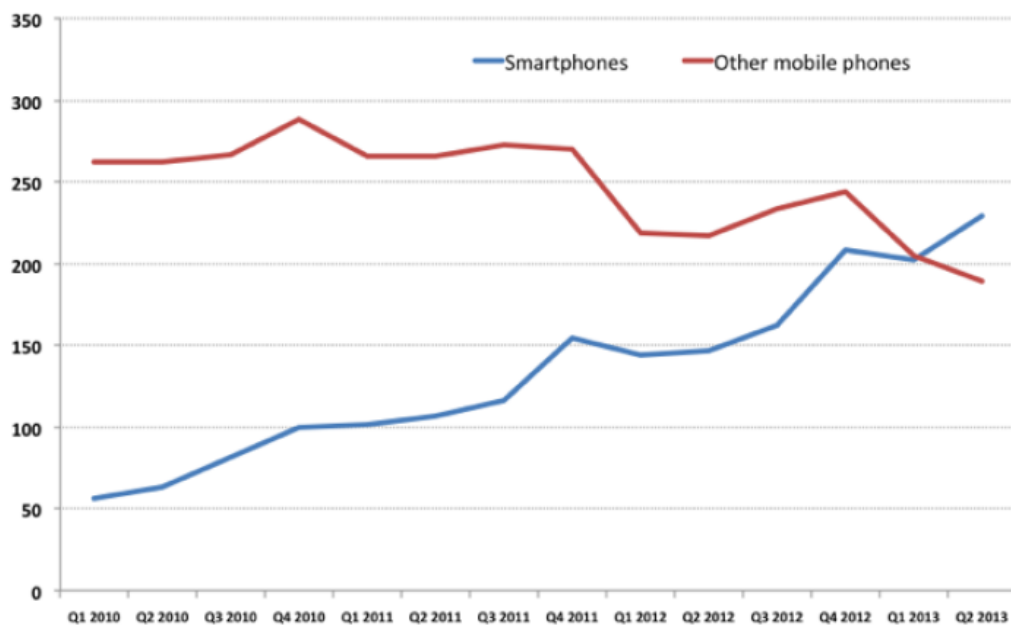

Figure 4.2 The progress of smartphones 2010-2013 (millions), based on data from OECD (2014), using information from the 14 largest mobile producers global sales data (ABI Research) (van Winden & de Carvalho, 2017).

Without going too into the details of data about digitalization's spread, in the latest years the diffusion and gathering of information and data have exploded, thanks to the new ICTs (Reaver, 2019). Profiling of citizens and consumers has become common and integrated into both the governance and the market. ICTs are one of the most used tools for service delivery and one of the most recognised assets of smart cities. Just to make some examples:

- IBM, promoting the centralization in IOCs (Intelligent Operations Centre) of information and control of public safety's and Law enforcement's operations (implemented in 2010 in Rio de Janeiro, Brazil);
- Siemens, developing integrated intelligence into infrastructures;
- Cisco, building systems of data gathering to manage urban services (implemented in Dubai, Kansas City, Adelaide, Hamburg, and Bangalore) (Morozov & Bria, 2018);
- Phillips, creating connected systems of Smart LED lighting. Data collection abilities through the use of internet, social networks, Internet of Things (IoT), AI, and sensors, have brought very precise instruments of profiling. Hyper targeting through data analytics, facial recognition, and individual profiling has been recognized as a threat for massive manipulation and control via the surveillance capitalism (Calzada, 2021). In fact, the debate has led in Europe to the enactment in 2018 of the General Data Protection Regulation (GDPR), which became an inspiration for several data regulations.

However, the most influent firms of digital media are the FAGAMI group: Facebook, Amazon, Google, Alphabet and Microsoft (Cooke, 2020; Zuboff, 2019).

One of the most known projects was Alphabet's Sidewalk labs in Quayside, Toronto (Artyushina, 2020; Cooke, 2020). In 2015 Alphabet Inc. was created by restructuring Google, with the aim to make the core business cleaner and more accountable, and not much time later Sidewalk Labs became one of the five firms under its name. Sidewalk started with free-Wi-Fi stands in New York, with the justification was to fight "digital inequalities". The real aim was to gather data. In 2016 a U.S. public partnership with the department of transportation financed a project to manage the traffic, where Google had the opportunity to enhance its system of transport management, Flow, supported by

Google Maps and Street View technologies. In Colombus, Ohio, a three-year experimentation brought to the creation of a hundred Google stands and the free access to Flow, with the aim to create "dynamic parking, optimization of parking control, and the marketplace of shared mobility". These phrases hide the activity of value extraction from the data gathered, that combines public and private goods on dynamic markets. The implementation has as only aim the maximisation of profit from citizens and bind the public administration to use the information owned by Sidewalk. In order to collaborate with Sidewalk cities have to share their data on transportation and invest a large sum of money on the platform, even that destined to public transportation (Zuboff, 2019). Sidewalk started many collaborations in various cities, one of the most known is the Sidewalk project in Toronto, started in 2017 and cancelled on the 7th of May 2020, precisely for criticisms regarding the high-tech plan, manly over data privacy issues. In 2018 Cambridge Analytica scandal made public opinion more critic over data gathering and privacy issues, hence Alphabet proposed to include in the plan an Urban Data Trust in order to secure citizens' privacy. However, even then political and civic opinions were afraid of the use of the data for economic purposes. In fact, Data Trust wasn't enough to reassure public opinion, Alphabet would either way had the possibility to manage and sell the data so in 2019 Canadian regulators asked that Data Trust was excluded from the urban plan. This brought in 2020 to Alphabet's decision to definitely stop the project.

4.4 Alternatives and solutions to retake data and cities

One of the most discussed problems of the collaborative governance is the lack of political legitimacy. Most public services are the result of negotiations between private actors and local institutions, leaving little ground for democratic dialogue. The citizens feel more and more ousted from participating in public life, and this affects state's legitimacy. Trying to solve public issues the state relies on technocratic and private actions; in one way this helps supply public demands but on the other it drives citizens away from the institutions. In his article Gregory Trencher analyses a possible solution to this issue, framing the concept of "smart city 2.0" (Trencher, 2019). As he writes, smart cities 2.0 consist in "a decentralised, people-centric approach where smart technologies are employed as tools to tackle social problems, address resident needs and foster

collaborative participation" (Trencher, 2019, pp.1). This new urbanization asset contrasts with the previous type of smart city, that was seen as primarily focused on the diffusion of ICTs following the market interests (Figure 4.3. Trencher, 2019, pp.2).

	Smart city 1.0	Smart city 2.0
Focus of vision	Technology and economy	People, governance and policy
Role of citizens	Passive role as sensors, end-users or consumers	Active role as co-creators or contributors to innovation, problem solving and planning
Objective of technology and experimentation	• Optimise infrastructures and services • Serve demand side interests and spur new business opportunities • Address universal technical agendas (energy, transport, economy)	• Mitigate or solve social challenges • Enhance citizen wellbeing and public services • Address specific endogenous problems and citizen needs
Approach	• Centralised (privileged actors) • Exogenous development	• Decentralised (diverse actors) • Endogenous development

Figure 4.3 Comparison of key attributes in the first- and second-generation smart city paradigms (Trencher, 2019).

As the article underlines, smart cities 1.0 and 2.0 are not one the evolution or the other. These two framing are two visions constantly in competition with each other. There is not just one type of smart city but a general trend, and these framings try to improve the way the governance is planned and implemented.

An interesting example analysed in the article is the one regarding the city of Aizuwakamatsu, a city in Fukushima prefecture, in Japan. The city has implemented numerous strategies to develop a people-centred governance, one of which coordinating local bus operators (Trencher, 2019, pp.5-6). In 2015 local institutions have gathered resident addresses and demographic databases, and they have linked them to a Geospatial Information System (GIS). Hence, the municipality cooperated with the local bus operators, residents and community groups to replan bus routes and timetables during 2016. The progressive ageing of the population had constantly decreased the use of bus transports, but with this new approach of cooperative digital planning the municipality succeeded in reforming the local transport system, following citizens needs and reducing bus operators' money losses.

The idea that a different smart city is possible is tempting however does not erase that practical examples of smart cities are different and present numerous issues. The other criticism that is often underlined is the concentration of data in the hands of institutions and big ICT firms. Profiling can be useful to implement a more efficient service delivery, but it can be a threat too. The possession of these information can give power of mass control, harming the democratic legitimacy. Numerous scholars write about the "data sovereignty" as a possible solution to this issue (Calzada, 2021) (Morozov & Bria, 2018). Data sovereignty, such as "technological sovereignty", is a rather simple concept, framing the possibility to create a system in which citizens are involved in the decisions regarding how the technological infrastructures, built for the urbanization development, operate and what aim they are created for. Data sovereignty can be built in many ways. The main principle is always to create a more people-centred city. One of the ways in which data sovereignty can be implemented is the "data cooperative". Data cooperatives are corporations or data holders' groups that consent to share and own data for mutual and common benefit, trying to rebalance the asymmetrical relationship existing between data owners and data users.
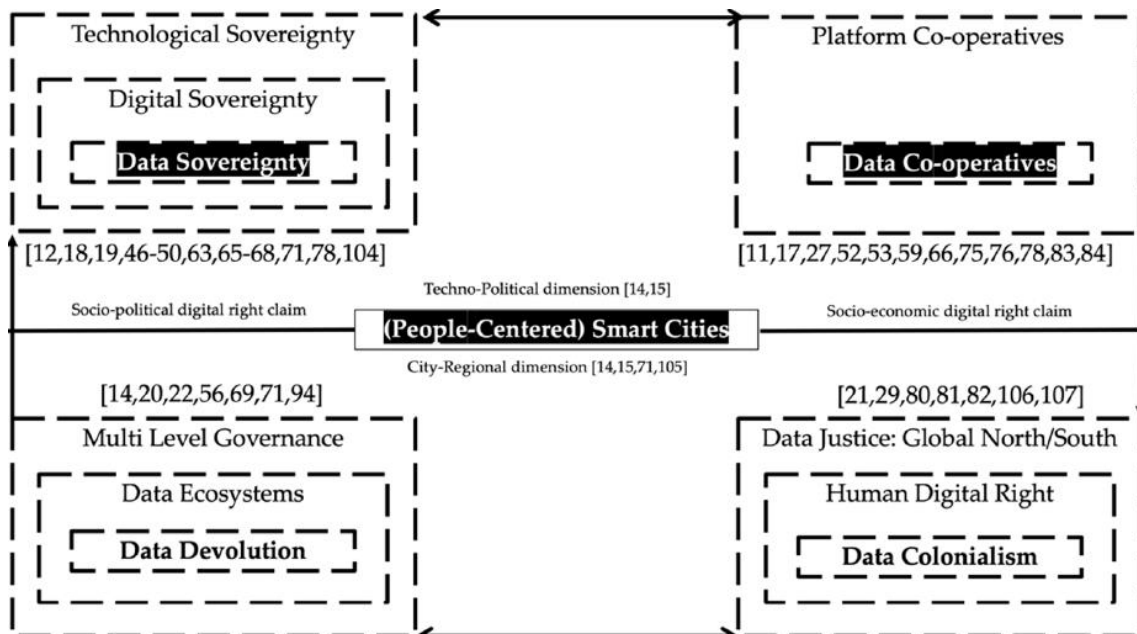

Figure 4.4 Framework, structure, and literature review: technopolitical dimension of the 'People-Centred Smart Cities' consisting of data co-operatives through data sovereignty (Calzada, 2021).

Platform cooperation is based on "member-owned data management storages (e.g., credit unions) with fiduciary obligations to members, where all data usage is for the benefit of members and done only with their consent; it is driven by privacy preservation. Data co-operatives focus on data interactions among citizens and not essentially on the core social value behind them" (Calzada, 2021, pp.4).

Platform cooperatives feature eight important characteristics (Nembhard pag.28, in Schneider and Scholz, 2018):

- Cooperatives supply social needs and address market failures.
- Cooperatives invent new ways to aggregate people, resources, and capital, overcoming historical barriers.
- They highly contribute to the national income. In the U.S. 30 thousand cooperatives add 154 billion dollars to national income, creating over 2.1 million jobs.
- This type of business presents a lower failure rate.
- Cooperatives are more likely to make local communities grow.
- They help communities' stabilization processes.
- Cooperative start-up cost can be low.

Platform cooperatives have different ways to create alternatives to platform capitalism, such as the open access and the digital commons.

There are several groups that can be listed to make an example, I will describe just a few:

- In Barcelona, Spain, was found in 2017 the non-profit data cooperative Salus Coop. The cooperative works in the field of health research, with the aim to create a data management controlled by citizens. It allows citizens to control their health records and implements data sharing in order to facilitate research innovation in healthcare.
- Coopify was created by Steven Lee in New York and helps low-income workers in cooperatives and enterprises, thanks to the use of technology.
- Another example is represented by the data cooperative Driver's Seat, founded in Milwaukee, Wisconsin, during the 2019. The group is owned by the drivers and thanks to the data sharing through a digital application, they have been able to enhance the gig economy of ride-hail drivers and on-demand delivery. The collected data have been used by the drivers themselves to improve their

earnings and activities. Also, selling the data to the local and state institutions has made possible to improve policy planning and law enforcement.

- Stocksy United is a stock photo agency created by Nuno Silva and Brianna Wettlaufer, that provides royalty-free licenses on exclusive photos thanks to an online marketplace that gives the opportunity to photographers to build a career. The photographers are sustained by a transparent system of co-ownership and profit sharing.
- The last example that I will list is MyData, a data cooperative born in 2015. The group helps users to secure their personal data and supporting them in the data management and sharing. Members' profit from the sale of data are donated to public research.

Furthermore, the advent of internet and the new ICTs technologies represent a tool that needs to be analysed not in a neutral way, as too often has been made (Bär et al., 2020). Profiling and mass data management's technologies need to be contextualized in the contemporary socio-economic reality, with their pros and their cons (Colding et al., 2019). Leaving the ground to the development and enhancement of these technologies without a political dialogue can represent a real threat to democracy. Both collaborative governance and ICTs technologies are the core of the smart cities and the new trends of urbanization planning. Developing people-centred cities is not easy. Numerous actors with different interests are involved, that is why a political dialogue should be implemented, trying to minimize the up-bottom decisions and private-public negotiations, and leaving the ground to bottom-up solutions and citizens-institutions dialogue. Some of these examples represent successful alternatives of both public and private management, however they do not give a satisfactory solution. However, the tendencies that have been analysed create a power structure impossible to overcome just with small economic alternatives, political request needs to be higher. A group of people can create a functioning platform cooperative, but the system of value extraction is the same: either they sell data, or they will not earn as much as the other firms, becoming not competitive. The same works for public management solutions, the only way for an alternative to be produced, is to prevent firms from creating the system of value extraction. In other words,

to prevent the market from taking the control of certain activities, political institutions and citizens must decide the rules, making these firms democratically accountable.

Conclusion

The research tried to organically put together an analysis concerning the tendencies that today form a widespread power structure that touches all the aspects of our social life. However, during the gathering of major topics I could not fail to see many other possibilities of analysis that could have ameliorated it. First above all, the geographic differences. As already said, this thesis focuses on Western countries and even if it makes some differences in the examples, it does not outline the major structural differences between the States. In particular, the differences between U.S. and European countries would have given much more insight on the problems, especially regarding the collaborative governance, given that the governance traditions of European countries and U.S. states, even if they affect each other, differ both internally and between the two. Another interesting overview would have been about Japan, given that the country presents major similarities in the governance despite being an Eastern state. The topic of developing countries and colonialism, as already said, would have been another major aspect to explore, especially given the influences that new ICTs have had on the power relations between colonialised and first world countries. Furthermore, in the last chapter it would have been interesting to explore with more data the evolution of statal planning and financing. As already explained before, this was not the main aim of the research, however it would be interesting to further analyse the translation from a governance made by structural planning and ideological battle to the nowadays governance based on public and private collaboration.

In the end, the bibliography touches various topics, that are usually discussed separated, because one of the aims of the structure given to this thesis was to show how much intertwined these aspects are. The critique to collaborative management was useful to outline the manifest problem of states' submission to the capital. It is not new that modern state has been an instrument for the development of the capital system, however nowadays the balance of power between the two seems evidently to create an empty politics. Institutions are losing more and more accountability and as seen, citizens are less and less involved in the political life. Even though they undergo the consequences of the decisions taken by the governments, the majority is either excluded or disillusioned. In particular, those that most of all bear the consequences of the new power structure are the

younger generations, in particular those born during the '90s. The so called "digital natives" have lived through the spread of the ICTs in all the aspects of social life with little time to adapt. Younger generations are considered to be the ones that really understand the new technology, but being able to use a tool does not mean to comprehend its functioning. The fact that young people possess and constantly use devices connected to internet actually makes it easier for them to be addicted and controlled by the scientists that are behind them. A survey in 2012 found that young adults spend on the media the longest part of their days confronted to all other activity, counted almost 12 hours on any media on average. In 2018, Pew Research concluded that around the 40 percent of the people between 18 and 29 years old feels to be "constantly" online. Obviously, this is not just about young people, the same research reports that the percentage of the people between the 36 and 49 years old feeling the same way reaches the 36 percent. However, the younger they are the higher the percentages (Zuboff, 2019). Social media and the use of internet have a huge impact on the lives of people, in particular on the perception of the world. Various studies affirm that the use of social media enhance the probability of psychological disturbs, such as depression, this happens because the life represented online is a "fake life", far from the imperfections of reality. A picture in the best moment of the day or even created ad hoc for the followers hides what happens between, the final effect is a hero comic book in which the space between the panels is hidden. The platforms' owners know that, but they emphasize the fake proximity between social media and reality because they earn from it. To possess the platform on which people communicate and share contents mean to control a verification space of reality. A study carried out internally by the same Facebook and leaked on the Wall Street Journal[11] outlines the serious psychological effect that its platforms have on people, especially young ones. For example, the study shows that Instagram causes disorders and depression in the 32 percent of female teenagers. The study was made by Facebook but disclosed thanks to a leak. In sum, just as extracting oil destroys nature environments, the misuse of social network destroys the social life and damages people.

This research has not the aim to demonize new technologies nor services. The aim of this research is to outline what does not work in these elements and trends, and in particular

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[11] https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739?mod=hp_lead_pos7

to highlight the power structure created by them in order to ameliorate it. New technology are an instrument, a powerful instrument, that can make our lives better and create more equal societies. However, we should think of the new ICTs as dynamite not as penicillin, both can do harm if used in the wrong way, but the first is much more easy to slip on the dangerous side. Technologies need to be handled with caution, but in particular need to be made democratically accountable, otherwise we could end becoming the tools and they the owners.

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