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**CHANGES IN
PROFESSIONAL
WORLD AND THE
RELATIONSHIP
BETWEEN URBAN
AND PERIPHERAL
AREAS**

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Introduction

From an economic point of view, urban areas have always been a key hub. They have often anticipated the cultural, social and economic evolutions of society, becoming real laboratories. However, in the last hundred years, changes in the world of work have led to sudden changes in urban areas. Over the course of a few decades, these areas have gone from being the hub of an economic system based on the Fordist industry to being the hubs of global sales and production networks. These sudden changes in the economic and social fabric of urban areas have inevitably led profound modifications in the relationship between urban and peripheral areas. The latter, while appearing as the great "defeated" of the economic transformations of recent decades, have been able to show in some cases a certain economic vitality, focusing on different development paths from those implemented in large metropolises. The study of the relationship between urban and peripheral areas, and how this relationship has changed over the decades, is not only important from an economic point of view, but also from a social, cultural and political aspect. In recent years, the peripheral areas have been the reservoir of votes of many populist political movements, opposed to the economic models that have become predominant in recent decades. Therefore it has become fundamental to understand what led to similar "political revolts" and how to allow an active inclusion of peripheral areas in economic development processes¹ (Rodríguez-Pose, 2018).

The exogenous factor of the pandemic which has broken out in recent months, caused by the Covid-19 virus, should also be included in this report. This pandemic has reached greater peaks in large urban areas, the "engines" of the modern economy. However premature it may be to predict how this virus will change the social and economic fabric of urban and peripheral areas, it is important to understand how this exogenous shock is creating effects that will continue beyond the short term. In light of these considerations, the analysis, evolution and development of links between urban and peripheral areas is extremely important today, not only for economic analysis, but also because the evolution of the urban fabric of these areas affects has economic, cultural, social and political consequences.

To better understand this relationship, and how it has evolved over time, it is necessary to start from the professional world. Its evolution has deeply influenced the urban and peripheral areas, as well as the relationship that binds them. After a first, sudden, urbanization due to the Industrial Revolution in the first half of the 19th century, this relationship remained stable until the end of the century, when the advent of the second Industrial Revolution led to the creation of new economic needs. They led to a new transformation of the world of work, with the advent of the Fordist model. The cities transformed their social and economic fabric, and changed their relationship with the peripheral areas. Although they did not suffer the Fordist evolution, where peripheral areas received benefits from this new economic model as well.

The model designed by Frederick Taylor and Henry Ford remained the predominant one for about half a century. However, when it started to decline, due to both internal weaknesses and exogenous factors, the economic models underwent profound transformations. Thanks also to new digital technologies, economic models led to an increasingly dynamic system, where cognitive capital got

¹ Rodríguez-P.A., (2018) "The revenge of the places that don't matter (and what to do about it)", Cambridge Journal of Regions, Economy and Society, Volume 11, Issue 1, Pages 189–209, <https://doi.org/10.1093/cjres/rsx024>

more and more consideration. The consequence of these changes is a totally different concept of the economy, which affirmed in a few years and changed the economic needs of urban tissues, as well as the relationships between metropolitan and peripheral areas, which became "passive" areas. Economic concepts such as the offshoring, or the Digital Revolution, led to the end of the 20th century to a total transformation of the world economy, where urban areas were the "global nodes"² (Castells, 1996) of financial and cognitive capital. This evolution continues today, through the so-called "Fourth Industrial Revolution" or Industry 4.0. Through the use of automated production cycles and the intensive exploitation of data to build business strategies, it is continuing to bring new developments in the relationship between urban and peripheral areas, including through still ongoing phenomena such as reshoring.

The evolution of the professional world, has brought to an evolution of the urban areas, often in sudden and not planned way. From simple "containers" of the Fordist industrial fabric to global hubs, urban areas became capable of attracting financial and cognitive capital, and led to a transformation of the economic sectors. New economic sectors have arisen in urban areas, exploiting the new abundance of human and financial capital. They have laid the foundations for the so-called CCI (Creative Cultural Industry), while in peripheral areas such transformations have taken place to a lower extent, when they were not entirely absent. The economic fabric of urban and peripheral areas, therefore, has differentiated more and more, for human capital needs, business strategies and types of innovation. This is why, understanding which economic sectors can develop in peripheral areas, can allow a relaunch of the latter from an economic and social point of view. In this regard, the Italian model of the region of Emilia-Romagna can serve as an excellent example: although geographically close to the urban area of Milan, the economic fabric of Emilia has been able to build a growing, dynamic and innovative model over time.

Understanding these phenomena has a strong importance to understand how to allow greater coexistence between "global" urban areas and peripheral areas, even taking into account a current exogenous factor, such as the pandemic caused by the virus Covid-19, even though its effects in the medium-term are still difficult to predict. The current crisis in global metropolises, in fact, can encourage a possible economic recovery of peripheral areas which were less affected by the virus, from which cognitive capital could work remotely. However, this recovery involves profound changes both in peripheral areas and in the organisational structures of the companies that make up the economic fabric of urban areas. It must also consider the hypothesis that this exogenous factor creates shock effects only in the short term, creating a time window to revive and reconsider many aspects of urban areas, the so-called "soft factors"³ (Florida, 2002), which in the past have often been overlooked in favour of impetuous but unscheduled economic development.

² Castells M., (1996) "The Rise of the Network Society", The Information Age, Vol. 1, Oxford: Blackwell

³ Florida R.L., (2002) "The Rise of the Creative Class: And How It's Transforming Work", Leisure, Community and Everyday Life (New York: Basic Books)

1. From Taylorism to Toyotism

According to many historical examples, a large, urban growth of a country sees, as a main consequence, a contextual large economic growth of the country itself. A good example is the United States, where, from XVIII century to nowadays the urbanization rate has risen from 12% to 66%, so from about 12 million to over 300 million inhabitants.

Such a massive urbanization cannot affect only the need to create, around the society, a set of systems that collaborate in continuous growth, but, above all, it allows individuals to have access to consumption and social mobility.

In the first years of the 20th century, new needs started to rise, mainly led by the creation of such new urban agglomerations: the development of laws and regulations, the creation of new jobs, linked to the first wave of globalization, and so on. This period saw the birth of the first industrialized centers which were located in strategic points of the nation; over the years, the first industries turn to be inappropriate, as the production of goods was insufficient to support always growing needs of the population.

The factors that allowed the overcoming of traditional ways of production and the affirmation of large-scale mass production were:

- The development of new technologies, specialized machines capable of perform a limited number of operations, suitable for standardized products;
- The increase in the size of businesses, which took a vertical integrate structure, a fundamental characteristic of mass production;
- Increased availability of low-skilled workers, mainly composed of immigrants and farmers;
- The steadiness and predictability of the economic environment and the market, which favored Mass Production.

In contrast, traditional working methods (mainly related to craftsmanship) suffered from the following factors:

- Absence of real management;
- Absenteeism and slowness of work processes;
- Lack of suitable organizational methods.

These requirements were the basis for the deep innovations that characterized the first phase of globalization, between the 19th and 20th centuries. Once the primary needs guaranteed, the industries began to produce “luxury” goods and, alongside technological innovations, they started to focus on organizational innovation to reduced costs and time for industries.

The main organizational innovation, in this period, were developed through ideas of the American entrepreneur Frederick Winslow Taylor (1856-1915). He created the basis for a "scientific organization of work", with the aim to answer to the needs expressed by the emerging American industrial groups: meaning a more rational use of the large mass of workforce without any qualifications. Such theories are known under the term of “Taylorism”.

The basic principle of Taylorism was a rigid division between intellectual and manual labour, and the fragmentation of handwork. The old systems of work implied that workers had the choice of how

much time and energy to invest in their work. According to Taylor, this represented a great source of waste and inefficiency. He himself wrote that “The principal object of management should be to secure the maximum prosperity for the employer, coupled with the maximum prosperity for each employee. The workers' task must be limited to the execution of predetermined jobs, dismantled into simple operations with scientific criteria, and to perform with standardise tools in set times”⁴ (Taylor, 1911).

These concepts found practical application in mass production, whose idea was put in practice by the American entrepreneur Henry Ford (1863-1947). Taylorism and its evolution, Fordism, were the basis of 20th century industry, which was only surpassed in the 1980s, with the coming of digitalization.

1.1 Taylorism: the basis of modern entrepreneurship

The industrial system in which Taylor operated and implemented his line of thought was a system in full evolution: indeed, while factories in the XIX century that exceeded a thousand employees were relatively rare, towards the end of the century a massive productive expansion took place. The children of the industrial proletariat formed in previous years, were no longer sufficient to meet the growing needs for workforce. This need led the big industrialists to turn to the peasant masses. Often children of immigrants, mingled with the proletariat, they represented an important "de-qualified" and extremely mobile workforce, because of the constant search of higher wages. The strategy that firms were aiming was to cut costs more than focusing on the quality and innovation of the products. In fact, the general idea was that, once the right formula for a product was found, it could be sold for years without modifications of any kind.

Taylor's theories took up the idea of Adam Smith (1723-1790), one of the promoters of the modern economic science. In fact, already at the end of the XVIII century, Smith identified several advantages offered by the division of the work in terms of increased productivity. In his work "The wealth of nations" of 1776, he shows how, by decomposing production in a series of elementary operations, we obtain a clearly greater quantity of product per unit of time: the example proposed is that of pins. By breaking down the production of pins for ten workers, each used for specialized and different tasks, the productivity rate increased from 20 to 4,800 pins daily: each worker produced 240 times more goods than an isolated worker.

The reasons behind this increase are mainly a growth in specialization and a decrease in the time between one operation and another. However, as Adam Smith himself pointed out, the extreme division of labor also has negative effects, such as, the intellectual development of the worker.

These writings will find application a century later by the American engineer Frederick Winslow Taylor.

Basing on Smith's writings, Taylor argued that the best production is reached when each worker is assigned a specific task to be carried out in a certain time and in a certain way. Any cycle operation in an industrial production can therefore be decomposed and studied in detail. Thus, it was possible

⁴ Taylor F.W., (1911) “The Principles of Scientific Management”

to rationalize the cycle production, through the elimination of unnecessary efforts, the introduction of incentive systems, an internal hierarchy and a meticulous selection of staff.

Taylorism was basically divided into two parts: A first part, where Taylor proposed a careful study of the individual movements of the worker in order to optimize work time, and a second part, where he introduced a radical reorganization of the management of a factory and the creation of eight functional heads, who presided over the various corporate functions;

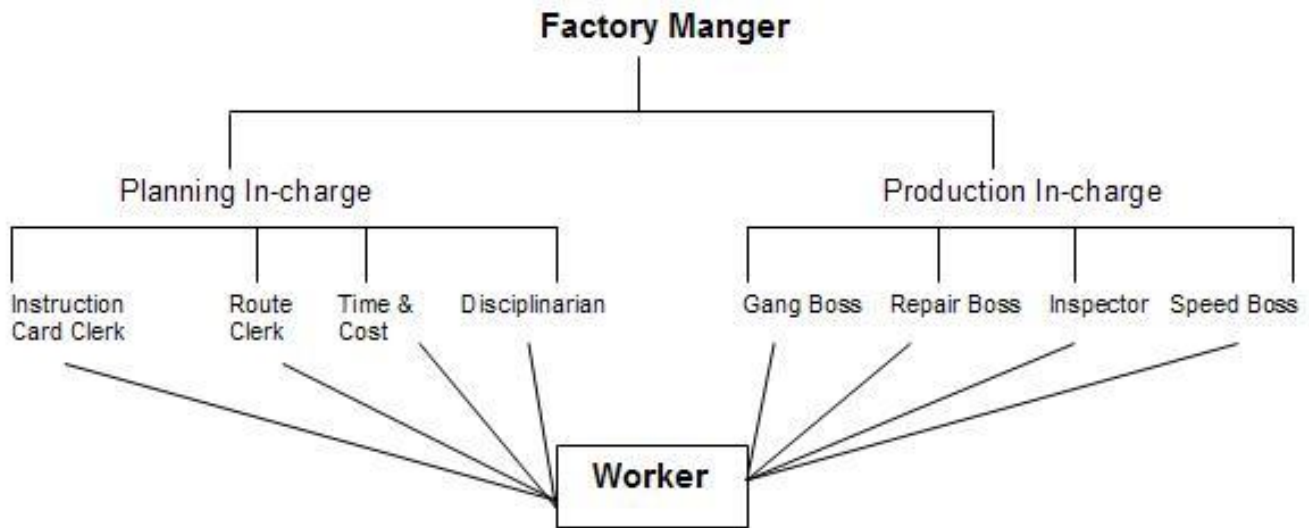


Figure 1.1: Company structure according to the Taylorist philosophy

The practical application of these principles launched the first production line: in fact, it changed the whole organization of labor in industries. Those who suffered these major transformations were the workers. While previously they could choose the times and ways to complete their tasks, with the introduction of new procedures they were forced to adapt to the pace and methods chosen by managers. What should drive the worker to accept new work rhythms is, in Taylor's opinion, the economic incentive, linked to a greater productivity: if workers complete their task in the exact way and within the pre-established time, they will receive an increase ranging from 30 to 100 percent.

This conception of work, aimed only to maximize productivity, was criticized by the work unions from the very beginning, which were considered by Taylor as harmful and dangerous organizations. Overall, it can be said that with his theories Taylor aimed not only at a revolution in the way of working but above all a revolution in the way of managing.

The system by which factory production was achieved was widely known as Drive System, in which workers were continually driven to move faster and to work harder. Taylor intended his method as scientific because it was made up of a number of general principles that can be applied in various ways. To increase productivity, it was necessary to increase the performance of the workforce, and therefore rely on the S.O.W (Standardized Organization of Work); in fact, the equation is, major performance equals greater well-being for all.

In addition, to explain the slowdown in production, Taylor claimed that the majority of men have an instinctive tendency to slow down the pace of work, and this tendency translates into a systematic slowdown in production.

To avoid this, a modern business management cannot be limited to soliciting production with traditional methods, leaving workers free to organize their work. To obtain optimal results, it must take on most of the tasks that until then were left to the workers, who must limit scrupulously carry out what the management has established.

The new method that Taylor applied was the Task Management, in which every day a certain amount of work must be established, performed by workers without decreases or increases. The advantage of this method was, according to Taylor, to get a job standardized and uniform with a predictable yield and with a double, sometimes triple, yield the one obtained with the old systems. A higher pay should therefore be considered as a performance bonus, which only those who will carry out the entire production can receive.

S.O.W therefore was an organic construction with the aim to affirm management leaderships. It consisted of the assumption that, for every problem, exists a solution that we can be achieved only through the adoption of scientific methods research. With S.O.W, the personal power and liberty disappear and any big or small topic becomes a problem for the scientific research. Taylor, in the name of science, therefore affirmed the absolute primacy of the organization at the detriment of individual freedom.

Taylor's idea was to overcome the inexperience of his contemporaries, through a scientific study of the work and a profitable collaboration between management and workers. His hypothesis was to suppose the existence of only "one best way" to perform any operation.

However, Taylorism had profound limitations: one was that his method is highly analytical but poorly synthetic, since it spent little time on the coordination of workers' activities. Furthermore, Taylor was concerned about improving industrial efficiency, but paid little attention to the sale of manufacturing products.

Fordism instead represented, in some ways, an evolution of the scientific organization of the work created by Taylor. The transition to Fordism, which he had however, among its key points the Taylorist ideals, provided a total adaptation of this thinking about the reality of firms, with the capability to introduce other concepts, and the ability to be directly and simply used in industries of that time.

1.2 Fordism: the birth of modern industry

Taylorism represented a first attempt to organize industrial work through scientific thought. Despite its intrinsic flaws, it represented the first attempt to adapt the XIX century industry to a new type of society. These changes were the push for the development of new organizational methods of work, such as Fordism. Taylorism and Fordism represent the fulfillment of the process of rationalization and technicalities of the work, started two centuries earlier with the works of Adam Smith.

The work of Henry Ford fitted into this fluid context, capable of implementing the theoretical dictates of Taylorism, giving life to a new line of thought called "Fordism".

The etymology of the term "Fordism" refers to the name of the American industrialist Henry Ford, who promoted important transformations in the production sector, which been famous throughout most of the industrialized world. The term was born immediately to identify the set of innovations

that have marked the world of production for great part of the XX century, since it immediately appeared as the maximum fulfilment of the original Smithian intuition of the work division.

The basic idea of Fordism, about mass production, was simple, but effective: to create standardized products at low cost, to achieve the masses. Ford expanded organizational innovations implemented by Taylor with new studies, with the aim to increase sales (an aspect that Taylor had not considered) through economies of scale; but above all, Ford's aim was to build new market's segments. Cars were the classic example of a product which was transformed by Fordism. From a "luxury" handcrafted product, it quickly became a mass product, accessible for everyone.

The main difference between Taylorism and Fordism was that it made greater use, also for historical reasons, of the technological factor linked to the assembly line. Assembly lines were new machines, capable of repeating a few actions, without require specific interventions: they were fast, even if not very flexible. The consequences of these innovations, combined with the non-qualification of workers, created the conditions for the mass production, and make possible to create a more concrete, applicable and competitive model than the scientific method of Taylor. The scientific management, therefore, remained a mere theoretical construction, not sufficient to transform a production system, such as that of the XIX century factory, which was extremely rigid in its structure.

Ford did not believe that workers should be "educated" on tasks, because this would be useless and expensive. Instead, the factory must create a productive apparatus which, by allocating the workers into a mechanized process, "obliged" them to carry out their work in the best and only way allowed, simplifying the various operations and eliminating any margin of autonomy. By eliminating unnecessary gestures and by downsizing any voluntary (potentially "Harmful") intervention rationalization finds full fulfillment, moving on the path of total automation.

A further element of distinction between the Fordist and the Taylorist projects concerned the introduction of the principle of high wages. Producing in a rational and efficient way was not enough to maximize profit, it was also necessary to stimulate consumption, especially the consumption of workers. Ensuring the economic stability of the workforce by increasing their purchasing power, high wages allow to transform workers in a great resource for a constantly expanding market. For the first time, those who produce, buy the products of their own work: the "worker-consumer" represents the other side of the relationship between mass production and mass consumption (Dinetti, 2013⁵). The low-cost standardization of an increasing number of products was the attempt to stimulate sales, and create needs to satisfy for an ever-increasing number of people. The worker-consumer thus becomes the specific "life form" of Fordism: forced, in exchange of wages, to complete an alienating work, towards which he/she felt a profound sense of non-involvement, he/she found (or believes to find) in consumption a source of satisfaction.

⁵ Dinetti F., (2013) "Trasformazioni del lavoro e forme di vita nel XX secolo. I nuovi paradigmi del lavoro nel passaggio dal fordismo al postfordismo fino al lavoro contemporaneo", <http://hdl.handle.net/2158/805906>, pag. 34

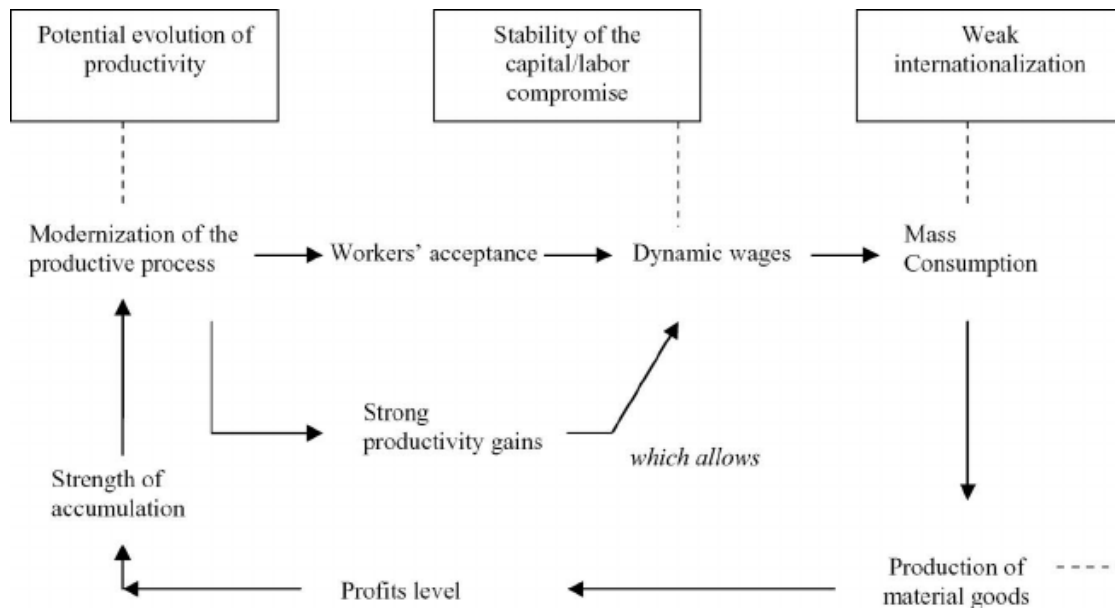


Figure 1.2: The infinite cycle of the market according to Fordist thought. Source: Fumagalli and Lucarelli, 2008;⁶

Thanks to a national market in continuous expansion, with the possibility for firms to not depend more on skilled workforce, Fordism allowed industrial centers to expand rapidly throughout the American territory, and to change the country's economy, all without having to radically modify its rigid XIX century structure.

In summary, the following points summarise the main aspects of the Fordist model of the 1920s:

- Breakdown of the production process into a series of elementary operations, to conduct along the assembly line;
- Simplification and standardization of workers' duties;
- Imposition and intensification of work rhythms;
- Bureaucratization of the production process;
- Polarization between management and workers;
- Introduction of high wages as an incentive to consume.

However, the great crisis of 1929 downsized the expansion of industries in American urban centres. In the following years, arose the idea that Fordism, intrinsically linked to the liberal model, needs some regulations. The most important changes were:

- Extension of collective bargaining and institutionalization of industrial relations (to control conflict and ensure collaboration);
- State intervention in demand regulation;

These innovations allowed the stabilization of the market in the long term, guarantee continuous and constant economic growth for America for the next 30 years. At the same time, in Europe the close link between the Keynesian social status at the macro level, and Fordism at the micro level in the post-war period created constant economic growth until the 1970s.

⁶ Fumagalli A., Lucarelli S., (2008) "Basic Income and Productivity in Cognitive Capitalism", Review of Social Economy, 66:1, 71-92, DOI: 10.1080/00346760802063000

1.3 Post-Fordism, a break from the past

Established with the crisis of the Fordist model in the mid-1970s, what we identify with the term "post-Fordism" is a set of economic, cultural and social aspects, which place themselves in an alternating relationship of continuity and break with the past. However, it is important to stress that we are not dealing with a distortion or a subversion of the current economic and social order, but with a modernization and a general overhaul of those aspects which are no more compatible with the changing market needs.

In fact, after thirty years of the "glorious economic boom", the Fordist industrial production was no longer able to be applied to the new global size of the market. The reasons behind this fact are both economic and cultural, as well as linked to a change in many Western institutions (End of the Bretton-Woods monetary agreements).

The transformations of the economic and social reality proceeded simultaneously to the affirmation of a cultural context unrelated to the rigid principles and "strict functionalist aesthetics"⁷ (Harvey, 1990) of the Fordism.

The main changes in the organization of work came from new technologies based on information technology and microelectronics, incompatible with the rigid Fordist model based on the scientific organization of work. In contrast with the rigid discipline, with the strong centralization of the command and with the vertical hierarchization of tasks, typical of the great Fordist industry, a more linear organization or "reticular" become popular: "the true concept of 'factory', understood as homogeneous and contiguous space of work, is subjected to a dispersion process, until the 'difference between places of organized production and places of social life, which had been constitutive of economic modernity, since the times of the first industrial revolution'"⁸ (Harvey, 1990).

The new cultural context welcomed with euphoria the overcoming of the Fordist model, hoping for the arrival of a fairer society. This euphoria was justified by new technological innovations, so powerful that was possible to speak about work automatization.

In a little more than a decade, however, it began clear that optimistic forecasts on the future of work were difficult to realize. Three, in particular, are the problems which the post-Fordist reality had to face:

- The increase in unemployment and poverty, as an effect of lower demand for workforce, following the introduction of new technologies;
- The growing flexibility of the production, which translated into a precariousness of relationships and working conditions;
- The affirmation of a supranational and global dimension of the economy, which made it difficult to establish accurate forms of control;

In this context, the transition began, from the centrality of dependent work to the autonomous and independent one. The latter still represented a "hybrid" in the scenario of the labor market, halfway between the Fordist wage earner, of which he lost the main protection tools, and the traditional craftsman, whose it claimed autonomy and freedom in performing tasks.

⁷ Harvey D., (1990) "The condition of postmodernity", Oxford and Cambridge, Basil Blackwell, pag. 172

⁸ Harvey D., (1990) "The condition of postmodernity", Oxford and Cambridge, Basil Blackwell, pag. 115

These changes will lead to an individualization of the society, with a strong segmentation of consumption, to the detriment of the centralized and rigid society of Ford and Taylor. It is clear from these elements that large industrial centres, composed of thousands of employees and divided into rigid hierarchies, have difficulty to adapt of such social and economic changes.

1.4 Toyotism and Fordism

The overcoming of the Fordist model conceived in the 1930s can be found in the intuitions of the Japanese engineer Taiichi Ohno (1912-1990). The latter, starting from the 1950s, created a revolutionary model at Toyota, introducing a phenomenon called "Toyotism". Soon, Toyotism will be taken as a reference model for post-Fordism, which became the ideal solution for companies to overcome the economic crisis of the 1970s. Among the most important aspects of this model were:

- The enhancement of factors such as communication;
- Product customization;
- Cognitive capital (investments in future human capital through education);
- The downsizing of workers, in leading to a growing precariousness and absence of safety.

The rift between Fordism and Toyotism is first caught in the diversity of contexts in which they developed. Fordism arose in the United States at the beginning of the century, which is preparing to become the force economic hegemon of western capitalism, in the context of a fast market expansion. Toyotism, on the other hand, was born in a country like Japan that was still very backward from a technical-industrial point of view, with a marginal role in international trade, with a low level of exports, but with an internal situation of strong competition between industries, whose success depended on their diversification and capability to speed up the production.

Another aspect of the rift between these two movements is the relationship with the market: while in the Fordist model consisted in the factory which "created" the market and therefore exercised a dominion towards the surrounding environment, the relationship of dependence is now reversed and the market dictates production laws. The centrality of the factory in the Fordism model was due to the belief that the market had unlimited possibilities of growth, and that the only limits were the production one of the factory itself.

The market idea of Toyotism was different. Upstream of its innovative organizational principles (just in time, self-activation, lean production) there was a different conception of the market as a finite and limited circuit. This idea arose from the saturation of the markets, which showed all the limits of Fordist mass production. A possible solution to the crisis of overproduction was then found in the choice to adapt the production to the demands of the market. If in the Fordist model the aim of production was quantity, in Toyotism it became quality and diversification/personalization of products, based on consumers' needs.

With Toyotism therefore, strategic planning gives up the way to flexible and variable production, which requires “capacity from the industry to constantly respond to changing demands from the market”⁹ (Shingo, 1981).

The relationship with the worker changed as well. With Taylorism and Fordism the worker was considered as lazy and unwilling to work, building a production system that had the aim to contrast the alleged workers' adversity towards their work. With Toyotism, the elimination of long-term production planning, in favor of "occasional" practice, changed the way in which people relate to the workforce. The continuous adaptation of the production cycle to a changing market requires the workforce to be more involved in the corporate spirit, who had to be better educated, capable of dealing with unexpected situations and able to intervene promptly in case of anomalies. The figure of the worker passed from being poorly qualified and to be controlled, to a qualified figure, fundamental for the efficiency of the company's production.

However, Toyotism was not a radical change of Fordism. In addition to the many differences, in fact, there were also common points.

The first common thing was "synchronization". Ford's goal was to create a factory where all parts of the production cycle were perfectly synchronized with each other. Ohno recognized this idea, but underlined how the high internal competition of the US market has prevented the "fluidification of work", necessary to better synchronize the production cycle. The Japanese engineer then highlights other two problems of the Fordist model:

- The application of mass production as an indisputable gospel, which in fact prevented any change in the production cycle in line with market changes;
- An insufficient technological development that made it even more difficult to make the required changes;

The Toyota model therefore didn't deny Fordism. Indeed, in many perspectives, Ohno's program can be interpreted as an evolution of Fordism, with the aim of developing the unexpressed aspects of Fordism, through the use of new organizational structures and the introduction of highly flexible technologies, which allow to bypass technical obstacles that had stopped Ford.

Toyotism, therefore, was a point of reference for the industrial system after the crisis of Fordism. However, it did not determine the birth of a new production model. Instead it marked, the affirmation of a transformation process, that gave birth to specific production systems, each one constituting a reality in itself. Therefore, post-Fordism can be defined as a movement, that contain multiple ways to answers to the crisis of the single and homogeneous Fordist model.

⁹ Shingo S., (1981) “A Study of the Toyota Production System from an Industrial Engineering Viewpoint”, revised edition Productivity Press, Portland, Oregon, Sipahi, R., Ilker Delice, I., 2010

2. The world of Post-Fordism: Offshoring and Digital Revolution

Since the 1970s, there have been many changes both in the workplace and in the macroeconomic environment. These transformations have been accelerated by the great technological boom started in the 1980s of the 20th century, which made the production and exchange sectors take on a new face. In fact, during post-Fordism, in particular in Toyota's model, attention was immediately turned to new machineries and new technologies that have allowed a flexible and lean rethinking of the productive process.

Specifically, there was an entrance of the language and communication into the production processes. This fact determined not only important transformations of work's forms, but also of the ways in which work was represented. The knowledge and notions required by the new information technologies of communication, individualized jobs and add some totally personal and not easily transferable factors to work.

The production process went from being a "mechanical chain", as in Fordism, to become one "Language chain". Language became a means of production, triggering forms of relationship and "productive" collaborations between subjects at work. In companies, for example, communication between workers became fundamental as a stimulus for the search of new opportunities, from a productive point of view.

The type of language referred to is the one "which produces organization": a formalized language, made of symbols, and codes which allow workers to respond with promptness to the market's demands. The adoption of the typical principles of today's computer language has the goal to organize the company "as if it were a sort of 'database', capable of self-activation with the use of one smooth communication, maximally fluid, 'interfacing'"¹⁰ (Marazzi, 2002).

Work, therefore, undergoes a revolution in all its aspects, including the domestic one. Elements such as aesthetics and clothing become fundamental in certain managerial areas, together with the ability to know how to infuse the right corporate spirit to employees. But it is, above all, in terms of leadership and economic power that such new forms of communication and language produce the greater transformations.

New technologies allow to promote products on a higher level: promotion becomes a full activities next to production. New payment methods (e.g. credit cards) together with new means of transmitting information (Internet), allow extremely efficient data collection, allowing companies to personalize their products in line with the market's taste. The phenomenon of reversal of the parts, between the company and the market, which had begun during the crisis of the Fordist model in the 1970s, is now completed with a full transfer of decision-making power in the hands of the markets and of consumers.

At the same time, advances in information technology, with the consequent speeding up of times and methods for information transfer, together with the new decision-making power of the market,

¹⁰ Marazzi C., (2002) "Capitale & linguaggio. Dalla new economy all'economia di guerra", Roma: Derive Approdi pag. 27

determine a rapid development of the financial economy, with an exponential growth in transactions on the stock exchange.

Therefore, the new role played by language, combined with new technologies, create the conditions for a "financialization of the economy". In such a heterogeneous and constantly changing environment, the knowledge, the so-called Cognitive Capital, becomes fundamental. After the first revaluation in Ohno's Toyota Model, it becomes the economic fulcrum, the capital from which any type of business has to start.

Knowledge, communication and language become the new pillars on which work rests, causing a financialization of the economy and creating a dynamic component within the working environment.

2.1 The role of knowledge and information

Among the most relevant consequences of the crisis of Fordism, the foreground function assumed by knowledge emerges.

In Factor Analysis (Stewart, 2001), David Stewart lists the three pillars on which the new knowledge economy is based¹¹:

- "Knowledge has become what we buy, sell, produce. It is the most important production factor";
- "For companies, knowledge-related assets (i.e. intellectual capital) have become more important than the financial and tangible ones";
- "More and more knowledge and information are incorporated into all the products that we use".

In addition, Stewart gives his own definition of "intellectual capital", which it consists of "Talent, skills, know-how, know-what and relationships (in addition to the machines and networks that incorporate them), that can be used to create wealth, because only through the knowledge companies can differentiate their product from that of competitors"¹² (David Stewart, 2001).

Knowledge and communication have always been essential factors of technological development, of economic growth and of social transformation. However, the ways in which the knowledge was organised, distributed, enhanced and the purposes for which it was addressed has changed during the time. In recent decades there has been the affirmation of a productive logic and regulation of knowledge, which takes the form of a new economic model, characterized by the centrality assumed by knowledge in the process of wealth production.

2.1.1 Knowledge

In the pre-industrial economy, every form of knowledge was necessarily connected to a certain "know-how". However, with the advent of Fordism and the introduction of new machineries and

¹¹ Stewart D., (2001) "Factor Analysis", pag. 24

¹² Stewart D., (2001) "Factor Analysis", pag. 39

technologies, a split between "material work" and "intellectual work" is generated. In the system theorised by Taylor and Ford, cognitive capital was incorporated into the new machines, capable of reproducing any human action with greater efficiency. Material work had become a sequence of elementary actions, mechanical, measurable and removed from any active and conscious intervention. In the rigid Fordist corporate hierarchy, intellectual knowledge was concentrated among a few individuals, as no "intellectual work" was required. In the Fordist system, capital growth was closely linked to the amount of products placed on the market. In this context, mechanical and standardised work was the main production factor. It is clear that this system did not encourage the creation of knowledge among employees, since it was useless for the purposes of the company.

The crisis of Fordism of the 1970s highlights the limits of the mass production system, based on the standardization of goods and the homologation of tasks. In addition to the physiological limits of the market, another factor is also the increased literacy of the population, which increasingly challenges the rigid fragmentation of the Fordist system, unable to adequately enhance human skills and abilities in the workplace.

To deal with these difficulties, a new idea begins to spread among companies: it is necessary to introduce new elements in the organization of the production and labor. Faced with saturated market, due to the limited purchasing power, companies have to adapt and try to increase their yield at the expense of quantity. This leads to flexible production, and an inverse relationship between the latter and consumption. Encourages the search of dynamism, innovation, product diversification, is considered a winning strategy to exit from the Fordist crisis. This transformation aims to overcome the market saturation through a new enhancement of knowledge, as well as through specialized professional qualifications.

Therefore, in the new economic scenario, the classic concept of productivity (value of finished products compared to the cost of production factors) is questioned. This definition was reflected in the structure of the Fordist production process, which was static and not subject to radical changes over time. Now, however, situations change constantly, through a continuous search of innovation and specialization. In such a dynamic context, productivity is closely related to capacity to act in contexts based on occasionality. Investment strategies, both social and corporate, are addressed to the growth of the socio-cultural aspect, to the development of the social cognitive capital, that allows its employees to take the opportunity. An opportunity that can only be grasped through one's own skills and social connections.

Knowledge ceases to be one of the many production factors, to become the central one. This mutation is possible thanks to the "telematics, to transmit a huge quantity of data at great distances and at low costs information, thus accelerating the push towards a knowledge-based economy"¹³ (Lassandro, 1999).

This new role attributed to knowledge, however, also has consequences on the social context and the relationships it contains. Human capital (knowledge, skills, social relationships, etc.) is integrated into the production process as a form of interest-free loan. Profit then results from a risk-free investment: if in the Fordist system, wealth was obtained only from material labor, now it is obtained

¹³ Lassandro Paola, (1999) "Il telelavoro nella residenza e nel terziario. L'avvento della telematica alle soglie del terzo millennio", pag. 11

from the combination of intellectual and material labor. Companies, however, continue to pay only the merely material aspect of their employees' work, thus obtaining their knowledge and social relations on loan free of charge.

Moreover, the theme of innovation, introduces the problem of its management. With entry of innovations and communication in the production process, also the distinction between economic-productive sphere and political-administrative begins to go into crisis.

In Fordism these tasks were clearly distinct: the entrepreneur, through scientific research, introduced innovation, while the political administration managed and regulated its effects. With post-Fordism, this distinction disappears. Production ceases to be separated from management and language becomes itself a producer of organization within the company. This led to an obvious contradiction: the new regime of continuous innovation and research, imposed by the market, collides with the downsizing and outsourcing policies that have characterized the post-Fordist dynamics of the years 1980-'90s. These policies have had the merit of modernizing the company organization, still anchored to an outdated Fordist model, but at the same time they have made the workforce more precarious, blocking the development of forms of collaboration between the different types of intangible, communicative and relational work that make up cognitive capital. The restructuring processes, with the existential risks and uncertainties connected to them, generate working environments with a low rate of communicative collaboration with consequences negative on productivity.

The logic that drives companies to follow these "weight loss" policies is often linked to a short-term profit. But all that does is damaging the social knowledge of the workforce. A knowledge that, since the 1980s, has become fundamental for the construction of any durable economic activity.

2.1.2 Communication

Communication is the common aspect of the different post-Fordist organisational models. Communication is seen as a sort of "lubricant" for the entire production process, capable of making it more fluid, dynamic and easily adaptable to market requests.

The first example of communication present in the production process occurs with Toyotism (the so-called "kan ban", Japanese term that literally means "teaches", indicates an element of the Just in time system of reintegration of stocks as they are consumed); from the workforce rationalized, fragmented and static, Ohno moves on to a multipurpose and more adaptable workforce, which knows how to understand and interpret the continuous flow of information conveyed from one end of the production process to the other. In general, workers broaden their range of skills (execution, programming, quality control, etc.) in order to dialogue with the market and, therefore, to be able to respond to its requests in an active and creative way.

The central role of communication spreads through in every economic sector in close connection with the growing importance of externalities related to knowledge. Knowledge, for the first time, is not divided between private (i.e. the training background of an individual) and social (to increasing the well-being of the society). Private and social knowledge become indeed one at the service of the company, which coordinates its direction and purposes. In the face of increasingly unstable and fluctuating markets, workers' knowledge becomes an extremely dynamic and continuously

modifiable factor, creating a permanent innovation system, where knowledge changes rapidly, from innovative to obsolete in few years.

2.2 The financialization of the economy

The emerging of communication and knowledge, have profoundly changed the world of work. This has led to a progressive financial drift of the economy. This drift can be read as “a block of accumulation intended as non-reinvestment of profits in indirectly productive processes”¹⁴ (Marazzi, 2009). The transition from the Fordist model to the new system of "equity managerial capitalism" is explained as a reaction to the "drop in industrial profits between the 1960s and 1970s due to the depletion of the technological bases of the Fordism, in particular the saturation of the markets for mass consumer goods"¹⁵ (Marazzi, 2009).

Therefore, in 1980s, finance becomes the environment for excellence, where cognitive work replaces material work, without however affecting the final profit. In fact, finance feeds on profit that is not accumulated, but that is "multiplied thanks to financial engineering"¹⁶ (Marazzi, 2009).

This becomes possible through the principle that economics and finance must expand infinitely. Funded on debt (which then becomes a common exchange currency), financialization thus becomes an attempt to get out of the impasse in which Post-Fordism had fallen: if the reduction of prices, via the downsizing of labor costs, was conceived as the only way forward, at the same time this solution, removing or reducing workers' wages, has led to a drop in their purchasing power, and therefore of the demand, with a consequent contraction in consumption (as well as a slowdown in the development of their cognitive capital).

Debt becomes the system's response to exit of such impasse. Through indebtedness, consumption can increase, without having to force companies to abandon downsizing strategies. As wages drop and become more and more unstable, the realization of profits is maintained through consumption and through "non-wage income"¹⁷ (Marazzi, 2009). From now on, the valorization of capital gradually distances from the process of production, to connect to the symbolic value attributed to the goods. This results in the difficult of determining the value of money causing uncertainties on a social and cultural level too.

This revaluation of money, however, starts from faraway. In particular, 1975 can be considered as the starting year in the States United, when the drainage devices began to multiply, enhancing the stock exchange which financed the economy. All this, combined with the end of the Bretton-Woods agreements in 1971 (which had guided the Fordist system for almost thirty years), effectively ended a whole economic era.

In the 1980s, the United Kingdom became the spokesman of a new monetary policy, called "monetarist", whose aim was to stop the inflationary spiral, caused by an excess of public spending and fight the growing depreciation at the international level. The result is an extremely restrictive

¹⁴ Marazzi C., (2009) “Finanza Bruciata”, Casagrande, Bellinzona, pag. 45

¹⁵ Marazzi C., (2009) “Finanza Bruciata”, Casagrande, Bellinzona, pag. 47

¹⁶ Marazzi C., (2009) “Finanza Bruciata”, Casagrande, Bellinzona, pag. 64

¹⁷ Marazzi C., (2009) “Finanza Bruciata”, Casagrande, Bellinzona, pag. 51

monetary policy which, by raising interest rates, reduces the money supply and blocks the investment and production process, as well as promoting massive privatization of public resources. This increase in interest rates has some "immediate and lasting consequences on the public and private sectors' debt, forcing capital to increasingly depend on the stock markets for its own financing and, therefore, to depend on the influx of savings on the same markets"¹⁸ (Cristian Marazzi, 2002).

Thus the influx of collective savings into Stock Exchange begins. Familiarization with investments in shares, initially for pension purposes, opens the way to the extension of this investment method also for other forms of savings. Since the stock exchange becomes the main source of financing, savings and investments, once different ways of using capital, become the same: both companies and ordinary citizens feed the stock market consisting of "virtual" symbols, codes and goods.

One first factor in the development of the financialization process is represented by the diffusion of new information and communication technologies, which have strengthened the capital-money abstraction process. For companies, they represent an important resource: they allow the possibility to reorganize the work around new automated tools, with consequent costs' reduction. The opportunity is given to profit from intangible human factors (mental faculties, knowledge, relationships, education, communication skills), which, thanks to the new technological tools (computers, internet, audiovisual media etc.) are in the conditions to act to their full potential. The second factor is that new technologies facilitate the reticulation of companies' new organization. Companies are given the opportunity to make use of external supply (with very flexible contracts) and to carry out relocations to distant countries with low-wage labour. Companies' headquarters become a real managerial and management center, without productive functions, and whose main role is to create increasing value shares for shareholders.

The important role of new technologies in determining the exit from the remaining of the Fordism and the progressive advancement of the speculative dimension on production concrete assets, finds its fulfillment in the digitalization of financial markets. The financial dimension of private investments takes on, starting from the end of the last century, dimensions never seen before. With new digital technologies, financial markets become "the preferred area of the enhancement of capitalist enterprises and the direct source of financing and control of international investment flows"¹⁹ (Andre Fumagalli, 2006).

At the origin of the mentioned transformations is the tax crisis of States, which are profoundly indebted and increasingly tied to private financial institutions to finance public spending. Starting from the 1990s, a large part of the financing of spending public, once supported by the State, is now linked to the dynamics of the global financial market, causing the greater social security burdens to fall on the shoulders of households' budgets. The shift in the financing of the economy from the banking sector to the stock exchange, sanctions the affirmation of the new system (called the New Economy), as a well-defined economic paradigm. It also means the beginning of a phase in which factors such as precariousness, uncertainty and risk can be capitalized through the stock exchange.

¹⁸ Marazzi C., (2002) "Capitale & linguaggio. Dalla new economy all'economia di guerra", Roma: Derive Approdi, pag. 9

¹⁹ Andre Fumagalli, (2006) Il lavoro. Nuovo e vecchio sfruttamento, pag. 2

Starting from the early 1990s the different innovations and transformations, which gave way in a disordered way, to post-Fordism, begin to gather around a more precise paradigm of valorization and accumulation that finds in language and communication its new pillars, making "the public space the place of liquidity creation"²⁰ (Marazzi, 2002). Such a revolution in the world economic system, as well as in the working world, has obviously influenced companies, which, as we have already mentioned, had to start a race for ruthless innovation, which radically changed the very concept of "business".

2.3- The company in the New Economy

The crisis of the Fordist model, starting in the late 1960s, has brought about a series of changes at the economic level. Obviously, all this has also profoundly changed companies. If the Fordist model was the result of a compromise between the new needs of the Society and an industry still tied to the rigid 19th century hierarchical model, the New Economy model places companies in front of a saturated market. Therefore, not only the goals of companies change (no longer scale economies, but product customization), but the company structures undergo radical changes as well. Rationalisation, or control of the production process, was the focal point of the Fordist company's project; adaptation is now the core of the post-Fordist firm.

The key word of the new business model is "flexibility". Compared to the rigidity of Fordism, post-Fordism replaces flexibility:

- Labour, flexible in tasks as in presence;
- Product, and its customization, thanks to new technologies, to match customer taste;
- Productive quantities, thanks to the use of subcontracting, which allow to increase or decrease the production with ease;

Flexibility therefore becomes a philosophy. Starting in the 1990s, it will go beyond the corporate field to permeate the entire capitalist society.

The first tangible change, however, was at the level of company staff. If scale economy can no longer be the model through which to guarantee profits, if the lowering of the break-even point (meaning the minimum production volume after which profits begins) becomes necessary, then the reduction of costs becomes a priority. In companies, the practice of outsourcing begins (subcontracting and supplier network), limiting production to the core-business, that is those central activities where its specialization is greater and productivity and competitiveness are higher.

The rigid sequence of operations based on a fixed machine system is therefore replaced by the possibility of varying the sequence, according to the different productions and continues product transformations according to the market needs. Internally, this is possible thanks to new technologies, but even more thanks to redesign of the complete production cycle. A new product, or simply the passage from one small series to another, must be very fast, therefore the reprogramming of production lines and supplies must be done in real time.

²⁰ Marazzi C., (2002) "Capitale & linguaggio. Dalla new economy all'economia di guerra", Roma: Derive Approdi, pag. 24

The great Fordist factory (heritage of the 19th century industry) ceases to be the basic production model, to dissolve in a myriad of smaller production units with greater specialization. Ford's idealized functional hierarchy is falling: in fact, all the companies involved become autonomous production cells of a company process; They are perfectly recombinant since, although not hierarchically structured, they can, according to needs, produce different products. However, it is important to underline how horizontal management does not mean no economic hierarchy: leading companies and brands, are able to control the other pieces of production by folding them to their own needs.

Decentralization and horizontality, however, are not only affirmed in the organization between companies, but also within them. To the hierarchical network within the company and the consequent lack of responsibilities of subordinate personnel, a more horizontal nature of the relationships and even greater autonomy of decision now substitutes: workers must now know how to take decisions. The internal hierarchical network is not suppressed, but each department is more autonomous and more connected to the other departments.

Fordist planning called for long-time and large investments, possible only within a controlled market. The post-Fordist firm does not plan, but reacts to the fluctuations of the markets and its fashions. It must embrace a development philosophy that grasps and responds to needs in real time. The reaction speed is the ability to vary the product, to adapt to an increase in demand or a decrease in demand: it becomes a central factor in competition, thanks to an adequate development of cognitive capital.

In the face of these new needs of companies, economic geography also radically changes. Industrial centres born and developed through the Fordist model are in crisis, as they are unable to adapt their infrastructures and their (human and financial) capital to new industrial needs. In such an ever-changing, constantly evolving and unpredictable economic model, a rapid centralization of human and financial resources begins. The aggregation centers are rich in terms of infrastructure (necessary to fully exploit the potential of new technologies) and economic capital, capable of quickly attracting companies from all over the world. They give rise to new industrial districts, starting a rapid process of "economic desertification" to the detriment of former industrial centers and economic peripheries in Western countries.

2.4 The phenomenon of Offshoring

The system of the New Economy, based on knowledge and communication, allowed a greater integration of the various national economies. This was possible thanks to trade, as well as to horizontal integration. Since the 1970s, in fact, the percentage of import/export on the total GDP (Gross Domestic Product) in the advanced economies had considerably grown. This was possible thanks to the disintegration of the production process, especially in the manufacturing sector. "Companies, in fact, are now finding it profitable to outsource increasing amounts of the production process, a process which can happen either domestically or abroad."²¹ (Feenstra, 1998).

The phenomenon could be better understood thanks to some data. With the exception of some countries, like Japan and the United Kingdom, most of the industrialized countries have experienced

²¹ Feenstra Robert C., (1998) "Integration of Trade and Disintegration of Production in the Global Economy", Journal of Economic Perspectives, 12 (4): 31-50, pag. 31

substantial growth in trade relative to merchandise value-added since 1890 (see Figure 2.1). This increase can be explained through various hypotheses: the first, theorized by the economists Baier and Bergstrand in 1997, believes that the causes were the increase in liberalisation and the reduction of transport costs, due to the new technologies. About two-fifths of the growth of trade related to income is explained by the combined effect of falling tariffs and transportation costs. Out of these, falling tariffs were twice as important as falling transportation costs. Nevertheless, both are only partial explanations, leaving three-fifths of the growth in trade unexplained.

The second theory for the explanation of trade's growth is that when economies become more similar in size, world trade increases, as demonstrated theoretically by Helpman in 1987²². In his theory, the world is divided into three economies, which have a total GDP of 120. If the three countries have a GDP of 100, 10 and 10 respectively, then the highest possible level of export in the world is 40. However, if the three economies have a GDP of 40 each, then the maximum level of exports rises to 120. Thus, when countries become more similar in size, they import more product varieties from each other. This hypothesis has found considerable empirical support for the OECD (Organisation for Economic Co-operation and Development) and also non-OECD countries²³ (Hummels and Levinsohn, 1995).

A third possible explanation, attempts to explain this increase in world trade through the disintegration of the manufacturing process in advanced economies. In Advanced economies, where the denominator is added-value a not quantitative. This is surely an important factor in the great surge in exports from the Asian newly-industrialised countries. As their economies have expanded, these countries have become producers of a vast array of consumer and industrial products, relying substantially on imported intermediate inputs. In some cases, these goods are marketed under the brand name of the company itself. This phenomenon took off during the 1980s and it's called "offshoring": foreign companies were engaged in "original equipment manufacturing",²⁴ (Feenstra, 1998) which was then resold under corporate brand names in the Western world.

²² Helpman E., (1987) "Imperfect competition and international trade: Evidence from fourteen industrial countries", Volume 1, Issue 1, March 1987, Pages 62-81, [https://doi.org/10.1016/0889-1583\(87\)90027-X](https://doi.org/10.1016/0889-1583(87)90027-X)

²³ Hummels D., Levinsohn J., (1995) "Monopolistic Competition and International Trade: Reconsidering the Evidence", The Quarterly Journal of Economics, Volume 110, Issue 3, August 1995, Pages 799-836, <https://doi.org/10.2307/2946700>

²⁴ Feenstra Robert C., (1998) "Integration of Trade and Disintegration of Production in the Global Economy", Journal of Economic Perspectives, 12 (4): 31-50, pag. 35

Ratios of Merchandise Trade to Merchandise Value-Added (percent)

Country	1890	1913	1960 ^a	1970	1980	1990 ^b
Australia	27.2	35.6	24.4	25.6	32.4	38.7
Canada	29.7	39.4	37.6	50.5	65.6	69.8
Denmark	47.4	66.2	60.2	65.9	90.0	85.9
France	18.5	23.3	16.8	25.7	44.0	53.5
Germany	22.7	29.2	24.6	31.3	48.5	57.8
Italy	14.4	21.9	19.2	26.0	43.1	43.9
Japan	10.2	23.9	15.3	15.7	25.8	18.9
Norway	46.2	55.2	60.0	73.2	70.9	74.8
Sweden	42.5	37.5	39.7	48.8	72.9	73.1
United Kingdom	61.5	76.3	33.8	40.7	52.6	62.8
United States ^c	14.3	13.2	9.6	13.7	30.9	35.8

Notes: Merchandise trade is measured as the average of imports and exports, except as noted below. Merchandise value-added combines agriculture, mining and manufacturing for the U.S., and these sectors plus construction and public utilities for most other countries.

^a Value for Australia refers to 1962, and for Canada refers to 1961.

^b Value for Canada refers to 1988, for Germany to 1989, and for the U.K. to 1987.

^c Data recorded under 1890 is for 1889, and along with that in 1913, measures the ratio of merchandise exports to industry value-added.

Figure 2.1: Growth rate of trade for the main industrialized countries in the 20th century. Source: Feenstra, 1998.²⁵

2.4.1 The disintegration of production

It is possible to explain the offshoring phenomenon through the example of Barbie dolls, examined by Paul Tempest in 1996.²⁶ The raw materials necessary to make dolls (plastic and hair) are obtained in Taiwan and Japan. Assembling also used to be done in those countries, as well as in the Philippines, but it has recently migrated to lower-cost locations, such as Indonesia, Malaysia, and China. The moulds themselves come from the United States, as well as the additional paints used to decorate the dolls. Other than labour, China only supplies the cotton cloth used for dresses. Of the 2\$ export value for the dolls when they leave Hong Kong for the United States, about 0.35 cents cover Chinese labour, 0.65 cents cover the materials costs, and the remainder covers transportation and overheads, including profits earned in Hong Kong. The majority of added-value is therefore from U.S. activity. A sale price of \$2 per piece, in 1995, allowed a production value of \$1.4 billion per year.

The most important aspect of this example is that, while the purely productive aspect was transferred from the U.S to other countries, both the design and marketing parts remained in America. It is interesting to underline how, with the new economic system, the activities more related to knowledge and communication become the fulcrum of companies of advanced countries, while the productive aspect (which was a central point in the Fordist system) is now transferred abroad, in developing economies.

The trade needs of economically countries therefore changed. Since the colonial period, these countries have been mainly importers of raw materials, which were then transformed into finished or semi-finished products and exported. With the offshoring phenomenon, all of this has changed. The companies, through the new digital technologies, succeeded in breaking the rigid Fordist order. This allows them to pass, from a rigid vertical order, to a capillary horizontal organization. With this new,

²⁵ Feenstra Robert C., (1998) "Integration of Trade and Disintegration of Production in the Global Economy", Journal of Economic Perspectives, 12 (4): 31-50, pag. 35

²⁶ Tempest P., (1996) "Defining and Overcoming Risk - Some Global and Middle East Factors", In IAEE Newsletter

more flexible and dynamic structure, companies can separate more aspects of their economic cycle (production, commercial, accounting, etc.), placing them in different environments, even geographically distant. The model of the great Ford factory is thus definitively replaced, in favour of a cosmopolitan structure. Large companies thus become legal entities with economic interests located in several countries.

The increase in trade, and the economic integration of the countries involved, thus become a consequence of the transformation, or "disintegration" of the production process. In Figure 2.2 it's possible to see that products have been imported into the United States at increasingly advanced stages of processing, which suggests that U.S. firms shifting such processes abroad.

Shares of U.S. Exports and Imports by End-Use Categories (*percent*)

Category		1925	1950	1965	1980	1995
Foods, feeds and beverages	Imports	21.9	30.0	19.1	11.3	5.0
	Exports	18.7	15.5	19.2	16.9	9.2
Industrial supplies and materials	Imports	68.2	62.4	53.3	31.3	18.2
	Exports	59.8	45.5	34.8	32.2	25.6
Capital goods (except autos)	Imports	0.4	1.3	7.1	19.0	33.6
	Exports	8.7	22.4	31.4	35.0	42.4
Consumer goods (except autos)	Imports	9.4	6.1	16.0	21.5	24.3
	Exports	6.0	8.9	7.0	7.8	11.7
Automotive vehicles and parts	Imports	0.02	0.3	4.5	16.9	18.9
	Exports	6.8	7.8	7.5	8.1	11.2

Figure 2.2. Sources: Feenstra, 1998²⁷

This phenomenon, of course, did not affect all sectors in the same way, nor does it affect all OECD countries. Some, such as Japan, manage to reverse the trend over time, managing to convince many companies to move their production chains to the Japanese territory. In general, however, the process of transfer of production processes had the merit of increasing world trade and economic integration between the various countries concerned, on the other it had very complex and multifaceted social implications.

2.4.2 The disintegration of wages

The decision of companies to source their production overseas most certainly impacted the employment of such firms at home, with different effects depending on the skills and knowledge of the workers. With firms in developed countries facing a higher relative wage for unskilled labour than abroad, the activities that are outsourced are those that use a large amount of unskilled labour, such as assembly of components and other repetitive tasks. Moving these activities abroad will reduce the relative demand for unskilled labour in the developed country, in much the same way as replacing these workers with automated production. "This means that outsourcing has a qualitatively similar effect on reducing the demand for unskilled relative to skilled labour within an industry as does skill-biased technological change"²⁸ (Feenstra, 1998).

²⁷ Feenstra Robert C., (1998) "Integration of Trade and Disintegration of Production in the Global Economy", Journal of Economic Perspectives, 12 (4): 31-50, pag. 37

²⁸ Feenstra Robert C., (1998) "Integration of Trade and Disintegration of Production in the Global Economy", Journal of Economic Perspectives, 12 (4): 31-50, pag. 41

This consideration has several implications. The most important one is that we should not assess the proximate cause of the decline in employment and wages of unskilled workers by attributing all within-industry shifts in labour demand to technology, and allowing trade to operate only via between-industry shifts. This approach was thought to be correct by many economists in the early 1990s, but they tended to consider only trade in final goods. In that context, it is true that international trade must affect labour demand through inter-industry shifts. But as soon as trade in intermediate inputs is allowed, as with offshoring, then changes in the demand for labour can occur within each industry due to trade, as well. Trade (through offshoring), and with the new technologies of the Digital Revolution are two complementary factors which help to explain the fall in the employment of workers, unable to work in the OECD countries. Thanks to the new technologies, in fact, companies can afford to move production where poorly educated labour is required in the market with a lower cost. This leads to a drop in demand for unskilled labour in the industrialised countries. In the Fordist system such a strategy would be considered illogic, as unskilled labour is also the first consumer; but in the new economic system, companies can overcome this situation by opening up new markets, as well as by the new concept of product customization, which requires a search for balance between quantity and quality.

The social consequences of such choices are still debated among economists. The problem is that, in a few years' time, entire categories of unskilled workers found themselves with substantial wage cuts, in order to compete with the new competitors. Governments of advanced economies have tried various solutions to this problem: they have tried to give incentives to companies, to make it less convenient for them to move their production to other countries; they have also made use of aid subsidies to workers in crisis. However, all these measures are nothing but palliatives, incapable of solving the social problem at its roots. It is in this period that we begin to see the creation of the so-called "economic suburbs". On the one hand, in fact, many cities "benefited" from the New Economy, which has allowed them to insert new companies into the urban fabric. It was, however, activities related to knowledge and communication, for which skilled and flexible workers were required. On the other hand, in the cities where the Fordist system had allowed the concentration of large masses of unskilled workers, offshoring caused a massive economic dispossession, with very complex social consequences and rooted in the local economic fabric.

2.5 Offshoring and Asian success

The Digital Revolution has transformed every economic sector, changing habits in a profound way. From a purely industrial point of view, in the economically advanced countries this change of economic model was quite revolutionary. In the Fordist system (and also in many of the post-Fordist models of the 1970s) the entire production process, from the supply of raw materials to the marketing of the product, remained within the country. After the Digital Revolution, firms from advanced-nation offshored labour-intensive segments of their supply chain to developing nations. This completely changed the industrialisation process in the developing nations that received these offshored phases. The developing countries had to have reasonably reliable workers, a hospitable business environment and proximity to a technologically advanced countries willing to offshore some of their factories. At first, distance still remained a key factor, as often the staff of the parent company had to control and

"educate" the staff in developing countries. The result was that offshoring, at first, came to the advantage of developing countries bordering with advanced ones.

At first this was limited to product destined to export, but, as cost pressure led to growing specialisation and scaling, multiple developing countries were folded into the supply chain. The most striking cases were the countries of South-Eastern Asia, which were able to quickly, and successfully, fit into the production processes of companies from developed countries (the proximity to Japan was, at the beginning, an additional advantage, especially for countries such as South Korea and China).

The growth of the manufacturing sector in these countries was very rapid (see Figure 2.3). In 1985, most developing East Asian nations supplied most of the intermediary companies in the production cycle, while the rest were imported from the advanced countries. By 2000, the situation had radically changed: many Asian countries had become, in turn, exporters of technologies and skills to the intermediaries of the production chain. This situation is defined as "Factory Asia"²⁹ (Baldwin, 2008).

1985	Singapore	Malaysia	Indonesia	Philippines	Thailand	China	Korea	Taiwan	Japan
Singapore	20%	7%	3%						
Malaysia	10%	50%							
Indonesia	5%		63%						
Philippines				73%					
Thailand					73%				
China	9%			2%		90%			
Korea							78%		
Taiwan								79%	
Japan	8%	14%	11%	4%	9%	3%	9%	7%	94%
US	7%	7%	5%	6%	2%		5%	3%	
EU & RoW	36%	16%	15%	10%	11%	6%	7%	9%	3%

2000	Singapore	Malaysia	Indonesia	Philippines	Thailand	China	Korea	Taiwan	Japan
Singapore	37%	12%		5%	4%				
Malaysia	11%	36%		3%	3%			2%	
Indonesia	2%		73%						
Philippines				32%					
Thailand	3%	4%		2%	51%				
China	4%	2%			4%	88%			
Korea	3%	4%	3%	7%	3%		78%	4%	
Taiwan	3%	5%		5%	3%			61%	
Japan	17%	13%	6%	17%	15%	2%	7%	13%	93%
US	11%	11%	4%	12%	6%		5%	6%	
EU & RoW	8%	10%	7%	14%	10%	3%	4%	7%	

Source: Baldwin (2008). Notes: Share of manufactured inputs bought by column nation's manufacturing sector from the row nation. Numbers less than 2% are zeroed out. For details of the original tables, see Inomata and Uchida (2009).

Figure 2.3: Evolution of Factory Asia, 1985 to 2000. Source: Baldwin, 2008³⁰

A good practical example of this phenomenon can be represented, paradoxically, by the automotive sector. Baldwin, in fact, claims that "even in the 1970s, making an automobile required a massively complex network of suppliers, and a broad array of advanced technologies, advanced management

²⁹ Baldwin R., (2008) "Managing the noodle bowl: the fragility of East Asian Regionalism", The Singapore Economic Review 53(3)

³⁰ Baldwin R., (2008) "Managing the noodle bowl: the fragility of East Asian Regionalism", The Singapore Economic Review 53(3)

capacities, and a skilled workforce. Why then was it such a favourite among development planners?"³¹ (Baldwin, 2011)

The end of the 1970s was marked a by a stagnation in the car sector. In an effort to overcome the crisis in the sector, large producers began to move parts of the production process to developing countries. The developing countries assembler company was almost always a joint venture with the advanced-nation kit producer. Assembly, of course, was only meant to be the first step. Local assembly would create local demand for auto parts and this would create local parts suppliers. The developing countries started with the easiest factory processes, and progressed to the more technologically complex operations. Local content requirements were designed to encourage this. Given the sophistication of the components and the lack of local skills, firms typically met local content restrictions by repeating the charade for components.

It is important to underline that, in most developing countries, this new industrial model discouraged in every way its own industrial production, as, logically, it created "unwelcome" competition for producers in advanced countries, who had no interest in creating new competition in the sector. An exception to this was Korea, which was able to build its own sector, going from "complementary agent" of the production chain to competitor.

2.5.1 The success of South Korea

Of all the developing nations, only Korea managed to build its own supply chain, introduce original models, and become competitive in the world markets of the automotive industry. Korea started, in the 1960s, with assembly, but multinationals were forced to accept weaker positions than usual; in an attempt to break this control, four Korean companies were founded, which, together with the new chemical industry on the rise, required the companies to submit plans for a low-cost car whose specifications, timetable, and costs were laid down by the government. The result was Korea's first home-designed car, Hyundai's Pony, and a Mazda-designed car by Kia. However, despite the results, most of the components, in the mid-1980s, were still imported from advanced countries.

The first Korean car models had a strong success at national level, while their export did not achieve the desired results, despite the competitive price. This, together with the worldwide crisis that hit the car industry between 1980 and 1983, brought the Korean automotive industry to the brink of bankruptcy. The Ministry of Trade and Industry led a restructuring and reorientation of the industry; scaling was to be achieved by exporting to the US (the only market that was big and open enough). The Ministry also targeted quality upgrading and Korean companies heavily invested in new production facilities. They negotiated new alliances with major automobile parts makers for plant layout, body design, the supply of major components, and access to marketing channels. Hyundai also set up its own dealer network in the US and Canada. Most of this was debt financed. Thanks to this industrial plan, the crisis was overcome, and at the end of the 1980s the sector was in full rise. With this high-volume, Korean automakers pushed further up the supply chain. By the early 1990s, they were producing engines, transmissions, chassis, and brakes with their own technology.

³¹ Baldwin R, (2011) "Trade and industrialisation after globalisation's second unbundling: how building and joining a supply chain are different and why it matters", in R. Feenstra and A. Taylor (eds.), *Globalization in an Age of Crisis: Multilateral Economic Cooperation in the Twenty-First Century*(Chicago: University of Chicago Press, Chicago), pag 16

The reasons for Korean success became even clearer after the 1997 crisis, which brought many economies in South-East of Asia to their knees. Korea, in fact, was able to build a solid production process, based on the strengths of its companies. Unlike other countries in the region, Korea has from the beginning aimed to replace Western producers in the sector, going to build its own competition with the skills obtained through the offshoring of American and European companies during the 1960s and 1970s.

2.5.2 The failure of Malaysia

Very different from the Korean case was the evolution of the automotive sector in Malaysia. Until 1982, Malaysian auto industrialization focused on kit assembly. The already small market was shared by more than a dozen assemblers. This was largely due to the large fragmentation of Malaysian producers during the 1970s. Unlike Korea, where the sector was immediately in the hands of only four companies, in Malaysia the manufacturers of car components were numerous, largely composed of small and medium-sized enterprises, thus making the competition very high, with reduced profit margins.

This situation changed during the 1980s, when the government-owned Heavy Industries Corporation of Malaysia (HICOM) was established, which aimed to develop a Japanese-like fully integrated automobile industry. The project of a Malaysian national machine was immediately launched, with the support of the Japanese Mitsubishi, in an attempt to relaunch the sector until then too dispersed and "succubus" of companies in advanced countries. Unfortunately, the project did not achieve the desired results. Having to depend completely on Japanese technology, the project (called PROTON) produced modest results, barely sufficient to satisfy the domestic market of the country. During the 1990s, the project underwent an attempt to revive, with some encouraging results, but the 1997 crisis finally put an end to the ambitious Malaysian project of its own automotive sector, which remained mainly focused on satisfying the internal market.

The reasons for the Malaysian failure are multiple. Unlike Korea, Malaysia never attempted to build its own "technology", always depending on foreign countries on this aspect, and focusing mainly on the stages of assembly and production. With the change of the economic system, and with the advent of the offshoring phenomenon, this strategy proved to be unsuccessful, as well as impossible to reverse. The advent of branch offices of European and American companies in the South-Eastern, made the competition impossible to sustain for the Malaysian sector, which declined even in the satisfaction of domestic demand.

3. The fourth industrial revolution: Industry 4.0 and the phenomenon of reshoring

“The First Industrial Revolution began at the end of the eighteenth century and early nineteenth century, which was represented by the introduction of mechanical manufacturing systems utilising water and steam power. The Second Industrial Revolution started in the late nineteenth century, symbolised by mass production through the use of electrical energy. The Third Industrial Revolution (also called Digital Revolution) began in the middle of twentieth century and introduced automation and microelectronic technology into manufacturing. Although the Third Industrial Revolution also focused on the automation of machines and processes, Industry 4.0 focuses more on the end-to-end digitisation and the integration of digital industrial ecosystems by seeking completely integrated solutions”³² (Xu et al, 2018).

The phenomenon of Industry 4.0 was first mentioned in 2011 in Germany as a proposal for the development of a new concept of German economic policy based on high-tech strategies³³ (Mosconi, 2013). The concept has launched the fourth technological revolution, which is based on cyber-physical systems, the Internet of things (IoT), and the Internet of services (IoS). The perpetual communication via Internet that allows a continuous interaction and exchange of information not only between humans (C2C) and human and machines (C2M), but also between the machines themselves (M2M).

It is important to stress how this continuous interaction is, in most cases, between machines. Machines are streaming data via wireless sensors and sending these data to the smart product providers’ centres, where large amounts of data are analysed. The purpose of such automation is the individual customer, oriented adaptation of products and services that will increase added value for organizations and customers. The results will be shown by the permanent control over the individual life that allows the personalised service and product offer in real time: and consequently, this leads to customer loyalty, if trust is established between the customer and the organization and the customer is satisfied with their services.

Characteristic of Industry 4.0 is the increased competitiveness through smart equipment, which make use of information on high-wage locations, demographic changes, resources, energetic efficiency, and urban production. Industry 4.0 is on the way and will have an important influence on the complete transformation of industry because it represents progress on three points³⁴ (Almada-Lobo, 2016):

- Digitization of production, information systems for management and production planning;
- Automation, systems for data acquisition from the production lines and using machines;
- Linking manufacturing sites in a comprehensive supply chain.

³² Xu, L., E. Xu, and L. Li., (2018) “Industry 4.0: state of the art and future trends”, International Journal of Production Research, pag. 3

³³ Mosconi F., (2013) “Origine e sviluppo della nuova politica industriale. Una prospettiva europea”, MUP

³⁴ Almada-Lobo F., (2016) “The Industry 4.0 revolution and the future of Manufacturing Execution Systems (MES)”, Journal of Innovation Management, Vol. 3 No. 4 January 2016, DOI: 10.24840/2183-0606_003.004_0003

The consequences of the development of technologies such as 3D printing, or online sales services like car services, had a significant impact on the world economic system: in some respects, they take to extreme some features of the Digital Revolution, examined in the previous chapter. Organizations have to understand how connected consumer products or services can serve as a critical foundation for businesses to identify customer's opinions. The new technologies, developed through the use of the Internet, allow the application of more complex marketing strategies by companies, obtain relevant and valuable content from customers, and constantly reply to them in real time, with the intention of changing or enhancing customer behaviour. Accordingly, information organizations can prepare strategies that will help them to retain old customers and obtain new customers. It is obvious that these innovations are only made possible if there are adequate infrastructures. The rise and expansion of Industry 4.0 are based on the assumption of increasing global urbanization. Demographic changes are becoming a challenge for urban renewal and development, which will have to enable the infrastructure of residents for ensuring their quality of life and sustainable orientation.

It is also important to point out that these terms, such as Industry 4.0 and the Fourth Digital Revolution, are quite recent, and that they are the consequence of Germany's huge investment in manufacturing. The economic, as well as social and cultural, consequences of these phenomena are therefore still in full development, making partial the current analysis of the phenomenon, as well as making it very complex to predict its future effects in society.

3.1 Industry 4.0: a cyber-physical system

Industry 4.0 is based on a concept: Cyber-Physical Systems (a fusion of the physical and the virtual worlds) CPS, the Internet of Things (IoT) and the Internet of Services (IoS), will collectively have a disruptive impact on every aspect of manufacturing companies. Manufacturers can begin now to define their target manufacturing model and then plan a transformation roadmap.

Cyber-physical Systems (CPS) are simply physical objects with embedded software and computing power. In Industry 4.0, more manufactured products will be smart products, CPS. Based on connectivity and computing power, the main idea behind smart products is that they will incorporate self-management capabilities. On the other hand, manufacturing equipment will turn into CPPS, Cyber-Physical Production Systems. The latter is nothing more than a software that, through a wide range of sensors actuates the correct command to differentiate the product. CPPS know their state, their capacity and their different configuration options and will be able to autonomously take decisions. This ability allows the industries to produce large quantities of products, each characterised in a specific way, according to the tastes of the customers and end users, which can be catalogued thanks to the continuous flows of data. The supply chains of Industry 4.0 are highly transparent and integrated. The physical flows will be continuously mapped on digital platforms: this will make each individual service provided by each CPPS available to accomplish the needed activities to create each tailored product. While the challenges at the supply chain level are quite considerable, the challenges at the factory level are not smaller. The combination of CPS and CPPS is likely to trigger significant changes in manufacturing production and control, going towards completely decentralised systems.

This completes the customization process that began with the Digital Revolution. To maintain and acquire new competitive advantage, companies exploit new technologies (mainly IoS) to

continuously collect new data on customer tastes. The search for specialization, differentiation, and quality began with Toyotism thus comes to fruition, bringing it to a new level of competition where situations would vary on a daily basis. Industry 4.0 advocates that the shop-floor will become a marketplace of capacity (supply) represented by the CPPS and production needs (demand) represented by the CPS. Hence, the manufacturing environment will organise itself as a multi-agent like system. This decentralised system with competing targets and contradicting constraints will generate a holistically optimized system, ensuring that only efficient operations are conducted.

The aspects of the production process most affected by the new technological revolution are:

- Decentralisation: the decentralisation does not need to be physical, but instead a logical one. Smart products could be located anywhere, as long as computers could connect to a physically centralised system;
- Vertical integration: beyond the already referenced supply chain transparency, achieved through horizontal integration across the supply chain, the compliance, control or the fulfilment of any other related corporate business process is guaranteed through the vertical integration;
- Connectivity and mobile: connectivity within the shop floor can hardly be considered something new. Now it is different, as it is easy to achieve such connectivity, with significant impact in the overall manufacturing operations;
- Cloud computing and advanced analysis: both CPS and CPPS will generate huge amounts of data, which need to be stored and processed. Clearly this can only happen by integrating data from different sources. Advanced analysis are then needed to fully understand the performance of the manufacturing processes, quality of products and supply chain optimisation. Analytics will also help through identifying inefficiencies based on historical data and allowing corrective or preventive actions to be performed.

These innovations potentially change the concept of work as it has been defined until now, especially in sectors such as manufacturing. The decentralisation of computing power allowing autonomous decisions in a market-like manufacturing environment, composed by service providers, and service consumers within the shop floor, vertically and horizontally integrated for aligning with manufacturing business processes and the overall supply chain. Another positive aspect of this new system is the value creation effects from gains in efficiency and new business models. But technological change may have both a positive and a negative impact on employment: the challenge will be the restructuring of jobs because some of the less-demanding occupations will quickly disappear. The productivity gains achieved by the use of smart technologies may help to secure jobs and boost consumer demand with additional income (compensation effect), but the use of new production technologies and processes may also destroy jobs (redundancy effects).

3.2 The rise of IoT (Industrial Internet of Things)

IoT (Industrial Internet of Things) represents a fundamental concept in the integration of all smart devices that are part of major smart projects. Manufacturers of IT (Information Technology) products and manufacturers of traditional products have found themselves faced with the issue of how to

stimulate the regrowth of demand. The answer was found in the development of a new technological period, which is characterised by the fact that the economic and social activities are globally interconnected, which facilitates technology platforms such as the Internet, mobility, and sensor systems. In a simple way, the IoT is of relevance if any device or even a living being is connected to the Internet.

Any economic activity nowadays has the possibility to connect and exploit the Internet through the use of an alternative business model, related to the context of connectivity, thus changing the way it is possible to create added value. This is because the Internet gives companies flexibility, as well as resilience, which was unthinkable in previous economic models. The price of raw materials may change, conditions with providers may vary, lack of infrastructure may slow down the business, but the Internet remains available, allowing companies to accumulate data, catalogue them and advertise their products in any case. Companies, therefore, have the opportunity to manage their relationship with their customers, with real-time customer support systems and marketing promotions on demand.

The fields where this innovation is most relevant are:

- Smart infrastructures: they can improve flexibility, reliability, and efficiency in infrastructure operation. Their added value is in reduced costs and manpower requirements, as well as the enhancement of safety. They will have an important role in smart cities' mobility control (e.g., monitoring parking availability, traffic control);
- Health care: tools like sensors can monitor the patients and send information to doctors;
- Supply chain and logistics: the IoT can improve logistics and supply chain efficiency by providing more detailed information and product traceability;
- Security: IoT devices are wireless, and in the public network, information exposure to intrusion increases, and therefore, data transfer should be encrypted. The transfer of data and their archiving in cloud data centres must not be subject to unauthorised access.

These changes do not only affect the production process. Communication, which had already taken on an important role during the Digital Revolution, plays a fundamental role here. In many sectors, what matters is no longer the quality of the product, but how it is perceived by the final customer. Communicating becomes the pillar for excellence, going beyond the importance of knowledge as well. Internet communication becomes the most widely used means by companies to market their products. Through the continuous data collection allowed by social media, sites and clouds, companies are able to quickly understand the tastes of customers, reshaping their communication strategy according to the latter. The importance of cloud computing and mobile computing for Industry 4.0 lies in the provision of services, which can be globally accessed via the Internet.

For the establishment of the IoT, companies set up a circuit between products and services. This system can operate with the help of both humans and artificial intelligence. The data which are collected with the help of these systems are saved in clouds. Products integrated with cloud computing can provide data that enable a predictive maintenance and provide information about optimisation possibilities in the production. The use of integrated networking and integration of products into internet data allowed for far reaching possibilities to collect data. Instead of single data points or short

intervals, a continuous stream of data is now available. The huge amounts of data available can now be used to continuously analyse and optimise production.

The new role of Iot, then, will be to help companies to understand better their customers and offer proactive support by leveraging IoT data to create improved, automated customer support environments.

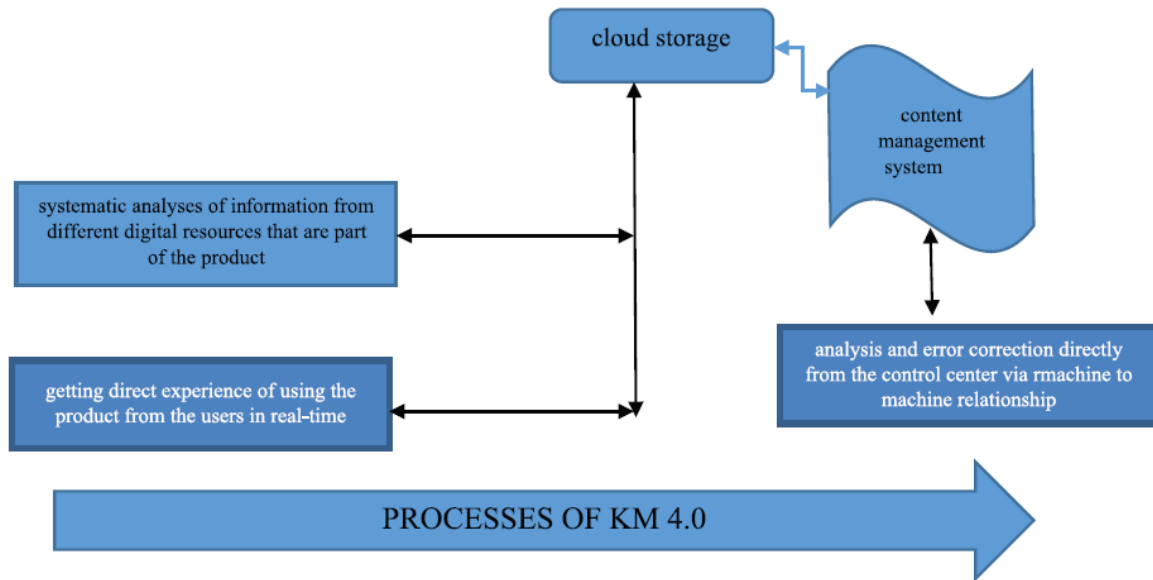


Figure 3.1: IoT, prediction for a Knowledge Management 4.0. Source: Vasja Roblek et al, 2016.³⁵

This system, however, still needs human support. Alongside communication, therefore, knowledge also has a new role (so-called Knowledge Management 4.0, or KM 4.0). The IoT has influenced the development of KM 4.0 (Figure 3.1), which arises from the phase of integration between people with documents, and passes to the phase of connecting between devices. KM processes are also located between the consumer and the manufacturer or service provider.

The implementation of the IoT by companies, however, presents some downsides. The first is the need to establish, develop and maintain over time an infrastructure network capable of allowing the transfer of data on an industrial scale. This creates the need for continuous investments, sometimes very expensive, which cannot always be maintained over time. The second concerns data management and protection, not only because of the general traceability, which simply cannot be avoided, but also because of the ownership and protection of data clusters, which are devices exchanged, processed, and stored.

3.3 The Smart Factory

The smart factory is a particular implementation of CPS, based on the extensive and deep application of information technologies to manufacturing. The new possibilities, created by the use of IoT and

³⁵ Roblek V., Meško M., Krapež A., (2016) "A Complex View of Industry 4.0", SAGE Open, DOI:10.1177/2158244016653987, pag. 6

IoS, go to deeply modify the relationship between the various agents that compose the business scheme. The main features of Industry 4.0 include:

- Horizontal integration (see paragraph 2.3), through value networks to facilitate inter-sectorial collaboration;
- Vertical integration of hierarchical subsystems inside factories to create flexible and reconfigurable manufacturing system. By this integration, smart machines form a self-organized system that can be dynamically reconfigured to adapt to different product types;
- End-to-end engineering integration across the entire value chain to support product customization.

The horizontal integration of corporations and the vertical integration of factories are two bases for the end-to-end integration of engineering process. This is because the product lifecycle comprises several stages that should be performed by different component.

Factories are responsible for processing raw materials and semi-finished products to produce finished products. Within the boundary of one single factory, various physical or informational subsystems are involved during production and management. Therefore, the Industry 4.0 expects to vertically integrate the hierarchical subsystems to transfer the traditional factory into the highly flexible and reconfigurable manufacturing system, that is, to implement a smart factory. This is essential to support small-lot and customized consumer demands. The smart factory is also a key base to support the other two kinds of integration, that is, the horizontal integration through value networks and the end-to-end digital integration of engineering.

A smart factory framework consisting of four tangible levels:

- Physical resource level, which comprises various kinds of physical artefacts such as smart products or smart machines. These artefacts can communicate with each other through the industrial network and beyond this, they are able to collaborate for achieving a system-wide goal. Thus, the physical artefacts form a self-organized and autonomous manufacturing system based on industrial network and intelligent negotiation mechanism;
- Industrial network level, an important infrastructure which not only enables inter-artefact communication but also connects the physical resource layer with the cloud layer. For example, it can accommodate variation caused by new machines in the production process or machines' malfunctioning. Therefore, it is believed to be mandatory for smart factories;
- Cloud level, which is a support infrastructure for the smart factory. The term cloud is a vivid expression for a network of servers that provides services, digital platforms and softwares. Therefore, the cloud provides a very elastic solution for big data storage. When operated, smart artefacts may produce massive data, which can be transferred to the cloud through the INL (Industrial Network Level). The big data analytics then can support system management and optimization including supervision and control;
- Supervision and control terminal level, which links people to the smart factory. With the terminals such as pcs, tablets, and mobile phones, people can access the statistics provided by the cloud, apply a different configuration, or perform maintenance and diagnosis, even remotely through the Internet.

This new implementation of the company leads, inevitably, also to a profound review of the production process, a new interpretation already begun with the Digital Revolution (see figure 3.3). The traditional production line aims to produce single type of products. When the unfinished products flow through the line from the input to the output, each machine performs its predetermined part of task. The machine has its own independent controller, but the communication between machines is absent. On the contrary, smart factories' production system aims to process multiple types of products. Machines reconfigure themselves to adapt to product type variation, in this way there is no definite input or output. This is possible thanks to the possibility of using cloud and big data. In fact, the latter enables smart artefacts to form an autonomous architecture, able to coordinate data in a flexible way, and to adapt production in a very short time according to the changes that have been made thanks to them. The intensive use of data, and its exploitation to maximise the flexibility and speed of reaction of the production process, are therefore part of that process of product customization that began with the Digital Revolution, which led to the complete dismantling of the Fordist mould system. The benefits of such a production system are:

- Flexibility, smart artefacts can be reconfigured automatically to produce multiple types of products. Even new products can be directly ordered to the system. This helps to cope with ever changing market and discerning consumption demands;
- Productivity, compared with the traditional production line, the smart factory can more efficiently produce small-lot products of different types. On the one hand, the time needed to switch from one product to another is considerably reduced. On the other hand, the production process is optimized thanks to the use of data from the cloud. This also allows an optimised use of machines, with a significantly reduced risk of wear;
- Resources and energy efficiency, based on the big data analytics: it is possible to establish an accurate knowledge of production processes and guarantee a stable quality level and rate of finished products. In addition, the new generation machines have a more efficient energy consumption, allowing a reduction in consumption;
- Transparency, based on the use of data analytics: it is possible to quantify performance indicators related to machines, products, and system. This makes it possible to quickly take accurate and effective decisions and can also facilitate production plan and accelerate response to market changes.

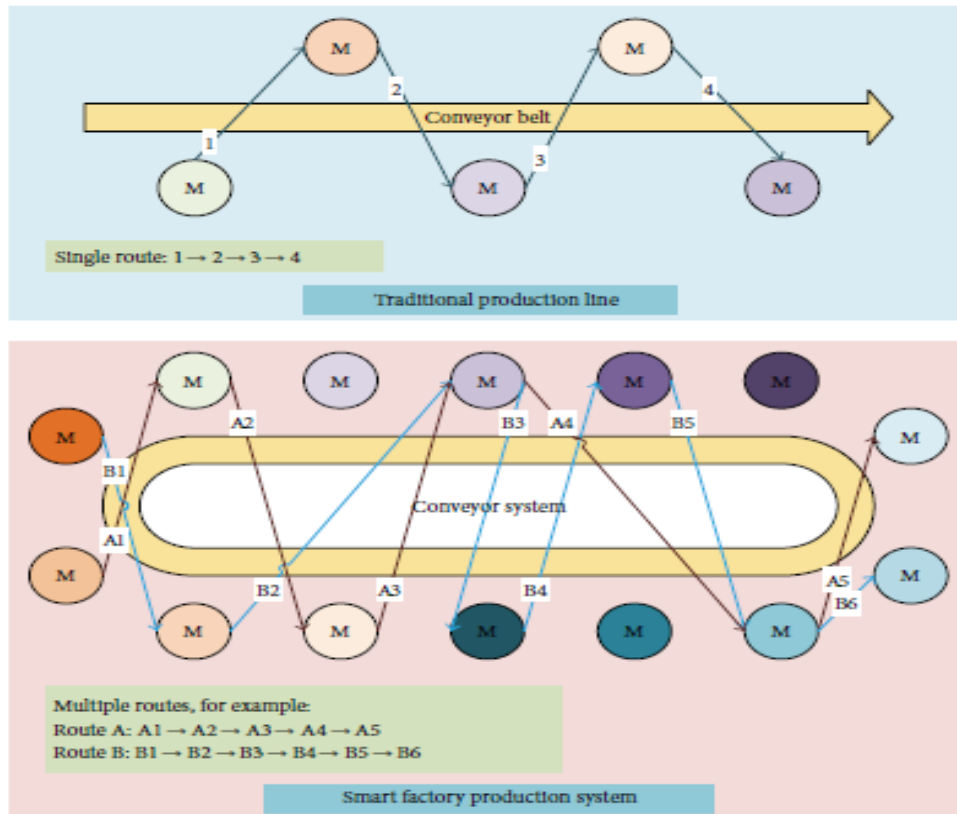


Figure 3.2: Differences between the traditional production process and the smart factory production process. Source: Wang et al, 2015³⁶

Nevertheless, such a structure, which favours product customisation and the flexibility of the production process, creates some ambiguity as well. On the one hand, such a business structure allows the proliferation of small and medium-sized enterprises, due to the cost of information technologies, that it constantly declines while the performance constantly improves. For the coming small-lot and customised consumption demands, the operational cost is rather low compared with the fixed production line because of flexibility of resources and energy efficiency. However, on the other hand, the investments must be kept constant over time, to allow an adequate updating of the production chain and infrastructure in support of IoT and IoS. Such costs, which sometimes impact heavily on the company budget, cannot always be incurred over time by companies below a certain size.

The new production process, however, is not limited to increasing the efficiency and flexibility of the company, but also to enhancing the integration of the company's fabric. The vertical integration of hierarchical subsystems leads to smart factory, which in turn supports horizontal integration through value networks and end-to-end digital integration of engineering. Thanks to an instant transfer of data, consumers can influence in real time the production process of the company, creating a new collaborative relationship between customer and company, which had never been seen before.

³⁶ Wang S. et al, (2015) "Implementing Smart Factory of Industry 4.0: An Outlook", International Journal of Distributed Sensor Networks, DOI: 10.1155/2016/3159805, pag 5

3.4 The new relationship between consumer and firm

Industry 4.0 is rapidly changing the relations between consumers and producers. Through post-Fordism, and the Digital Revolution, this relationship had undergone a reversal of the roles of force. From an economy of scale, where it was the company that decided how much to produce, the economy moved on to a fluid market, where the tastes of consumers and of the market in general governed. Industry 4.0 strengthens the relationship that came out of the Digital Revolution, but at the same time it partly changes the type of relationship that connects producers and consumers.

Some economists, for example, believe that manufacturers and retailers will be able to overturn the current balance of power, creating a relationship of dominance vis-à-vis consumers. Their theory is that robots or other M2M interactions will likely be the end game with regard to the retailer consumer interactions in the future, and influence the rebuilding of the knowledge value chain. Other assumptions underline the importance of artificial intelligence, born in recent years. Robotic personalities such as Cortana or Siri could acquire more and more importance in the future in the relationship between consumers and firms, profoundly altering the marketing and communication sectors, and allowing increasingly efficient and flexible data collection for firms.

The balance of power, however, did not only move towards the producers. Consumers, in fact, will increase their awareness with regard to the importance of the quality and reliability of the acquired and given information and technical condition of the products. This will affect the accumulation and analysis of information in real time and, consequently, influence coming guidelines of value creation for the customers. Another aspect not to be underestimated is the role of technology in this relationship. IoT and IoS have allowed firms to collect data faster and more efficiently, but these tools can also be used by consumers. Thus, the manufacturer of a smart vehicle is provided guidance by obtaining direct consumer experience. Direct contact with the consumer engaged in Industry 4.0 allowed an assessment and the perceived value along with focus on the genuine customer value of the entire set of services related to the management of smart vehicles.

Finally, the management of this data is vital. The possibility of acquiring personal data with extreme ease places the relationship between companies and consumers in a delicate legal situation. The privacy of consumers, as well as their anonymity, can often be put to the test by competition between rival companies, who would take advantage of the opportunity to unauthorized access to each other's data. In terms of privacy, this is a considerable problem involving data providers of free electronic mailboxes, calendars, navigation, storage, and various applications, and the questions regarding whether and where operators sell consumers files. The protection of these data requires, most of the time, a cost that companies do not always want to bear making the management and dissemination of these data a difficult subject, both from an economic and legal point of view.

3.5 The phenomenon of reshoring

The advent of mechanisation, and the interaction between machines, allowed a reinterpretation of the business model. The Digital Revolution allowed companies to "disintegrate" the production process, moving it to areas where the cost of unskilled labour is lower. In fact, this had led to a division of the

world into “headquarter economies and factory economies”³⁷ (Baldwin, 2006). The Digital revolution lowered the cost of coordinating complex activities at distance and this made the geographical dispersion of supply chains feasible and profitable. Rich-nation firms offshored segments of their value chains to developing nations. This “technology lending” could revolutionize the output of a developing nation’s industry almost overnight. The advent of mechanization, and the intensive exchange of data between machines, has begun to produce numerous variations in the business models of advanced economies. These changes, however, have not yet profoundly affected the offshoring phenomenon.

The question, especially from the point of view of work, is complex. In recent decades, high education, high-skilled workers flourished in the face of globalisation while less educated workers suffered. The basic force was the unbundling of production and consumption so that relative goods prices in all nations tended to converge. This was good for rich-nation workers whose skills were relatively abundant but bad for those whose skills were relative scarce in the closed economy (their talents were over-priced by the bundling). Since education was relatively abundant in rich nations while unskilled labour was relatively scarce, globalisation seemed to be a boon for highly educated citizens. Tasks that could be provided at a distance were likely to be offshored, but the list of these tasks was unlikely to line up with educational attainment or at least not as neatly as it had in the past.

However, in recent years, some features have been highlighted that, in theory, would allow a halt to the offshoring process, with the beginning of a reverse process of return of companies in advanced countries; such phenomenon is called “reshoring”. Some factors, in particular, would seem to suggest a similar process³⁸ (Lisa M. Ellram, 2013):

- The rising cost of fuel and associated transportation costs, which would make the "fractionation" of the production process less convenient for holdings;
- The rising cost of labour in low-cost countries;
- Real and anticipated volatility in currency valuation;
- Increasing theft of intellectual property when dealing in global regions;
- The fast response time and leaner supply chain associated with locating manufacturing closer to the end customer/consumer.

To this list, it may be appropriate to add the recently growing customer perception, especially for some specific sectors like fashion, has begun to strongly influence the choice of reshoring, which is part of the context of consumer influence, which has the power to influence, by its own choices, the business strategy.

The choice of the production location, in a manufacturing company, is not always determined only by purely economic factors. Although transaction costs economics (TCE) remain important in the final assessment, there are additional benefits to take into account, such as³⁹ (Dunning, 1998):

³⁷ Baldwin R., (2006) “Globalisation: the great unbundling(s)”, paper prepared for Finnish Prime Minister’s Office for EU Presidency

³⁸ Ellram L.M., Tate, W. L., Petersen, K. J., (2013) “Offshoring and reshoring: an update on the manufacturing location decision”, *Journal of Supply Chain Management*, pag. 1-2

³⁹ Dunning J.H., (1998) “Location and the Multinational Enterprise: A Neglected Factor?”, *J Int Bus Stud* 29, 45–66, <https://doi.org/10.1057/palgrave.jibs.8490024>

- Resources' advantage: this still concerns availability of raw materials and infrastructure, but local partners are also seen as important resources;
- Marketing advantage, concerns the availability and cost of local talent and suppliers, access to domestic markets in a region (including users in knowledge-intensive industries) and government economic policies;
- Efficiency advantage, that combines both production cost-related factors, specialized industry clusters, and government removal of trade barriers;
- Strategic asset advantage, which considers knowledge related assets, and synergies related to maintaining a local presence.

Generally, within the Fordist model, the advantages most taken into account were those related to the presence of raw materials or the advantages related to greater efficiency. Over time, however, the advantages of strategic asset seeking soon became fundamental in the New Economy system.

Taking these elements into account, in recent years, especially in manufacturing, many companies have begun to reconsider the positioning of previously outsourced production, repositioning it in their country of origin (back-reshoring) or in countries close to their headquarters (near-reshoring). It is important, however, to stress that, to date, there is no precise term for enclosing and explaining this phenomenon. Many economists use different terms to analyse the same concept. Fratocchi (2014) uses for example the term "back-reshoring" to denote the decision to reallocate in the country of origin the production or the supply of an enterprise that has previously outsourced its activities⁴⁰. Generally, the term reshoring tends to indicate a generic change of location compared to the previous country where the offshoring operation took place. Reshoring, therefore, is not simply a re-entry of enterprises, but it implies a broader and more complex phenomenon, in full evolution. One of the definitions that can best explain this phenomenon, in any case, is given by Fratocchi himself, who defines back-reshoring as "a voluntary corporate strategy regarding the home-country's partial or total re-location of (insourced or out-sourced) production"⁴¹ (Fratocchi et al., 2014). The term "near-reshoring" refers instead to the case in which the activities of the production, previously delocalized, are re-localized in a country belonging to the same continent of the mother house. In order to consider a business strategy as reshoring, the following characteristics must be present:

- It is an opposite decision to the previous one of offshoring;
- It relates to productive activities;
- It does not necessarily involve repatriation or approximation of all activities that companies had previously offshored;

⁴⁰ Fratocchi L., Ancarani A., Barbieri P., Di Mauro C., Nassimbeni G., Sartor M., Vignoli M., Zanoni A., (2014) "Il back-reshoring manifatturiero nei processi di internazionalizzazione: inquadramento teorico ed evidenze empiriche", Paper presentato al XXVI Convegno annuale di Sinergie Manifattura: quale futuro?, Università di Cassino e del Lazio Meridionale, novembre 2014, DOI 10.7433/SRECP.2014.27, Referred Electronic Conference Proceeding

⁴¹ Fratocchi L., Ancarani A., Barbieri P., Di Mauro C., Nassimbeni G., Sartor M., Vignoli M., Zanoni A., (2014) "Il back-reshoring manifatturiero nei processi di internazionalizzazione: inquadramento teorico ed evidenze empiriche", Paper presentato al XXVI Convegno annuale di Sinergie Manifattura: quale futuro?, Università di Cassino e del Lazio Meridionale, novembre 2014, DOI 10.7433/SRECP.2014.27, Referred Electronic Conference Proceeding, pag. 56

- It is a voluntary operation, the result of a deliberate choice and not the consequence of impositions by external actors.

The international decision of localization could be conceptualized like a process: in the first phase enterprises decide if to internationalize their production, choosing the relative structure of governance (insourcing or outsourcing) and the intended geographical distance from the country of origin. A company must strategically look at its own activities, assessing its own limits (assets) and geographical limits. This is because the weakening of the strategies of outsourcing and international relocation of productive activities does not always generate an increase in profits and a sustainable competitive advantage. From this perspective, reshoring can be seen as a correction of a short-term error caused by some factors, among which exogenous changes stand out (reduction in differences in labour costs between low-cost countries and advanced countries, the increase in logistical costs, etc). At the second stage, the company tends to revise its strategy of reshoring, modifying the geographic aspect of its activities of manufacture (insourced or outsourced). Reshoring, therefore, is very often determined by elements of both market research and research of strategic activities, to which must also be added the recent factor of industrial automation, which could become decisive in the future in involving countries with a high level of infrastructure in this phenomenon.

The offshoring phenomenon, in addition to not being irreversible, is also subject to different stages of progress and regression, based on the economic needs of the company, the presence of exogenous factors and the search for efficiency, market, resources and strategic activities. Another important factor is a strong interconnection along the value chain, which consists of considering the logistical difficulties, translated into higher coordination costs, that offshoring can cause. The phenomenon of reshoring, to date, can be considered more as a strategic review by companies, than a return due to the new technologies of Industry 4.0, which, up until now have played a marginal role in this phenomenon.

Despite these considerations, data on reshoring operations are scarce to date, due to the relative novelty of the phenomenon and the limited adoption by companies. As already highlighted, in recent years the phenomenon of offshoring has shown some critical, but many companies have still shown reluctance to take advantage of the new potential of the fourth industrial revolution to implement reshoring strategies. The reasons behind this choice are variable, giving rise to a very fragmented quantitative evidence on the phenomenon. In general, the application of these strategies has varied according to the regions and economies at stake, with extremely variable timing and intensity. The same economic sectors do not move in a single way, varying in the application of this phenomenon according to the countries and regions in question.

However, many governments of advanced economies are pursuing this issue. The U.S can be considered the country with the highest rate of reshoring of these years, thanks to programs such as “Tax Cuts and Jobs Act (TCJA)”, that offered significant incentives to bring production back to the US. The Boston Consulting Group estimated that reshoring could help create 2.5 million to 5 million jobs in the US by 2020⁴² (Boston Consulting Group, 2013). The UK has also launched a policy programme of reshoring, which aims to help companies to bring production back home. Such policies demonstrate that, behind the fragmentation of data and the reluctance of some companies, the

⁴² Boston Consulting Group, (2013) “Behind the American export surge”

phenomenon of reshoring is a current economic reality. However, these policies are very fragmented, the literature highlights some differences between countries in terms of main reshoring motivations and industries. Consequently, there is a lack of in-depth comparative studies on how home country matters in reshoring processes.

Dataset characteristics (N = 529).

	Home country											
	All (N = 529)		US (N = 290) (54.8%)		Italy (N = 92) (17.4%)		UK (N = 60) (11.3%)		Germany (N = 49) (9.3%)		France (N = 38) (7.2%)	
Industry												
Mechanical	88	16.6%	51	17.6%	12	13.0%	7	11.7%	17	34.7%	1	2.6%
Clothing	87	16.4%	34	11.7%	32	34.8%	11	18.3%	2	4.1%	8	21.1%
Electronics	82	15.5%	45	15.5%	17	18.5%	9	15.0%	6	12.2%	5	13.2%
Automotive	60	11.3%	31	10.7%	7	7.6%	6	10.0%	9	18.4%	7	18.4%
Other	212	40.1%	129	44.4%	24	26.1%	27	45.0%	15	30.6%	17	44.7%
Firm size												
Large	296	56.0%	138	47.6%	61	66.3%	25	41.7%	44	89.8%	28	73.7%
SME	233	44.0%	152	52.4%	31	33.7%	35	58.3%	5	10.2%	10	26.3%
Entry mode												
In-sourcing	419	79.2%	223	76.9%	73	79.3%	43	71.7%	48	98.0%	32	84.2%
Out-sourcing	110	20.8%	67	23.1%	19	20.7%	17	28.3%	1	2.0%	6	15.8%
Motivations												
Logistic costs	112	21.2%	84	29.0%	9	9.8%	8	13.3%	5	10.2%	6	15.8%
Made in effect	97	18.3%	60	20.7%	29	31.5%	4	6.7%	1	2.0%	3	7.9%
Quality issues	95	18.0%	65	22.4%	7	7.6%	9	15.0%	13	26.5%	1	2.6%
Customer proximity	86	16.3%	52	17.9%	17	18.5%	13	21.7%	0	0.0%	4	10.5%
Labour costs' gap reduction	82	15.5%	60	20.7%	4	4.3%	12	20.0%	3	6.1%	3	7.9%
Delay in deliveries	78	14.7%	54	18.6%	1	1.1%	16	26.7%	5	10.2%	2	5.3%
Total costs	69	13.0%	46	15.9%	5	5.4%	14	23.3%	1	2.0%	3	7.9%
Government incentives	53	10.0%	41	14.1%	0	0.0%	8	13.3%	0	0.0%	4	10.5%

Figure 3.3: Summary of the policies of reshoring of 5 advanced economies (Italy, Germany, France, United Kingdom, United States). Source: Wan et al., 2019⁴³

Figure 3.3 provides the main descriptive data on industry, firm size, reshoring entry mode and motivations for the full dataset (N=529) and the five country sub-sets (US, Germany, UK, France, Italy). These data were extracted from the “European Monitor on Reshoring”⁴⁴. From them, it is possible to notice that the reshoring projects are almost equally distributed between the European Union (45.2%) and the US (54.8%). Most of the reshoring projects in the full dataset belong to four industries: mechanical (16.6%), clothing (16.4%), electronics (15.5%), and automotive (11.3%). The label “Other” includes industries with less than 6% of projects each (e.g., household appliances, furniture, food, chemicals). From these data it is possible to note that, to date, the phenomenon of reshoring occurs independently of the phenomenon of mechanisation of Industry 4.0, because it incorporates both companies operating in sectors with a large use of unskilled labour and in sectors where skilled labour is used. The size of companies also varies, as in some countries reshoring policies attract larger companies (Germany) while in others this is less the case (United Kingdom). Each country has peculiarities in terms of reshoring industry, firm size, entry mode and even reshoring

⁴³ Wan L., Orzes G., Sartor M., Nassimbeni G., (2019) “Reshoring: Does home country matter?”, Journal of purchasing and supply management, 25(4), pag. 5

⁴⁴ <https://reshoring.eurofound.europa.eu/>

motivations. For example, while in Germany companies are mainly motivated to take advantage of quality distribution infrastructure, in Italy this motivation is much less common. This diversity is linked, on the one hand, to their industrial, cultural and institutional specificities, and on the other hand, to the sectorial, dimensional, and motivational specificities of the reshoring projects. Indirectly, it could be argued that the success of a reshoring project depends on the appropriate matching between the characteristics of the home country and the characteristics of the project. From one side, this may be led by the will of some of these countries to promote technological innovation, the digital modernisation, and the empowerment of the workforce of the national companies through the phenomenon of reshoring. On the other side, it is not possible, to date, to consider the innovations introduced by the fourth industrial revolution as one of the main motivations that drive many companies to stop the disruption of their production process, the latter are still marginal in this context.

4. From the Fordist city to the global metropolis

The evolution of work has profoundly influenced the relationship between urban and economic development. In recent decades urban planning researchers have identified various “global cities” as key spatial nodes of the world economy, localized bases for capital accumulation in an age of intensified globalization. Cities have therefore evolved over time, adapting to changes in the economy and in the work field. During Fordism, cities were simple "containers" of industries (where labour supply was to count), but over time they have changed, to become so-called "global cities". The creation of global cities is linked both to the globalization of capital and to the regionalization and localization of State territorial organisation. As nodes of accumulation, global cities are sites of reterritorialization for post-Fordist forms of global industrialisation. This re-scaling of the State is a key “accumulation strategy”⁴⁵ (Jessop, 1990) through which cities throughout the world economy are being promoted by their host states as local nodes for international capital investment.

Globalization has been an important watershed in the fundamental relationship between cities and the economy. Cities are primary centres of scientific, cultural and social innovation, they have proliferated all over the globe and have become increasingly interdependent so that, it could speak quite meaningfully of “national urban systems”. A further major point must now be underlined: that since the interdependent specialised activities that constitute the division of labour (and the residential housing associated with them) cannot all occupy a single point, they must necessarily sort themselves into a spatially extensive lattice or patchwork, organised around their common centre of gravity and characterised by intricate internal patterns of geographic differentiation. This type of system is called “urban land nexus”⁴⁶ (Scott, 1980). The variables that influence this system, in different times and places, are:

- The overall level and mode of economic development;
- The prevailing resource allocation rules;
- The forms of social stratification;
- The cultural norms and traditions;
- The relations of political authority and power.

These variables are able to deeply influence the economic, social and political composition of a given urban entity. The meaning of urban territory emerges mainly through a process of agglomeration and land use, thus generating a complex network of localized activities linked to each other by economic, cultural and infrastructural ties. More specifically, agglomeration, proximity and density result in many different kinds of externalities (positive and negative) that circulate through the urban land nexus so that land use at one location invariably has impacts on other locations. Positive outcomes from agglomeration include processes of sharing, matching, and learning which in part account for the dynamism we typically associate with cities throughout history and especially in the last decades. Negative outcomes may include the congestion, land use incompatibilities, incentives to crime, segregation and inequality, social conflicts and other undesirable consequences that arise out of the

⁴⁵ Jessop B., (1990) “State Theory: Putting the Capitalist State in Its Place”, Cambridge, UK: Polity

⁴⁶ Scott A.J., (1980) “The Urban Land Nexus and the State”, Pion, London, 1980

dense coexistence of highly differentiated social and economic activities in a relatively restricted spatial orbit.

This explains in large degree why the individual decision-making and behavioural mechanisms of the urban land nexus are virtually everywhere regulated by collective governance arrangements designed to safeguard cities against implosion and stagnation. Within a city, economic production units, connected to each other, typically form distinctive clusters according to the bands of residential activity. Areas outside the city are the sources of food, primary resources and materials that are not internally produced; These areas are represented both by the immediate hinterland of the city and other cities and regions at more distant locations.

In light of these descriptions, cities can possibly be described as a “very specific scale of economic and social interaction generated by agglomeration processes and focused on the imperative of proximity, and almost always endowed with governance arrangements that attempt to deal with the problematical effects of density and propinquity.”⁴⁷ (Storper and Scott, 2016). Through this definition, the phenomenon of offshoring is even more significant: it has deindustrialized cities which have had to adapt to a radical change, going from a container of heavy industry to something new, and much more complex.

4.1 City between Fordism and Post-Fordism

The relationship between cities and the Fordist economy can be explained through the “regulation theory”. Fordism was an efficient technical organisation of mass production that tied with wage gains to lead to the expansion of mass consumption through a series of nationally defined social and political institutions. Part of this characterisation was the assumption that the sources of crises in accumulation were endogenous and derived from the contradictory nature of relations under capitalism, from tensions that had to be managed through national level compromises. Fordist capitalism was typically presented as broadly supporting similar national-level institutional forms that governed the wage relationship, competition, the use of money, the role of the state and international relations. Reflecting local contingencies, these forms developed to support patterns of accumulation and economic growth that might be called Keynesian.

This perspective of regulatory theory led to a distinction between the accumulation regime (RA), which described the behaviour of entities under market laws, and social regulation (MSR) which referred to state market institutions.

There two concepts are the core of regulation theory, and they help to better understand this phenomenon:

- Regime of Accumulation, can be defined as an organisation of the society, of its political institutions, culture, systems of production, which is conducive to economic growth. It implies the presence of mechanisms ensuring both a balance between production and consumption and a synchronous expansion of these two perspectives;

⁴⁷ Storper M., Scott A.J., (2016) “Current debates in urban theory: A critical assessment”, *Urban Studies*, 53(6):1114-1136, DOI:10.1177/0042098016634002, pag. 6

- Mode of Regulation, refer to the nature of mechanisms bringing society in line with the requirements of the production sphere. This concept has a broad scope, encompassing laws, values, social norms, predominant family types, institutional structures. All these aspects of society can pattern a behaviour in a way that is supportive of the prevailing regime of accumulation. Effective regulation ensures the correlation between a changing production process and the various actors of society, favourable to sustained and planned economic development.

A major contribution of the regulation theory was in its capacity to tie economic phenomena to their social context. Edmond Preteceille, in fact, states that “The regulation theory draws explanations for observed trends from the conceptual connections it forges between microeconomic and macroeconomic tendencies, production and consumption, public-sector institutional arrangements and the private economy”⁴⁸ (Preteceille and Pickvance, 1991). The regulation theory attempted to elucidate the Fordist regime of accumulation, the circumstances that have led to its demise and the nature of post-Fordism. As mass production increasingly dominated the Fordist economy from the late 1940s to the early 1970s, a Keynesian mode of regulation was put in place to secure sufficient demand.

The relationship between city and economy became a stable relationship. Cities, through infrastructure and the concentration of cheap labour, became an ideal place for the proliferation of heavy industries, which required large quantities of cheap labour. At the same time, structured and programmed consumption allowed the birth of a certain well-being among the middle-low class, who started to consume more and more, fuelling the growth spiral described by Ford (see paragraph 1.2), generated from a fundamental compromise between large companies and large trade unions. Productivity continued to grow thanks to economies of scale, combined with a choice of rigid labour, which required little training and little adaptation to change over time. Old equipment was quickly written off and the amortisation costs were incorporated into prices. This compromise was signed by the state, through the support of the unions, creating Keynesian policies of full employment and a series of welfare measures related to this aim. The relationship between cities and industries was therefore a compromise between the industrial and the working classes: both managed to achieve their goals without excessively affecting those of the other side.

In this scenario, economic suburbs were involved in the economic programs. The capacity of programmed growth allowed companies a possibility of constant expansion, which encompassed more and more territories. Historically understood as depressed territories, and therefore considered as exporters of unskilled labour, the peripheral economic areas have experienced an increase in income and economic activities during the Fordist period. Companies opened new locations, creating new job opportunities, thus avoiding internal immigration by the population of these areas. The planned economic growth after the Second World War allowed an urban expansion, instead of the polarization observed at the beginning of the twentieth century. New cities were born, expressly developed in symbiosis with the industries of the Fordist model (Detroit, Toronto, etc), through the great plans of territorial planning, residential construction, service and industrial, coinciding with the stage of extreme maturity of the productive development of Fordist model. The same relationship

⁴⁸ Preteceille E., Pickvance, C., (1991) “State Restructuring and Local Power: A Comparative Perspective”, Pinter, London, pag. 9

between cities changed. Urban centres attracted labour through "scarce" factors not easily replicable (land, real estate investment, value activity high productivity, etc.), all managed in a centralized manner, in order to return an economic value in a short time. However, this call did not create a relationship of conflict with peripheral areas; on the contrary it created a chain effect (band wagon, an effect that creates an interaction between demand and consumer preferences. In practice, the effect creates an increase in the demand for a particular asset, in proportion to the increase in the number of people who acquire that particular asset.) in which the peripheral locations moderately followed the central locations, taking management models and transferring government and planning procedures in the leap from one dimensional rank to another.

It is also important to distinguish the relationship between cities and the Fordist system in two macro phases:

- A classic Fordism, which places large factories at the centre of the cities' operation;
- A mature Fordism where factories tend to be decentralised to the suburbs, while the core-system town remain restructure around the services.

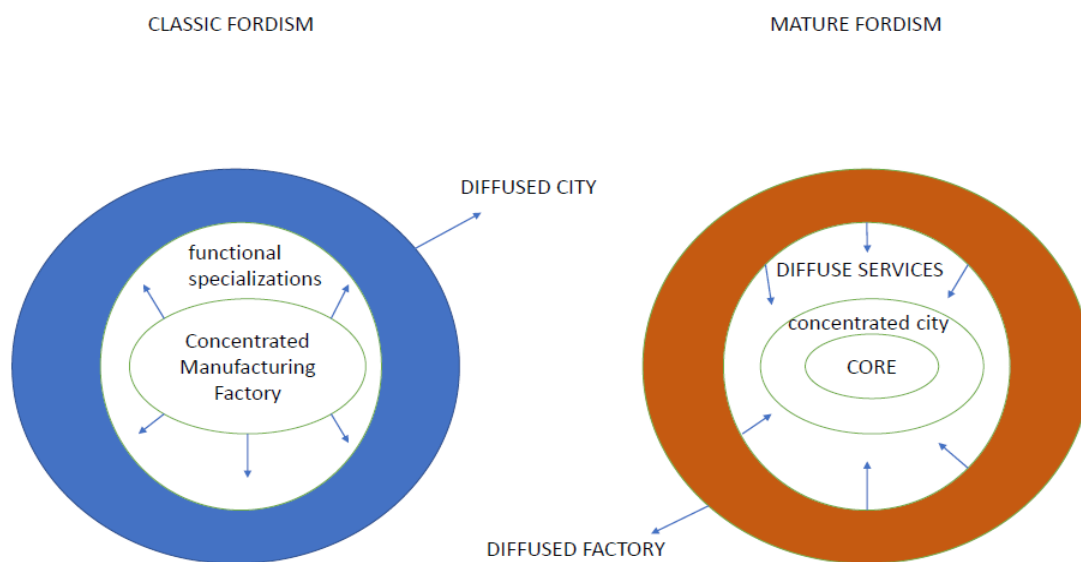


Figure 4.1: The two macro phases of the relationship between the urban area and the Fordist system. Source: Pilotti, 2001⁴⁹

The services that began to appear in the urban area of mature Fordism were less linked to the "poor" context of the modern factory, and more related to knowledge (which will assert itself as a fundamental economic value starting from post-Fordism). This, therefore, created in the new tertiary sector a certain resistance to move to the periphery, due to poorer infrastructures and cultural context, and economically less advantageous. In urban areas, relations and knowledge were formed with a low degree of transferability. To these one needs to add the skills developed in decades of the Fordist model, which had adapted over time to the metropolitan context. This led to the formation of a complex balance of skills in urban areas, between new and old economic models, that changed the

⁴⁹ Pilotti L., (2001) "Le rigidità flessibili della città-territorio verso la virtualità", Università di Padova, pag. 3

relationship between urban and peripheral areas, as well as the relationship between peripheral areas and the factory.

Such a stratification between old and new knowledge generated lock-in relationships: it avoided an excessive expansion of such differentiated sets of services on the territory, in particular those distant from the centre. In this way a regulation of the territory emerged for bands of specialisation of concentric type and that were held with each other up to the extreme limit of the periphery where the factory constituted the last barrier of the centre-periphery connection. A similar type of connection, configured territories based on the variation of prices, which decreased as the distance between the periphery and the centre increased. This process also took place with the relocation of public and private services (banks, transport, healthcare, etc...), which tended to select the quality of their service according to the economic and cultural context in which they operated: further away from the metropolitan centre becomes equivalent to a lower quality service. In this context, having access to schools, crafts or hospitals became strongly linked to the presence of factories, which gradually entrusted tasks that in the classical tradition were carried out by the factories themselves, to the municipal administrations (welfare services to workers, etc.).

This explains the non-traumatic transition from cities linked to classic manufacturing functions, then linked to an economic and urban growth model, through economies of scale, to more dynamic metropolitan areas, which had little in common with the model contextualized by Ford. At first, post-Fordist cities do not completely polarize the resources to the detriment of the peripheral areas, but merely change the type of relationship that binds them to the latter. From a centralized control, with chain effects from the centre to the periphery, a more horizontal system begins, to better respond to new frontiers of productive complexity and to face the changes of the economic system.

Such system of relations between the economic and the urban world, however, changed during the crisis of the Fordist system (see paragraph 1.3). The new economic systems (the so-called post-Fordist systems) undermined the previous planned and stable economic development. The saturation of the market, combined with the need to adapt to increasingly rapid changes, brought the Fordist economic system, centred on large factory, to the end. The relationship between factories and cities changed accordingly. These changes have highlighted the contrast between the widespread development of decentralized forms of production, thanks to the use of new communication technologies, and the metropolitan Fordist model, characterised by a centralized control and a chain wagon relationship between urban areas and peripheral areas.

In post-Fordist cities, the spatial uniformity of the territory is broken, driven by the attractiveness of the major centres compared to the smaller centres, which in many cases behaved as followers. Overall, a new model is established, with strong asymmetries, especially in the relationship between large metropolitan areas and surrounding territories, although it emerges less in the middle-sized centres, where the Fordist model's crisis was slower. This because the widespread and intense use of resources in Fordist cities, which were useful to develop internal functional specializations but closed to any external influence, produced in the long-term unsustainable costs. The development of services that grew by inertia and by extensive imitation in urban areas was insufficient to overcome the constraints and rigidities imposed by mass production models, as it became a divided but poorly remunerative production, both in economic terms and in terms of services provided. On the contrary, in a more dynamic system like the post-Fordist one, the need to share and transfer became increasingly

important. This process of transferability was favoured by the development of supply relations, and by a vertical partnership between the production process and the distribution one (see paragraph 2.3). The process of implementing knowledge, which took place at the urban level, exceeded the mere technological dimension, becoming convenient for the economic fabric of urban areas through three important aspects:

- It generated a separation between intangible resources (knowledge and language) and material resources, introducing greater degrees of portability and replicability;
- It produced the great specialization in the working field, both of productive type that connected to the use of new acquaintances, reducing costs and level of risk of the investments within the formation of the cognitive capital;
- Introduces virtuous circularity in the use of knowledge both as input and output of intelligent machines, expanding production potential.

These three factors changed the priorities in urban areas. They moved from a series of socio-economic movements, with medium-short range, which influenced peripheral areas through chain effect, to a series of broader investments, aimed at strengthening movements of human, financial and cognitive capital. These investments mainly aimed to strengthen areas such as human resources, transport, logistics and infrastructures, which became the basis for attracting and introducing new capital into the urban fabric. In this context, communication (telematic and not) acquired a new function, different from the one carried out in the previous Fordist system, where it had to ensure the substantial immobility of resources. In this new situation, urban areas had to allow high accessibility to useful resources, as the ability to react to the market, combined with the adaptability of new companies that emerge, became the basis for economic success.

Within a little more than a decade, between the 1970s and 1980s, a profound mutation took place in urban areas, and in their relationship with peripheral areas. In the Fordist system, the urban area simply was the fulcrum of the services made available to companies, creating a chain effect on the peripheral areas, through the spread of specializations linked to the core system in cities. With the crisis of this system, and with the advent of the first post-Fordist economic systems, this relationship changed. The needs of companies changed, as did their structure, from large and rigid enterprises, to smaller structures with greater adaptability. These new companies, which formed a new core in urban areas, reversed the relationship that banded urban and peripheral areas, creating a centralization of human and financial capital, in the cities, where it was easier to emerge in the new economic system. The polarization of resources in urban areas, to the detriment of peripheral areas, will be the dominant feature of the New Economy: it will also hit those cities that, through the Fordist system, had built their own economic and social fortunes.

4.2 Urban and peripheral areas in the New Economy

Since the 1990s, economic changes have accelerated, leading to major changes in urban areas as well. The resulting economic structure took the name of New Economy and was characterised by a number of new factors (Vaciago and Vaciago, 2001)⁵⁰:

⁵⁰ Vaciago E., Vaciago G., (2001) "La New Economy", Il Mulino, Bologna

- New centrality of the knowledge and an increasing dominance of the immaterial dimension of production processes;
- Development of advanced computer technologies;
- Contraction of the space-time dimension and growth of a relational economy;
- Tendency to information sharing.

In particular, the great importance of intangible resources has made it possible for new virtuous circles to circulate in local economies. However, of all intangible resources, the most important impact in this context is the advent of the Internet. Indeed, the presence and use of the Internet have characterised information (and, in general, knowledge) as a global resource, to the point of perceiving it as the “glue” between cultures and geographically distant societies. However, even if information could be exchanged more effectively, the old paradigm of the growth process of local and national economies was still valid. This paradigm links the investments needed for economic growth, the use of public capital and human capital. This is for two reasons:

- Modern facilities for the transmission of information need infrastructures, capable of producing high added value (thanks to the reduction of transaction costs);
- The intensive use of information technology makes it essential to invest in the training of the workforce, in order to take advantage of all the new opportunities offered by the latest technologies.

In this context, the organization of cities, metropolitan areas and their production systems is reorganized, according to network systems, modular structures and flexible performance, compatible with the modern post-Fordist scenario⁵¹ (see paragraph 2.3) (Pilotti and Belussi, 2002). It is precisely the growing importance of relational networks that creates a new type of social capital within urban areas. This capital is able to change the historical relationship between local and global realities that had characterized the development paths of urban economies of the 20th century. In that context, economic systems were managed in such a way as to contain the conflict between fragmentation and integration that local societies were facing in the post-Fordist reality. The New Economy has partially modified this scenario, passing from the hierarchical order of investment policies (national-regional-local), added a further horizontal level of investment, which allows a more correct management of the new network, what sociologists and geographers call the “Network Society”⁵² (Tornqvist, 2002).

With the renewed centrality of knowledge, the vision of cities as an inextricable and dense set of information flows becomes relevant again (after the Fordist period). Cities become the gateway of an economy built around local networks of organisational systems and skills, leading to virtuous processes of cumulative growth. In this context, the Internet represents an element of novelty, capable of distorting the space. From an urban point of view, all this represents a change in the relationship between the economic fabric of the urban area. This is because the historical relationship between customers and suppliers change radically, with the possibility for very distant economic subjects to interact with each other. The economic geography becomes virtual. It turns into an incessant flow of

⁵¹ Pilotti L., Belussi F., (2002) “Knowledge Creation, Learning and Innovation in Italian Industrial Districts”, *Geografiska Annaler: Series B, Human Geography*, 84:2, 125-139, DOI: 10.1111/j.0435-3684.2002.00118.x

⁵² Tornqvist G., (2002) “Proximities in a knowledge-based economy”

information within cities that begin the process of digitalization of the economic fabric, after the digitalization of infrastructures.

The growth of knowledge-based creative industries within city districts is an important aspect of the spatiality of the New Economy. These new industries are shaped by the convergence of culture and urban development, the growing importance of technology in production and the competitive advantage of new opportunities in urban areas. Cities, and more specifically their metropolitan core, become the "creative habitat"⁵³ (Florida and Gertler, 2003) par excellence, offering human capital, amenity attributes, and environmental conditions. The new urban districts do not include isolated companies, but rather consistent sets of dynamic industries, which interact with each other.

These new industrial sites, within urban areas, be considered as hybrid models of industry, and are configured by the use of technologies (ITC), culture (cognitive capital) and mainly by the innovative context of the urban environment. The interdependency and interaction of these factors have underpinned the formation of new industry clusters in urban areas since the 1990s. These new industries include new types of enterprise, which combine creative input and design with technology-intensive communication and production systems within the production process. These include both industries such as industrial design, graphic arts and fashion, as well as typical New Economy industries such as software design, Internet design and computer services. It is possible to notice from these examples that, as Allen J. Scott states, the concept of cultural and other new industry sectors "refers not only to agglomerations of technologically dynamic firms, but also to places where qualities such as cultural insight, imagination, and originality are actively generated from within the local system of production"⁵⁴ (AJ Scott, 2001), giving a deep acceleration to the process of gentrification and centralization to the detriment of peripheral areas. It is also important to emphasize how the term "hybridity" is partly defined by the distinctive mix of Fordist and post-Fordist industrial production regimes, and is underscored by new divisions of labour and employment trends.

Generally, when talking about New Economy, the tendency is to focus on recent processes and experiences. But in some respects, the emergence of high-tech industries within cities can be seen as part of a longer industrial restructuring process that began after the Fordist model crisis in the 1970s. In the last decades, the development of clusters within urban areas is due to the rising of specialized formations including:

- Development of services to enterprises located in the metropolitan core, but beyond the boundaries of the industrial district (infrastructure, training centres, etc.);
- The rebirth of craft production, partly associated to the communities of artists and artisans of the cities' historic districts. These communities, exploiting the phenomenon of gentrification, encourage companies to concentrate in specific areas of metropolitan areas;
- The expansion of creative and design-based services dating from the mid-1980s in many large- and medium-size cities;
- The rise of the technology-intensive firms;

⁵³ Florida R.L., Gertler M., (2003) "Cities: talent's critical mass", *The Globe and Mail*, 8 January, Toronto, ON, p R3

⁵⁴ Scott A.J., (2001) "Geographic foundations of creativity and innovation in the cultural economy", In *Creativity, Innovation, and Job Creation*. pp. 73–86, Organization for Economic Cooperation and Development (OECD), Paris, pag.

- The emergence of hybrid enterprises, characterized by advanced technology production techniques.

The concentration of creative and technological enterprises also confer benefits to non-emergent sectors, known as “knowledge spill overs”⁵⁵ (Audtresh, 2000), which tend to be locally or regionally bounded. These enterprises are integrated into the new urban economic fabric, and this extent them to exploit new technologies, such as the Internet, to obtain specialized services and products, without abandoning the previous productive structure altogether. Thus, many companies enter new urban areas using both traditional value chains as well as exploiting innovative communication and production systems. This allows them to obtain specialized inputs, to obtain new competitive advantages within their business and to strengthen the production process, serving both national and international markets.

A: Typology of spaces	B: Representative sites and cities	
I. Extensive new production districts		
Concentrated and dispersed patterns of new industries	1. “City fringe” (Clerkenwell, Bunhill, Shoreditch)	London
Integrated production ensembles	2. “Multimedia Gulch” (South of Market)	San Francisco
Diverse activities and land use patterns	3. “Silicon Alley” (CBD fringe & heritage districts)	Vancouver
II. Compact New Economy clusters		
1. “Spontaneous clusters” essentially market-driven clusters of New Economy firms	1. Victory Square-Gastown 2. Northeast Mission (SOMA) 3. Shibuya 4. Suzhou Creek	Vancouver San Francisco Tokyo Shanghai
2. “Induced clusters” central role for public policy (rezoning, land use, equity role in property, buildings, heritage policies)	1. Cité Multimedia 2. False Creek Flats 3. Design Exchange site 4. Bermondsey Street Conservation Area	Montreal Vancouver Toronto London
III. “Signifying” New Economy precincts		
Typically 0.5–1 km ² in extent Concentrations of leading edge firms Environmental and consumption amenities	1. Yaletown 2. Hoxton 3. South Park 4. Telok Ayer 5. Belltown 6. Ehrenfeld	Vancouver London San Francisco Singapore Seattle Cologne
Cultural markers and re-imagining effects Leading role in “reterritorialisation”		
IV. “Incipient” new industry districts and sites		
	1. Stratford (Newham) 2. Deutz 3. Mid Main District	London Cologne Vancouver

Figure 4.2: Some examples of clusters and economic activities formed in the urban fabric through the New Economy. Source: Thomas A. Hutton (2004)⁵⁶

This evolution of industries belonging to "traditional" economic sectors suggests the need to place capital formation and development, necessary for this evolution, in cities, through a wider development model. This allows to recognize the competitive advantage of new urban areas, to the detriment of rural areas. The chain wagon relationship, established between cities and peripheral areas, which had survived the crisis of the Fordist model, begins to permanently disappear.

In this process of transformation, the relationship between cities and economic peripheries, which had already begun to change during the crisis of the Fordist system, now changes radically. The

⁵⁵ Audretsch D., (2000) “The economic role of small- and medium-sized enterprises: The United States”, paper prepared for the June 11-12, World Bank Workshop on Small and Medium Enterprises

⁵⁶ Hutton T.A., (2004) “The New Economy of the inner city”, Volume 21, Issue 2, April 2004, Pages 89-108, <https://doi.org/10.1016/j.cities.2004.01.002>, pag. 6

transformation of present economic activities into cities, also created a different demand for labour, with a strong increase of professions based on the use of intellectual and managerial skills. This change in the economic fabric created an innovative environment which manifested over time the tendency to agglomerate in order to exploit the territorial spill overs. This resulted from the presence of research centres and prestigious universities. This gave rise to a strong dependence of companies on human capital. The latter tends to be mainly located in urban areas with a high concentration of Universities and excellence Centres that encourage its development. In this context, it became mandatory for companies to draw from the metropolitan basin of human resources, if they want to continue to grow and maintain competitive positions in the dynamic market of the New Economy. From the point of view of cities, the real competitive advantage is to be able to provide adequate logistic services, distributing the products traded in a short time, combined with the ability to create and train human capital adapted to the needs of businesses.

Human capital, has become the raw material par excellence for companies, on which their economic success depends. New Economy's cities look as the place where the level of knowledge is maximized and geographically concentrated. Urban centres allow to maximize two different types of knowledge spill over:

- The effect, according to which the concentration of companies in the same sector and in the same urban area, facilitates growth and innovation through the exchange of knowledge;
- The effect, for which the variety of industries present in the urban territory ensures the intersectoral diffusion of knowledge and innovation.

The city dimension becomes the physical opportunity to reconcile and make these benefits become complementary, where once they used to be as opposite. Therefore, the direct relationship between consumers and producers generates a demand for logistical services that need to be met if urban competitiveness is to be preserved. This new concentration of companies, combined with the proliferation of new economic sectors, put in second place the peripheral areas, now excluded from technological and economic developments. Areas that before were able, through a cascade diffusion, to take advantage from the investments and infrastructures of the metropolitan core, find themselves cut off from every investment plan, public and private. This was caused by the offshoring phenomenon, which found in the countries of south-east Asia a perfect outlet to revive the sectors fallen into crisis with the implosion of the Fordist model.

4.2.1 Offshoring and global cities: the implementation of a new system

The phenomenon of offshoring, from an urban point of view, has different faces. For some metropolitan areas, this phenomenon was limited to accelerating the process development of the tertiary sector, thus changing the type of companies of the economic fabric of cities. For other urban areas, especially for Asian metropolises, offshoring represented an opportunity for growth, linked to the production processes that Western companies moved over time in the urban tissues of South-east Asia. However, this phenomenon also created numerous "depressed" areas, especially those urban areas that had consolidated their success within the Fordist model. The inability to maintain an adequate level of competitiveness, in an increasingly dynamic market, led to a violent "deindustrialization", which quickly transformed numerous thriving urban areas into depressed areas,

unable to attract new investments to from most emerging economic sectors. Otherwise, the areas that gained advantages from this phenomenon established themselves as new reference points in the global market of the New Economy, giving rise to so-called "global cities".

For peripheral areas, the phenomenon of offshoring was, in most cases, a negative phenomenon: they consolidated the rupture of the relationship with the metropolitan areas. The advent of the New Economy, with the consequent evolution of economic and labour relations within the metropolitan core, had made unnecessary the demand for unskilled labour in large urban areas. This, together with the substantial break in the chain wagon effect between the metropolitan core and the economic suburbs, put such locations in a complex situation: unable to attract investments, now polarized by metropolitan cities, making it impossible for them to attract new emerging companies, these peripheral areas were cut off from any economic development programme. The phenomenon of offshoring fitted here, moving numerous production chains and processes from one country to another, but always keeping these processes linked to an urban environment, well integrated into the national economic fabric and connected through a good level of infrastructure. In all this, economic suburbs were simply left behind, ignored both by the Western metropolises, which are beginning to polarize human and financial capital, and by Eastern metropolises, which arose around those phases of the value chain translated through the offshoring phenomenon. It is therefore in this historical period, between the 1980s and 1990s, that it is possible to begin to speak of "forgotten places"⁵⁷ (Rodríguez-Pose, 2018): economic areas that, with the crisis of the Fordist model, remained behind, ignored by the economic programs of the various governments, ignored by private individuals, who needed the human and financial capital of which these areas were largely lacking, and therefore unable to attract companies that, even in the New Economy system, needed unskilled labour, as the cost of the latter did not compete with that of emerging markets, in particular those of Asia.

The phenomenon of offshoring defined the role of the "global city"⁵⁸ (Sassen, 1991) that was created during the early years of the New Economy. Sassen then suggested the idea of a new type of city, which was the result of a combination of two complementary trends: the integration of the world market and the decentralisation of activities, enabled by the new information and communication technologies, which define a new strategic role of organisation and control for cities. This can thus be effectively integrated into this context. Global cities, arose under certain conditions:

- The demand for advanced (financial and commercial) services enabling cities to establish themselves as places of production and innovation;
- Once they have become places of collection of such economic phenomena, cities must know to impose themselves, becoming the main markets of the companies pertaining to their economic fabric.

In view of these conditions, global cities were not only power centres of a widespread and internationally integrated economy, but above all global services' centres; key hubs for the New Economy system. They became the focus of the new global economic "network"⁵⁹ (Castells, 1996).

⁵⁷ Rodríguez-P.A., (2018) "The revenge of the places that don't matter (and what to do about it)", *Cambridge Journal of Regions, Economy and Society*, Volume 11, Issue 1, Pages 189–209, <https://doi.org/10.1093/cjres/rsx024>

⁵⁸ Sassen S., (1991) "Cities in the global economy", In R. Paddison (Ed.), *Handbook of urban studies* (pp. 256–272), London: Sage Publications

⁵⁹ Castells M., (1996) "The Rise of the Network Society", *The Information Age*, Vol. 1, Oxford: Blackwell

Cities had an economic background, but not enough to keep remaining isolated, which is then forced to connect with other economic realities (more or less close), through new communication technologies, which allow competition between different economic tissues worldwide. Networks constituted the new social morphology of society. The "space of places" is increasingly flanked and reinforced by the "space of flows"⁶⁰ (Castells, 1996), defined as a combination of layers between:

- Network technologies (physical and communication);
- Spatial organisation of the interests of the various economic actors involved.

Similar definitions of global cities and networks help to understand the new economic, cultural and social fabric in which cities fit. In this context, the phenomenon of offshoring acts, through specific parameters (see paragraph 2.4) that measure the degree of competitiveness of cities. Through new technologies, companies move parts of their value chain into different cities or economic clusters, seeking the economic environment that will enable them to become more competitive. In such a context of mobility, cities rediscover, through offshoring, the reference points of the economic system, whether it is a matter of attracting new investments in emerging sectors, through a strengthening of infrastructure and human capital.

The city thus becomes, at the same time, a polarizing and dispersive context. Offshoring moves, on a global scale, one or more parts of the value chain of city enterprises. However, such mobility always remains in the urban context, definitively excluding the peripheral areas from the active economic scenario. Global cities become a polarizing factor, which accumulate (human and financial) capital at a high pace, to maintain a privileged position in the mobile network of the New Economy. The effect of the chain wagon, typical of the Fordist model, is definitively interrupted, with often negative economic and social consequences for these peripherals area.

4.2.2 The forgotten places

The development of global cities, as fundamental nodes within the New Economic system, placed excluded areas in a complex situation. The latter, now excluded from the great movement of capital, found themselves as passive subjects in the modern economic scenario.

Andrés Rodríguez-Pose, in his "The revenge of the places that don't matter" (2017) begins his analysis of this problem with an example: in October 2008, the economist Tim Leunig stood in Cathedral of Liverpool and declared that cities of the Northern England were to be considered as depressed areas, despite the numerous support programs implemented by the British government. He added that "development policies were not working and there was a need to rethink development strategies for lagging and declining areas in the UK, as the fate linked to geography could not be bucked"⁶¹ (Rodríguez-Pose, 2017). The solution proposed by Leunig, to solve the social problems of these areas, was simple: first, to focus on the parts of the country that were prosperous and dynamic (such as the capital London) and, second, to allow people in the most depressed areas of the country to move to the more affluent places in order to take advantage of the opportunities over there. Similar

⁶⁰ Castells M., (1996) "The Rise of the Network Society", The Information Age, Vol. 1, Oxford: Blackwell

⁶¹ Rodríguez-P.A., (2018) "The revenge of the places that don't matter (and what to do about it)", Cambridge Journal of Regions, Economy and Society, Volume 11, Issue 1, Pages 189–209, <https://doi.org/10.1093/cjres/rsx024>, pag. 4

macroeconomic strategies, aimed at facilitating the transfer of cognitive capital from peripheral areas to those more integrated into the economic system, were implemented by many governments from the 1980s onwards for over thirty years. Traditionally, supply-led development intervention was considered to have generally failed, leading to permanently assisted and sheltered economies, hence the decision to "leave behind" such areas.

The idea of Tim Leunig may have been extreme, but it reflected the dominant narrative emanating from urban economics. The economic system that began in the 1980s made global cities the engine of the world economy. Starting from this aspect, more lines of thought have agreed that the best form of territorial intervention was not to focus on peripheral places, perceived as having low potential, but on what was supposed to be areas with the greatest potential: the largest and most dynamic agglomerations. The reason for focusing resources on such areas is, through a combination of factors which included agglomeration, density, and transportation costs. "Agglomeration and density facilitated the pooling of labour, the sharing and matching of infrastructure and suppliers, the interaction of economic agents, and, through learning processes, the generation, distribution and assimilation of knowledge and innovation"⁶² (Duranton and Puga, 2004).

Not all cities, however, were able to exploit these capabilities. According to urban economics, there are considerable advantages of being located in larger and denser cities, as "there are substantial productivity benefits for all firms in denser areas that are even stronger for more productive firms"⁶³ (Combes, 2012). Two main explanations have been offered:

- Firm selection, larger cities toughen competition, allowing only the most competitive to survive;
- Agglomeration economies, larger cities promote interactions that increase productivity.

However, there are plenty of once dominant cities that have suffered of sharp or gradual economic declines. Examples of former industrial hubs such as Detroit in USA, Lanzhou in China or Montréal in Canada. These cities, once important industrial centres, suddenly found themselves cut off from investments and from the active subjects of the new economic scenario. The so-called "deindustrialisation", combined with the offshoring phenomenon, emptied these industrial poles from their competitive advantage, creating numerous depressed areas in a short period of time.

⁶² Duranton G., Puga D., (2004) "Micro-Foundations of Urban Agglomeration Economies", In Handbook of regional and urban economics, vol. 4, eds. J. V. Henderson and J. F. Thisse, 2065–2118. Amsterdam: Elsevier

⁶³ Combes P.-P., Duranton G., Gobillon L., Puga D., Roux S., (2009) "The productivity advantages of large cities: distinguishing agglomeration from firm selection", Discussion Paper 7191, Centre for Economic Policy Research

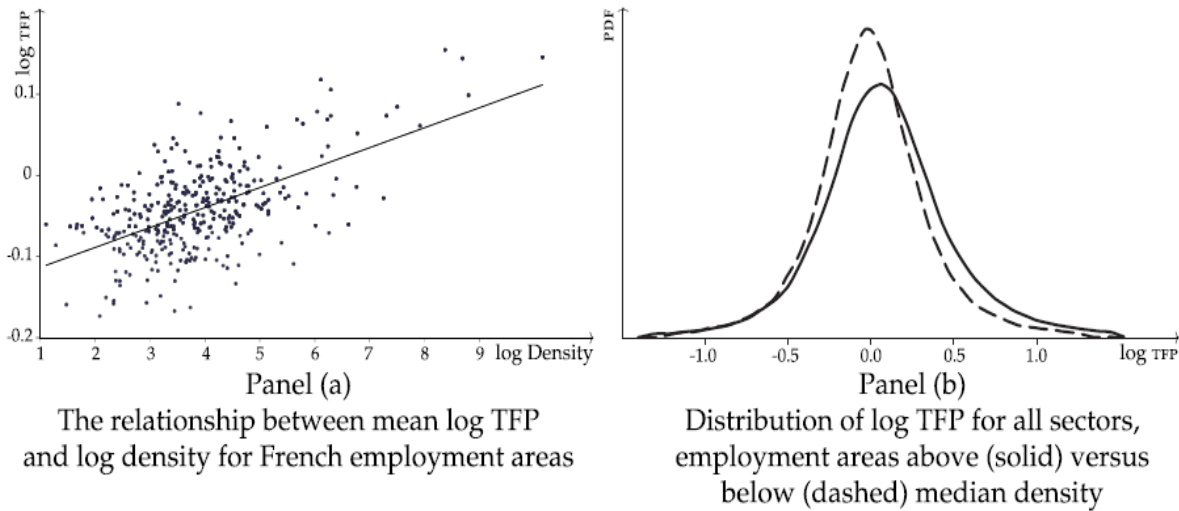


Figure 4.3: The productive advantages of large cities, considering the log total factor productivity (TFP), with the French practical case on the left. Source: Combes, 2009⁶⁴

In sum, these data allow to understand how, in an attempt to fully grasp the economic potential of new subject, such as global cities, macroeconomic policies have "forgot" many areas, creating complex political and social fractures with the implication that "economic growth will be unbalanced"⁶⁵ (World Bank, 2009). The result was that many poor regions have remained stuck for long periods in low income traps, while some formerly well-off and dynamic regions have experienced long periods of decay. This can be clearly seen in developing countries, where the contrast between dynamic urban environments and peripheral areas was wide, but also many advanced countries show similar signs of disparities within their national territory (Germany, Italy, etc...): they were caused by macroeconomic policies that have proved incapable of going beyond the mere economic subsidy, which proved to be insufficient to revive the economic fabric of these areas.

It is from these "forgot" areas that populist movements have found their political success in recent years, highlighting the contradictions of the current economic system. Populist votes have been heavily concentrated in territories that have suffered from long-term declines and reflect an increasing urban and regional division. The most famous examples are the 2016 Brexit referendum, or the American elections of the same year. In the UK's Brexit vote, most big cities opted to remain in the European Union⁶⁶ (Essletzbichler, 2018), such as London, Brighton or Oxford. The Brexit vote was concentrated in many industrial declining and disadvantaged rural areas of the North and the East of England, and also in many large urban centres of these areas the vote was in favour of Brexit, as Birmingham, Hull, Sheffield, or Sunderland. The 2016 US elections showed similar trends: Iowa, Ohio, Pennsylvania, and Wisconsin flipped electoral votes between 2012 and 2016. But even in these

⁶⁴ Combes P.-P., Duranton G., Gobillon L., Puga D., Roux S., (2009) "The productivity advantages of large cities: distinguishing agglomeration from firm selection", Discussion Paper 7191, Centre for Economic Policy Research, pag. 2

⁶⁵ World Bank, (2009) "World Development Report 2009: reshaping economic geography", Washington, D.C., World Bank

⁶⁶ Essletzbichler J., (2018) "The victims of neoliberal globalization and the rise of the populist vote: A comparative analysis of three recent electoral decisions", Cambridge Journal of Regions, Economy and Society, Volume 11, Issue 1, March 2018, Pages 73–94, <https://doi.org/10.1093/cjres/rsx025>

states the vote was territorially uneven, with a one-way vote for the Democratic Party in all American cities with a population level above one million.

The examples of social and political rifts between urban and peripheral areas are numerous, but these two suffice to show how the New Economy system has created deep rifts in the world economic fabric, with consequences that easily lead to social and political issues. Yet some empirical data show a different scenario.

In a recent study by Lessmann and Seidel⁶⁷ (Lessmann and Seidel, 2017), covering virtually all countries in the world, it was found that within-country territorial disparities have not increased as one would have expected if economic growth had been driven by a handful of large cities. These data were obtained by the GINI coefficient (index of concentration to measure inequality in the distribution of income or even wealth through a numerical value between 0 and 1. Values close to 0 indicate a homogeneous distribution of wealth. In contrast, values close to 1 point to high levels of inequality.). Also using a different population-weighted generalized entropy indexes, in order to achieve levels of inequality from a regional point of view, and thus also the levels of inequality within a country. The data obtained through these indices show how about two thirds of all countries in the world have experienced a reduction of economic disparities between 1992 and 2012⁶⁸ (Lessmann and Seidel, 2017). Most of this reduction has been concentrated in developed and middle-income countries. Territorial disparities have declined across the American continent, most of Europe and in a number of Asian countries. Greater polarisation is, by contrast, in evidence in most of Africa, Eastern Europe, and large parts of South Asia (see Figure 4.4).

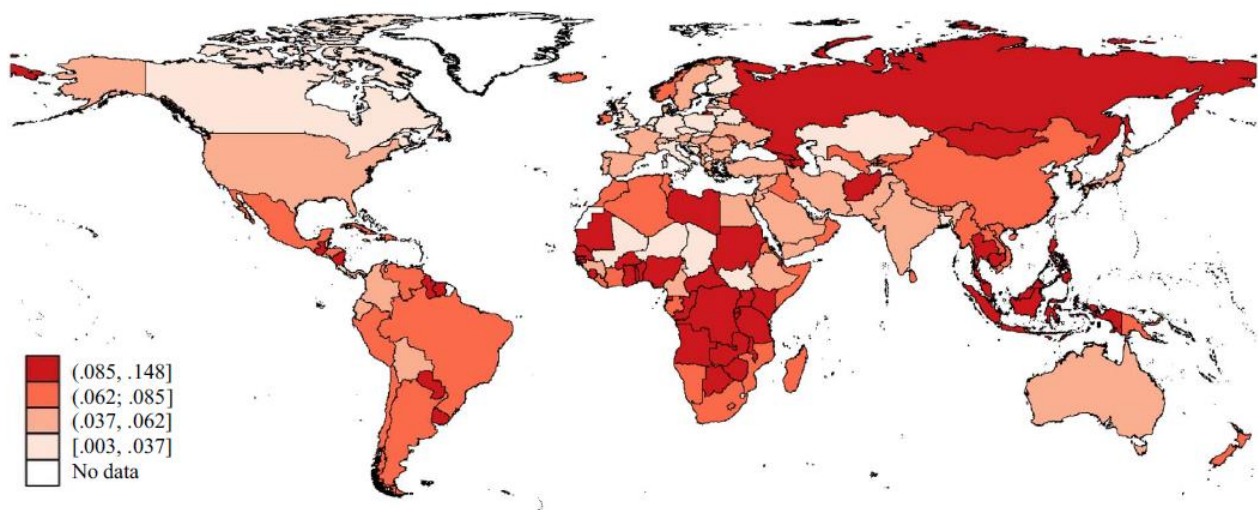


Figure 4.4: Regional inequality within countries (1992-2012), through the use of the GINI index. Source: Lessmann and Seidel, 2017⁶⁹

This evidence contradicts most predictions by urban economics. Many less-developed regions across the world have actually caught up with richer regions in their respective countries. These data make a more complex picture of the world economic scenario, composed by polarizing elements (global

⁶⁷ Lessmann C., Seidel A., (2017) “Regional inequality, convergence, and its determinants – A view from outer space”, *European Economic Review*, 92: 110–132

⁶⁸ Lessmann C., Seidel A., (2017) “Regional inequality, convergence, and its determinants – A view from outer space”, *European Economic Review*, 92: 110–132

⁶⁹ Lessmann C., Seidel A., (2017) “Regional inequality, convergence, and its determinants – A view from outer space”, *European Economic Review*, 92: 110–132, pag. 9

cities) and "forgotten" areas, but at the same time also by social and economic factors that, over time, they have managed to reduce economic inequalities in many regions.

4.3 Creative Culture Industries

“Creative industries” is a recent category in academic, policy and industry discourse. It can claim to capture new enterprise dynamics that such terms as “arts”, “media” and “cultural industries” do not. A first definition of creative industries came by the Creative Industries Task Force Mapping Document⁷⁰ (CITF 1998, 2001) in the UK. This document defined creative industries as “activities which have their origin in individual creativity, skills and talent and which have the potential for wealth and job creation through generation and exploitation of intellectual property”⁷¹ (CITF, 2001). It mapped into the creative industries sector, among other, the following activities: advertising, arts, crafts, design, music, publishing, software and so on.

With the advent of the New Economy, new sectors were born, and had as basis of their success the use of knowledge and communication. From a business economics perspective, John Howkins has given a broad definition: “the sum total of four sectors, the copyright, patent, trademark and design industries, together constitute the creative industries and the creative economy”⁷² (Howkins, 2001). It is possible to note that this definition is much wider than the previous one, as it includes all patent-based R&D in all science, engineering and technology base sectors. Creative industries encompass many economic sectors within them, almost all of them are linked to the economic-social concepts of the New Economy. Creative industries exploit processes of intellectual dynamics which have as characteristic factors the ability to produce ideas, originality in design, synthesis and analysis skills, ability to define and structure their experiences and knowledge in a new way.

Over the years, the first definitions were criticized, as they aimed at bringing together many emerging sectors, often different from each other in terms of economic structure and value chain. The British agency NESTA (National Endowment for Science, Technology and the Arts), which deals with giving opinions on issues of art, science and technology, in a report of 2006 developed a new approach to analyse of creative industries, compared to that of Howkins. According to this report, in fact, the English association considered the previous definitions of Creative Industry incorrect because:

- By combining creative activities such as music and IT business, too broad definitions are created, which prevented an economic analysis of the phenomenon;
- There is no differentiation within categories of Creative Industry, not allowing to understand which of these is more or less important for economic growth;
- The phenomenon of Creative Industries was analysed only from the point of view of output, leaving aside important aspects such as value chain, market structures, distribution mechanisms and consumption⁷³ (NESTA, 2006).

⁷⁰ CITF (2001) (Creative Industries Task Force), <http://www.culture.gov.uk/creativeimapping.htmJ>

⁷¹ CITF (2001) (Creative Industries Task Force), <http://www.culture.gov.uk/creativeimapping.htmJ>

⁷² Howkins J., (2001) “The Creative Economy: How People Make Money from Ideas”, Penguin London

⁷³ NESTA, (2006) “Creating Growth: How the UK Can Develop World Class Creative Business”, from http://www.nesta.org.uk/insidenesta/research_creativeindustries.html, pag 10

The definition of NESTA in this report also tries to classify Creative Industry in different categories⁷⁴ (NESTA,2006):

- Creative service providers, who make profit by using their intellectual property; among these categories are advertising agencies, design agencies, architectural firms and new media agencies (social networks, etc.);
- Creative content producers, who invest capital to exploit intellectual property to consumers; this includes the audio-visual industries, theatre companies, videogame development studios, record companies, book and newspaper publishers and fashion designers;
- Creative experience providers, who sell the experience of specific activities and performances in particular spaces. This category includes theatre, opera and dance companies, organizers of concerts and also includes cultural, sports, and tourist promotion;
- Creative originals producers, those who are involved in the creation or sale of objects, who owe their added value to the cultural or creative sphere; visual art, handicraft and design products are included in this category.

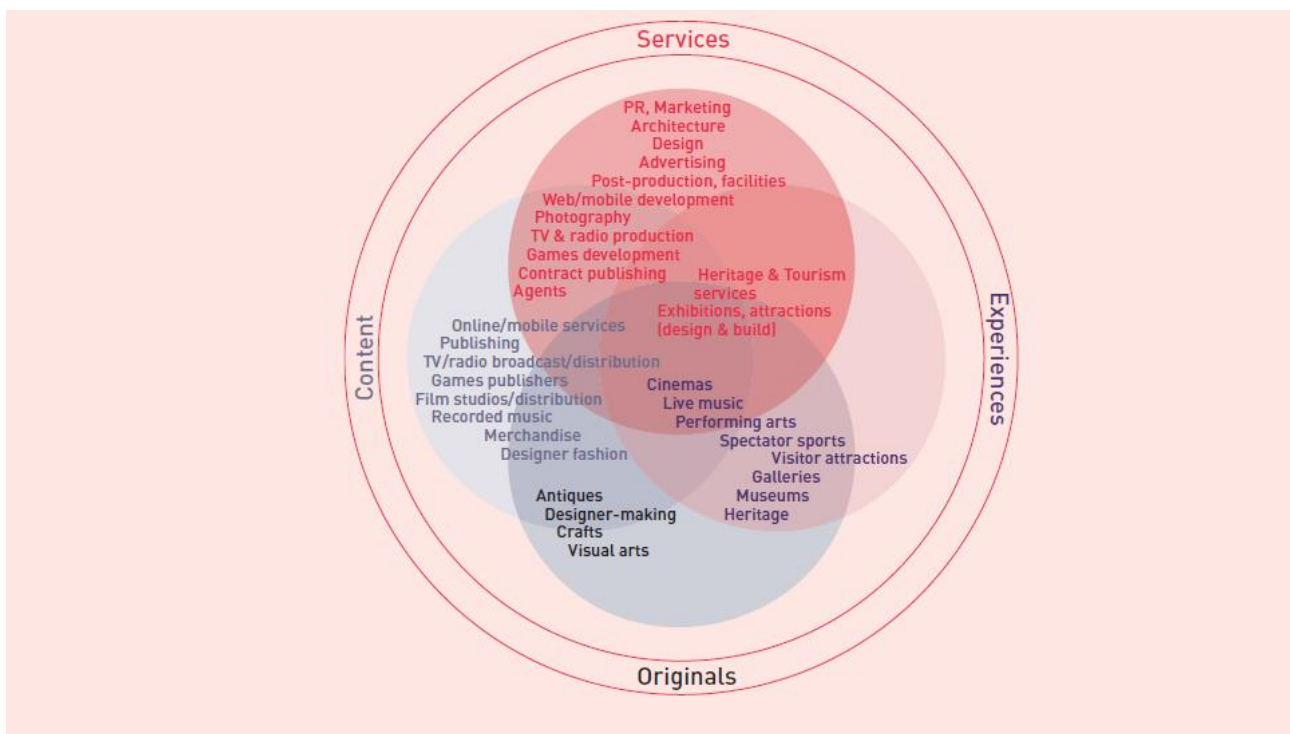


Figure 4.5: NESTA Model of creative sectors, Source: NESTA, 2006⁷⁵

Another important model, linked to the concept of Creative Industry, is the model of the Work Foundation. In its 2007 report "Staying Ahead: The Economic Performance of the UK's Creative Industries", it proposed a model known as the Concentric Circles Model. This approach differed from that of NESTA as it pointed to a correlation between the presence of rich consumers and the

⁷⁴ NESTA, (2006) "Creating Growth: How the UK Can Develop World Class Creative Business", from http://www.nesta.org.uk/insidenesta/research_creativeindustries.html, pag. 54

⁷⁵ NESTA, (2006) "Creating Growth: How the UK Can Develop World Class Creative Business", from http://www.nesta.org.uk/insidenesta/research_creativeindustries.html, pag. 55

development of creative industries. This led to define this category of subjects as active in the construction of the knowledge economy. The Work Foundation chose to differentiate industries that produce and distribute creative products, based on the "expressive value" of their products, identifying the sectors based on the centrality of the "expressive value"⁷⁶ (The Work Foundation, 2007) of their output. In its analysis of sectors, the Work Foundation therefore made a distinction between cultural industries and creative industries.

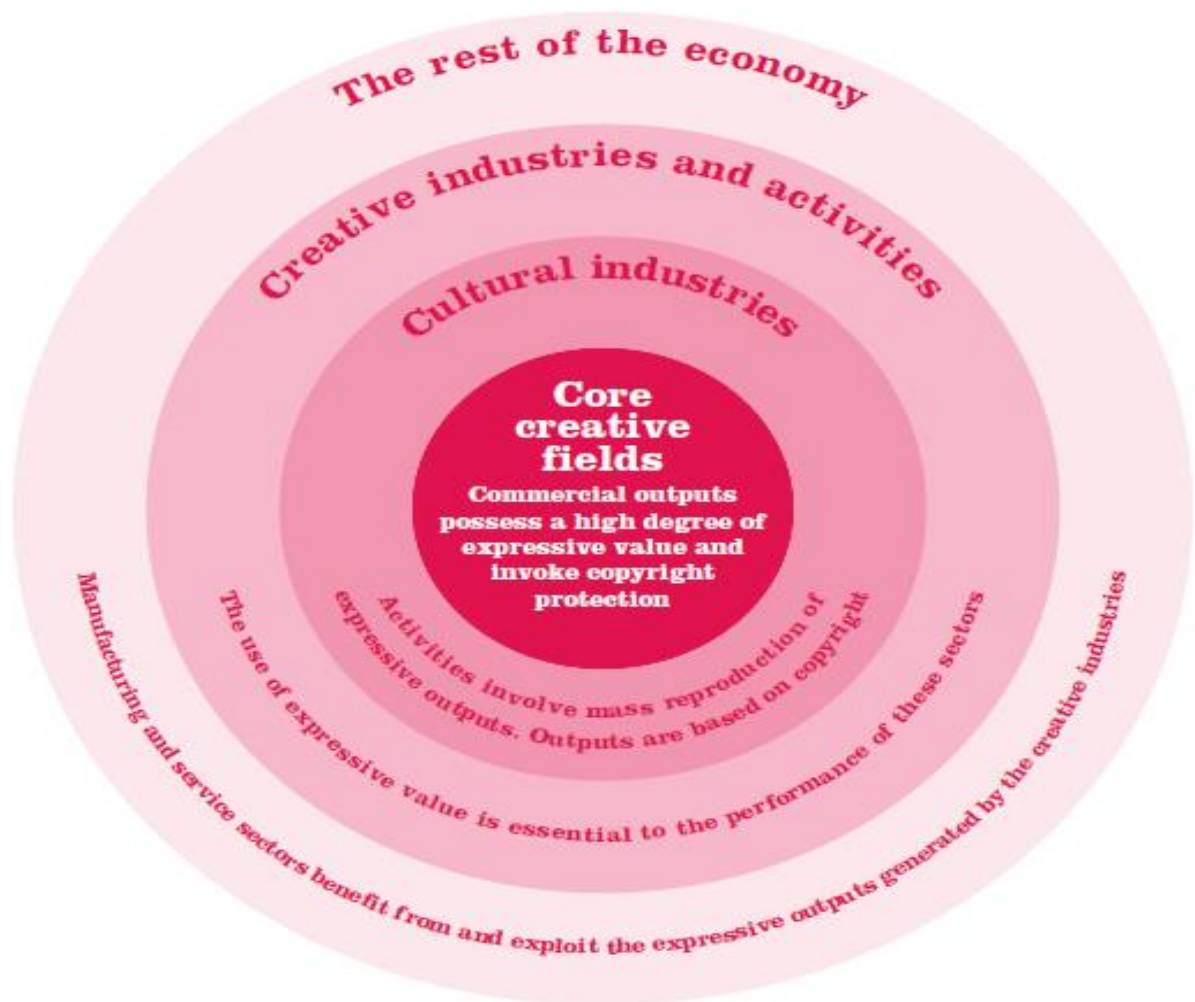


Figure 4.6: The Work Foundation Concentric Circles Model. Source: The Work Foundation, 2007⁷⁷

Over the years other definitions of this concept have appeared. Among others, it is interesting to remember the KEA Report of 2006, where the European Union tried to define this concept, in order to structure economic policies that would adapt to the new types of enterprise. This relationship marked a new approach to culture as a heritage to be foraged, to the development of increasingly important cultural and creative industries in the economic landscape. In this report, a quantitative analysis was developed in Europe of the impact of the cultural sector on the economy. It identified the gaps on which to work to develop the sector, which approaches needed to be used and what

⁷⁶ The Work Foundation, (2007) "Staying ahead: the economic performance of the UK's creative industries"

⁷⁷ The Work Foundation, (2007) "Staying ahead: the economic performance of the UK's creative industries", pag. 6

benefits could be provided by developing this sector. The definition introduced by this report separates the cultural sector from the creative sector⁷⁸ (KEA, 2006):

- The Cultural Industrial sector, produces cultural products aimed at mass reproduction, mass-dissemination and exports. These are “cultural industries” including film and video industries, video-games, broadcasting, music, book and press publishing sectors;
- The Creative Industrial sector, includes activities such as design: it uses culture as an added value to the production of non-cultural products. Creativity is understood as the use of cultural resources, as part of the production process of non-cultural sectors, and therefore as a source of innovation.

In the concentric model below, cultural industries are at the core: progressively, the cultural aspect loses importance, leaving space to the creative one.

CIRCLES	SECTORS	SUB-SECTORS	CHARACTERISTICS
CORE ARTS FIELD	Visual arts	Crafts Paintings – Sculpture – Photography	<ul style="list-style-type: none"> • Non industrial activities. • Output are prototypes and “potentially copyrighted works” (i.e. these works have a high density of creation that would be eligible to copyright but they are however not systematically copyrighted, as it is the case for most craft works, some performing arts productions and visual arts, etc).
	Performing arts	Theatre - Dance – Circus - Festivals.	
	Heritage	Museums – Libraries - Archaeological sites - Archives.	
CIRCLE 1: CULTURAL INDUSTRIES	Film and Video		<ul style="list-style-type: none"> • Industrial activities aimed at massive reproduction. • Outputs are based on copyright.
	Television and radio		
	Video games		
	Music	Recorded music market – Live music performances – revenues of collecting societies in the music sector	
	Books and press	Book publishing - Magazine and press publishing	
CIRCLE 2: CREATIVE INDUSTRIES AND ACTIVITIES	Design	Fashion design, graphic design, interior design, product design	<ul style="list-style-type: none"> • Activities are not necessarily industrial, and may be prototypes. • Although outputs are based on copyright, they may include other intellectual property inputs (trademark for instance). • The use of creativity (creative skills and creative people originating in the arts field and in the field of cultural industries) is essential to the performances of these non cultural sectors.
	Architecture		
	Advertising		
CIRCLE 3: RELATED INDUSTRIES	PC manufacturers, MP3 player manufacturers, mobile industry, etc...		<ul style="list-style-type: none"> • This category is loose and impossible to circumscribe on the basis of clear criteria. It involves many other economic sectors that are dependent on the previous “circles”, such as the ICT sector.

	: “the cultural sector”
	: “the creative sector”

Figure 4.7: The concentric model provided by the KEA Report of 2006 for the division between creative industry and cultural industry. Source: KEA, 2006⁷⁹

⁷⁸ KEA European Affairs, (2006) “THE ECONOMY OF CULTURE IN EUROPE”, pag. 3

⁷⁹ KEA European Affairs, (2006) “THE ECONOMY OF CULTURE IN EUROPE”, pag. 4

As illustrated in figure 4.7, the first circle exclusively presents cultural products. In the second circle it is possible to find creative industries and the third circle identifies related industries where culture and creativity are not inputs of production, such as ICT (Information and Communication Technologies). The model also has an important feature: the introduction of copyright. All creative and cultural activities have the peculiarity of being assets that acquire value from the production of something protected by copyright. This model therefore marks a break in the management of the European cultural economy and will be taken up by the actors involved in this sector in the following years.

The need to catalogue these new types of industry showed how the urban fabric, over the decades, had progressively detached itself from the remaining areas, creating peculiar characteristics that could not be replicated. These industries, which had started from a generic definition of economic activity, linked to the use of knowledge, were divided into several categories, each with well-defined needs and potential. From the generic definitions of cultural industry, in a decade, a more specific division between cultural industries and creative industries was defined: each of the two was divided into dozens of economic sectors. This has led to the creation of two different economic tissues in urban areas:

- Industrial clusters: generally of small-medium size, located in limited areas. These enterprises are specialized in different phases of the productive process, which are complementary to each other, and integrated through a complex network of economic and social interrelations;
- Digital platforms: a heterogeneous set of practices and models that use digital technologies to facilitate contact, exchange and collaboration between people. Generally, such services are performed by start-ups through online sites or applications.

Over the years, new industrial sectors have developed, consisting of creative and cultural industries, exploiting cognitive capital and digital infrastructure, in order to obtain an alternative production mode to the Fordist one. However, over time these districts have been located in certain geographical areas, often very different from each other, to meet new needs of the market. On the one hand, peripheral districts have developed, through small companies, in order to analyse approaches targeted to resource efficiency (example: Chiampo in Italy). Digital platforms, on the contrary, have preferred densely populated urban areas, where it is possible to maximize their offer, through digital infrastructures, and creating new urban districts.

4.3.1 The industrial clusters

An industrial district is generally described as a production system, consisting of a set of SMEs (small and medium-sized enterprises). These enterprises are, in general, concentrated in a given territory and linked by a common historical, social, economic and cultural experience. However, the distinctive feature consists in the fact that the productive process is not vertically integrated in the local enterprises, but is realized on the basis of the division of jobs and the consequent productive relationships between enterprises connected in the supply chain. This brings industrial clusters to possess not only a specialization in the final product (example: footwear), but also specializations of phases, inside of the productive chain. What characterizes a district are the differences (specializations) and the relations between enterprises (based on the differences). It is important,

however, to underline that the active actors of a district are not only enterprises. Institutional subjects (example: Chambers of Commerce) play a role as well, affecting the birth and the development of industrial clusters.

Generally, when a district evolves, it assists to the widening of finished products, realized from the enterprises of the same district. This horizontal diversification, compared to the original specialization, can remain within a certain type of product, (for example: the switch from the production of wooden chairs to metal chairs) or totally change the type of market (example: from chairs to furniture). On the one hand, this leads to develop new specializations in the district, on the other hand, it establishes new relationships with economic subjects, external to the district.

From this point of view, the progressive emergence of new activities must be taken into account, and the consequent birth of new enterprises, that do not re-enter in the historical aggregate of districts. The range of vertical specialisations covered by enterprises may include the production of new technologies, the need of materials used in production processes and in supply of services, also in the phases of the supply chain that are placed to valley, regarding the realization of products, like in the case of logistic services. With time, districts can expand both economically and geographically, taking the configuration of geographical clusters, a form of spatial organization of production that Michael Porter defines as "geographic concentrations of interconnected companies and institutions in a particular field"⁸⁰ (Porter, 1998).

Industrial districts, allow companies to share their knowledge in a competitive environment. Among the mechanisms that allow such sharing of knowledge, some are particularly frequent:

- Observation aimed at imitation. This type of process refers in particular to innovations and corresponding product imitations. Innovations may not be relegated to the productive context, but to behaviours that accompany the new product on the market, such as communication activities. The observation aimed at imitation must succeed in absorbing as much knowledge as possible contained in the artefact, through a process of reverse engineering;
- Various types of relations, which are intertwined within the district context. Such transfers can be influenced by the typologies of present relationships in a single district. The most common example concerns the relations between companies that are linked in the production chain. However, this exchange of knowledge can also take place between subjects which are not bound by direct relationships (through a third subject in common with both). Social relations must also be taken into account in this specific economic context;
- The transfer of cognitive capital (human resources) from enterprise to enterprise. People can play the role of knowledge carriers in the same way as artefacts. The activation of knowledge in the new context can exclusively involve its owner, or the same knowledge is transferred to other people operating in the business context, through communication and imitation.

It is important to underline how these mechanisms can operate simultaneously. For example, the probability of success of observation-imitation of a new product increases considerably if the imitator company takes away from the innovator a specific human resource that was involved in the

⁸⁰ Porter M.E, (1998) "Clusters and the new economics of competition", Harvard Business Review 76 (November-December), 77-90, pag. 78

development of innovation. In order to understand how such processes of knowledge transmission take place, it is useful to state that in these transfers three different sub-processes come into play:

- The transmission of knowledge to the potential recipient through one or more cognitive media. This can mean a large number of actions: from those carried out by individuals, to industrial products, whose diffusion in the market corresponds to the transmission of knowledge that they incorporate;
- The reception of knowledge by the recipient;
- Absorption, that is the understanding of the knowledge received, which makes it available for use.

At this point, it is important to emphasize the relationship between the complexity of knowledge and its possible tacit nature. Indeed, several authors argue that the higher is the implicit level of an innovative process, the more difficult it is to imitate it⁸¹ (Teece and Shuen, 1997). Transmission is difficult because of the high complexity of tacit knowledge. Tacit knowledge, in fact, can be made explicit in different ways, and then move from one business context to another, with the observation of artefacts or through communication, that connects directly or indirectly business contexts. Tacit knowledge is not fixed or impossible to transmit. However, may be very complex, and therefore impossible or too expensive to lead to an explicit state. This is why it is possible to define tacit knowledge as not yet explicit⁸² (Spender, 1993).

Through this concept, it is possible to understand how the complexity of knowledge inhibits its absorption, while keeping in mind the characteristics of the cognitive capital of the context. In particular, with the same complexity, the probability that a knowledge produced in an S (source) context will be absorbed by an R (receiver) context is higher than capacity of absorption of R. This ability, which includes monitoring, evaluation of external knowledge and assimilation⁸³ (Levinthal et al, 1990), tends to dissolve the inhibitory effect of complexity of absorption. Finally, the capacity of transmission and absorption of knowledge depends by the complexity of the latter, and by the capacity of absorption of cognitive capital of the context. More precisely, to use the words of Cohen and Levinthal, "the ability to evaluate and utilize external knowledge is largely a function of the level of prior related knowledge. At the most elemental level, this prior related knowledge includes basic skills or even a shared language but may also include knowledge of the most recent scientific or technological developments in a given field"⁸⁴ (Levinthal et al, 1990).

The concept of prior, related knowledge, introduces a logical link between S and R. When a business environment has cognitive capital very close to that of the context that generated a new knowledge, the absorption capacity of the former is high and the transfer process can easily reach the final stage. Since this can happen, observation can become an effective mechanism of knowledge transfer. In order for the observation to be concluded in a positive way, the observer must have a basic knowledge

⁸¹ Teece D.J., Pisano G., Shuen A., (1997) "Dynamic capabilities and strategic management", *Strategic Management Journal* 18(7): 509-533

⁸² Spender J.C., (1993) "Competitive advantage from tacit knowledge? Unpacking the concept and its strategic implications", *Best Paper Proceedings Academy of Management*

⁸³ Levinthal A., Cohen, Wesley M., (1990) "Absorptive Capacity: A New Perspective on Learning and Innovation", *Administrative Science Quarterly*, vol. 35, no. 1, 1990, pp. 128-152. JSTOR, www.jstor.org/stable/2393553

⁸⁴ Levinthal A., Cohen, Wesley M., (1990) "Absorptive Capacity: A New Perspective on Learning and Innovation", *Administrative Science Quarterly*, vol. 35, no. 1, 1990, pp. 128-152. JSTOR, www.jstor.org/stable/2393553, pag. 128

similar to that of the person who produced the innovation. Similarly, with respect to relationships and the mobility of human resources, the reduced cognitive distance between business contexts facilitates the transfer of knowledge. In the opposite situation, however, the transfer is bound to remain stuck at the receiving stage, since an absorbed knowledge is such if it is available for use.

Such concepts explain why knowledge transmission mechanisms are particularly frequent in industrial districts. First, the population of district enterprises can be divided into groups, each of which is formed by a number of enterprises that share the same specialization at the level of output achieved. Within these groups, cognitive distance that separates business contexts is very short, being maximum the level of Prior related knowledge between them.

Second, cognitive interaction occurs more easily in a homogeneous socio-cultural context. Socio-cultural homogeneity includes a series of elements that Dei Ottati summarizes in the concept of "community market"⁸⁵ (Dei Ottati, 2003): a shared language and values, meanings, implicit rules of common behaviour. The community dimension operates as an intangible resource. Its presence facilitates communication within the district context, and facilitates mutual understanding between the subjects who dialogue, allowing them to reach their more easily goals. It is important to underline how socio-cultural homogeneity not only facilitates cognitive interaction but also increases the probability of events that constitute its premise: relationships and mobility of people within companies. Connections are more frequent in the absence of significant communication barriers. With respect to mobility, the homogeneity that unites the business contexts of the district, from a socio-cultural point of view, makes the decision to move less problematic.

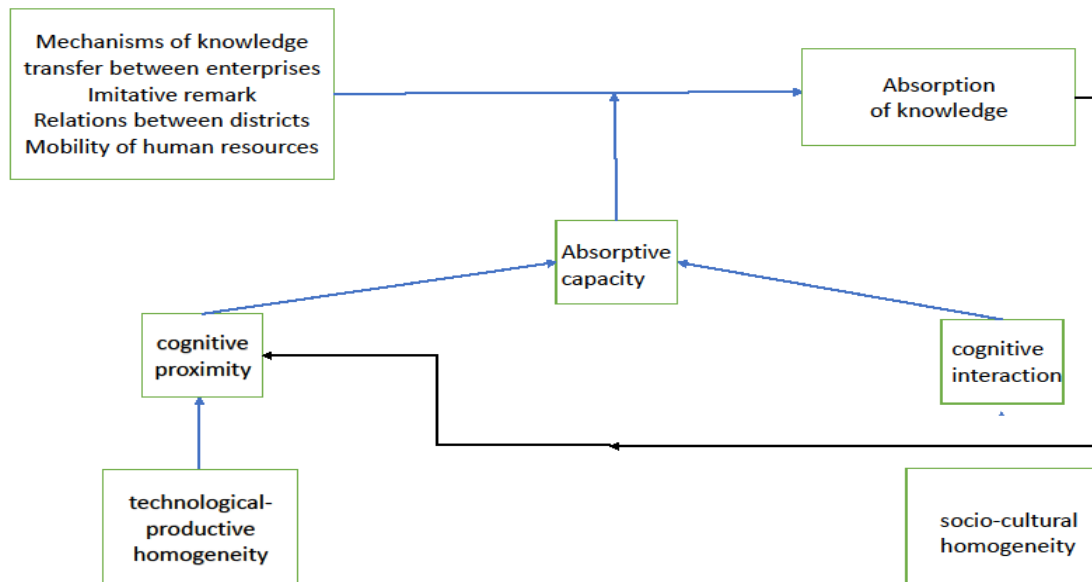


Figure 4.8: The transfer of knowledge between district enterprises. Source: Camuffo and Grandinetti, 2011⁸⁶

⁸⁵ Dei Ottati G., (2003) "The governance of transactions in the industrial district: the community market", in Becattini G., Bellandi M., Dei Ottati G., Sforzi F., From Industrial Districts to Local Development. An Itinerary of Research, Edward Elgar, Cheltenham

⁸⁶ Camuffo A., Grandinetti R., (2011) "I distretti industriali come sistemi locali di innovazione", Sinergie, n. 69, pag. 11

Industrial districts take advantage of their ability to create and imitate innovations, allowing companies that are part of them to strengthen and specialize in a particular area of the production process. Under many aspects, industrial districts are the answer of Western enterprises to the crisis of the Fordist model: they represent the ability to cooperate to specialize more and more in a determined economic scenario, without losing the company's flexibility to incorporate new innovations or skills. However, in the last fifteen years the competitive scenario has changed, in relation to the increasing globalization of economic processes. This phenomenon appears as a progressive extension, on a global scale, of production processes, circulation and use of knowledge relevant to the competitive advantage of companies. In this perspective, for district systems a higher level of cognitive openness to the external environment is imposed.

Focusing on this aspect, in many districts the challenge of the global competition is faced only from some companies, that they are evolved in such a way to being defined like industrial global districts (IGD). They consist in business entities that have reached a considerable size, also through the acquisition of other enterprises. In addition, the internal value chain and the value network of these companies acquire an international configuration. In fact, activities and relationships that remain in the district are integrated into a more complex system, which includes:

- The relocation of certain phases of the production chain, the creation of production joint ventures or the establishment of production plants outside the district;
- The creation of distribution channels in various forms. This starts from the development of a network of sales agencies, particularly in foreign markets, such as the creation of joint sales ventures, the establishment of commercial subsidiaries and the acquisition of retail chains;
- The development of relationships with suppliers outside the district, in activities such as technological innovation, the development of new products, quality management and marketing, and financial services.

From the cognitive point of view, enterprises that acquire the district-global form transfer and absorb knowledge on an international basis. On the same basis, they combine their own knowledge with that of other subjects to which they relate, producing new knowledge even outside the district. Another interesting feature of such enterprises is the nature of innovative processes they are able to develop. This refers in particular to projects which profoundly modify the organizational structure of the company and all its relationships. But at the same time, these innovations are linked to information and communication technologies and the absorption of complex knowledge. District enterprises in motion towards the totality must therefore develop an advanced ability to approach universal languages and to codify tacit knowledge.

It is important to underline how the coding of knowledge occupies a fundamental role in evolutionary distances that have carried to the formation of global district companies. On the one hand, this competence is necessary in processes of innovation described above, and on the other hand it strengthens the company's investment and relationship capacity in a global context. This does not mean that tacit knowledge and its development lose importance. On the contrary, in order to defend the competitive advantage, companies must maintain endogenous capacity to produce tacit knowledge and at the same time strengthen themselves to better absorb knowledge.

However, such internationalization makes things difficult for other remaining enterprises of the district. Since their ability to absorb knowledge becomes less adequate, and processes of local

diffusion of innovation through imitative observation, intra-district relations and inter-company mobility of human resources become more selective. In light of these aspects, the strategies developed by IGD (Industrial Global Districts), with the overcoming of the relative closing of the industrial district, do not correspond to the reproduction of the ideal district model for the remaining enterprises. This happens because evolutionary resources are concentrated in one or a few dynamic actors and, in the local context, the demand that supports the division of labour and the mechanisms of diffusion and combination of knowledge are lost. The district of Belluno (Italy) corresponds to this framework: it is characterized by the strengthening of larger business realities and the weakening of the district system. The industrial districts, which had been able to overcome the crisis of the Fordist model, are entering a crisis of the global scene, with a strong centralization of dynamics of the district in the hands of few economic subjects.

4.3.2 Economies of platforms

Economies of platforms are one of the most growing social and economic phenomena in recent years. A very general definition of this phenomenon can be a diverse set of practices and models, which use digital technologies to facilitate contact, exchange and collaboration between people. Within an economy of platforms, it is possible to find a wide range of examples, from voluntary experiences (banks of the time, social street, etc.) to models that instead follow the traditional companies (Airbnb, Facebook, etc.). Specifically, these latter realities can be defined as components of platform capitalism, which exploits new technologies to extract value from citizens' resources, by creating markets where they did not exist before. Platforms are open and dynamic network spaces, offering products and services that mediate between supply and demand. This has a significant impact not only on prices, but also on service provision, work organisation and on the way in which consumers interact with services and providers.

The new relationship between consumers and online service providers has created a new market: the data market. The underlying mechanism is similar for most platforms. The use of platforms such as Google, or Twitter for the end consumer is free. However, in order to use offered services, consumers are obliged to enter numerous personal data. These latter, once obtained the consent of consumers, can be sold to third-party companies, exploited for specific marketing campaigns or for other remunerative uses. The impact of this system therefore implies the emergence of new economic relations, which arise through a "datafication": the application of artificial intelligence through digital networks, with the implications that this change entails for the corporate structures of the different systems of capitalism⁸⁷ (Rahman and Thelen, 2019).

Some of these platforms now exercise a level of market dominance that inspires comparison to classic monopolies of the 19th and 20th centuries. But what is distinctive about them is the way they achieve market dominance: the goal for these firms is not so much direct ownership as control. In fact, compared to previous monopolists, platform companies can exercise in many ways a deeper control

⁸⁷ Rahman K.S., Thelen K., (2019) "The Rise of the Platform Business Model and the Transformation of Twenty-First-Century Capitalism", *Politics & Society*, 47(2):177-204, DOI:10.1177/0032329219838932

due to the way in which platform data and algorithms “structure the rules and parameters of action”⁸⁸ (Zsyman and Kenney, 2018) that are available to participants on the platform. In this sense, as John Zsyman and Martin Kenney point out, these platforms constitute “regulatory structures”⁸⁹ (Zsyman and Kenney, 2018) that dictate the terms of interaction, between workers and employers, buyers and sellers, clients and contractors, creators and viewers, and advertisers and consumers.

It should be noted, however, that platform companies do not replace all other existing corporate firms, contrary to what happened when the New Economy companies completely eclipsed the Fordist model. Platform firms are important not for their ubiquity but because they represent the leading edge of emerging business models and, as such, increasingly set the terms of the markets they enter. For example, Airbnb puts great pressure on the paid housing market (hotels), while Walmart and other traditional retailers survive only by emulating core features of the Amazon model.

In fact, rather than replacing previous forms of business, platform companies tend to copy the features of these models, trying to improve them. Just as the post-Fordist society has attempted to improve some aspects of the previous Fordist model, platform companies develop and intensify the features of the New Economy model, particularly from the point of view of work. What companies of platform copy from the New Economy companies of the late 20th century is a strategy of reducing labour and costs, that avoids standard employment contracts in favour of indirect employment. Indeed, platform companies are able to take cost reduction strategies to a new level, focusing more on independent bargaining and implementing their huge data collection capabilities to optimize and manage work.

So, platform firms combine features of previous models with new elements. However, their distinctive features rest on three factors that set them apart from previous models:

- Platform companies have benefited from a more "patient" form of capital. Investors have played a key role in the New Economy model, but platform companies are supported by a different type of investor, with different motivations. Unlike the financial mentality of the 1990s, the financial interests behind companies such as Uber and Amazon are for the long term; Investors are still important, but the financial interests behind new platform firms represent a different type of investors. This change marks a first distinctive feature of the platform firm, distinguishing it from the New Economy model. Uber, for example, has famously been operating in at a loss for several years, but that didn't make the investors run away. This because the objective of platform firms is to capture entire markets and achieve monopoly power. In order to reach this objective, the company is willing to operate in loss in the short-medium period, thanks to “their capacity to cultivate and capture value”⁹⁰ (Langley and Leyshon, 2017), where investors are allies in the “battle for market supremacy”⁹¹ (Langley and Leyshon, 2017). The financial interests behind these companies thus are capable of enormous patience relative to the relentless quarterly demands of the old shareholder value

⁸⁸ Zsyman J., Kenney M., (2018) “The next phase in the digital revolution: intelligent tools, platforms, growth, employment”, Communications of the Association of Computing Machinery, pag. 62

⁸⁹ Zsyman J., Kenney M., (2018) “The next phase in the digital revolution: intelligent tools, platforms, growth, employment”, Communications of the Association of Computing Machinery, pag. 59

⁹⁰ Langley P., Leyshon A., (2017) “Platform Capitalism: The Intermediation and Capitalization of Digital Economic Circulation”, Finance and society, 3 (1), pp. 11-31, pag. 22

⁹¹ Langley P., Leyshon A., (2017) “Platform Capitalism: The Intermediation and Capitalization of Digital Economic Circulation”, Finance and society, 3 (1), pp. 11-31, pag. 26

model. However, these developments represent a concentration of control in the interest of powerful managers and investors pursuing “winner-take-all returns”⁹² (Kurz, 2017). As a result, competition in developed platform markets often winds up being highly oligopolistic and characterized by very high barriers to entry;

- Such investor patience is due to the fact that companies of platform have a different purpose. The core of the New Economy model was labour specialization as a means of increasing profits and increasing stock value. The central goal of platform model is to secure a level of market dominance that will ultimately pay back investors’ patience. Once reached, this dominant position on the market offers many ways to generate returns, multiplying the number of stakeholders, whose dependence on the platform makes them potential allies to defend it from unwanted competition. This networked dominance is what makes platform firms both a revival and a reinvention of classical monopoly concerns;
- The role of consumers. Consumers were important to the success of New Economy firms as partial beneficiaries of specialisation labour, mix with the lead of low consumer prices. However, consumers figure centrally not just in the market strategies of platform firm but in their political strategies as well. Compared to New Economy firms, platform firms enjoy a much more direct link to their users, most of whom connect to these firms through personal devices.

Through these characteristics, it is possible to affirm that strategies of the job, put into effect from these companies, improve the innovations on the topic, introduced from the New Economy. Although platform firms have been criticised for their “gig”-based labour model, this model is in many ways simply a continuation of previous trends. With the New Economy, in the 1980s there was an increase in precarious work, thanks to greater flexibility. Platforms have accelerated this trend. Platforms take such strategies to a new level by forgoing labour contracts altogether, relying on independent contractors for whom the firm bears no responsibility for wages or hours or benefits or anything else. This is made possible, exactly as in the Digital Revolution, by new technologies, which lower the cost of monitoring outsourced or franchised operations. Technology thus allowed lead firms to get the “best of both worlds”⁹³ (Weil, 2014), slashing labour costs and escaping regulatory oversight while at the same time exercising enormous control throughout their networks of outsourced, franchised, or contracted labour, production, and manufacture.

These characteristics lead to a second distinction of the platform firm model. In the post-Fordist and the New Economy systems, the lack of competition was a risk, as companies in the market lacked the drive to specialize their products, with the risk of losing flexibility and adaptation to sudden changes. However, the most successful platform firms today have been able to consolidate and concentrate power in ways that reveal durability, not fragility. The central importance of network effects means that platforms supported by patient investors enjoy enormous advantages over those of challengers. As Mordecai Kurz notes, “once an innovative firm establishes platform dominance, size becomes an advantage and the cost and economies-of-scale advantages are almost impossible for competitors to

⁹² Kurz M., (2017) “The New Monopolists”, <https://www.project-syndicate.org/commentary/monopoly-power-wealth-incomeinequality-by-mordecai-kurz-1-2017-09>

⁹³ Weil D., (2014) “The fissured workplace: Why Work Became So Bad for So Many and What Can Be Done to Improve It”, Cambridge, MA: Harvard University Press, chapter 5-7

overcome.”⁹⁴ (Kurz, 2017). Even if no single firm achieves monopoly, strong oligopolies are well positioned to “inhibit, or sharply constrain, further entrepreneurial efforts.”⁹⁵ (Kurz, 2017). Moreover, the most successful platform firms also demonstrate enormous capacity to anticipate and absorb potential competitors, sometimes to extend their own dimension and sometimes just to quash a potential threat. The power of platform firms is thus not just anchored in the investors behind them; it also derives from the way network effects allow the firms to secure concentrated “infrastructural power”⁹⁶ (Rahman, 2016) that enables other forms of rent and revenue generation. Thus, the giants of today’s platform exercise a monopoly-like control, without the burden and responsibilities of direct ownership. Unlike the classic model of monopolistic enterprise, platform companies exercise market power by controlling other participants. For example, Uber can dominate both drivers and riders and set the terms for both sets of users that make up the market.

A third and final feature of platform firms is their relationship to consumers. The concentration of power in platform firms is often rationalized and defended under the banner of serving consumer interests. It is the ability to deliver lower prices and more seamless consumer experiences that generates market share and revenue, which in turn yield investor returns. However, a large consumer base is if anything even more important to platform firms than to New Economy firms because the business model turns so heavily on achieving scale. Loyal consumers are enlisted, actively or passively, as vital political allies. Platform undertakings have a particularly close connection with their consumers, which opens up the possibilities for regulating this relationship at all levels. Moreover, consumers of those platforms that do achieve scale can become essentially locked in. For example, Walmart appealed to their consumer base, through pricing or brand policies, but “the relationship of consumers to firms such as Amazon runs much deeper, as these platforms have come to form part of the infrastructure of their lives”⁹⁷ (Culpepper and Thelen).

All this allows these platforms to exert, through a link with consumers, a strong pressure on the institutions, which are often reluctant to alienate consumers. Such alliance with consumers, explicit or tacit, further distinguishes platforms’ firm from other types of monopolies, past and present. Like other monopolies, the efficiency gains of platforms are a function of their scale and scope. But unlike in the past, consumers often do not perceive such a monopoly as an unwanted constraint. On the contrary, many of them perceive such companies as an important aid, to simplify many aspects of everyday life. So, platforms often exercise power not against the public but in a close and symbiotic alliance with a public who depends on them. This relationship is fundamental to the stability of these companies. This relationship helps to legitimize the entire business model, often playing a central role in relations between these companies and public authorities.

The exploitation of creativity and innovation has led to the creation of new groups of companies, which, however, in many respects follow existing business models. The sharp increase in precarious

⁹⁴ Kurz M., (2017) “The New Monopolists”, <https://www.project-syndicate.org/commentary/monopoly-power-wealth-incomeinequality-by-mordecai-kurz-1-2017-09>

⁹⁵ Kurz M., (2017) “The New Monopolists”, <https://www.project-syndicate.org/commentary/monopoly-power-wealth-incomeinequality-by-mordecai-kurz-1-2017-09>

⁹⁶ Rahman K.S., (2016) “The Shape of Things to Come: The On-Demand Economy and the Normative Stakes of Regulating 21st-Century Capitalism”, *Eur. J. Risk Regul.* 7, 652–663, pag. 63

⁹⁷ Culpepper PD. and Thelen K., (2018) “Are We All Amazon Primed? Consumers and the Politics of Platform Power”, *Comparative Political Studies*, 53(2), pp. 288–318. DOI: 10.1177/0010414019852687

employment, combined with strong pressure on any attempt to regulate these new areas, recall the theories of Taylor and Ford. However, it is the relationship with the final consumer that profoundly distinguishes these models from the previous ones. Such a deep and direct relationship allows these enterprises to have two faces, to be exposed according to the interlocutor: on the one hand, they are creative companies, which heavily rely on innovation and new technologies to establish an increasingly stable and strong relationship with the consumer; on the other hand, they heavily rely on lowering labour costs to keep being competitive, leveraging the relationship with consumers to hinder any institutional attempt to regulate the sector. These contradictions characterize these new industrial districts, which often constitute the urban fabric of new global metropolises.

5. The Italian case: from the global metropolis of Milan to the dynamic outskirts of Bologna

The birth of the Creative Culture Industry (CCI), and its subsequent development within urban areas, is distinguished by a precise geography: goods and services are destined for the global market, but sectors that are part of it are inextricably linked to local contexts, which characterise their form and content. The link between the urban environment and the CCI has been analysed by many authors, and undoubtedly the productive fabric of cities is heavily invested by the emergence and growth of these economic segments. In general, such studies focus more and more on the role of certain elements that would favour the cultural industry in urban regions. In particular, there are surveys on classic growth factors (policies, labour market, transport and communication infrastructure, etc.), as well as surveys that assess the impact of typical elements of the New Economy (product customization, cognitive capital, etc).

In recent years, this second group of elements has been given greater consideration. For example, Richard L. Florida, in his works, states that the mere presence of what is called “the creative class” (operators and professionals in the field of advanced urban economy) would be an element of fundamental importance for local economic growth; the creative subjects would also have homogeneous behaviour, with a very high territorial mobility, which causes them to move to those cities able to offer them high-level services for work, a good quality of life and so on. Cities are encouraged to promote these “soft factors”⁹⁸ (Florida, 2002), which would contribute to the concentration of creative entities on the territory and thus support the growth of local economies linked to the concepts of creativity and culture.

However, other authors (for example, Markusen⁹⁹), show the complex relationship between hard factors (the classical factors necessary for economic development) and soft factors (more linked to the quality of life and the social and cultural environment) for the growth of the CCI and consequently for local development. From this example it is possible to understand how the analysis of how territories favour the development of the Creative and Cultural Industry depends on the approach used. The three main ones are:

- The first is related to Florida thesis, mentioned above, and to the conflicting theses (example Markusen); In particular, there are two criticisms of the Florida approach. The first, from a socio-economic point of view, argues that Florida, by developing a neo-liberal program, does not take sufficiently into account the social effects of an economic policy focused only on the creative class and the cognitive economy; the second criticism focuses on the concept of the creative class: Markusen¹⁰⁰ argues that the concept of the creative class is confused, as it contains too many variables and is not measurable (Markusen, 2006); other scholars, such as Allen J. Scott, show that there is no evidence that creativity and the economy linked to it

⁹⁸ Florida R.L., (2002) “The Rise of the Creative Class: And How It’s Transforming Work”, Leisure, Community and Everyday Life (New York: Basic Books)

⁹⁹ Markusen A.R., (2006) “Urban Development and the Politics of a Creative Class: Evidence From a Study of Artists”, Environment and Planning A: Economy and Space, 38(10), pp. 1921–1940, doi: 10.1068/a38179

¹⁰⁰ Markusen A.R., (2006) “Urban Development and the Politics of a Creative Class: Evidence From a Study of Artists”, Environment and Planning A: Economy and Space, 38(10), pp. 1921–1940, doi: 10.1068/a38179

necessarily lead to economic growth¹⁰¹ (Scott, 2006); Pratt finally focuses his criticism on the consumption side of the creative class and on the policies that should support its, because in his opinion consumption is overvalued¹⁰² (Pratt, 2008);

- The second approach investigates the paths that individual contexts have taken to reach the current favourable (or not) situation for the economy; among the most important works of this approach are those of Peter Hall¹⁰³ and Sharon Zukin¹⁰⁴, which are halfway between an economic history of cities and a sociological analysis of the urban fabric;
- The third approach is based on an analysis of the relationships between creative workers; the most complete analysis is done by Allen J. Scott¹⁰⁵ (Scott, 2000) who outlines it in three main moments: the first relationship is between communities, understood as centres of cultural reproduction, which pass on the cultural capital through generations (time) and between different workers (space); the second concerns their relationship with local institutions; the third and final report analysed by Scott concerns communities, which are understood as the context in which creative workers develop relationships within the urban fabric. The concept of creative communities becomes very useful for the study of the evolution of the economy in the post-Fordist cities, especially with regard to the elements related to relations between workers.

Starting from these theoretical premises, the practical case of Milan is taken into account from this last point of view. The Milan metropolitan area has been the protagonist of an important transformation in the last twenty years, passing from a post-Fordist economy, to a different economic scenario, which is expressed in the growing strength of the sectors of knowledge and creativity: this transformation takes place both at a sub-urban and regional level. On the one hand, this leads to the strengthening of an 'economy based on information, creativity and innovation, on the other leads it consolidates the typical sectors of the so-called "Made in Italy". The economic and social evolution of Milan has forced many Italian cities to face this dynamic environment. The cases of Turin and Bologna analyse the attempt to emulate the economic and social transformation of Milan (in the case of Turin) and to analyse how a peripheral urban area can maintain a certain level of economic competitiveness, despite the geographical proximity to a global city such as Milan (Bologna).

5.1 The development of the Milan hub

Historically, the area of Milan has always been a laboratory of economic innovation, since the Middle Ages. So, it is not surprising that its economic fabric is a centre of economic ideas regarding the Creative and Cultural Industry (CCI). The density of economic activities on the territory and the physical proximity of many operators translate into a dense network of relationships which plays a

¹⁰¹ Scott A.J., (2006) "Creative Cities: Conceptual Issues and Policy Questions", *Journal of Urban Affairs*, 28:1, 1-17, DOI: 10.1111/j.0735-2166.2006.00256.x

¹⁰² Pratt A.C., (2008) "Creative Cities: The Cultural Industries and the Creative Class", *Geografiska Annaler: Series B, Human Geography* 90(2): 107–17

¹⁰³ Hall P., Royle, Stephen A, (1995) "Cities in Civilization: Culture, Innovation, and Urban Order", *The Geographical Journal*, vol. 166, 2000, pp. 187-188. ProQuest, <https://search.proquest.com/docview/231421603?accountid=6724>, 2000

¹⁰⁴ Zukin S., "The Cultures of Cities", Oxford: Blackwell

¹⁰⁵ Scott A.J., (2000) "The Cultural Economy of Cities: Essays on the Geography of Image-Producing Industries", London: Sage

crucial role in the work experience of Milan. From the point of view of economic density, an element that is a strength factor for Milan is the physical geography of the city: the territorial boundaries of the city enclose a space that, in comparison with other European urban realities, is quite restricted. This space becomes even more limited by observing the symbolic boundaries of urban space, in which the city centre represents for most sectors the space to be occupied to demonstrate its power (economic, cultural, symbolic). These characteristics of the urban economy accentuate the concentration of human and economic capital, which allows the spread of so-called "face to face" relationships, that is, relations between workers and operators outside the organizational structures of companies. In the Milan area, economic actors have very dense networks of relationships, based on face-to-face interactions and crucial for work: networking is in itself a demanding occupation and a fundamental element in many areas. Milan allows, through the unique characteristics of its territory, to strengthen and encourage such contacts and relations, allowing the development of many economic sectors.

These relationships develop at all levels, from local to international contexts and involve different subjects with different intensity. The simplest and most common typology is represented by the set of relationships that are created between subjects of the same sector, at the local level, because the cognitive and cultural components do not create particular obstacles in the formation of relationships between subjects. Then there is a network of supply chain: each sector has different subjects, which are connected to each other by interpersonal relationships, linked by their economic objective. This kind of relationship touches almost every category: directors with photographers, musicians and producers; designers with weavers and draftsmen and so on. However, the importance of such networks is not the same in all sectors: for example, in the media industry (advertising, cinema or television), the network of operators in the various sectors plays an important coordinating role, because the final product depends on the organization of a large number of people.

	<i>Italy</i>	<i>Lombardy</i>	<i>Milan</i>
1) % of artisan business	26,5	31,0	23,4
2) % of businesses run by young entrepreneurs	9,8	8,8	8,0
3) % of businesses run by female entrepreneurs	22,3	18,8	17,4
4) % of businesses run by foreign entrepreneurs	9,4	11,1	13,9
5) % of individual businesses	60,0	50,0	40,0
6) % of manufacturing enterprises	10,3	12,8	10,9
7) % of construction enterprises	15,0	17,1	13,8
8) % of trade enterprises	27,5	24,1	25,1
9) % of service enterprises	32,5	40,3	48,9

Sources: indicators 1-5, Camera di Commercio, 2015a (data at 1st trimester 2015); indicators 6-9 Camera di Commercio, 2015b (data at 2014).

Figure 5.1: Business indicators in Italy, Lombardy and Milan. From these data it is possible to observe the affirmation of the creative and cultural sectors in the Milanese urban fabric.

From these data, it can be deduced that these interactions create the system that Storper and Venables call "the loop"¹⁰⁶ (Storper and Venables, 2004). This system produces and makes use of social relationship at different levels: it develops trust between operators, the circulation of information is encouraged, and talent recognition is generated. All this supports the development and the implementation of a solid CCI. The creation of such links between operators within the same network generates a virtuous circle, in which trust in the people who work together is multiplied, which is crucial for success in a workplace. First of all, mutual trust is essential because often in the cultural industry sectors, operators have to work together to carry out projects of various kinds. Knowledge and mutual trust are therefore indispensable to lay the foundations of a solid and fruitful relationship. In addition, the CCI sectors are characterised by a high-risk factor, as they are conditioned by volatile aesthetic judgments and are subject to unstable markets. It is therefore essential to know the skills and risk assessment of one's colleagues.

This type of relationship also serves the exchange of information. The sectors that compose the Creative Culture Industry are very volatile sectors, where economic scenarios can rapidly change. The exchange of information, through a relationship of trust, therefore allows to obtain valuable information in a short time, creating the possibility to obtain a competitive advantage. In the field of human resources, too, the exchange of information on people and companies is extremely valuable, and it makes it possible to act quickly and have the right candidate available as soon as a company looks for them. This type of relationship, also becomes fundamental for workers. Showing off, through the right knowledge or a correct exchange of information, can allow a subject to improve their working position, or to strengthen it, especially in competitive sectors such as fashion, where work is organized to projects and professionals recruited from time to time on individual products. It is therefore essential to be able to rely on a wide network of relationships to maintain a working continuity and be able to move from one job to another.

From the point of view of economic literature, similar situations of "co-presence" (that is, where the individual subject shows off and his/her abilities are recognized by the remaining operators in the sector) are described as "a driving force to increase the creativity and innovation of an industry"¹⁰⁷ (Molotch, 2003). From this analysis of the relations between workers of the CCI, it emerges that face-to-face relations, supported by the network of operators of Milan, are the basis on which the productive fabric of the city develops. The ability to build interpersonal relationships, often even outside the workplace, has allowed a very dynamic development of social networks in Milan, able to anticipate innovation before others or even to create it. The economic success of Milan in recent decades, particularly in the Creative and Cultural Industry sectors, can be explained through this connectivity that derives from the local work culture. A connectivity that allows the urban area of Milan to create surplus value in many dynamic sectors, always managing to "read" and adapt to changes in the market.

The capacity to build social relations and networks is not limited, however, only to creative sectors, but is also applicable to the financial one. In this sector, the possibility of creating a network of

¹⁰⁶ Storper M., Venables A.J., (2004) "Buzz: Face-To-Face Contact and the Urban Economy", *Journal of Economic Geography*, Volume 4, Issue 4, Pages 351–370, <https://doi.org/10.1093/jnlecg/lbh027>

¹⁰⁷ Molotch H., (2003) "Where Stuff Comes From: How Toasters, Toilets, Cars, Computers, and Many Others Things Come To Be As They Are", New York: Routledge

contacts allows subjects to know in advance the evolution of the market, allowing them to move accordingly. The great expansion of the Milanese financial sector, started in the 1980s, is also the result of the ability of the local fabric to connect and create networks between the various economic entities. This is one of the key factors that have allowed Milan to move from cities with a mainly post-Fordist economy to a global node, with great attractiveness of capital and workforce.

However, this connectivity is also at the root of the weaknesses of the Milanese model. Networks, so functional to the work of those who belong to it, represent an obstacle for those who are excluded, with the categories of young people and foreigners to be most affected by this exclusion. The dynamics of access to networks are complex and often relate to the link between share capital obtained through work or training, and between share capital ascribed to membership in other networks, which are family, neighbourhoods, or past social networks. The observation of the Milanese networks shows a system that rewards those who are already inside and refuses, with little chance of success, those who are outside. Often talent, the manifestation of one's own ability, is not enough to be able to be welcomed into the network: many creative sectors over the years have closed, losing in part their innovative thrust. After decades of global growth and consolidation, the Milanese sector has gradually closed to external influences, both from social and financial capital, thus losing part of its innovative thrust on the market.

Even from these weaknesses, it can be deduced that the economic success of Milan in recent decades is the base of the expansion of the CCI and has largely determined the current state: the interconnection of many sectors, the presence of communication and transport infrastructures, a pool of skilled labour prepared by local universities, the ability to create an attractive image for foreign workers. All these features have been fundamental for the creation of the social networks that are at the base of the creative industry in Milan. This industry, however, seems to depend more on past than current investment. The Milanese area still lives on the success of past decades, and has lost much of its innovative drive, also thanks to a very weak support of local institutions. However, some argue that it is precisely the absence of strong institutions that have allowed the creation of such social networks at the basis of the creative industry in Milan¹⁰⁸ (Triglia, 2007). It would therefore be the social connectivity of the Milanese economic system that, even in the absence of institutional support, manages to activate entrepreneurial and professional skills that lead to the economic success of the city. However, even a similar vision of the economic fabric of Milan leads to two problems:

- The first one is the dynamic of access to networks, which are particularly strategic for the economic success of creative sectors. Their closure in recent years has caused many key sectors of Milanese industry to lose their innovative drive. The absence of strong institutions can be noted in the absence of strategies aimed at facilitating the inclusion of new subjects and capital, capable of recovering the lost innovative thrust;
- The second problem is partly related to the previous one, and refers to the lack of reproducibility of social and cultural capital of the networks. Networks structured in the fabric of Milan are difficult to replicate elsewhere, due to numerous cultural, social, geographical and economic factors. This leads to a continuous "drainage" of social and financial capital by Milan, which is able to attract them to the detriment of other urban areas.

¹⁰⁸ Triglia C., (2007) "La costruzione sociale dell'innovazione: economia, società e territorio", Firenze, Firenze University Press

This therefore leads to a complex situation: Milan, while making its social networks more closed, continues to attract a large number of capital and workers, taking them away from other urban areas. Creating strategies that make these networks more inclusive would relaunch innovation in the Milanese CCI, but at the same time would make increase its the ability to drain cognitive and financial capital from other urban areas.

This "capacity" derives from three characteristics of Milan, which have strengthened its economic leadership in the Italian and European fields:

- Reference market; Milan in recent decades, although moving from a post-Fordist economic fabric to a global one, has managed to maintain its position as a reference point for companies in Lombardy and, more generally, in Northern Italy, which try to take advantage of the events organized in Milan to display, advertise and sell their products (Salone del Mobile¹⁰⁹, Salone dell'Occhiale¹¹⁰, etc...). These events, in addition to exploiting the networks mentioned above, create highly competitive social spaces, where innovation and trade move together. So, Milan manages to possess the competitiveness of a "global node", but at the same time to remain the reference point of many Italian economic sectors, thus being able to exploit the "Made in Italy" brand in the international context;
- The geographical position. From an European point of view, Milan is an important commercial hub, connecting the Italian peninsula to the rest of the continent. This position has allowed it to remain a key focus of European transport and trade, thus attracting capital and investment in transport and trade-related services;
- Academic pole. Over the years, Milan has been able to enhance its academic structures, creating virtuous circuits between universities and the professional world. These investments have created a very efficient academic system, which allows the city to attract cognitive capital from the rest of Italy and from abroad. This massive presence of cognitive capital thus creates the conditions for the creation of skilled labour force and to stimulate local entrepreneurship.

Italian companies, in recent decades, have developed in an irregular way. On the one hand, the phenomenon of offshoring (see paragraph 2.4) has led to a depletion of the Italian supply chain. Big Italian brands have preferred to move part of the productive chain to countries with lower labour costs (or in countries with higher quality services), putting into crisis the small and very small company that make up for a large part of the industrial fabric of Northern Italy. On the other hand, the interconnection between international markets, which has led to the exponential growth of world trade (see paragraph 2.4), has allowed an important spread of the "Made in Italy" brand. Milan, in this phase of commercial expansion, is a point of reference and of aggregation for Italian companies.

In fact, already during the "Italian economic miracle", between the 1950s and 1960s, Milan had laid the foundations of its economic success. The expansion of industry in the Northern regions of the country caused massive immigration from the Southern regions of the peninsula, as new enterprises needed large quantities of unskilled labour. Due to such migrations, Milan underwent a strong urban expansion in a very short period of time. The abundance of unskilled labour thus made Milan a point of reference and attractiveness for companies, which were still implementing an economic and

¹⁰⁹ <https://www.salonemilano.it/>

¹¹⁰ <https://www.mido.com/>

organizational scheme of the Fordist stamp. When the Fordist model started to decline, however, Milan was able to maintain its privileged position, thanks to investments in transport, services and to the academic universe: all these factors, have been able to meet the new needs of companies. The emergence of more volatile, flexible and fluid economic sectors made it necessary for Italian companies to have a more qualified workforce and a more modern service system. The success of Milan, however, is also the result of the relationship built between the academic world and the working world. The need for an increasingly skilled workforce has pushed companies to move to urban areas where this cognitive capital is more abundant. Over time, Milan managed to build an academic system capable of meeting the needs of the working world, creating a fruitful marriage.

These characteristics (geographical location, ability to attract business capital and an abundance of cognitive human capital) fit into the social and cultural context described above. The ability to build social networks that promote innovation is also due to the characteristics described above, which allow the economic fabric of the Milanese urban area to attract large financial and cognitive capital. This has led to the creation of a complex relationship with other neighbouring economic and urban realities. The attractiveness of Milan, in fact, over time, has stripped of capital and labour force many economic realities, especially during the years of the Digital Revolution (1980s-1990s).

This situation has forced many neighbouring urban areas to have to "live" with Milan, meaning having to deal with a much more global and competitive environment. Each neighbouring urban area has opted for its own strategy in this regard, based also on its social, cultural and economic characteristics. The results have been very heterogeneous, showing how it is possible for urban areas to live with highly competitive global nodes such as Milan or, on the contrary, how such proximity can cause an economic-social depression.

5.2- Turin: a city with two faces

The causes of the evolution of the urban fabric of Turin in recent decades are very similar to those of Milan: a strong urban expansion, due to internal immigration, in the decades of the Italian economic boom and the need to change the economic fabric of the city from a Fordist model to a post-Fordist one. Turin, however, has undergone a different evolutionary process, leading to heterogeneous results from an economic and social point of view. A possible explanation of this difference can be found in the role played by institutions. While in Milan institutions have implemented a less incisive strategy, preferring to interfere as little as possible with the economic and social initiatives of the urban fabric, in Turin local institutions have repeatedly tried to "guide" the post-Fordist revival of the city, often even with contradictory projects.

Between the end of the 20th and the beginning of the 21st, in fact, in Turin coexisted and competed three different strategies, which articulated different contents and priorities and gave rise to different visions of the city, even if, in theory, they were compatible in their implementation. Each of these strategies tried to revive the economic and social area of Turin, trying to link this revival to different economic players. The urban structure that resulted is the result of the overlap between these different strategies and the interaction between the subjects that influenced this implementation.

The first of these strategies can be summarized with the name "polycentric Turin"¹¹¹ (Russo, 2004), and had the objective of relaunching the urban suburbs of the city, both from a housing and infrastructural point of view. Such investments would lead to a revival of economic activities, also through a differentiation of them, almost absent in the economic fabric of the city. The implementation of such strategy implies a new model of use of the residential land and for the relaunch of the housing market, seen as necessary conditions to relaunch the local development, as well as a way to avoid a fall in employment, in a context (1990s) marked by the industrial decline of the leading company in the economic fabric of the city (Fiat). This, combined with new heavy investments in urban infrastructure, was thought to strengthen and revitalize the urban fabric, and to place it in a more global context.

The application of this strategy, in the early years of the 21st century, led Turin to modify its urban and infrastructural aspect: the main infrastructures (rail, airport and metro), suburban neighbourhoods and disused industrial areas were upgraded, resulting in a revival of the real estate sector. Furthermore, the award of the 2006 Winter Olympics allowed a significant influx of capital into the city, which financed and re-launched several development projects.

Despite capital inflows, the economic actors operating in these urban regeneration plans were mainly local, whose core is the construction industry, with around presented a dense network of auxiliary subjects: the brokerage companies, the world of professions related to the housing sector, the companies of large retailers, the retail trade, and so on. In this context, the role of mediator between the various economic interests of the Turin territory was held by the Chamber of Commerce, leaving to political institutions a mere task of mediation between the various non-economic entities present in the territory. Although the various investments must be ratified through agreements between public and private entities, this development model created favourable conditions for a "place-bound" profit¹¹² (Radicioni, 2008), meaning a profit which is closely linked to the economic fortunes of the territory. The "polycentric Turin" strategy has considerable similarities with the growth model called "growth machine", which has characterized the development of American cities in the post-war period. From this point of view, this strategy aims to promote a constant influx of population and capital, by increasing land use and population's average income¹¹³ (Molotch and Logan, 1987).

According to this logic, the active economic actors must control and direct the investment programs, composed by the main beneficiaries of the rents and profits related to the metropolitan territory: housing and financial companies, local banks, professional firms, construction companies, insurance companies, Chamber of Commerce, etc. Although none of these subjects monopolize the decision-making process, their economic interests shape the political economy of the city and development strategies, leaving to the political authority a mere function of coordination and support. The "polycentric Turin" strategy therefore aims to push towards a direction of urban and economic development similar to that of Milan, with a massive program of infrastructure and urban investments aimed at attracting cognitive and financial capital, and with a plurality of economic subjects, active on the local territory, free from any State control.

¹¹¹ Russo G., Terna, P., (2004) "Numeri per Torino", Turin, Otto Editore

¹¹² Radicioni R., (2008) "Il governo del territorio: il caso di Torino", rivista quadrimestrale Nuvole, n. 32

¹¹³ Molotch H., Logan J., (1987) "Urban Fortunes: The Political Economy of Place", Berkeley

The second investment strategy in Turin aims to relaunch the academic system, through a new enhancement of the sectors connected to it. This strategy, commonly called by the media of the time "polytechnic Turin", seeks to link the economic fabric of the city, which, at the beginning of the 21st century, was still strongly based on a cultural model of the Fordism, with the new needs of Cultural and Creative Industry and of globalized work models. The academic institutions interventions try to expand their own venues and research activities, expanding existing locations, and building new ones in peripheral areas, in order to diversify the educational offer. The research world in Turin tries to build new relationships with economic actors of the territory, in order to improve research and make its structures more attractive for cognitive capital, particularly in the field of information technology and telecommunications.

The strengthening of the academic system goes in parallel with the attempt to develop a new industrial fabric within the urban area, more modern and less linked to the old production logic. To allow the creation of new industrial poles, attempts are made to create partnerships with foreign companies (for example the agreement of the Turin Polytechnic with Microsoft for genetic research and with General Motors for research on clean engines) to increase the logistical and financial support towards the latter, so that these companies would invest in the local territory.

The actors who carry out this development strategy are different from the former ones, as they are more linked to public authorities and to the academic world (University and Polytechnic). To these one must add, with a more auxiliary role, the banking system and the Chamber of Commerce, which have the task of mediating between local and international players. In the Polytechnic agenda, public authorities have an active role, and not only in regulating and coordinating.

The reference model of this strategy is the "three-bladed propeller"¹¹⁴ (Etzkowitz and Leydesdorff, 2000), which provides a series of investments aimed at the formation of cognitive capital, especially in the high-tech sectors and areas oriented towards creating innovation: telecommunications, biotechnology, etc. These investments are coordinated by three main players: the public authorities, the private sector and the academic world, which act with the aim of attracting cognitive capital and enhancing local resources. Among the three subjects, it is the academic world that stands out in particular, as it is proposed as a point of encounter and enhancement between the world of public authorities and the world of work, constituted by private individuals.

The third and final strategy, which can be called "cultural Turin", includes investments focused on the local economy, through the promotion of cultural events. In this growth model, the city is considered as a "cultural district", in which various "cultural" activities (tourism, sport events, scientific dissemination, religious celebrations, etc.) can offer an alternative to purely industrial development, to relaunch Turin in the international context.

This strategy multisectoral, and based on the application of heterogeneous public policies. The organization of events is the most media-oriented result. The 2006 Winter Olympics is the main outcome of this strategy, but many other events, on an annual basis, attract a large audience and engage substantial economic and organizational resources (example: The Book Fair). The objective of such events, almost always organized by public authorities, becomes the promotion of the image

¹¹⁴ Etzkowitz H., Leydesdorff L., (2000) "Dynamics of Innovation: From National System and «Mode 2» to Triple Helix of University-Industry-Government Relations", *Research Policy*, 29(2)

of the city, to be exploited in the touristic and cultural fields. Alongside these events, strategic investments go to other cultural sectors, such as cinema, theatre and music, but also the simple cultural promotion, as for the Egyptian Museum, fits into this context.

This development strategy summarizes the model known as the "entertainment machine model"¹¹⁵ (Lloyd and Clark, 2001). According to this model, the revival of urban areas, which have been in crisis since the decline of the Fordist industrial model, must take place through a restructuring of the urban fabric, aimed at attracting continuous flows of resources rather than stable endowments. Local production no longer concerns material goods, as in the old industrial model, but symbolic services and goods, such as exhibitions, shows, sporting events, festivals, international meetings, fairs; all these are addressed both to the local population and to tourists. This development model is often managed by the public authority in coordination with specialized sectors in the production and supply of services and recreational-cultural initiatives. Despite this coordination, investment and project management firmly remain in the hands of public entities.

In the early years of the 21st century, the evolution of the urban area of Turin has been the result of these three strategies. The urban scenario that emerges is a different city from ten years before: infrastructures have been strengthened and enlarged, the educational offer of the academic system and the economic fabric has been diversified more. In this urban area of those years coexist, not without problems and tensions, urban renewal, advanced economy and cultural entertainment.

From these first analyses, however, the first, great difference with the model of Milan clearly emerges: the active role of stimulus and direction beyond regulation and intermediation, which is assumed by the public authority. What was established in Turin, after the fluctuations of the 1990s can be considered as an "urban regime"¹¹⁶ (Stone, 2006), a political-economic system that, following a perceived condition of decline, has the objective of promoting economic growth under the control of public authorities. Unlike the Milan model, where the public authorities are limited to a role of passive coordination, economic sectors in the Turin model never obtained complete independence from public investment. As soon as the latter goes into crisis, the economic fabric of the city begins to suffer.

The 2008 financial crisis significantly affected Italy, affecting the country's public spending capacity. This also hit Turin. The development model, based on the three strategies discussed above, was linked to the ability of the public authority to invest and coordinate its resources with those of private economic entities. The reduction of these opportunities, which occurred in the years following the crisis, has put the urban entrepreneurial fabric in difficulty. By analysing the rate of business growth in Turin, it is possible to see that, until the crisis of 2008, the trend was better than the national average; from 2008 on, it has worsened, increasingly moving away from the Italian average (see Figure 5.2).

¹¹⁵ Lloyd R., Clark TN, (2001) "The City as an Entertainment Machine", In *Research in urban sociology*, vol. 6, Critical perspectives on urban redevelopment, ed. Kevin Fox Gatham, 357–78, Oxford: JAI/ Elsevier

¹¹⁶ Stone C.N., (2006) "Power, Reform, and Urban Regime Analysis", *City & Community*, 5: 23-38. DOI:10.1111/j.1540-6040.2006.00151.x



Figure 5.2: Growth rate of enterprises in the metropolitan area of Turin (CM Torino). Percentages; data processing Chamber of Commerce of Turin. Source: Rota Report, 2019¹¹⁷

As for the "added value"¹¹⁸, if in the first years of the 21th century this value was growing, after 2008 it collapsed too, reaching in 2018 a lower value than the one recorded in 2001. In 2001, Turin's added value was 72% of the one produced in Milan, in 2018 this ratio fell to 60%¹¹⁹ (Rota Report, 2019).

When going into more detail in specific economic sectors, it seems clear that the economic fabric of Turin has entered deep crisis after 2008. By analysing the different components of the productive fabric of Turin from 2001 to 2016, the weight of industry in total added value has decreased from 29% to 26%, that of the tertiary sector has increased from 70% to 74%, which however remains one of the lowest values in Italy, despite the significant investments supported by the strategies discussed earlier. The attempt to diversify the urban economy, focusing more on growing sectors such as the CCI, has proved unsuccessful, with an economic fabric still linked to traditional industries. However, not only the emerging sectors have been in crisis since 2008. Even the traditionally strongest sectors of the urban economy, such as exports, have suffered a strong backlash. Although Turin remains the second Italian city for export, after Milan, this sector in the last twenty years has grown only by +24.5%, one of the lowest increases in northern Italy. The comparison becomes even more pitiless compared to the growth sustained by Turin exports in the decade 1998-2008, during the years of large investments: until 2008, exports grew by 28%, from 2008 to 2018 only by 3%¹²⁰ (Rota Report, 2019). The vision that emerges of today's Turin is a city that has lost the innovative thrust that it had at the beginning of the millennium, with an economic fabric anchored to the classical industry (in which

¹¹⁷ Rapporto Giorgio Rota, <http://www.rapporto-rota.it/rapporti-su-torino/2019-futuro-rinviato.html>, 2019, Cap. 2, pag. 3

¹¹⁸ Value added measures the ability to create wealth in the economic system, because it corresponds to the difference between the value of the production of goods and services and the value of the raw materials and intermediate services used for production.

¹¹⁹ Rapporto Giorgio Rota, Rapporto Giorgio Rota, <http://www.rapporto-rota.it/rapporti-su-torino/2019-futuro-rinviato.html>, Cap. 2, pag. 4

¹²⁰ Rapporto Giorgio Rota, <http://www.rapporto-rota.it/rapporti-su-torino/2019-futuro-rinviato.html>, 2019, Cap. 2, pag. 5

more than a quarter of the total workforce is employed) and to the export of the obtained industrial products.

Compared to the beginning of the millennium, however, also in Turin the industrial sector is greatly reduced, with almost a third of the transport and construction sectors (two of the sectors that have benefited the most from investment at the beginning of the century) are also less well-off.

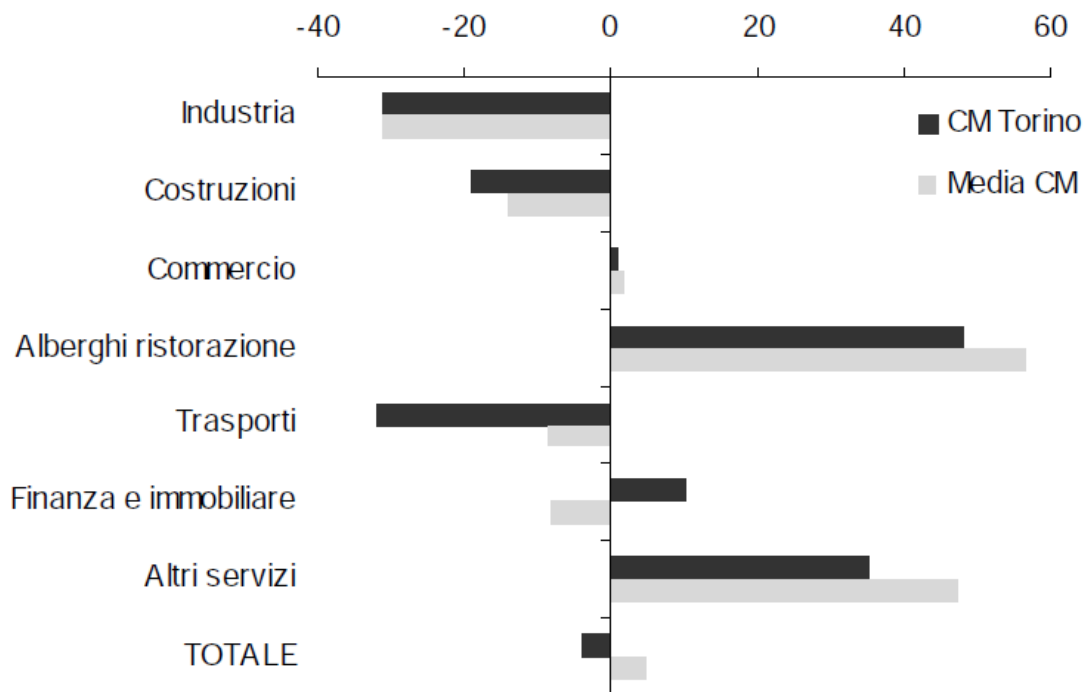


Figure 5.3: Changes 2001-16 of employees in enterprises; National average (Media CM) and average of metropolitan area of Turin (CM Torino); percentages; Source: Rota Report, 2019¹²¹

Translation of voices: *Industria* = Industry; *Costruzioni* = Housing sector; *Commercio* = Trade; *Alberghi Ristorazione* = Hotels and catering; *Trasporti* = Transports; *Finanza e Immobiliare* = Finance and Real Estate; *Altri Servizi* = Other Services;

From these data it can be noted that the industrial production of the urban area of Turin from 1998 to 2018 recorded a cyclical trend, with a collapse in 2009, a period in which the effects of the crisis have produced the greatest consequences (see Figure 5.3); almost all the economic sectors recorded sudden drops in 2008-2009, but then partly recover, with a technical rebound, in the following years. However, the innovative thrust of the Turin area has not reached the investment levels of the years before 2008.

¹²¹ Rapporto Giorgio Rota, <http://www.rapporto-rotta.it/rapporti-su-torino/2019-futuro-rinviato.html>, 2019, Cap. 2, pag. 8

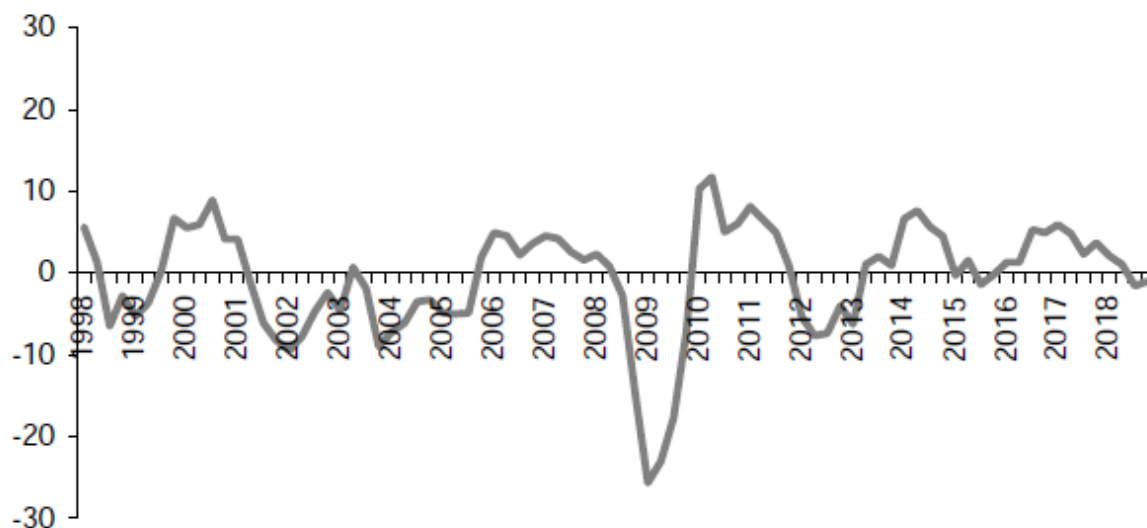


Figure 5.4: Evolution of industrial production in the metropolitan city of Turin; percentage change on the same quarter of the previous year; Source: Rota Report, 2019¹²²

Another issue is the lack of economic diversification. Past investments have not been able to attract companies operating in sectors other than the traditional ones of the local territory. The manufacturing sector continues to have a relevant weight, especially when compared to other metropolises of Italy: although they represent only 8% of the active companies and 9% of total local units, the incidence on the total employees remains 26% (ISTAT, 2016). Even despite the progressive "downsizing" of Fiat, which in the last twenty years has moved part of its management and production chain abroad, consequently decreasing its presence in the Turin area, while maintaining a dominant position, as compared to other industrial sectors.

From the point of view of the tertiary sector, however, in recent years Turin has shown a good growth, particularly in the trade sector, which in the city has favoured by large-scale distribution. Active actors that can be considered active subjects in large-scale distribution are: hypermarkets with sales areas over 2,500 square metres, large non-food specialised areas over 1,500 square metres, supermarkets and department stores over 200 square meters. This growth has gone hand in hand with the hotel sector, the second pivot of the Turin tertiary sector, which has doubled the number of workers in the last twenty years, although the increase from 2008 onwards was only 5%¹²³ (Rota Report, 2019). This growth is strongly linked to the tourism sector, which since 1998 has doubled the annual visits with a peak in 2006, the year of the Olympics hosted by the city.

The data observed so far give a picture of an urban area which, overall, has failed the attempt to become a global node, capable of easily attracting cognitive and financial capital, and to increase its economic fabric through the presence of innovative sectors, such as those of the CCI. The strategies implemented in the early years of the 21st century were intended to change the economic and social fabric of the city, pushing for an improvement in infrastructure and in the academic and cultural system to make the city more globally attractive. These strategies, however, once the initial thrust

¹²² Rapporto Giorgio Rota, <http://www.rapporto-rotta.it/rapporti-su-torino/2019-futuro-rinviato.html>, 2019, Cap. 2, pag. 9

¹²³ Rapporto Giorgio Rota, <http://www.rapporto-rotta.it/rapporti-su-torino/2019-futuro-rinviato.html>, 2019, Cap. 2 pag. 13

had been exhausted, and with the advent of the financial crisis in 2008, failed to achieve the objectives set. In summary, the reasons for this failure are:

- The inability to build a modern economic fabric; strategies analysed above are mainly aimed at relaunching the Turin economy, through investments and projects that pushed innovation and the ability to attract new businesses. However, these projects, while achieving results, have remained linked to public authorities and their ability to attract resources to be coordinated and invested. As public authorities have seen their investment and coordination capacities diminish, the urban economic fabric has suffered, losing its innovative thrust. From this point of view, Milan has been able to develop an innovative economic fabric without relations with the public authority, thus allowing greater flexibility and adaptability of urban economic sectors. To this done must also add the inability to diversify the economic fabric, with a predominance of the "traditional" sectors of the city economy;
- The lack of long-term planning; many of the structural investments, such as those dedicated to the construction sector or infrastructure, are projects with a limited time range, dedicated to the 2006 Olympics. After 2006, also due to the 2008 crisis, investments in these two fields have almost halved, with an absence of building interventions intended for industrial settlements. The airport of Caselle, after an initial investment in the early twenty-first century, has also suffered a progressive decline, with a minimal increase in passengers during the last twenty years¹²⁴ (Rota Report, 2019).

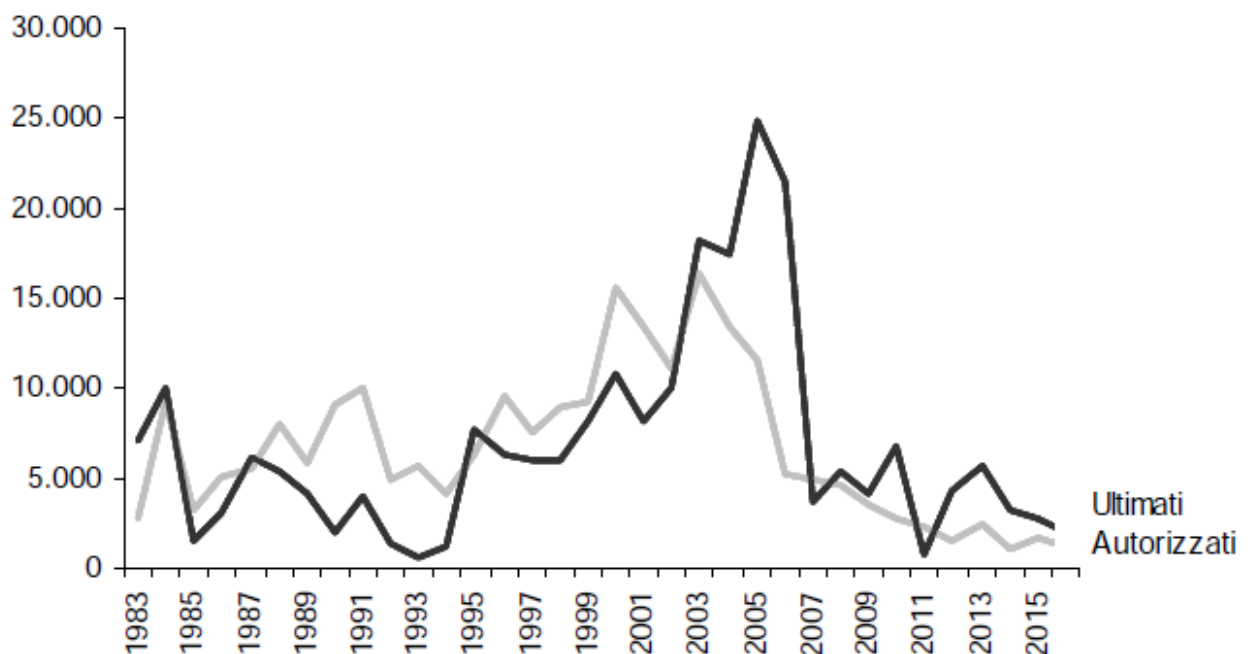


Figure 5.5: Residential buildings in Turin city. Absolute number of rooms; Source: Rota Report, 2019¹²⁵.
Translations voices: Ultimati = Completed; Autorizzati = Authorised;

¹²⁴ Rapporto Giorgio Rota, <http://www.rapporto-rotta.it/rapporti-su-torino/2019-futuro-rinviato.html>, 2019, Cap. 3, pag. 6

¹²⁵ Rapporto Giorgio Rota, <http://www.rapporto-rotta.it/rapporti-su-torino/2019-futuro-rinviato.html>, 2019, Cap. 3, pag. 2

- The last decades have also been marked by the transition to the digital age. Although infrastructure for the physical transport of people and goods plays an important role, investments in telematic networks have been crucial for the economic development of an urban fabric. From this point of view, although considering the structural delay of the whole of Italy in this sector, Turin does not shine, having a digital blanket of about 89%, lower than many Italian cities such as Venice, Bologna and Milan;

	2011		2015		2017		2019
Napoli	100	Milano	100	Milano	100	Milano	100
Trieste	77	Bologna	67	Cagliari	90	Cagliari	98
Milano	75	TORINO	62	Bari	83	Bari	94
Roma	67	Genova	47	Palermo	74	Venezia	91
Genova	61	Roma	45	Messina	70	Bologna	90
Bari	58	Bari	42	Catania	58	Catania	90
Catania	57	Palermo	35	Trieste	54	Reggio C.	89
TORINO	52	Napoli	28	Venezia	51	TORINO	89
Palermo	52	Catania	26	Roma	47	Trieste	85
Venezia	52	Venezia	14	Bologna	45	Messina	84
Firenze	47	Firenze	0	Genova	42	Genova	71
Bologna	45	Trieste	0	TORINO	39	Roma	68
Messina	40	Cagliari	0	Reggio C.	37	Napoli	67
Reggio C.	37	Messina	0	Napoli	36	Palermo	65
Cagliari	30	Reggio C.	0	Firenze	28	Firenze	65

Figure 5.6: Broadband networks in the Italian metropolitan¹²⁶. For 100 we mean the maximum possible coverage values in that year with the available technologies. Source: Rota Report, 2019¹²⁷

- The inability to build a social fabric similar to that of Milan. Despite all the investments pursued, even at the academic level, Turin was unable to create a social, urban and economic fabric, as proactive and innovative as the Milanese one. The city's economy is still firmly anchored to the traditional sectors of the economy, making the city's economic environment much less flexible and innovative in the eyes of business and cognitive capitals.

What emerges from this analysis is a city that, in the last twenty years, has had two faces. Aware of the economic and social limits, in the late 1990s, the public authority invested numerous resources to reshape the urban fabric of the city, in an attempt to transform Turin into a global metropolis, with an economic and social vision that transcended Italian borders like Milan. However, the lack of long-term planning, as well as the dependence of new investments and projects on public authority, has shown the limitations of this project. After the 2006 Olympics, and with the advent of the world crisis of 2008, Turin lost the innovative thrust of previous years, being sucked into the orbit of Milan. Turin has not been able to reinvent itself, showing an absence of flexibility. After the years of the crisis, which halted any ambitions of internationalization, Turin relied on its "classic" economic sectors to

¹²⁶ 2015 data refer to Fttb-Ftth broadband, 2017 data to Broadband >30 mbps, 2019 broadband >100 mbps.

¹²⁷ Rapporto Giorgio Rota, <http://www.rapporto-rotta.it/rapporti-su-torino/2019-futuro-rinviato.html>, 2019, Cap. 3, pag. 5

emerge from the crisis, trade and the automotive industry. The difference in economic performance with Milan, and other global European cities, is therefore in this absence of long-term planning, lack of flexibility and inability to split the economic fortunes of private economic entities from those of the public authority.

5.3 Bologna and the Emilian Model

When analysing the social and economic fabric of Bologna, it is important to consider the different context in which this urban area has developed. A context that, for its history, geography and economy, presents differences from the context in which urban areas, such as Milan and Turin, operate and develop in Northern Italy. Unlike Northern Italy, the central regions of the peninsula have a polycentric urban system. This means that local economic development is linked to the development of many urban realities, both small and medium-sized. Bologna fits into a context with a high density of small urban areas, connected to each other by infrastructure and economic relations.

Another characteristic to consider is the presence of a capillary and diversified industrial fabric in the local territory. The city of Bologna has developed a different relationship to those observed in the urban areas of Turin and Milan. If the two metropolises have always tried to serve as a reference point for the industries of their territory, the Emilian industrial fabric has "forced" Bologna to develop an alternative collaboration. The presence of modern industrial and agricultural centres, innovative and capable of successfully diversifying into small urban centres (for example: Sassuolo), has led Bologna towards a less centralised strategy, coordinated between the various urban centres of the Region.

The economic success of Emilia (a region of Central Italy where the city of Bologna is located) has its roots in the years immediately following the economic development of the Northern regions of Italy. At the beginning of the 1970s, in Emilia an innovative and flexible manufacturing took hold, capable of making numerous sectors (mechanical, automotive, etc...) coexist. This model is an interesting case because, unlike other regions with a greater presence of districts, it has experienced the development of an industrial model based on decentralization of production and social integration. The features that make this model innovative and unique are:

- The concentration of small enterprises in different productive sectors but interconnected by subcontracting or technological links. In many districts of this area, the links of input-output cross with technological ones, giving life to processes of technological development based on the mutual learning of suppliers and producers. These paths are stimulated by the small size of companies and the incremental nature of the innovations that determine competitive strategies, even at international level;
- A social environment that promotes entrepreneurship. The environment in which Emilian companies operate pushes them to evolve, to become an operating company. This evolution does not only affect the home sectors of companies, but also in new sectors, where they aim to expand to create new networks with other customers and markets. "The perspective, for the worker, of becoming a small entrepreneur is added here the perspective, for the small

entrepreneur, to emancipate themselves from production to third parties and attempt the adventure of the own account"¹²⁸ (Vianello, 2007).

The environment in which the urban area of Bologna operates is dynamic and flexible. Over the years, it has managed to not lose its innovative thrust in the traditional sectors, and at the same time it has managed to expand into new economic areas. This entrepreneurial dynamism is stimulated by the pressures arising from the tensions on the labour market, as well as by the opportunities provided by a diversity of industrial sectors operating in the territory. The particularity of the urban area of Bologna is to possess a mix of different functions. On one hand a strong propensity to the development of the tertiary sector, with financial, commercial and academic activities; on the other hand, a more institutional profile of coordination between the services present in the urban area and the industrial districts present in the territory.

Bologna, like other Italian cities, in the early years of the 21st century, has undergone many transformations, through deindustrialization in favour of the tertiary sectors (finance, trade, etc.). The main characteristics of that period are:

- The existence of a dynamic hinterland, characterized by a constant demographic increase and a high density of economic activities;
- The beginning of a hierarchical differentiation (in a functional sense) between the historical centre and the urban periphery. The majority of the new financial and commercial services, together with the historical academic world, are concentrated in the urban centre of the city, while industrial activities are concentrated in the peripheral areas.

These characteristics show how, in the case of Bologna, the deindustrialization typical of the Italian urban areas of the period, is actually a "translation" of the activities related to the industrial world. Due to the strong industrialization of the surrounding area, the economic fabric of Bologna is limited to moving, not to shrink, thus starting a coexistence with the new financial and commercial services, almost a fifth of Bologna's workforce was employed at the beginning of the new millennium¹²⁹ (Anderlini, 2002). This tertiary sector, however, remains an exception in the Italian scenario, due to the presence of two key carriers such as industrial manufacturing and the institutional welfare system (health and university). Through these two vectors, the Bolognese tertiary sector experienced at the beginning of the millennium an impetuous development, without reducing the economic weight of the industrial sector, as it happened in other urban realities.

However, despite the strengthening of these sectors, the urban area of Bologna does not begin a process of centralization similar to that of Milan. The reasons must be sought in the peculiarities of the Emilian economic model: like Bologna, also other cities of the region, such as Modena, Forlì or Piacenza, are able to coexist the high industrial density with the new emerging sectors of the tertiary sector. This uniform distribution of financial and commercial services, combined with the high density of industrial-driven urban areas, has prevented a centralisation of financial and cognitive capital, as it was the case in Milan.

¹²⁸ Vianello F., (2007) "Sistemi di imprese. A proposito della nuova raccolta di saggi di Sebastiano Brusco (e della precedente)", *Economia e Lavoro*, No. 1, pag. 14

¹²⁹ Anderlini F., Gennari T., Scalone F. and Varini P., (2002) "1991-2001: l'evoluzione economica del territorio bolognese", pag. 23

Bologna faces the 21st century with a particular urban and economic composition: a central hinterland, composed almost exclusively of tertiary services and residential districts, and a "belt" of small peripheral municipalities, which are, on the other hand, densely populated. It is interesting to note that Bologna has opted for a development strategy different from that of Turin: while the metropolis has opted for large private and public investments, but with a predominance of the public authority in coordination, the Emilian city preferred to focus on a slow and constant transformation. After a first, exponential growth in the tertiary sector, in fact, the conformity of the urban and economic fabric of Bologna has consolidated, through targeted investments in infrastructure enhancement and in diversifying the educational offer of the city's academic world, in an effort to attract more cognitive capital.

The expansion of infrastructure, in particular, is a theme that the urban area of Bologna has faced in recent years. The creation of a monopolized hinterland by financial and commercial companies, combined with the diversification of academic structures, has led over the past fifteen years to a significant proportion of the population to move their residence to the peripheral areas of the city. This has increased the density of the belt of municipalities surrounding Bologna. The upgrading of infrastructure linking the central urban area with the suburbs is a consequence of the need of companies operating in the city and the workforce forced to move quickly between the external municipalities and the city centre. The expansion of infrastructure, however, is also caused by the expansion of the tertiary sector. With the strengthening of the Adriatic route, Bologna has found itself to be a fundamental hub, point of railway connection between Milan, Rome and the Adriatic coast, creating the prerequisite for the expansion of the tertiary sector linked to commercial and financial services.

Expansionism in the tertiary sector has not only influenced the urban composition of the city, but also the academic world of the city, which has partially suffered from such phenomenon. The University of Bologna, historically the oldest in Europe, has launched numerous investments to diversify its offer in the early years of the new millennium, so as to attract more cognitive capital. However, the results have been only partial: in 2015, the number of university students had fallen by 19% compared to 2001¹³⁰ (Ardeni and Leone, 2017). This decline shows an objective difficulty of the Bolognese academic world to modernize its offer. Another possible cause may be the strong "competition" of nearby universities: Pisa, Milan, Florence, Padua, Verona, Venice (just to name a few) have also invested numerous resources to modernize and diversify their educational offer, considerably increasing their ability to attract cognitive capital.

From an industrial point of view, as already described, Bologna has been able to maintain an important industrial fabric over the years. The sectorial composition sees a prevalence of enterprises in services (31.1%), in commerce (27.5%), and in constructions (12.2%). Very low, on the other hand, is the percentage of manufacturing enterprises (6.4%), which shows that in this sector, enterprises have opted for a dispersion on a provincial and regional scale¹³¹ (Ardeni and Leone, 2017).

The economic fabric of the city, has suffered the effects of the financial crisis of 2008, with a sharp stagnation. From 2012 to 2017, the number of companies operating within the urban area of Bologna remained broadly unchanged, while employment data show mixed results: if overall, from 2004 to

¹³⁰ Ardeni P.G., Leone L., (2017) "La Situazione Economica e Sociale Bolognese", pag. 12

¹³¹ Ardeni P.G., Leone L., (2017) "La Situazione Economica e Sociale Bolognese", pag. 20

2016, employment increased by 4%, the detailed analysis reveals that this increase occurred only before 2008. Since 2008, employment in Bologna has fallen by 3%. Among the various age groups, the most affected are young people between 25 and 34 years, who have experienced an increase in unemployment (46.3%), only partially reabsorbed in recent years, testifying a lack of synergy between the academic and the professional world¹³² (Ardeni and Leone, 2017). The employment data and the number of companies, thus shows how the economic fabric of the city has remained, with a few exceptions, quite stable, recovering in recent years the losses suffered during the crisis of 2008. This "stationarity" has not prevented the economic fabric of the city to continue to transform. In Bologna, the decline in employment in industry in the years of the crisis continued, although it was more than offset by the increase in employment in the city's top tertiary services (finance, universities and trade) and agriculture, with a surplus of 21,000 persons employed between 2008 and 2016¹³³ (Ardeni and Leone, 2017).

	Occupazione	Disoccupazione
2004	71.7	2.9
2005	69.6	2.6
2006	72.0	2.9
2007	71.2	2.3
2008	72.9	2.0
2009	70.3	2.1
2010	69.5	4.0
2011	68.8	3.8
2012	69.5	6.8
2013	68.8	8.8
2014	70.0	7.5
2015	70.9	7.5
2016	71.0	5.6

Figure 5.7: Employment and unemployment rate in the Municipality of Bologna (percentages); Source: Ardeni and Leone, 2017¹³⁴
Translation of voices: Occupazione = Employment; Disoccupazione = Unemployment;

The tertiary sector, although monopolized by the growth of financial and commercial services, has seen a growth, especially in recent years, not indifferent thanks to tourism. In the urban area of Bologna as a whole, the number of visitors to public museums, monuments or archaeological areas decreased by 28% from 2008 to 2010, while it increased by 49% between 2010 and 2017, breaking through the 20000 monthly visits to cultural sites in 2016¹³⁵ (Ardeni and Leone, 2017).

These data allow to draw a picture of a city that has been able to resist the economic crisis, despite some downturns. By size and location, Bologna does not possess the aspirations of Turin. The Emilian city does not have the capacity to become a global city, able to attract financial and cognitive capital from all over the world. However, despite its proximity to Milan, Bologna has been able to enhance its resources. The lack of creation of a creative sector has been compensated by the strong financial and commercial expansionism, which have been able to coexist, and in many cases enhance, the pre-

¹³² Ardeni P.G., Leone L., (2017) "La Situazione Economica e Sociale Bolognese", pag. 22

¹³³ Ardeni P.G., Leone L., (2017) "La Situazione Economica e Sociale Bolognese", pag. 43

¹³⁴ Ardeni P.G., Leone L., (2017) "La Situazione Economica e Sociale Bolognese", pag. 23

¹³⁵ Ardeni P.G., Leone L., (2017) "La Situazione Economica e Sociale Bolognese", pag. 37

existing industrial fabric. Taking advantage of the Emilian industrial model in which, it is inserted, characterized by a dynamic and polycentric industrial sector, Bologna has been able to use its strengths to avoid being "sucked" under the influence of the nearby Milan. The results show a city with a young and dynamic population: over the past decade more than 150,000 new residents have arrived in Bologna, equivalent to more than 40% of the current population, only partially compensated by the output of almost 110,000 people overall¹³⁶ (Ardeni and Leone, 2017), thus showing a discreet attractiveness towards financial and cognitive capital (albeit almost exclusively Italian). Thanks to its dynamic economic environment, Bologna shows how it is possible to become an attractive urban area, even if geographically close to a global city like Milan. Although it is true that this economic dynamism must be sought in part in the characteristics of the regional model of Emilia, many of which are not replicable, Bologna has been able to enhance its urban and industrial fabric, avoiding to be distorted as Turin, in excessive investments and too often linked to the financial fortunes of the public authority.

¹³⁶ Ardeni P.G., Leone L., (2017) "La Situazione Economica e Sociale Bolognese", pag. 39

6. Urban and peripheral areas: competitiveness in comparison and the exogenous factor Covid-19

The evolution that the professional world has undergone in the last forty years, has led to a review of the urban economy, of the subjects that operate in this environment and of the characteristics that influence the economic development of companies. Among the latter, innovation and creativity are certainly the most outstanding. In the context of the many sources that can feed the value generated by businesses, creativity is certainly a resource of particular interest. A classic definition of creativity indicates the latter as a feeder of new ideas, which are the basis of innovation strategies and corporate change; but above all creativity stimulates product differentiation which is a fundamental determinant of competitive advantage¹³⁷ (Im and Workman, 2004). The same temporal extension of competitive advantage¹³⁸ (Barney, 1991), is related to creative capacity, which is therefore a key objective in the field of management. Creativity is therefore the ultimate source of the value produced by individual country systems that draw from this capital the driving force to innovate¹³⁹ (Florida, 2002), both the most innovative and the most mature sectors, linked to traditional industry.

At present, there are few studies that have given a definition of the creative capacity of an enterprise, which is the ability to indicate the stock of creative resources that an organization has at a given time in history. Florida (2002), in addressing the problem of creativity at the territorial level, defined creative capital as a mix of three different resources¹⁴⁰:

- Technology;
- Tolerance (the level of openness to innovations or to elements external to your business model);
- Talent (the level of creativity of individuals within of the organization).

However, this definition has two flaws: first, it takes on a macroeconomic value and, as such, it is imprecise about the organizational configuration of the creative capacity, representing only its output at a general level. Secondly, by not proposing a definition of the creative capacity of an enterprise, it does not allow to provide a solution to the relationship between creativity and sustainability of competitive advantage. In an effort to overcome the problems related to the definition of creativity, the idea has been developed that the selection of individuals or creative subjects is only the first step to foster productivity at organizational level: the absence of a suitable environment for developing creativity, in fact, can reduce the skills even of particularly creative subjects. As Cummings and Oldham point out, “most employees’ behaviour is a function of both the person and the place”¹⁴¹ (Cummings and Oldham, 1997). So, the next steps that influence the creation of a creative process are:

¹³⁷ Im S. Workman J.P., (2004) “Market orientation, Creativity, and New Product Performance in High-Technology Firms”, *Journal of Marketing*, 68(2), pp. 114–132, DOI: 10.1509/jmkg.68.2.114.27788

¹³⁸ Barney J., (1991) “Firm resources and sustained competitive advantage”, *Journal of Management* (17)

¹³⁹ Florida R.L., (2002) “The Rise of the Creative Class: And How It’s Transforming Work”, *Leisure, Community and Everyday Life* (New York: Basic Books)

¹⁴⁰ Florida R.L., (2002) “The Rise of the Creative Class: And How It’s Transforming Work”, *Leisure, Community and Everyday Life* (New York: Basic Books)

¹⁴¹ Cummings A., Oldham G.R., (1997) “Enhancing Creativity: Managing Work Contexts for the High Potential Employee”, *California Management Review*, 40(1), pp. 22–38. doi: 10.2307/41165920, pag. 27

- Knowledge;
- Intellectual skills;
- Thinking style;
- Motivation;
- Personality.

In particular, the knowledge of individuals, together with skills and personal characteristics, show a strong relationship with creativity. “To do original work, one needs the basic knowledge of the field so as to go beyond the status quo (...) Knowledge is also necessary because creativity has been shown to be fairly domain specific, meaning that people are not generally creative in any field but rather in specific areas”¹⁴² (Sternberg, O’Hara, Lubart, 1997).

From these ideas, the features present in creativity and in the creative process can be summarized in the following points:

- The creativity of a company is expressed in the realization of products, processes or in any evident changes in terms of results. This is often due to a high level of knowledge of their employees, which allows them to go "further", creating and discovering new products or uses for existing products;
- Entrepreneurial creativity depends to a large extent on individual creativity, that is, on a construct characterized by a strong attachment to the psychological and aptitude characteristics of the individual;
- The creative capacity of an enterprise must be based on the organization of individual creativity. This does not mean to untie the creative process from the business logic. Creativity cannot be associated exclusively with an “artistic expression” for its own sake, but an answer to the need to solve a problem.

In the light of these characteristics, the conclusion is that the creative process of a company is the result of the creativity of the individual subjects that make up the company, who use this ability to try to solve a problem. Solving this problem will create a competitive advantage for the company. The areas that succeed to "favour" such process, manage to attract companies that make of the creative process the base of their own business. By exploiting the knowledge and cognitive capital of the company, creativity is the engine of innovation, which allows a company to gain a competitive advantage in its business.

The exploitation of cognitive capital, through a spatial reorganization of the company, is one of the necessary characteristics for an enterprise to give life to a creative process. The possibility of creating a competitive advantage over time is certainly fundamental for the future of the business of an enterprise, especially in a dynamic changing market. However, over time, enterprises have "agglomerated" not only in urban areas that allow them to achieve such competitive advantages through creativity (see paragraph 4.3.1). The case of Bologna (see paragraph 5.3) shows how the Emilian model has succeeded in creating a dynamic and innovative economic system even in the absence of large urban areas, with a high concentration of cognitive and financial capital, but through

¹⁴² Sternberg R.J., O’Hara L.A., Lubart T.I., (1997) “Creativity as Investment”, California Management Review. 1997;40(1):8-21. DOI:10.2307/41165919, pag. 9

a dispersive and polycentric model. The ability to develop innovation and economic dynamism, even in the absence of urban areas, theoretically fertile to creative development, is a fundamental aspect for the development of modern business, and to "rebalance" a model of development that in recent decades has favoured almost exclusively the large global metropolises.

6.1 Urban clusters versus peripheral clusters

The advantages that enterprises receive from the territory in which they are located have already been analysed (see paragraph 4.2), especially in the case of enterprises located in urban areas. In these territories, enterprises receive economic benefits from the concentration of economic activities: proximity to suppliers, customers, competitors, etc., generates positive economic externalities, which favour companies for "the sole reason" to be located there¹⁴³ (Oerlemans and Meeus, 2005).

Peripheral enterprises, that is to say enterprises located in territories where such advantages do not exist due to physical proximity, do not benefit from this favourable situation. It is generally assumed that successful enterprises located in peripheral territories derive competitive advantage from the endogenous variables to the enterprise, without receiving any benefit from the surrounding territory. According to this model of thought, qualities of the productive factors of the enterprise, and first and foremost the role of the entrepreneur, would be, in this context, much more important than the exogenous variables related to the environment and the territory in which the enterprise operates. This is because these variables would be almost a foreign body to the company, which would have few relationships with the surrounding territory: few horizontal relations with competing companies, contrary to what happens in the districts; few relations with the companies in the supply chain, contrary to what happens for the companies in the clusters; few relationships with customers and suppliers, in contrast to urban businesses.

However, there are a number of cases of peripheral areas which have succeeded, due to a number of characteristics (economic history of the territory, cultural characteristics of the local population, etc.), in creating exogenous advantages for the affected enterprises (for example, the Emilian model).

The territory, peripheral or urban, produces both advantages and structural disadvantages in favour of the enterprises located there. An example on peripheral districts may be identified in enterprises belonging to an industrial cluster (see paragraph 4.3.1). The advantages of belonging to a cluster are clear in the vertical integration that is created between companies in the same chain, or horizontal ones between companies in different sectors. However, there are many successful companies, which are located in territories that are not industrial districts, urban areas or even areas of territorial clusters. There is therefore a possibility that this success may be partly attributable to the territorial variables. A possible explanation of this phenomenon is that the territory contributes, like other factors, to the economic success of the company. The territory that surrounds the enterprise has an importance, in most cases, in the success or the failure of the business carried out by an enterprise.

The structural characteristics of a peripheral area can become a factor of attraction for new enterprises or of roots for enterprises already inserted in the local economic fabric. The type of enterprise that

¹⁴³ Oerlemans L.A.G., Meeus M.T.H., (2005) "Do Organizational and Spatial Proximity Impact on Firm Performance?", *Regional Studies*, 39(1)

aims to establish roots in similar territories are the ones that do not have need of the present economies in the industrial clusters (as operating outside a structured supply chain) or services and customers available in large urban areas (as operating with international suppliers and customers). Even though it is under trace, during the 1980s, in many peripheral areas an "atypical" industrial fabric has formed, which has exploited the homogenization of the industrial fabric in many economically advanced countries, thus benefiting from the proximity of industrial districts and clusters¹⁴⁴ (Kim, 1999). This behaviour, however, remains mainly valid for companies operating in the economic sectors that arose after the Digital Revolution, while for companies operating in the "traditional" sectors, the advent of the economic and social transformations of that period (see paragraph 2.3) has led to a reduction in the costs of transporting raw materials, products and information, which has made relocations not close to supply or outlet markets much more convenient, but close to areas with affordable labour costs or digital infrastructure.

Another factor influencing the choice where to locate an enterprise may be share capital. It has already been discussed how the evolution of economic systems has led to a revaluation of cognitive capital in the eyes of companies (see Chapters 2 and 4), but in some sectors companies may look for characteristics other than cognitive quality. In general, the level of social capital of a territory depends on the links that are established between agents, links that also encourage the circulation of knowledge and information and stimulate entrepreneurial activity¹⁴⁵ (Geddes e Newman, 1999). In peripheral and rural areas, social capital has greater cohesion, a more homogeneous level of cognitive capital and a strong collective identity¹⁴⁶ (Bourdieu, 1986). For some economic sectors (for example, chemical, metallurgy or mining), these characteristics are more useful than high cognitive capital or fluid social capital. This partly justifies the location of enterprises in peripheral or rural areas: the principles and values inherent to a place, encourage local growth and the development of economic activities¹⁴⁷ (Pike, Rodríguez-Pose and Tomaney, 2010). This also explains, for peripheral companies, a company organization that presents more labour intensive than capital intensive. Within the single sectorial groupings, the capital per employee of the peripheral enterprises is always lower than the one of metropolitan and district enterprises, indicating that also at parity of productive field, peripheral enterprises have a different production organization, in which work is rewarded through investment in capital.

An additional variable that explains the advantage of locating in peripheral areas can be linked to the added value, namely the creation of wealth generated by a company. Such economic variable, influenced by the degree of productive decentralization and outsourcing carried out from the enterprise, can be present, in relative values always tied to the value of the turnover, in greater percentage in the situated companies in peripheral areas. The difference is attributable to a different vertical integration of the organizational structure: peripheral enterprises produce more to own inside, while metropolitan and district enterprises mainly use the productive decentralization. The presence

¹⁴⁴ Kim S., (1999) "Regions, resources, and economic geography: Sources of U.S. regional comparative advantage, 1880-1987", *Regional Science and Urban Economics* 29, 1–32

¹⁴⁵ Geddes N., Newman I., (1999) "Evolution and conflict in local economic development", *Local Economy*, 13

¹⁴⁶ Bourdieu P., (1986) "The Forms of Capital", *Handbook of Theory and Research for the Sociology of Education*. Greenwood Press, New York 1986, pag. 241-258

¹⁴⁷ Pike A., Rodríguez-Pose A., Tomaney J., (2010) "What Kind of Local and Regional Development and for Whom?", *Regional Studies*, 41(9), 1253–1269

of a supply chain on the territory favours the organization of the de-verticalized enterprise, typical of the industrial districts or the clusters, to the contrary of what happens in the peripheral areas. Companies that live in global urban areas use a large number of services, to which many business functions are delegated. On the contrary, the peripheral enterprise must maintain these functions internal, thus leading to a lowering of added value.

The competitive advantages that a company can find in a peripheral area are mainly due to some characteristics:

- The territorial component: that means the presence of a raw material, or more environmental conditions that make it particularly advantageous for the company to settle in a given place. Of course, these advantages are available to certain economic sectors (agri-food, wood, paper, tourism, etc.), but they allow, over time, the creation of a skilled workforce, which allows companies to expand their influence in foreign markets, without having to relocate production. The possibility of building its own specialized labour force, which is difficult to replicate elsewhere, thus creates a competitive advantage;
- The social characteristics of the territory, or the possibility of building social, family and cultural ties with the surrounding area, giving rise to a strong social and cultural identity of the company. Such identity, very often, is transmitted also in the markets where the enterprise competes, allowing it a competitive advantage. The construction of a "core business" linked to a strong social and cultural identity in many economic sectors is fundamental to the success of the business conducted by the company. This identity is much more difficult to build in large urban areas, where different aspects of social capital are favoured;
- The absence of conflicting industrial relations. A static social environment, like that of peripheral areas, makes creative processes more difficult to happen in companies, but generates a low turnover of staff, with no strong social conflicts. The peripheral areas where the economic fabric manages to develop, own part of their success also to a strong and collaborative relationship between entrepreneurs and the working class;
- The lack of dependence on local demand. A company located in a peripheral area can expand easily, thanks to the development of competitive advantage, thus going to untie its production cycle with the demand of the local market. In the past the level of income per capita of some peripheral areas, linked to a specialized agricultural sector, has played a fundamental role in the development of an industrial fabric, but today such link no longer exists. With time, thanks to adequate managerial resources, the strategy of making international a business is the most advantageous choice. The absence of economic links with local demand therefore makes the export of these companies more favourable, regardless of the type of their products, which can indeed boost their cultural and social identity in international markets;
- The reference to the product. It is the main advantage of peripheral areas. The final quality of the product, the customization of the production, the productive flexibility are very "traditional" factors of the competitive advantage, that are possible to find in the determinants of the success of many famous brands (Ex: "Made in Italy"), independently from the sector concerned. Nowadays, with the centralization of cognitive and financial resources in large urban areas, peripheral areas can contrast with the cultural, economic and social background of their products, almost impossible to replicate. Such strategy can be implemented through two ways: through the application of new technologies, or through the dedicated care of details

and production particulates. Peripheral enterprises generally follow this second strategy, implementing an industrial organization which is based on the artisan care of details and on customization. Through the personalization of the product, such enterprises can obtain competitive advantages hardly replicable from other competitors. Generally, the successful company's response is a strategy that is based on a sort of "return to the origins", especially in the more "traditional" sectors such as the agri-food one. In order to differentiate the product from the competition of the big players, the focus is on the concept of traditional product, using technologies that allow to reduce the costs, improve the quality and the performance of the product, provided that it is still associated with the image of traditional production. The work of marketing, and innovation that requires the implementation of such a strategy is very high, since a company need to know how to combine quality production, link it to skilled labour or to particular raw materials, but also have a certain flexibility, which allows to "anticipate" the tastes of the reference market and adapt quickly to it. This also needs a robust marketing campaigns, to show customers an image of quality and tradition.

It is interesting to note that the innovation incorporated in the new machinery does not help the competitive advantage of peripheral enterprises, since it is the "old" machines that best meet the needs of the traditional product, in which the quality of the details makes premium on the reduction of the productive costs. The same statements are valid for customer service strategies, some of which are precisely against the current dictates of modern business economics. The company's innovations are not technological but organizational or commercial. For example, the packaging of the finished product is carried out manually to give the product the traditional or artisan image that seeks the customer. The goal is to expand production without having to sacrifice the quality of the product, as well as the image that marketing strategies convey.

On the contrary, companies operating in global urban areas rely more on the large density of available cognitive and financial capital, in addition to the possibility of high-quality services and infrastructure. They focus more on the use of the creative process to build a long-lasting competitive advantage. In light of this differentiation, it can be said that, very often, it is the economic sector in which a company decides to operate which influences the choice of the place where to take root. Peripheral territories can focus on their historical and cultural background, to be mixed with entrepreneurial skills and innovation. The economic model of Emilia (see paragraph 5.3) shows how it is possible to coordinate, through modern marketing strategies, dynamism and flexibility within the production process, without losing in customization and quality of the final product.

6.2 Digitalisation between urban and peripheral areas

The phenomenon of digitization, which has been going on for the past forty years, has profoundly changed the way of understanding the economy. Through the evolution of many economic sectors, digital infrastructures have allowed the expansion, or the decline, of many urban and peripheral areas, changing their social, cultural and economic fabric. In Chapter 2, these economic and social transformations have been analysed: they have continued, until nowadays, with the advent of the so-called "Industry 4.0" (see Chapter 3). The formation of contexts in which cognitive and financial capital abound, has made these environments fundamental for modern companies, increasingly in need of using financial and human capital to compete. From many points of view, in fact,

digitalisation and digital technologies have changed the structure of companies, forcing them to adapt to changing economic systems. However, these technologies are interpreted in a different way within the different organizations, according to the type of sector in which they compete and the territory where they operate.

Among the enterprises which have adapted the fastest to the use of such technologies, there are companies that have been able to put as a major goal to provide a better experience for the customer. Digital technologies allow to create new types of customer relationships. A summary definition of digitalisation can in fact be "The re-alignment of, or new investment in, technology and business models to more effectively engage digital consumers at every touch point in the customer experience lifecycle"¹⁴⁸ (Dal Porto, 2016). The first cause of the use of such technologies is the need to rethink the way of approaching customers, offering an experience aligned with their expectations. These expectations are formed during the daily use of technology, which evolves at an often-unknown pace, and which changes the way in which users interpret they make use of. Consumers, or end users, through the use of digital technologies have a huge amount of information available, which allow them to know the characteristics of a single product before purchasing it. Therefore, the fundamental role of Language and Communication (see paragraph 2.1.2) comes into play, and it must be used in parallel with the use of new digital technologies. Creating a quality product for a company nowadays is not enough, because it must be able to create communication and marketing strategies that exploit, through the sale of the final product, a competitive advantage over time, allowing the creation of an effective interaction, both real and online, with the consumer. From this point of view, the territory in which the company operates and competes must be able to allow the exploitation of both digital technologies and Language and Communication. Operating in a context which is rich in digital infrastructures, but which limits the potential of communication during the construction of a competitive advantage, may be a disadvantage for an enterprise in the long run.

However, the opposite also applies. A territory which is poor in digital infrastructures, makes it difficult to create online relationships with customers, and creates an important competitive disadvantage for operating companies. Traditional communication channels have long been a "saturated" component, which can no longer be exploited by companies. The use of more modern and immediate communication channels, which allow a direct relationship with the final consumer, are much more complex, but over time allow the creation of a close relationship, which brings a fundamental competitive advantage. This is because the benchmark by which consumers form their expectations is no longer limited to the experience provided by the competitor of a similar producer, but rather depends on the best experience available in all markets with which they interact¹⁴⁹ (Barbera, 2014).

Another relationship that has changed due to the use of digital technologies is the one with the market. It has already been discussed how the crisis of the Fordist model, with the advent of Toyotism, overturned the balance of power between companies and markets (see paragraph 1.3). Modern markets, where companies operate, are constantly changing. Innovation means that new players without experience or capital, relying only on a technology or an innovative idea, can impose their

¹⁴⁸ Dal Porto L., (2016) "La trasformazione digitale nelle imprese: fenomeni digitali e pratiche organizzative dopo l'avvento della trasformazione", Università degli Studi di Padova, <https://doi.org/10.1021/acs.biochem.5b01040>, pag. 9

¹⁴⁹ Barbera M., (2014) "Cambiamo modo di giocare nella gestione cliente"

presence in markets previously characterized by few dominant companies. The very boundaries of a market and the entities operating within it become undefined, giving rise to very intense convergence phenomena; companies with large financial and cognitive capital, that have access to high digital know-how, have the opportunity to attack new markets, even if they are very far from their own position. By building their own competitive advantage through the implementation of digital solutions, these companies are able to cover in a short-time the technological-productive gap compared to companies that adopt a traditional approach. In such a dynamic scenario, the ability to easily access high-quality digital infrastructure and services allows businesses to move quickly and flexibly, and to react in time to threats not only from their direct competitors but also from companies operating in other sectors.

A third, big change that took place with the advent of digital technologies is the use of data. A huge amount of consumer information, known as "Big Data", is collected at every contact with the company and at every action in the network (see paragraph 3.2). Consumers, at every action they take online, leave data, which are collected and used by companies to improve their economic performance on the markets, and to strengthen their competitive advantages through the relationship with the consumer. Production processes have also undergone a drastic evolution. The application of digital technologies makes it possible to reinvent processes by increasing their efficiency and effectiveness and freeing the workforce from repetitive tasks and low value-added (see paragraph 3.1); the new automation and robotization technologies make it possible to suspend or adjust a production process at any time and even remotely, the machines are increasingly connected with each other, with the workers and even outside of the organization, through a continuous flow of data¹⁵⁰ (Almada-Lobo, 2016).

From these considerations, it can be noted that the primary priority of an organization that aims to create a digital business is the creation, management and dissemination of the information in their possession and the ability to transform it into actions capable of generating value and competitive advantage. The resulting digital platforms have the following characteristics:

- Instant availability: generated information must be immediately available to decision-makers. For this to be possible it is necessary that the entire business system is connected, to communicate in real time;
- Sharing: the number of subjects able to access the information, as well as the number of subjects that contribute to the creation of the same, must be as high as possible. In fact, it is no longer necessary for the information to be elaborated and transmitted through the levels of the organization, to then be aggregated and transformed into directives by the managers, but it can immediately aggregate into an organized digital space and be used by workers in real time;
- Standardization: in order for information to be available to anyone who needs it, and comprehensible to all stakeholders within the organization, it is necessary to standardize and integrate the processes with which information are created and collected, through a centralisation of the information and technology systems of the company.

¹⁵⁰ Almada-Lobo F., (2016) "The Industry 4.0 revolution and the future of Manufacturing Execution Systems (MES)", Journal of Innovation Management, Vol. 3 No. 4 January 2016, DOI: 10.24840/2183-0606_003.004_0003

From these characteristics, it can be deduced how such economic and organizational model is more likely to happen in urban areas, where it is possible to supply the services and the digital infrastructures necessary for its application. Peripheral areas, on the other hand, are unable to apply this economic model with the same ease, both for the different types of human capital present and for the lack of investments in the creation of the necessary infrastructure. The ability to communicate, work and transmit information remotely, in fact, which in theory should have favoured such areas, has not been fully developed. To date, most of the infrastructure needed for companies which make intensive use of digital technologies is mainly concentrated in large urban areas. The same capacity of innovation of peripheral areas (see paragraph 6.1), only partially implements the advantages of digital technologies on the Communication and Language side. Therefore, to date, the phenomenon of digitalization is building and implementing economic and social models that create conditions of competitive advantage for the economic fabric of globalized urban areas.

6.3 The factor Covid-19

The analysis in the previous chapters highlighted the centrality of territories in the process of economic development. Territories have become an important variable to explain the opportunities that are seized in some areas and regions and the constraints to the development process. The historical and cultural conditions and the socio-economic characteristics of the different territories play an important role; their differences can explain the different paths of development undertaken in different areas for history, culture and geography. The space stops being a mere cost for the enterprises, and assume instead the role of fundamental variable for the construction of a competitive advantage; the territory becomes the point of encounter between the various economic subjects, that they can collaborate or collide with each other. Ultimately, it is the meeting place between market forces and forms of social regulation¹⁵¹ (Krugman, 1991).

However, the relationship between the territory and economic entities, has entered a crisis, also taking on unprecedented implications: in the first months of 2020, a new respiratory virus (Covid-19, acronym of Coronavirus, while 19 indicates the year in which it was discovered, 2019), became a global issue. On the 30th January, the World Health Organisation declared a global health emergency and on 11th March, a pandemic. Within a few weeks, millions of people have been forced to live with this new, threatening presence, changing life and work habits. This has had a profound impact on many service industries, ranging from the tourism and healthcare sector through to the retail and leisure industries. In fact, in addition to having to be closed for quite long periods of time, companies from these sectors have also had to completely reinvent their organizational structure forcing many workers to work "remotely" from their homes.

The breakthrough was sudden and unprecedented. The lockdowns which millions of workers have been forced to observe have profoundly altered the concept of work. Within a few weeks, the use of digital technologies has exploded everywhere, even in economic sectors that have been very resistant to its use until then. Many sectors of the economy, which until then had flourished, entered a deep crisis, perhaps irreversibly, with alarming peaks of unemployment in many economically advanced

¹⁵¹ Krugman P., (1991) "The Strategies of Economic Development"

countries¹⁵² (Goldsmith-Pinkham, 2020). Others, on the other hand, managed to achieve unthinkable growth margins until a few months ago. Such a change in the world of work has influenced the economic fabric of urban and peripheral areas, with not yet fully predictable implications.

The first issue to be investigated concerns the working class. Erik Brynjolfsson, John Horton and other researchers started a survey, through the use of Google Consumer Surveys (GCS) instrumentation. The question they asked to thousands of American workers was “Have you started to work from home in the last 4 weeks?”¹⁵³ (Brynjolfsson and et al, 2020). Answers could be selected from the following options:

- 1. “I continue to commute to work”;
- 2. “I have recently been furloughed or laid-off”;
- 3. “Used to commute, now work from home”;
- 4. “Used to work from home and still do”;
- 5. “Used to work from home, but now I commute”;
- 6. “None of the above / Not working for pay”.

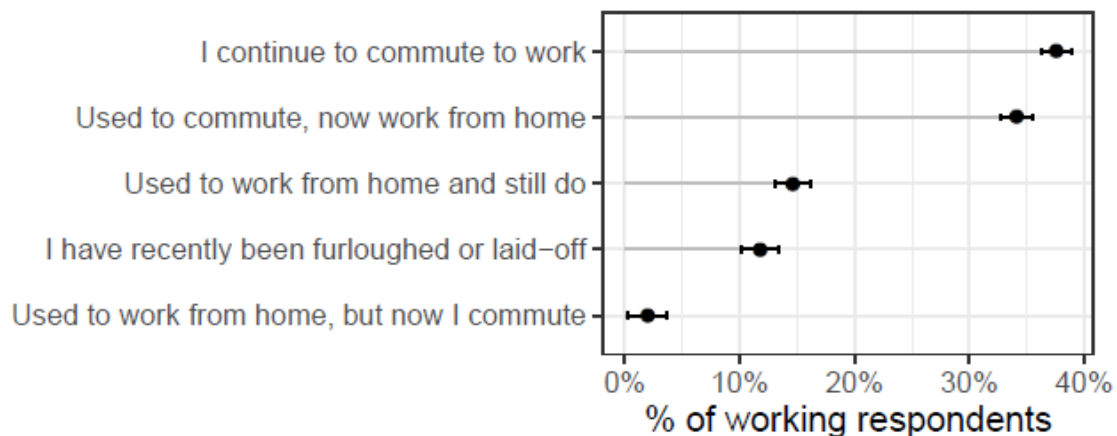


Figure 6.1: Answers to the question “Have you started to work from home in the last 4 weeks?”, conditional upon being in the labour force from a US sample. Source: (Brynjolfsson and et al, 2020)¹⁵⁴

Results show that 57% of respondents responded “None of the above / Not working for pay”¹⁵⁵ (Brynjolfsson and et al, 2020). The remaining workers responded as shown in Figure 6.3.1. It is possible to see that the most common response from workers is that they continue to commute, at 37.6%, but the next most common is that they have switched from commuting to working from home, which are around 34.1%. In addition, 14.6% reporting they were already working from home pre-Covid-19. This suggests that nearly half the workforce is now working from home, a much higher

¹⁵² Goldsmith-Pinkham, Paul and Aaron Sojourner, (2020) “Predicting Initial Unemployment Insurance Claims Using Google Trends”, Working paper

¹⁵³ Brynjolfsson E., Horton J., Ozimek A., Rock D., Sharma G. and Yi Tu Ye H., (2020) “COVID-19 and Remote Work: An Early Look at US Data”, pag. 2

¹⁵⁴ Brynjolfsson E., Horton J., Ozimek A., Rock D., Sharma G. and Yi Tu Ye H., (2020) “COVID-19 and Remote Work: An Early Look at US Data”, pag. 4

¹⁵⁵ Brynjolfsson E., Horton J., Ozimek A., Rock D., Sharma G. and Yi Tu Ye H., (2020) “COVID-19 and Remote Work: An Early Look at US Data”, pag. 3

figure than theoretically estimated. For example, Krantz-Kentkrantz uses 2013-2017 American Time Use Survey (ATUS) data to show that 20.5% of workers work from home in some way on an average day¹⁵⁶ (Krantz-Kentkrantz, 2019). From this simple survey of American workers, we can understand the magnitude of the change that this pandemic has caused in the professional world, the consequences of which are still largely unknown.

From a territorial point of view, it is interesting to note that this pandemic, although spreading all over the planet, has heavily affected large urban areas, the global nodes capable of attracting financial and cognitive capital to act as the creative and economic engine of countries. Continuing with the previous analysis, it is important to stress that New York was the epicentre of the pandemic in the United States, forcing the economic fabric of the metropolis to adapt to this extraordinary situation. In Figure 6.3.2, the origin of the respondents was traced, thus sorting their answers according to their place of origin, dividing them into regions of "Northeast", "Midwest", "West", and "South."

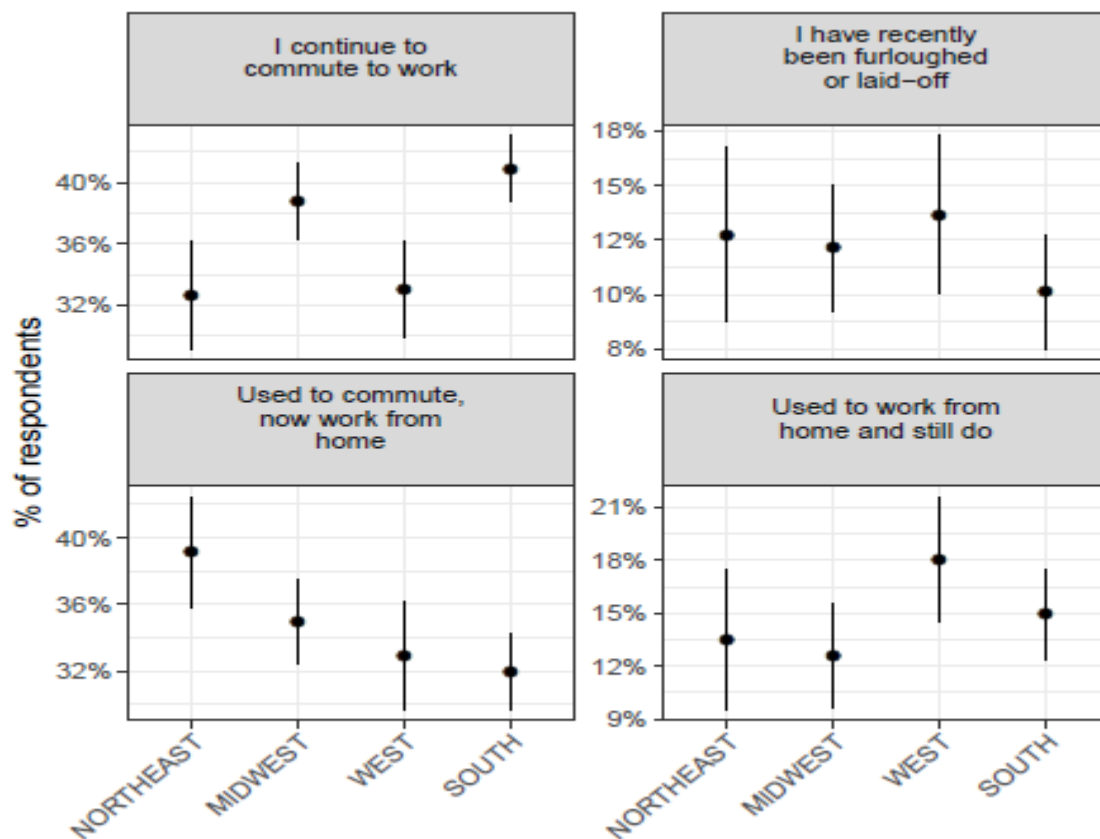


Figure 6.2: Responses by US region. Source: (Brynjolfsson and et al, 2020)¹⁵⁷

In the first facet from the left, it is possible to see that the Southern part of the country has the highest fraction of population still commuting to work and the Northeast has the lowest. In the second facet from the right, instead, the Northeast has the highest fraction of respondents switching to working

¹⁵⁶ Krantz-Kentkrantz R.M., (2019) "Where did workers perform their jobs in the early 21st century?", Monthly Labor Review, pag. 1-10

¹⁵⁷ Brynjolfsson E., Horton J., Ozimek A., Rock D., Sharma G. and Yi Tu Ye H., (2020) "COVID-19 and Remote Work: An Early Look at US Data", pag. 6

from home, and the South has the fewest. The Northeast started from the lowest fraction working from home, though these fractions are imprecisely estimated and are all fairly similar to each other. The Northeast fraction actually working from home is over 40%¹⁵⁸ (Brynjolfsson and et, 2020).

Even if taking into account possible inaccuracies, it possible to see from these data how the economic and social fabric of an urban area has a great deal to do with quantifying the changes that this pandemic is bringing to economic systems around the world. Paradoxically, the larger and better-connected urban areas are suffering from a rapid depletion of their human capital, thanks to the digital technologies that, in the past decades, have largely built the economic fortunes of these metropolises.

From this simple analysis, it is possible to understand how the pandemic caused by Covid-19 altered the working habits and lifestyle of each individual. The forced need to feed the "social distance", in order to minimize the opportunities for infection and transmission of the virus, forced companies to reshape the working methods of their employees, intensifying the so-called "Remote Working". While the dematerialisation of the place where the provision of a service takes place may even mean the simplification of certain bureaucratic practices, as well as a more intensive use of digital technologies and infrastructures, for some types of workers (in particular those working in the tertiary sector), measures of social distance may have negative effects. This is the case of workers from the CCI sector (Creative Cultural Industry), many of whom are habitual users of coworking spaces (CS) as co-workers (CW). Co-working spaces are "third places", which is an alternative to home work (first place) and traditional office work (second place), where self-employed, freelancers and businesses can interact, thus reducing the risks of isolation, increasing opportunities to meet and exchange knowledge and information, which encourage new business opportunities¹⁵⁹ (Van Oort, 2003). Dynamic interaction and physical, social, cognitive and organizational proximity are the very essence of the CS, where interchange is vital to the functioning of such modern communities of workers¹⁶⁰ (Mariotti and Akhavan, 2018) (see the example of Milan in paragraph 5.1). The lockdown (partial or total) required by an increasing number of cities and metropolitan areas, which increases as the virus spreads around the world, poses a threat to the tightness of co-working spaces, which feed the economic and social fabric of these areas.

In a scenario in which almost all the productive activities of goods and services inevitably find themselves suffering from the lockdown and the consequent impossibility to carry out their activities regularly, the CS and their users risk serious economic and social consequences. The majority of CS are located in some of the cities and metropolitan areas most affected by the pandemic. In the light of the first resilient experience of the Hubei Chinese region with the city of Wuhan, it is clear that the most interconnected cities are largely affected by the virus, and will be those that need more time to ensure the restoration of all activities and the gradual return to normal economic activity¹⁶¹ (Florida, 2020). Given that these urban areas are growing, economically, culturally and socially, particularly

¹⁵⁸ Brynjolfsson E., Horton J., Ozimek A., Rock D., Sharma G. and Yi Tu Ye H., (2020) "COVID-19 and Remote Work: An Early Look at US Data", pag. 5

¹⁵⁹ Van Oort F.G., Weterings A., Verlinde H., (2003) "Residential amenities of knowledge workers and the location of ICT-Firms in the Netherlands", *Journal of Economic and Social Geography (TESG)*, 94: 516–523

¹⁶⁰ Mariotti I., Akhavan M., (2018) "The effects of coworking spaces on local communities in the Italian context", *TERRITORIO*, 87/2018, pp. 85-92, DOI:10.3280/TR2018-087014

¹⁶¹ Florida R.L., (2020) "We'll Need To Reopen Our Cities. But Not Without Making Changes First", CityLab

by virtue of their attractive and aggregating power vis-à-vis financial and cognitive capital, the risk of a period of long agony for them is very real.

However, even at the end of the sanitary emergency, some CS and their economic activities could, at least in the short term, not return to their initial status: dramatic exogenous shocks, like the pandemic, require resilience that not all individuals or businesses are able to find at the same time. Activities carried out within the CS are characterized by frequent interchanges. The possibility of frequently interacting with other people could rekindle the fear of contagion and discourage physical presence in workplaces, even if companies encourage the creation of workstations that ensure the "safety distance" between co-workers and an adaptation of facilities from the hygiene point of view. This cost, however, will fall almost exclusively on companies, in addition to the already serious economic damage suffered by the lockdowns imposed by national governments in the first months of this year. It must also be considered that many of workers that operate in these urban areas, carry out activities that are also suitable to be carried out remotely, as they need a sparse digital instrumentation. A short-term contraction of these new areas of work is very likely, forcing companies to live with this new organizational situation, which also enjoys consensus on the part of public stakeholders. Because of these factors, possible relocations or reconversion of the activities of CS and its CW in peripheral areas could, in some cases, be a viable solution for several reasons:

- The potential benefits of owning a workplace in a peripheral or rural area. Akhavan et al. (2020) noted that CS in peripheral areas are more likely to organize and participate in activities with potential positive impact on the territory in which they are located (for example, facilities with bars and shops in the neighbourhood) compared to CS located in urban areas¹⁶². To this, one must add the so-called "soft-factors" (higher levels of well-being and less perceived stress, absence of urban congestion, traffic and pollution, etc.) which, from a psychological point of view, may influence a worker's choice as to whether or not to work remotely¹⁶³ (Fuzi, 2015);
- Through a direct 2018 survey¹⁶⁴ (Mariotti and Di Matteo, 2020), applied to CW from all over Italy, it was concluded that CW workers in peripheral areas have a greater chance of increasing their revenues than those operating in urban areas. This result is obtained through a non-parametric evaluation method, cataloguing the subjects interviewed between individuals located in the "peripheral areas" of the country and individuals located in "central areas". The ideal "treatment" obviously corresponds to the possibility of benefiting from the environmental and surrounding benefits that remote areas can offer compared to urban areas with greater congestion;
- A lower level of spread of the virus. The peripheral areas, by virtue of having a lower quantity of cognitive and financial capital, are those that seem to be attacked the least by the spread of Covid-19 (conveyed by the movement of people). It is likely that these territories will be the first to be able to remove the barriers of "social distancing", quickly returning to normality at the end of the emergency and delivering an image of themselves as "safe places". Peripheral

¹⁶² Akhavan M., Mariotti I., Di Matteo D., (2020) "The Geography of Coworking Spaces and the Effects on the Urban Context: Are Pole Areas Gaining?", *EyesReg*

¹⁶³ Fuzi A., (2015) "Co-working spaces for promoting entrepreneurship in sparse regions: the case of South Wales", *Regional Studies, Regional Science*, 2:1, 462-469, DOI: 10.1080/21681376.2015.1072053

¹⁶⁴ Mariotti I., Di Matteo D., (2020) "Understanding the economic performance of Coworking Spaces in core vs. peripheral areas", *EyesReg, Giornale di scienze regionali*, 10, 2

areas also benefit from a certain rate of innovation (see paragraph 6.1), which can be used as a basis for increasing their economic attractiveness and encouraging human and cognitive capital to stay longer.

Peripheral areas are facing an important opportunity, namely to promote initiatives to attract CS managers, for example by offering advantageous tax conditions or incentives to relocate these activities within their territory. They can increase it is the offer for dedicated spaces (libraries) in which CW can conduct remote working without having to leave home. The same coworking managers could begin to look with renewed interest to peripheral areas that were previously excluded from their strategies, due to the difficulties to a return to “normal” in large urban areas. Such initiatives, however, require a rethinking of the services provided by co-working and, more generally, of the business model that reduces the physical component and enhances the intangible component. In fact, while confirming the validity of these possible scenarios, there are some problems that make it difficult to relocate cognitive resources in peripheral areas:

- The tertiary sector with a high intensity of knowledge, innovation and creativity needs certain conditions to be able to express its potential¹⁶⁵ (Florida, 2002). While, on the one hand, certain conditions typical of peripheral areas can lighten tensions and encourage "soft factors", on the other hand the absence of certain structural assets such as digital infrastructure (for example, broadband), may discourage the installation of economic activities;
- The absence of solid links between peripheral and urban areas (transport). Face-to-face contacts with customers and suppliers located in large cities, a very common co-workers working aspect¹⁶⁶ (McCann, 2008), which would need adequate transport infrastructures;
- The lack of design for the long term. If most companies decide to allocate their cognitive capital on a permanent basis in peripheral areas, it would be necessary to verify: the demand for potential users, the willingness to reorganise activities in non-central areas and to pay for the services offered; a possible distortion of the concept of CS, given that it would lose the dynamism and involvement in space sharing, and acquiring the function of a more static work activity. Beyond the complexity of such business reorganisations, the uncertainty of the time horizon of the operation and therefore the impossibility of estimating precise amortisation times of the investments necessary for similar reallocation of cognitive capital.

Even from an academic point of view, the Covid-19 factor is creating numerous unknowns. The academic world must relate to the obligation to teach at a distance which, in fact, strongly penalizes the educational offer of universities. From this point of view, it is unlikely that universities will move their premises to peripheral areas, both because of the difficulties mentioned above and because of the difficulty in finding suitable buildings and infrastructures to maintain the high quality of university courses.

However, it is also true that the Covid-19 event can allow a deep reinterpretation of urban areas, perhaps improving some development aspects neglected in the past. This economic crisis is an opportunity to improve the "soft factors", such as plans to liberate more public space for pedestrians

¹⁶⁵ Florida R.L., (2002) “The Rise of the Creative Class: And How It’s Transforming Work”, Leisure, Community and Everyday Life (New York: Basic Books)

¹⁶⁶ McCann P., (2008) “Globalization and economic geography: the world is curved, not flat”, Cambridge Journal of Regions, Economy and Society, Volume 1, Issue 3, November 2008, Pages 351–370, <https://doi.org/10.1093/cjres/rsn002>

and cyclists, moving us closer to greener cities and a low carbon economy¹⁶⁷ (Nieuwenhuijsen, 2020). In the early days of the crisis there was considerable discussion about the need to widen sidewalks and re-design pedestrian crossings in order to meet social distancing recommendations. Milan appears to be the first to announce permanent changes, with the widening of sidewalks, 35 km of new bike lanes and the removal of entire lanes for vehicles; other cities such as Boston, London, Portland and Vancouver have begun reconfiguring streets to accommodate for more cyclists and pedestrians over longer distances¹⁶⁸ (Hawkins, 2020). This period may invite cities to implement low cost and temporary pedestrianisation projects, potentially following principles of tactical urbanism¹⁶⁹ (Lydon and Garcia, 2015).

Another factor, which has reached an important media prominence in recent months, is the issue of health and its link to urban development. Including health considerations in the design of public space is not new¹⁷⁰ (Nieuwenhuijsen and Khreis, 2019), in fact the inclusion of health criteria in public space design is still incipient, even if several authors have worked on tools that may assist planners and designers to conceptualize, design and build with a health perspective¹⁷¹ (Bird et al., 2018). For example, street re-designs that free space for pedestrians and for active mobility can help meet several public health objectives, notably through physical activity and the reduction of pollution exposure. Until now, health issues have always been considered secondary in the development analysis of urban areas, often combining them with the generic theme of "Welfare". The Covid-19 crisis is an opportunity to reassess this issue, strengthening the factors that limit greetings problems to residents of these areas.

Another aspect to reconsider is large public spaces. A potential consequence of Covid-19 is a generalized aversion to large crowds. Concerts, cultural events, sporting events all bring together many people, often in public squares and plazas. There is a possibility that the fears of a potential contagion will persist even at the end of the pandemic, making it very difficult for such manifestations to take place. Such a shift could have implications on the design of cities but also important cultural and political consequences. Large public spaces have provided citizens with a space to organize, form groups, come together and voice political dissent throughout human history. A permanent aversion to large public gatherings might change how cities are designed. A post-Covid-19 world might value these large flexible spaces as assets. Public spaces are a key feature of a resilient city, partly because of their ability to be transformed for emergency health purposes¹⁷² (Polko, 2010). In the light of the current pandemic, the value of large public spaces may push us toward modular and decentralized designs that allow this flexibility.

¹⁶⁷ Nieuwenhuijsen M., (2020) "Urban and transport planning pathways to carbon neutral, liveable and healthy cities; A review of the current evidence", *Environment International* 105661, DOI: <https://doi.org/10.1016/j.envint.2020.105661>

¹⁶⁸ Hawkins A.J., (2020) "There is no better time for cities to take space away from cars"

¹⁶⁹ Lydon M., Garcia A., (2015) "A Tactical Urbanism How-To", In: *Tactical Urbanism*. Island Press, Washington, DC. https://doi.org/10.5822/978-1-61091-567-0_5

¹⁷⁰ Nieuwenhuijsen M., Khreis H., Verlinghieri E., Mueller N., (2019) "The Role of Health Impact Assessment for Shaping Policies and Making Cities Healthier", *Integrating Human Health into Urban and Transport Planning*, Springer, pp. 609–624, doi:10.1007/978-3-319-74983-9

¹⁷¹ Bird E., Ige J.O. and Pilkington P. et al, (2018) "Built and natural environment planning principles for promoting health: an umbrella review", *BMC Public Health*

¹⁷² Polko A., (2010) "Public space development in the context of urban and regional resilience", *Cambridge Journal of Regions, Economy and Society* 3

Through these examples it is possible to understand how the crisis generated by Covid-19 has forced all economic actors to rethink their strategies, especially within global urban areas, which have suffered the most from this new exogenous factor. Today it is impossible to predict it with certainty if such modifications will be effective only in the short term, or if they will be implemented further in the medium-long period from the economic subjects, leading therefore to a new variation in the relationships between urban areas and peripheral areas.

Conclusions

The conclusions of this analysis are heterogeneous. The transformations of the economic and organizational models of companies have certainly favoured the development of some types of urban areas, and created the conditions to attract cognitive and financial capital. From the first industrial model that has opted for a new enhancement of cognitive capital, Toyotism, the new models of Industry 4.0 have developed, which exploited the data to implement fully automated production and sales processes. The origins of this turning point, which started with the saturation of the market by the Fordist model, have led to controversial phenomena, such as offshoring. The latter, while considerably increasing world trade and economic integration between States, has made it possible for companies to relocate part of their production cycle to areas with low-cost cognitive capital or facilitated access to new digital infrastructures. Therefore, in addition to the peripheral areas, which in the Fordist model were still considered an active part of the economic system, many urban areas have also seen themselves "stripped" of their economic fabric and human capital, thus delaying the transition towards a global economy. This phenomenon of "dispossession" has continued in recent years, during the so-called "Fourth Industrial Revolution", creating real economically depressed areas. The increasing use of digital technologies and infrastructures in economic systems has made it more convenient for most companies to operate within a global urban fabric, able to offer both infrastructure for the enhancement of financial capital. This because their offers training, through the academic world, are very attractive for the cognitive capital. For the first time in history, more than half of the world's population is now living in towns and cities, thanks to the presence of economies of scale that make concentrated urban centres more productive. The data show that urban areas have become increasingly important. In 2007, 1.5 billion people, 22% of the world's population, lived in the first 600 cities per size, with a Gross Domestic Product (GDP) of about 30 trillion (more than half of the world's)¹⁷³ (McKinsey, 2011). Within four years, the number of citizens living in the first 600 urban areas has risen to 2 billion (about 25% of the world's population), with an estimated GDP of over 60 trillion by 2025¹⁷⁴ (McKinsey, 2011).

The so-called "Digital Revolution" has therefore created "winning" and "losing" areas, contributing to the creation of popular discontent in the second ones. In the so-called "loser" areas also include urban areas that have not been able to transform their economic fabric of the Fordist mould, thus suffering from the phenomenon of "deindustrialization", combined with that of offshoring. However, this view remains simplistic, as the "New Economy" model has managed to reduce many social and economic inequalities, particularly in emerging countries, in the so-called "Third World" (see section 4.2.2). This productivity improvement from urbanization has already delivered substantial economic growth and helped to radically reduce poverty in countries such as China. The expansion of cities has the potential for further growth and poverty reduction across many emerging markets. The creation of "depressed" urban and peripheral areas is due to the concomitance of internal weaknesses and exogenous factors, rather than to the distortions of the economic system of the "New Economy". The examples of Milan and Turin, in this sense, can be useful to better understand this concept (see

¹⁷³ McKinsey Institute, (2011) "Big data: The next frontier for innovation, competition, and productivity", Lexington, KY: McKinsey & Company, pag. 6

¹⁷⁴ McKinsey Institute, (2011) "Big data: The next frontier for innovation, competition, and productivity", Lexington, KY: McKinsey & Company, pag. 7

paragraphs 5.1 and 5.2): both these urban areas have had to change their urban fabric, from a post-Fordist economic model, to a more "global" one. While considering the unique characteristics of these two territories, which adopted two different development strategies, the economic performance are profoundly different: Milan has been able to exploit a favourable geographical position and a good infrastructure base, through which it built a unique human capital network, which has been capable to build a creative and dynamic economic fabric. The result has been an urban area that, despite its internal weaknesses, became attractive to an increasing number of financial and human capital. Turin, on the contrary, focused on a development based on different strategies, coordinated by the Public Authority, and dependent on the use of public investments. As the support of the Public Authority decreased, with the financial crisis of 2008, the development of the city stopped, focusing on the "traditional" sectors of its economic fabric to face the crisis. This led to a blockage of the development of the urban fabric of Turin, which was "sucked" into the influence of Milan, losing competitiveness in the economic, educational and cultural fields.

Bologna, on the other hand, can be a useful example of successful peripheral areas in the current economic system. Bologna has been able to take advantage of the economic dynamism of the surrounding area (the Emilia model) which has always succeeded in distinguishing itself for its own capacities of innovation and for the territorial dispersion of its companies in cities of modest dimensions such as Sassuolo or Modena. Bologna has thus been able to maintain its industrial fabric of post-Fordist matrix, which has succeeded in innovating in its own sectors; at the same time it has developed a strong tertiary sector, through historical sectors such as academia and through new financial, commercial and tourism services.

From the example of Bologna, and of the Emilia model in general, it is possible to understand how peripheral areas must focus on their capacity of innovation, to build their own active role in the economic system. Companies operating in peripheral areas, in fact, can build important competitive advantages, difficult to replicate by competitors, such as linking their brand to the social and cultural fabric of the territory, or build over time a workforce specialized in the exploitation of natural resources in the area. These advantages can also be implemented in marketing strategies: in recent years, more and more markets have begun to favour the traditional or artisanal aspect within production cycles. A company operating in a peripheral environment can build an important competitive advantage by tying its brand to the territory, thus creating an almost non-replicable quality image for its products. Implementing such strategies also allows a very rapid commercial expansion for such companies, which can also enjoy the advantage of not having to depend on the "local" market for their economic success.

This potential, however, requires a massive diffusion of digital infrastructures, capable of allowing an evolution of the production process in companies operating in such contexts. The exogenous phenomenon caused by the Covid-19 virus fully shows this evidence. The pandemic that spread around the world in the first months of 2020 has mainly affected large, globalised urban areas. This forced companies that constitute the economic fabric of these areas to review their organizational process, leading to the so-called "Remote Working", where the employees work remotely, through the use of a rather sparse digital instrumentation. This situation could make the peripheral areas, by virtue of a lower presence of the virus, areas of great attractiveness for human capital, also thanks to

the presence of numerous "soft factors"¹⁷⁵ (Florida, 2002) absent in urban areas (less pollution, less stressful lifestyles, etc...). However, peripheral areas need investment to provide digital infrastructure, as well to create of social interaction spaces, often crucial in the CCI businesses, and which largely constitute the economic fabric of urban areas. To date, it is difficult to understand whether the exogenous factor of Covid-19 will create a permanent "emptying" of urban areas of their human capital in favour of peripheral areas, or whether this event will be only temporary. Certainly, this shock is creating numerous discussions about how to empower "soft factors" in urban areas, especially in the field of health, but at the same time it is showing how many peripheral areas, while they have the potential to build an active economic fabric, still need important structural investments to be able to build their own space in a constantly evolving economic system like the current one.

¹⁷⁵ Florida R.L., (2002) "The Rise of the Creative Class: And How It's Transforming Work", Leisure, Community and Everyday Life (New York: Basic Books)

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Glossary

- C2C = exchange of information only between humans;
- C2M = exchange of information between human and machine;
- CCI = Creative Culture Industry;
- CITF = Creative Industries Task Force Mapping Document;
- CPPS = Cyber-Physical Production Systems;
- CPS = Cyber-Physical Systems, a fusion of the physical and the virtual worlds;
- CS = Coworking Spaces;
- CW = Co-Workers;
- GDP = Gross Domestic Product;
- GINI coefficient = index of concentration to measure inequality in the distribution of income or even wealth through a numerical value between 0 and 1. Values close to 0 indicate a homogeneous distribution of wealth. In contrast, values close to 1 point to high levels of inequality;
- HICOM = Heavy Industries Corporation of Malaysia;
- ICT = Information and Communication Technology;
- IGD = Industrial Global Districts;
- IoT = the Internet of things;
- IoS = Internet of services;
- IT = Information Technology;
- INL = Industrial Network Level;
- Kan Ban = indicates an element of the Just in time system of reintegration of stocks as they are consumed;
- KM 4.0 = Knowledge Management 4.0;
- M2M = exchange of information only between machines;
- NESTA = National Endowment for Science, Technology and the Arts;
- OECD = Organisation for Economic Co-operation and Development;
- R = Receiver;
- R&D = Research and Development;
- S = Source;

- SMEs = Small and Medium-sized Enterprises;
- S.O.W. = Standardized Organization of Work;
- TCJA = Tax Cuts and Jobs Act;
- TCE = Transaction Costs Economics;