**Università degli Studi di Padova**

# Department of Economics and Management

Master Program in Business Administration

# HYBRID JOBS

## LITERATURE REVIEW AND APPLICATIONS

Supervisor Prof. Paolo Gubitta

Candidate Elena Pigato
ID Number 1124777

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# INDEX

**INTRODUCTION & SUMMARY ..... 3**

1. CHAPTER ..... 5

**HYBRID WORK: NEW JOB NEEDS NEW EDUCATION ..... 5**

1.1 Introduction ..... 5
1.2 Defining Hybrid Work from the scientific Literature ..... 7
Communication/Collaboration with Machine ..... 8
Mix between different sectors ..... 9
Data Analysis ..... 10
Digital Fluency ..... 11
1.3 Defining Actual Workforce, the od and new workers ..... 12
1.3.1 Active Workforce ..... 12
Silent Generation (born 1925-1945) ..... 13
Baby Boomers (born 1946-1964) ..... 14
Generation X (born 1965-1981) ..... 14
Generation Me/ Millennials (born 1982-1999) ..... 14
1.3.2 Digital Natives vs Digital Immigrants ..... 15
1.4 Hybrid Education ..... 16
1.5 Conclusion ..... 18

2. CHAPTER ..... 19

**AGILE ORGANIZATION AND DIGITAL DEXTERITY, NEW CHALLENGES FOR ORGANIZATIONAL DESIGN ..... 19**

2.1 Introduction ..... 19
2.2 Agile Organization ..... 20
Trends of the Digital Era ..... 21
Organizational Design: Agility Framework ..... 22
Robust Strategies ..... 24
Adaptable Designs ..... 25
Shared Leadership and Identity ..... 26
Value Creating Capabilities ..... 26
Business model creation ..... 27
Causation ..... 27
Effectuation ..... 28
Lean Start-up ..... 28
2.3 Digital Dexterity ..... 28
2.4 Conflict between generations ..... 31
2.5 Conclusion ..... 34

3. CHAPTER ..... 35

**DIGITAL TRANSFORMATION IN THE RETAIL INDUSTRY ..... 35**

3.1 Introduction ..... 35

3.2 History of Retail .....36
The Corner Store .....36
The Department Stores .....37
3.3 Retail 4.0.....41
Multi-sided platform.....44
Online–Offline Channel Integration .....45
3.4 Retail giants: Amazon and Alibaba .....47
3.5 Conclusion .....51

4. SOURCES.....53

**REFERENCES ..... 53**

4.1 Scientific articles & Books .....53

# INTRODUCTION & SUMMARY

*THE PURPOSE OF MY DISSERTATION* – The purpose of my dissertation is to study the effects of *technologies* on the organizational structures, processes and managerial practices on which a company is based. It is impossible to deny how society and industry have been rapidly changed by the evolution changes of the technology: the big flow of information, the easy way to access to it and the opportunity to interact with anyone anywhere create new needs and new approaches in the market. For this reason, the companies have the duty to evolve fast if they don't want to collapse and crumble. This is the so-called 4.0 Industry Revolution: it touches every sector, at every level: from production to distribution, from suppliers to retailers, from HR to board of direction departments.

The firms that decide to take the challenge and explore these new opportunities have to understand very well the risk and the cost about the new investments that should be done on new plants, new profesional figures and the implementation of the inner organization. Most of all, the firm which wants to grow has to understand what's gioing to happen if the manager suffers from a dangerous lack of bravery.

*CHAPTER 1 – HYBRID JOB CALLS FOR HYBRID EDUCATION* - The chapter describes how the implementation of technologies in the work environment requires also the improvement in every job role. In the last twenty years huge changes and evolution of any kind of work at any level and sector have been clearly noticed. Even the job seeking methods have been changed by Internet and Social Media. Human Resources are not just interested on a person's hard skills but also in his soft skills as the ability to work in a team,

problem solving, leadership, technologic resilience, adaptation in a new environment. Only at that moment, the workers have to understand how important is technology and how technology will become very helpful for absolving even their simplest work duties.

The real challenge now is to offer workers a correct technological training: one for the worker of today and one for the worker of tomorrow.

*CHAPTER 2 - AGILE ORGANIZATION AND DIGITAL DEXTERITY, NEW CHALLENGES FOR ORGANIZATIONAL DESIGN* - The chapter explains how the development of a unique set of Digital Organization becomes necessary during these years of digital age.

The Digital Organization is characterized of Agile Organization and Digital Dexterity, two fundamental features that help the company to face with this rapid pace of changing. In this way, solutions will be found in the fast and easiest way. The new goal is not only to create a tool that fits in the organization, but also to realize a dynamic organization able to use several tools. The attention will be focus on the features of a Digital Organization, that is composed by tools from different areas (Practices, Workforce and Resources) and Digital First Mindset.

*CHAPTER 3 - DIGITAL TRANSFORMATION AND RETAIL 4.0* - The chapter tries to answer how digital transformation influence the retailers, how the sale procedures have changed, how customers are changed (their needs, their habits), the evolution of the role of the shop assistant.

1. CHAPTER

# HYBRID WORK: NEW JOB NEEDS NEW EDUCATION

## 1.1 Introduction

In 1999, Bill Gates, CEO of Microsoft, in collaboration with Collins Hemingway published "Business @ the Speed of Thought", a book focused on the integration between business and technology. The book highlights the importance of the digital infrastructures and information networks. They become fundamental for getting a dominant role on the market competition.

Bill Gates twenty years ago predicted the proliferation of mobile devices, those which give anyone the opportunity to communicate from everywhere. Mobile devices offer everyone the opportunity to reach information and leave opinions in social media or websites. Moreover, Gates predicted the development of new ways of online selling and advertising (Amazon, TripAdvisor, etc.) and the growth of electronic entertainment.

Nowadays almost of Job's predictions have become true. These innovations are part of our society and they alter and influence the customers' behaviours and the workers' attitudes because they are installing in the society new levels of efficiency even more frequently: smartphones altered the concept of a bak: digital payments have become vet common, home banking has nearly substituted the old concept of bank. Many payments could be made through the smartphone so that even the credit card is becoming old.

When Bill Gates talked about the information era, he created three new words for describing the people behaviour:

● The Web lifestyle: it describes how the use of Internet in the everyday life not only creates new needs but also it develops some technological soft skills, that are essential for the future.

● The Web workstyle: an environment where employees expect to have everything at their fingertips and information flows fast between different areas; in this way meetings are arranged only for brainstorming activities or the organization of strategies. The managers will be a leader, will show the willing to dive in, becoming part of the changing.

● The "digital nervous system" approach: following this idea the business organization assume the features of a human brain. The flow of information will be continuous and guaranteed by an effective use of information technology. The digital nervous system will predict the upcoming problems and will offer the manager the best solution to solve it. "Paperless offices" will substitute the normal offices and there will be a reduction of routine tasks during the office hours of a normal employee.

After the definition of these three terms, which easily describe how society would have soon been changed, Bill Gates tries to understand how to improve Microsoft software to answer to these questions: How should a firm be organized? In which new ways should information flow? What tools can managers use to judge and select the best strategies for the firm? What are the parameters for the new workers? What are the new investments to bet on?

According with academic literature live in the Information Era, and even if some of prediction of the founder of Microsoft have become true, some of the issues of business are still unsolved and it is very difficult to find them an easy resolution.

In the last two decades the working world has evolved a lot: thanks to new technologies, new types of work have substituted the old ones. Many jobs have been transformed in a very rapidly. This transformation was so fast and so disruptive that the level of enuemplyment has increased a lot (Brynjolfsson and McAfee, 2012).

Industry 4.0 is characterized of an high pace of automation, a combination of increasingly clever technologies such as robotics, computerized inventory management software, vocal and face recognition, language translation, drones, pattern recognition and online commerce: all these innovations can easily replace repetitive jobs even if they require a certain level of technology knowledge.

The adjective Hybrid has recently started to appear inside the scientific debate referring to the metamorphosis of work: Hybrid Jobs, Hybrid Worker, Hybrid Workshop, Hybrid Education, Hybrid Organization, Hybrid Workspace, Hybrid Offering.

The aim of this chapter is to understand better this new *Hybrid World*, analysing three different elements, all connected with each other*: Hybrid Jobs, Hybrid Generation of Workers and Hybrid Education*.

The first paragraph explains how the *Hybrid Jobs* are defined in scientific literature, and which are their drivers and their characteristics. In this paragraph some practical examples which belong to the three different economic sectors will be analised.

The second paragraph will describe the new generation of workers: who they are, which are their working features, what are their expectations from the working experience and what are the skills they are required.

Then, the third paragraph highlights how fundamental is the role of education for adapting and managing the change and not being dominated by it. It is also very important to identify the different types of training paths for every different generation of workers.

## 1.2 Defining Hybrid Work from the scientific Literature

In every sector any company is increasing the use of equipment and software. As a consequence, machines will progressively substitute real people along the working processes. The growth of the unemployment rate represents a huge problem for society. It is not possible to stop the progress, so the best solution is developing a collaborative partnership between technologies and people. This will be the main road to follow in order to crate new possible jobs. This concept is perfectly outlined in the words of the studies of (Brynjolfsson and McAfee, 2012): "*In medicine, law, finance, retailing, manufacturing and even scientific discovery, the key to winning the race is not to compete against machines but to compete with machines.”*

In the last years it has been demonstrated that the employment rate has increased of 1.7% per year in occupation where computers are often used (Bessen, 2015), in particular in occupations for which are performed and for mid-wage occupations.

However, this growth is not homogeneous: the use of computers use is highly related with the jobs level: it increases in in well-paid jobs and

decreases in low-paid jobs. Through a substantial reallocation of jobs, requiring

workers are required to learn new skills to shift occupations (Bessen, 2015).

The change in the working world is evident, fast and unstoppable. It has not been planned but has evolved adapting itself to the neverending technological inventions.

Now it is important trying to define this phenomenon for planning a more sustainable future.

The definition *Hybrid Work* began to appear in the scientific literature in the last decade. A common definition and a series of studies which clarify this topic do not exist.

Starting from the syntactic study, the adjective *Hybrid* is used in the biological, engineering and lexical fields to describe a subject deriving from heterogeneous sources or composed of elements of different types (Oxford, 2018).

According with these data, it is possible to delineate the four characteristics of *HW*: Communication/Collaboration with Machine, Mix between different sectors, Data Analysis, Digital Resilience.

### *Communication/Collaboration with Machine*

The roots of the Hybrid Work lie in the collaboration between human and machine:, through the technology a machine becomes an intelligent instrument, able to communicate with its users and able to send them feedbacks.

This idea totally subverts the economic literature that is concerned with the technological change extinguishing jobs (Autor et al., 2003). The new studies ( Arntz; 2016) has revealed that just 9% of jobs are automatable across the 21 OECD countries. This results reflects the empirical average because the share of automatable jobs change according to the country analised. For example it is 6 % in Korea and 12 % in Austria.

Also Acemoglu (and Autor; 2011) claims that the canonical Skill-Biased Technological Change (SBTC) hypothesis explains that technology balances skilled workers. As a consequence, there isn’t a total substitution of human labour but an integration represented by a technological capital.

Automation and ICT, information and communication technologies, are the innovations that more commonly replace some human routine-task labours because the machine is more efficient and precise (Autor et al., 2003). At the same time, the creativity of the employers is increasing because creativity is the only feature that a machine doesn’t guarantee.

In United States the 0.56% of new jobs are connected with these new occupations, that are developed by the new technologies. This means that 18% of the workforce is cur-

rently occupied in a sector that did not exist, but it was not even imaginable in 1980 (Lin, 2011). A lot of the jobs created by technology don't belong to the technology-producing sector. The introduction of the personal computer was a revolution for the working world: it has enabled the creation of 15.8 million new jobs just in the USA since 1980, and about 90% of these occupations use the PC in other industries (Lin, 2011) .

Nowadays, knowing how to use a computer has become fundamental. A worker has to to know how to interact with a technological tool, from a personal computer to a robot. Moreover a worker should learn how to communicate the process and understand the different outputs of the machine.

A lot of studies are focused on the relationship between human and technologies, and how even the workspace must be changed in order to become more adaptable for Hybrid Jobs.

The Human Robot Interaction (HRI), in the car sector industry, has evolved in a working time sharing between the worker and the machine. As a consequence, the operator and the machine are able to perform a joint task in order to manipulate or handle a problem. This interactive collaboration within a common space is named *Hybrid Workspace.* Creating a *Hybrid Workspace* becomes necessary not only to improve the efficiency between the user and the machine but also to preserve the worker's safety. (Meziane et al., 2014)

### *Mix between different sectors*

As previously mentioned, one of the characteristics of *Hybrid Work* is the mixture of elements coming from two different sectors. This happens because some jobs necessitate new combination of activities or instructions that have arisen in the job market in response to the application of new information, technologies, or "technique" of production (Lin).

The Hybrid Work is not just following the innovation. It is fully absorbing the aspects and implementation of brandnew knowledge. For this reason it completely changes the "original" job, because this change not only introduce in the working process the use of a new machinery but also it boosts the subsequent develop of workers and organization (Lin).

The first Hybrid work appeared for sure in the manufactory industry, where the introduction of interactive machines and robots changed forever the role of the workers. But the evolution of Hybrid Work keeps expanding and broaden into other areas: agriculture, health, tourism, mobility and services. In Italy, some hospitals have a new sector called robotic surgery. Through the *Da Vinci Si HD Robot System* it is possible to perform on the patients minimally invasive surgical operations. In this way the surgeon can perform complex surgeries avoiding the limitations of the conventional surgeon as the the physiological tremor of the surgeon's hands or other involuntary movements. For this reason the operation will be perfectly performed and the patient will be treated in the best way possible.

This is a great example of Hybrid Work: the quality levels of a canonical job like surgery will be increased by the introduction of a robot. What becomes necessary at this level is the knowledge of the surgeon. In this contest the surgeon must enrich his own skills and learn how to use the robot. So he has to enrich his skills by learning how to handle the chirurgical console and manage the technology used.

Augmented reality technology has been introduced in various professional fields from the military to the medical one. Lately it has been introduced as a new marketing tool in newspapers or on the web. Above all, it has been developed in the artistic and architectural field in order to offer an outstanding cultural experience. Projects will also introdutced in an innovative way which is more dynamic and original and less pragmatic than a classic project presentation.

### *Data Analysis*

The Hybrid Work is a job based on technological innovation and gives to the user the huge opportunity to record and keep different kinds of data: the frequency of use of a certain instrument, the recording of a process, the user identification and the memorization of a procedure. The analysis of these data permit to discover useful information which will become very helpful for supporting decision making processes, the planning of a better strategy or a more efficient productivity approach. A data storage centre will prevent some problems, like the breakage of a tool. It will surely increase the quality of the inventories phases. (Bessen, 2015).

The need for a continual analysis of data has led companies of any sector (electronic, pharmaceutical, manufacturing, tourism) to look for the figure of the so-called data ana-

lyst, a new hybrid work. This working figure is required to know many managerial, statistical, IT and engineering elements. The goal of the data analyst is to show in a simple way the data which will be useful to solve a problem or simplify a complex decision (for example, reorganizing its staff according to a project).(Schwartz et al., 2017)

### *Digital Fluency*

In the hybrid work sectors we can identify two types of technological changes: the automation of existing tasks and the introduction of new tasks in which labour receives a comparative advantage. In both cases the workforce represented by the human factor should have a certain level of *Digital Fluency. I*n the first case, workers who doesn't possess a sufficient level of Fluency have to switch jobs. In the second case, Digital Fluency is the channel through which workers can develop and handle new tasks.

Digital Fluency is the ability to be flexible, accurate, efficient and appropriate in a digital context. It is the ability to achieve a specific goal by using technology. The goal should be reached readily and strategically. We are referring to the academic, working or recreational areas.

The people that develop a digital fluency, are not just workers able to use a software or a technologic tool. They have accomplished a level of proficiency that permits them to elaborate information, construct ideas, and use knowledge to realise strategic targets (Hsi, 2007).

According with the studies of Wenmoth (2015*), Digital Fluency* is a blend of:

- digital, or technical, proficiency: the ability to understand, select and use the technologies and technological systems;
- digital literacy: cognitive or intellectual competences, which include the ability to read, create, evaluate and make judgements and apply technical skills while operating;
- social competence, or dispositional knowledge: the ability to relate to others and communicate with them effectively.

If society is currently trying to develop *Digital Fluency* in the future workforces and make them ready to better cope with changes, such as hybrid work, it is also true that you are investing a lot in trying to make the objects more "smart".

A great result is the Internet of Things (IoT): this will enable a smarter bridging between digital, physical and human spheres. Objects will be able to capture data, will be able to communicate in a secure networked environment.

This innovation will allow the creation of a pervasive network between "smart objects". In this way objects will be capable of learning information from the external environment or from other objects and, as a consequence, they will find the quickest and best solution to achieve the goal. For example, alarm clocks will sound earlier if the traffic on your route to work is very high or the drug jars will warn all the family members if they have forgotten to take a medicine. All objects can take a proactive role by connecting to the Net (Gubbi et al., 2013).

When all these innovations will be within everyone's reach and will become part of our daily lives, will we still be talking about Hybrid Work or would it be better to say that we will be living in a Hybrid World?

## 1.3 Defining Actual Workforce, the od and new workers

To understand better the change in the jobs world, it is not only important to know and understand the main features of the hybrid work phenomenon, but it is essential to know and analyse its workforce.

### 1.3.1 Active Workforce

Right now, there are four different generations that are working together and face the challenges of new types of jobs: the Silent Generation, the Baby Boomers, the Generation X, and the Generation usually nicknamed as Millennials.

A lot of studies found that people who belong to a certain generation have in common some personality traits, attitudes, mental health, and behaviours (e.g., Kessler et al., 2005; Thornton & YoungDeMarco, 2001; Twenge, Zhang, & Im, 2004; Wells & Twenge, 2005;).

These generations are classified according to (Twenge et al., 2010):

- Period of birth,
- Generation Cohort; people have shared around the same time some distinctive
- social or historical life events during critical developmental periods (Schaie, 1965).

- These events that happened during the childhood or the adolescence period have created a common system of values, that influence their life and it will become the distinction with other generations.
- Work Values influence people's life and work choices. These values are very important for the life of the worker but they are less radicated than those around which the generation cohort rotates (Rokeach, 1973); Twenge (2010) defines the work based on five indices:
- Leisure: free-time, vacation, and freedom from supervision;
- Extrinsic Rewards: the tangible rewards external to the individual, such as income, advancement opportunities and status;
- Intrinsic Rewards: the intangible rewards that are the personal interest about the
- work, the learning and creative potential;

Altruistic Rewards: voluntary and civic and patriotic sense;

Social Rewards: interpersonal relationships at work.

The study of generational differences is important to trainee, manage and successfully maintain today's workforce generations.

### *Silent Generation (born 1925-1945)*

The name to this generation was given because in those difficult and hard times during the Great Recession and the Second World War children were not considered and not listened to.

Raised in a paternalistic environment, people tended to obey to authority rapresentatives and feel in awe of their working leaders. Workers belonging to the silent generation consider themselves to be survivors of the great tragedies of history, and for this reason they have always felt grateful to those who offered them jobs even if it did not necessarily appeal to them. They don't feel the necessity to change the job or firm and so many of them have remained diligent employer in the same firm throughout his-her entire working life: they feel they belong to the company. Their main values are safety, security, and consistency. Some of them, even if retired, continue to attend to the company meetings and give their own contribution even if their help is rather relative because they have totally lost familiarity with the technology tools.

### *Baby Boomers (born 1946-1964)*

Baby Boomers are those who have survived the 1968 revolutions which were focused on the civil rights recognition and the feminist revolutionary movements. They have also survived and witnessed to important and dramatic events like the Vietnam War, the assassinations of John F. Kennedy and Martin Luther King, and Watergate.

Society of Human Resource Management (2004), defines Baby boomers as workers who were "results driven," able to "plan to stay for long term," and "give maximum effort": indeed, they are famous to be ambitious workaholics. Their high priority is their own career and they are very critical with co-workers who don't share these values (McGuire et al. 2007).

They work better alone than in a team (Lancaster & Stillman, 2003).

### *Generation X (born 1965-1981)*

The people born between 1965 and 1981, are the first who saw and lived the results of the 68 revolution: the creation of a divorce legislation, the beginning of the free market globalization, the economic global crisis which downsized the jobs and produced effects which had never been seen before.

GenX faced the AIDS epidemic, economic uncertainty, and the fall of the Soviet Union. These experiences create a generation who wanted to be more independent, less faithful to the company in which they worked. This new generation looked for a certain balance between work and life. They believe more in the mantra "You should work in order to live. Don't live in order to work" , "embrace diversity," and "like informality" (Beutell & Wittig-Berman, 2008; Glass, 2007).

Martin, (2005) describes Generation X as skeptic workers, who prefer to work autonomously and consider meetings and group work as a waste of time.

### *Generation Me/ Millennials (born 1982-1999)*

Generation Me, Millennials, nGen and iGen are all names used to describe the people who are born from 1982 to 1999. This generation lived the collapse of several iconic companies (e.g., Enron, TYCO, Arthur Andersen) caused by unethical leadership, the September 11 Twin Tower attack, the economic crises of 2008, the evolution of technologies and the easy access to any kind of information through Internet (Gorman et al. 2004; Raines 2002).

The millennials represent the first generation that was familiar with computers and technological tools during their childhood and adolescence. This give them a great advantage over the previously generations because a Millenial is more inclined to *digital fluency* (Gorman et al. 2004; Pew Research Center 2007); they use to approach a technological tool or internet in order to satisfy a need, reach a goal, collect information, create media product, contact people or enjoy themselves during the leisure time.

Millennials share some common aspects with GenX: for them it is important to find a good work-life balance, and as Society of Human

Research Management (2004) describes GenMe, they ares "tech savvy," "like informality," "learn quickly," and "embrace diversity".

The global competition for jobs makes the GenX more individualistic, narcissistic and self-focused. They will not value leisure as much as previous generations.

Millennial's parents are very involved in their children's life: that have contributed a high expectation and achievement orientation for GenX: "make your dream comes true" (Alsop 2008; Marston 2007). Infact, young workers are more interested in a work that gratify them instead of enrich them with money (e.g., Lancaster & Stillman, 2003).

The enormous use of social media has created a continuous need for connection and the need of belonging to a component of intrinsic motivation (Baumeister & Leary, 1995).

Personality data prove that GenX is sociable and extroverted (Twenge, 2001b), but it places less importance on Boomers' social approval (Twenge & Im, 2007).

### 1.3.2 Digital Natives vs Digital Immigrants

Two new terms have been developed for describing the actual Workforce: Digital Native and Digital Immigrants.

Digital Natives are the people who are born after 1982, the first generation that had the opportunity to interact with technologies, internet and computers at home: they live surrounded by computers, videogames, digital music players, and all the other

toys and tools of the digital age. For this reason, they can use them whenever and wherever they want.

According with Eurostat, young people living in Europe are quite well equipped with basic internet skills. Only 11% of 16-24-year-old have not undertaken any internet-related activities. Instead the 71% people who are between 55 and 74 years old have developed any internet skills in 2007.

Digital Natives understand the operation of a new software or device just by using it. On the contrary, for a Digital Immigrant reading a manual for a program is becoming necessary. (Prensky, 2001)

According with Don Tapscott (2009), the early digital immersion has produced the develop of new significant brain functions and skills. The Digital Natives develop better multitasking attitudes, respond to visual stimulation, and filter information. But there's a dark side: Digital Natives have more difficulties in face-to-face relationships and are not so well in deciphering nonverbal cues (Hershatter and Epstein, 2010).

Now Digital Immigrants represent the majority of the work force in the labour market, but at the moment they are in a difficult situation because they aren't keeping the pace of the rapid technological changes. They are no longer recognized in the new relational models and have difficulty communicating with Digital Natives (Prensky, 2001).

Many digital Native people find themselves to work in situation in which they have to reduce their skills to adapt to the Digital Immigrants' timing. Moreover they have to occupy roles and positions that require leadership skills that can only be obtained through experience.(Kunze and Menges, 2017). These are just some problems that the society and business have to face.

## 1.4 Hybrid Education

In the previous paragraphs we have tried to create a clearer and more delineated image on the Hybrid Work: its features and its drivers, the new skills required, the composition of workforce, the benefits of this change and the new obstacles to face.

The main challenge facing society, governmental organizations and companies is to prepare people for these changes in the best way possible. Their digital fluency and resilience must be increased. To do this, the best solution is to invest in education.

When we talk about the evolution we are not only referring to the formal education given to the new generations, but also to the informal ones for the digital immigrants, who need to be educated to the rapid change that has hit them.

According to the World Economic Forum in its *Future of Jobs Report* (2016), 65% of children in primary schools will have a job that nowadays still doesn't exist. For this reason, the education program they are following will be considered old and obsolete. School programs are still based on the needs and requests of the past generations which are nowadays considered out of the job market.

It is essential to work in three different areas:

- develop new school programs that contain essential content for the "future society", not only digital and technological subjects as programming, statistics, binary thinking but also ethics, politics, sociology, foreign languages. All these subjects are very important to face the globalization.
- Invest on new teaching methods, as the use of presentation, video or games for teaching a subject that is traditionally based on lectures, step-by-step logic, and "tell-test" instructions. Now the students are more reactive if there is a random access to the knowledge with an intersection between topics. The study of Zuckerman (et al., 2005) presents a new framework for thinking about tangible interfaces in education, with a specific focus on abstract problem domains. They develop "*digital MiMs ("Montessori-inspired Manipulatives" ) which are accessible to young children, engaging, and encourage learning of abstract structures of dynamic behaviour through an iterative process of hands-on modelling, simulating, and analogizing*.".
- help those teachers who are Digital Immigrants, to learn the new digital language in order to increase the communication with Digital Natives. This doesn't mean changing the mean of what is important but find a faster and efficient way to share information and develop new skills.

- The European Union took an active interest in trying to find a way to mitigate the negative effects of the technological revolution. UE proposed the *Lifelong Learning* process, reaffirmed in 2000 during the Lisbon Conference. One of the objectives of lifelong learning is to disseminate and implement digital competence. EC Recommendation on Key Competences (EC, 2006) defines Digital Competence as "*the confident and critical use of ICT for employment, learning, self-development and participation in society*". The digital competences are necessary for working, living and learning in the knowledge society.
- Lifelong learning (or lifelong learning or continuous learning) is an intentional individual process focused on the acquisition of roles and skills. It is a continuous lifelong process, from birth to death, and it is constituted by the education we receive even before school. This learning flow will always influence the way of thinking and the choices of every single person.

- Lifelong learning in digital competence is not just a program created to explain the use of softwares and devices, but also to develop the correct use of these tools, focusing on aspects of privacy and security, ethical and legal use and a critical attitude in using multimedia contents. (Ala-Mutka, 2008).

## 1.5 Conclusion

Our whole society is completely permeated by technology: every economic sector from agriculture to tourism, from health to education can be an example of Hybrid Job.

As analyzed in the first paragraph, the world of work was invested by a real Industrial Revolution, which led to the birth of the Hybrid Work. The hybrid works can be divided into two types: those which are born from a brand-new and revolutionart idea, or those jobd that are born thanks to the presence of technological innovations, such for example the Data analyst or the Social Media Manger; or all the works that have evolved in order to adapt to technological innovations.

After a long period of research, it has been possible to define four main drivers: Communication with Machine, Mix between different sectors, Data Analysis, Digital Fluency.

The study on the work force that distinguishes the information age has underlined how the heterogeneity of the generations leads workers with different backgrounds and values to interact with each other.

Attention has been placed in the relationship between digital natives and digital immigrants, and how a cultural and social change that bases its roots on lifelong terming is necessary

According with the paper "Digital Competence for Lifelong Learning" (Ala-Mutka et al.) "*Lifelong learning strategies need to answer to the growing needs for advanced digital competence for all the jobs and for all the learners. Learning digital skills not only needs to be addressed as a separate subject but also embedded within teaching in all subjects. Building digital competence by embedding and learning ICT should start as early as possible, i.e. in primary education, by learning to use digital tools critically, confidently and creatively, with attention paid to security, safety, and privacy. Teachers need to be equipped with the digital competence themselves, in order to support this process.*"

2. CHAPTER

# AGILE ORGANIZATION AND DIGITAL DEXTERITY, NEW CHALLENGES FOR ORGANIZATIONAL DESIGN

## 2.1 Introduction

The first chapter dealt with the theme of technological revolution in the social, economic and work environment.

The phenomenon of the Hybrid Work was analysed. Moreover, in the first chapter, I focused my attention on how this phenomenon influenced the workforce: the relationship between Digital Natives and Digital Immigrants highlights the need to make the educational system evolve. Education should be increasingly oriented towards the unstoppable digital fluency which is required to every generation.

This second chapter analyses the "technological evolution" inside the business.

The *first chapter* is focused on the transformation of organization thanks to technologies.

Agile Organization is the result of this process of renewal and adaptation to new needs, both strategic and structural, through the use of a new business model.

Starting from the study of the trends that have determined the development of the agile organization, we will describe the major changes that an organization must implement: an agility framework and a more dynamic business model.

The *second chapter* will talk about the digital dexterity, the set of capabilities and the ability to respond to the needs and preferences of the customers. Through the digital dexterity a company is able to reorganize very quickly its structure to increase the value of the product. Digital Dexterity must be accompanied by the development of Digital Capabilities and Leadership Capabilities. Depending on the evolution of the two dimen-

sions, it is possible to catalogue the company according to its digital mastery. In this way we understand what investments we have to do to improve the digitization of the company. The chapter ends with the possible problems that can arise with the development of the agile organization: *conflict between generations* inside the company and the *paradox of labor flexibility*.

## 2.2 Agile Organization

The high competition in the business environment imposes to the organization to increase the Information Technology agility, which is defined by Fink and Neumann (2007) as ‘‘*the ability to respond operationally and strategically to changes in the external environment through IT”.*

In the last years the term “agile organization” has appeared many times in the economic literature and has defined the new digital organization, which contrasts with the “traditional” organization.

The “traditional” organization is based on the theories of Ford (1910), and those of his contemporary Taylor. Both of them figure a business organization based on scientific management: in other words, improving the effectiveness and efficiency of labour productivity using the scientific method. The Taylor and Grannt’s organizational model creates new business area as quality control, total-quality management and project management.

It is important to remember how the development of Taylor's theories is deeply linked to the sector in which it was born: Automotive Industry.

Infact, Gareth Morgan (1986) describes Taylorist organizations such as a perfect machine: stable, static, siloed, structural hierarchy, specialized.

The Agile Organization takes its name and its characteristics from the Agile ‘Software Development’ Manifesto (2001) a list of a few laws for developing a better software: increasing the value of products focusing on Individuals and Interaction, working software, Customer collaboration, Responding to change.

This “Agile principles” are the answer to design a new organization that includes stability and dynamism through a reduction of bureaucracy and the increasing of the speed of decision making. In order to obtain this result is fundamental to reduce the hierarchical structure and develop a network of teams instead. These teams are all connected with each other by technology that operates in a rapid learning and fast decision cycle.

The main ability of Agile Organization is to respond quickly to changes and reconfigure an efficient strategy, structure, process and people by adapting the business to volatile, uncertain, complex and ambiguous conditions (VUCA). (Annosi et al., 2018)

### *Trends of the Digital Era*

In the last twenty years, the traditional organization model that has been important for almost a century, has become obsolete because it is not able to deal with the trends of the new society. The trends are:

- Fast developing environment - the current volatile market environment is characterised by rapidly changing consumers' demands, by the rapid obsolescence of the products and by an intense competitive rivalry. For these reasons the business needs a new dynamic and flexible organization able to reply to all stakeholders' demand and to satisfy all these fast-changing urgencies (Zhou et al., 2018)
- Continuous development of new disruptive technology - In the last decades, the list of disruptive innovative technologies in different sectors has grown tremendously and influenced every aspect of the business world (Schwartz et al., 2017).
- In this wide range of technologies, some of them become necessary for increasing the flexibility and agility inside a business organization such as: Augmented workforce with Artificial Intelligence, Digital Twins, Cloud, Mobile, Big Data and Analytics, Internet of Things and Security platforms (Schwartz and others, Deloitte Insights, 2017).
- Increasing digitalization and democratization of information - Mass access to the Internet and the high connection between the devices has increased the ability to obtain information, both true or false, on any product, fact, person and company. In this situation, the company is required to pay a lot of attention to the management of the communication both inside (between colleagues) and outside the organization of the company. Providing a clear, transparent and fast information has become crucial to implement an agile organization.(Brynjolfsson and Hitt, 2000)

- Find and Grow talent - In the digital age knowledge- and learning-based tasks and an attitude towards adaptability are increasingly required. Moreover team work and problem-solving skills has become very important. For this reason, companies tend to invest in the training of their workers and try to keep the best talents in the company. As previously seen, these "learning workers" are often from different countries and have different experiences, needs and desires. The collaboration between different generations is a delicate situation inside the companies (Berman, 2012). For this reason, companies are not only interested in finding good workers but also finding people who are able to maintain relations with their colleagues. Digital companies are very focused on protecting their talents, offering them all kinds of bonuses: time flexibility, salary increase, ect ...

Though the analysis of the various trends, we understand how the development of an agile organization has been a necessary and organic change (Zhang & Sharifi, 2000).
Agility affects the business sectors and should be developed in different ways in order to face quickly the new challenges of market: time-based competition (Stalk & Hout, 1990); raising of the lean thinking (Womack, Jones, & Roos, 1990); a total incorporation of business components, working for a mutual aim (Kidd, 1994).
Now it is possible to propose a more comprehensive definition of agile organization.
An agile business development process is not only based on speed, but it is mainly focused on implementing corporate practices continuously in rapid parallel cycles, substituting predefined and conventional planning.

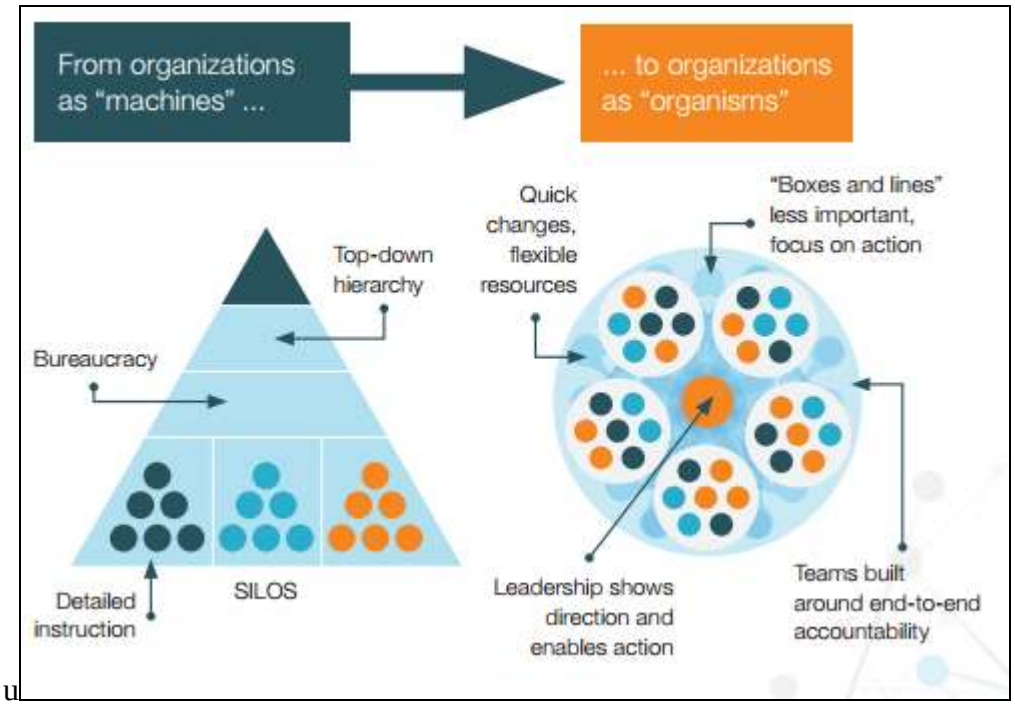
### *Organizational Design: Agility Framework*

The agile organization is dawning as the new dominant organizational paradigm: from the idea of Ford that sees the organization as a machine to another concept which considers organization as a living organism. The first step for developing agility inside the corporation is to modify the design of organization. Organizational design labels testifies the coordination and cooperation among workers that collaborate following a common goal.
The main choice is between *hierarchy* and *network* to facilitate the decision-making process.

A hierarchy process establishes that the decision-making power is in the hands of few people. Power is centralized as the decisions and responsibilities which derive from it. Hierarchy is chosen to strengthen central power or when there is a need for a rapid resolution of a crisis. Hierarchy could be an obstacle in a situation of adaptation of the local environment.

On the contrary, the network process, with the aid of digitalized information and processes, increases the dynamism of the organization without reducing its stability.

The decision-making control is shared among many workers. Participation and sharing of responsibilities are facilitated, as well as ensuring a faster and more creative response to market demands. (Soule et al., 2016)

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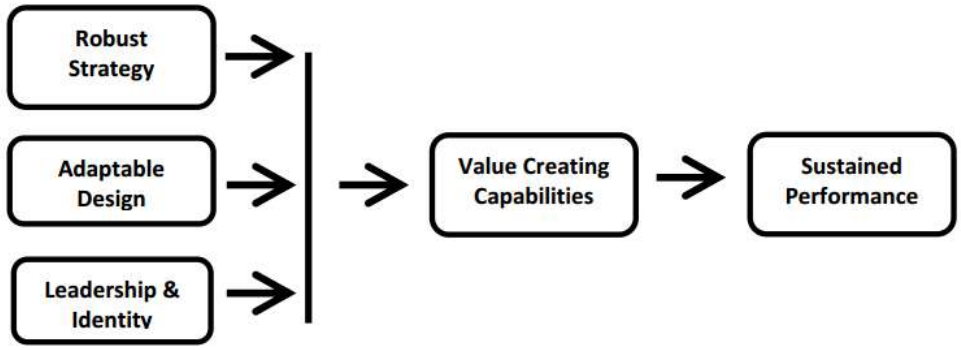
Now the organization agility has become an increasingly popular design choice because it guarantees a fast response to the complex and unstable environment.

In order to develop the agile organization, a company must detach from traditional design assumptions and rethink each element and feature in a more flexible, digital and collaborative way. Only though these steps high levels of performance will be reached.

The management theorists hypothesized four basic features of agile framework: *robust strategy, an adaptable organization design, shared leadership, and a strong change capability*.(Worley and Lawler, 2010)

Figure 1 - A Model of Agility and Performance




## *Robust Strategies*

Robust Strategy is the feature that permits to a company to generate better and positive results under fluctuating environmental situations. It is characterized by three elements: an *alternative economic logic, a strong future focus,* and a *flexible intent*.

- Economic logic

In an agile organization the main logic is being able to predict changes. The effectiveness of the strategy will be reached through momentary advantages and the increasing of the speed. This logic is very different from the traditional one that foresaw the achievement of effectiveness through stability, efficiency, alignment and growth.

The new agile economic logic is more suitable to face the challenges generated by financial cycles, political changes and new technologies. In the same way, micro investments are able to produce faster results in a very short period of time.

The new logic is a fundamental and significant shift in the agile organization that will define all the other features.

- Focus on the future

Through an agile organization, foreseeing future scenarios is easier. A dynamic and flexible process has been successfully developed thanks to technology, data analysis and constant investments in digital training

The competence to play with the future and to be more resilient towards external events develops a close collaboration between the members of a company and increase their participation to these trends.

- Flexible intent

*Flexible intent* together with *focus on the future* and *economic logic* make robust strategy effective.

*Flexible intent* is the ability to monetize a momentary advantage thanks to the flexible redistribution of the company's resources, following the three dimensions: *breadth, aggressiveness, and differentiation.*

The breadth of an agile corporation is represented by the number of options and possibilities which the same corporation has inside: variety of products and services, technologies or types of markets.

Aggressiveness defines the way in which communication, marketing, and execution of strategies are managed. The level of enthusiasm, urgency and resources are decisive to obtain advantages.

Differentiation is the set of features that distinguish a corporation's product in the market: price, quality, warranty, after-sale support.

### *Adaptable Designs*

Adaptable Design helps the organization to adapt quickly to internal and external changes. *Maximum surface area structures, transparent information and decision making processes, flexible talent and reward systems* are the features of an agile organization design. Through following these features, a company can manage agile structures, processes, people in order to be always able to implement them with new opportunities.

*Maximum surface area structures:* the organization creates a structure where as many employees as possible are directly in contact with all the stakeholders (regulators, suppliers and actual or future customers). In this way it is possible to collect more information about trends and future changes can be easily foreseen.

There are two ways to implement the surface area. The first one contemplate the embracing front back, process-based, or network structures that centralize the role of the customer and of the stakeholder. A surface area can be implemented through the organization of several independent business units, outsourcing, and matrix relationships. This structure help to understand better the change and to move rapidly towards new direc-

tions. Internal matrix relationships, a transparent information system and clear decision-making processes increase the communication between workers, their participation inside the company. The learning of new directions and the acceptance of change are facilitated.

Another important difference inside the agile organization is the adoption of many employment contracts in a situation in which change and constant updates are expected. This is the reason why agile organizations prefer to hire quick learners and resourceful people, that are able to find out the best resolution instead of waiting for instructions. In order to encourage productivity and cooperation among workers, new models of remuneration have been introduced: bonuses, stock, person-based pay and team-bonuses. This new remuneration system is very helpful and motivates people in periods of change. Moreover, it develops new skills and competencies which are fundamental for increasing the value of the company.

### *Shared Leadership and Identity*

In contrast with the traditional organization model, in which Leadership is considered an individual trait, in an agile organization model Leadership becomes an organization capacity. The spreading knowledge and the sharing of responsibilities expanded by the maximum surface area structure help to develop the leadership and management skills of a bigger number of employees. Through this method everybody can support the effort of changing and can eliminate the slowdown effect caused by the "fall of the single hero leader ".

In a company where everybody knows the mission and vision, supporting and implementing any kind of change become very easy.

### *Value Creating Capabilities*

The interaction between robust strategy, adaptable organization design and shared leadership promote value creating capabilities.

The main value creating capabilities are change and learning, because they are able to drive the company from one advantageous moment to another.

An agile company is focused on the ability to deliver the current object and at the same time to invest in project that will create future growth and stability. The main question

that every company has to answer in order to understand its agility is “What do we need to improve?” instead of “is it good what we do?”

### *Business model creation*

The agile organization requires fast actions through which it is possible to predict the future trends. In this way, a company can face better the changes and doesn’t run the risk of being excluded from the competition.

As we have already said, in an agile company the organization becomes fundamental to reach the goal and increase its value.

For this reason, the business model is the best managerial tool to obtain this result. As for other elements, this has been influenced by the digital revolution too.

The business model must be able to create a sustainable competitive advantage through realign value creation, IT technologies, shorter product life cycles and fast product obsolescence (Teece, 2010).

The study of Xu and Koivumäki (2018) analyses three types of business creation approaches: causation, Sarasvathy’s (2001) effectuation, and Ries’s (2011) lean startup. All these three approaches should work good under time constraints and agile environment. The analysis of these approaches is helpful to understand their methodology and their pros and cons in relation to an agile and dynamic market.

### *Causation*

Causation approach proposes a business model focused on planning, communicating and mapping future actions and opportunities (Duin, 2006).

The experts have defined three constitutive elements of the causation approach value (Chesbrough & Rosenbloom, 2002; Zott & Amit, 2010): “the discovery and estimation of viable customer value propositions; a specific customer segment; and the means to configure value network for creating and delivering the customer value”.

The causation approach is divided into three moments: the first is the evaluation of potential opportunities and their selection. Only the opportunities that fit the evaluation criteria will pass to the second phase, the comparison with the reality. This is the most problematic moment, because the business model is based on market assumptions, that may not be correct.

### *Effectuation*

Following Sarasvathy's (2001) theory, the effectuation process is based on the primacy of non-predictive control over predictive strategies. The effectuation process is characterized by creative and transformative procedures (Sarasvathy, 2001, 2004):

• Step 1: Finding "who am I?", "what do I know?" and "whom do I know?"

•Step 2: Deciding "what can I do?" and "affordable loss";

•Step 3: Stakeholders interactions;

• Step 4: Leveraging contingencies

Effectuation process is considered as a trial-and-error method to make something work in a non-predictive environment. It helps to obtain potential partners, identify quality business opportunities, reach more information, and increase the network. The effectuation process can produce different solutions when time is a constraining factor, because the contingency becomes decisive.

### *Lean Start-up*

The lean start-up method was born from the need to create a business model simple and easy for the start-ups, who live in a very volatile and dynamic environment.

Lean start-up process starts from the creation of an entrepreneurial activity rather than looking for opportunities. His approach is based on many trial-and-error experiments.

This method provides more realistic results thanks to the use of the continuous "construction, test and rotation" cycle.

The lean start-up model differs from the previous ones because it emphasizes the process of constructing, measuring and improving ideas or business models in a short time (Ries, 2011) and focuses on the needs of the client (McGrath, 2010).

Xu and Koivumäki, (2018)'s studies affirm that for an agile organization the best business model is the lean start-up approach: it is more responsive to changes in the external environment but it must be often updated.

## 2.3 Digital Dexterity

According with Soule (et al., 2016) "Digital Dexterity is the hallmark of a true Digital Organization".

As written in the previous chapters, the spirit of a Digital Organization is its ability to create value through the combination between digital practices and human force. But a

Digital Organization works/functions well when it is able to adapt with dexterity along with quickly evolving digital technologies.

Now we are no more focused on creating tools that adapt to the organization. We are concentrated on the development of a dynamic and agile organization which will be able to adapt quickly to new tools.

Digital Dexterity is the set of capabilities and skills that allow the company to respond quickly to the needs and preferences of customers. A company reorganizes quickly its structure to get an increase in the value of the product. Companies that continually invest in digital dexterity are able to use digital information and operations in order to establish more durable partnerships and identify the talents of the moment.

In an Agile Organization Digital Dexterity is essential but adequate Digital Capabilities and Leadership Capabilities are also needed to get the best out of it (Westerman et al., 2014).

Digital Capabilities are investments on new technologies, digital tools and physical capacity. Digital Capabilities can be divided in three clusters: *customer experience*, which uses technology to develop customer area, *operations efficiency*, which utilizes data for optimizing internal processes, *workforce enablement*, which considers the use of digital tools to facilitate collaboration among the entire organization (Soule et al., 2016).

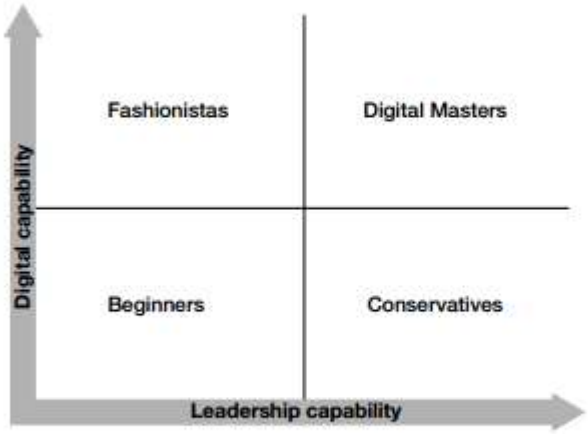
Leadership Capabilities represent the ability to drive the change and improve the organization. The great leaders are able to share a clear and broad vision of the future; they are able to start some fundamental/critic initiatives, and then involve their employees to follow them. The leaders should stay involved throughout all the transformation to ensure the success of the project and manage the problems that could arise in the changing process (Westerman et al., 2014).

Westerman (et al., 2014) tries to define the digital companies and their evolution using two dimensions: Digital Capabilities and Leadership Capabilities. In the figure, it's easy to represent the four kind of digital companies, according to their level of Digital Capabilities and Leadership Capabilities. Understanding which is the digital mastery of a company will be useful to understand which sector needs to be improved.

There are four levels: Beginners, Fashionista, Conservatives and Digital Masters.

FIGURE 1.1

**Four levels of digital mastery**




Source: Adapted from George Westerman, Maël Tannou, Didier Bonnet, Patrick Ferraris, and Andrew McAfee, "The Digital Advantage: How Digital Leaders Outperform Their Peers in Every Industry," Capgemini Consulting and MIT Center for Digital Business, November 2012.

- *Beginners* are those companies that have just started the process to become a digital organization. Both Digital Capability and Leadership Capability are still at a basic level. They are scared of the problems that technology can create, such as loss of power or diminished privacy. Their inaction represents an advantage for their competitors.

- *Fashionistas* are companies that comprehend the value of the digital capabilities, and so they invest a lot on them. The lack of digital leadership and governance make them lose a lot of money and time. They don't wait and act. They flaunt their technological trendiness but they don't change what's behind the external facade.

- *Conservative companies* are the opposite of Fashionistas: they have developed digital leadership but don't have increased their digital capabilities, maybe for an excess of prudence or a lack of skills in using the new tools. Perhaps they are afraid to waste time and money.

This caution can be beneficial, specifically in highly regulated industries, but it can also create a governance trap that is focused more on controls and rules than reaching and making progresses.

- *Digital Masters* are the real agile companies, because they are able to reinvest in both these features: Digital Capabilities and Leadership Capabilities. In this way they are able to earn competitive positions and to be ready to change.

Durable digital capabilities increase new, easier and less risky digital initiatives. In the same time a great leadership generates synergies that make new investments faster and easier and engage people in the new changing process. Together, the two capabilities creates a spiral in a virtuous cycle of ever-increasing digital advantage.

All companies that want to grow and excel in their own market know that they have to aspire to become Digital Masters. They should try to adopt an agile organization and develop a workforce capable of adapting to new types of job.

The academic field has dedicated many studies on the evolution of agile companies and on the ways used to find the most effective method to implement this transformation. Morover, these studies have collected and depicted some collateral aspects which are strictly linked to the basic features of the agile process.

The most relevant are the conflict between generations inside the company and the paradox of labor flexibility.

## 2.4 Conflict between generations

Investments on the workforce must not only concern the development of work skills but also the relational and collaborative skills between employees.

The agile company is focused on the increasing performance and the competitive advantage. The promotion system was totally changed: it was no more based on seniority but on merit.

The merit-based promotion systems make career progression more flexible, as it is based solely on achieving goals. This system encourages great competition among workers and it doesn't take into consideration their seniority.

The abandonment of the age aspect in promotion decisions is positively considered because it reduces age-based discrimination typical of traditional work (Kunze, Boehm, & Bruch 2011), and thus increases the level of the company's performance (Cadsby, Song and Tapon 2007, Dobson 1988, Lazear 2000).

This change is positively welcomed by young workers who are accustomed to a globalized and competitive society. Indeed, they consider this change as a projection of the

values of the society in which they live. On the contrary, workers who do not belong to the millennial generation, consider it a betrayal.

This strategy promotes young workers in positions that require the ability to manage older people.

The study of Kunze and Menges (2017) suggests how this new dynamic " Younger supervisors, older subordinates" is risky and can be counterproductive for the company.

This idea is based on the theory of social comparison (Festinger 1954) that describes how people judge their career progress by comparing it with others of similar age. People feel satisfied when they obtain prestigious work positions before other people of the same age. If they have been promoted more slowly, they feel that they have “lost the race”.

Having a younger supervisor is a permanent signal that remembers your failure (Lawrence 1984, p. 24). This situation generates negative feelings, as anxiety and fear (Rosenbaum & Rubin 1983) or less satisfaction with your own job (Shore et al. 2003).

These anxieties and fears manifest themselves in an increasing punctuality and a decreasing of the days of absence of the older workers.

It is very important to understand how the dynamics of salient non-normative relationships modify the working environment and therefore affect the productivity of the company.

Through the non-normative dynamics of salient relationships, the negative emotions expressed by older subordinates can spread as an emotion contagion (Barsade, 2002; Elfenbein 2014).

The negative emotion contagion can start just when the “older subordinate” complains about the age-inverse-supervisory relationship. A solution could be represented by the emotion suppression, which helps to create a barrier that prevents a negative spillover. (Cole, Walter, & Bruch 2008).

Gross (2002) affirms that the emotion suppression is not the best solution to the problem because it has still *“negative consequences such as depression, damaged health, and impaired cognitive performance*”.

The basic issue, the age difference, cannot be changed and the new merit-based system is fundamental to develop the agile organization. It is very hard to find a unique solution

to this problem: companies should be careful about this problem and do not underestimate the relationship between negative feelings and low performances.

Many studies are looking for adequate responses for the management of the age-inverse-supervisory relationship: formations have been proposed for the management of the relationship between " Younger supervisors - older subordinates ", but they are still under development.

Paradox of labour flexibility

The introduction or strong implementation of digital technologies in a company increases the autonomy and the flexibility of the employees.

In particular the professional knowledge of new mobile devices and the software that permit to share information and control the location, timing and performance of work, increase the workers' autonomy and the development of Smart Work. It is no more necessary to be in the office for calling clients, developing a project or making new researches. The development of technology gives the possibility to be always in contact and control everything, everywhere and at any time.

On one hand these professional workers obtain by the new technology more flexibility, peace of mind, and control over communications in the short term. Technology also strengthened collective expectations of the workers' availability, intensifying their engagement and thus reducing their capacity to disconnect from work.

Kunda's theory (1992) shows how the development of one ideologically designed culture - formulated as a non-hierarchical moral collective that aims to independence and originality is totally subverted in the office where a diligent commitment of the workers is requested. They are indirectly suggested about their behaviour, knowledge and reactions.

Workers are increasingly dependent on technology, in particular the use of the email as a communication tool. This situation has led to a reduction in the ability to relate and interact in the "real" world and a continuous sense of inadequacy that leads to control the mobile device on average every 8 minutes.

To reduce the negative effects of this excessive technological overdose some companies have started to adopt internal regulations such as a moratorium on the use of e-mails, encouraging employees to use them only in case of real need. In many cases workers are forbidden to send the same message internally to more than three people. For example,

the ban on responding to emails after 6pm is a choice made and shared by Procter & Gamble, Deutsche Telekom and Volkswagen. For BMW the emails which are answered after work are paid as overtime while Bayer turns off the servers half an hour after the end of the shift (Buckner et al., 2012).

## 2.5 Conclusion

The purpose of analysing the characteristics of Agile Organization is to comprehend better the evolution of the Agile Company, and their characteristics.

A company is not digital because it has invested large amounts of money in advanced machinery, but because it has transported digitization in every aspect, even in the organizational one.

This chapter highlighted how the development of the agile organization is fundamental and must be well planned and understood in all its aspects.

First of all it is important to understand which trends have developed most within the market in which the company is located. Then, starting from a sincere self-analysis, a company should decide which investments to make and how to reorganize the structure of the organization.

Managers who drive this change must pay close attention to communicating changes, must be as clear and quick as possible, and propose appropriate training to their workers so that the process is carried out in the best possible way and on time.

During the changing process it is important not to underestimate the problems that relational can arise due to the intrusion of new technologies: *conflict between generation* inside the company and the *paradox of labor flexibility.*

It is important to create a dynamic but not hostile work environment, in which it is possible to ask for and receive help.

3. CHAPTER

# DIGITAL TRANSFORMATION IN THE RETAIL INDUSTRY

## 3.1 Introduction

In the previous chapter we dealt with the changes which the digital revolution imported in the working world: the birth of hybrid work, and the agile organization in the managerial area of companies. In the third chapter we will focus our attention on one of the sectors which had been most affected by these changes: Retail.

Usually, the definition of retail is "the sale of goods to the public in relatively small quantities for use or consumption rather than for resale" (Oxford English Dictionary, 2017).

Nowadays this definition is not more actual, because the digital economy has developed some new feature and selling typologies to add at this definition. After the digital transformation, it has been possible to use more services or products without buying them: nowadays, ,almost every product can be rent. For example, if you want to listen to your favourite songs you don't need to buy the CDs. You only have to click on an app called Spotify which you can install on your mobile device and the music will stream on your device.

The increasing possibility to rent a lot of products created a series of "hybrid products" such as e-books, apps and streaming movies. All these products can be defined as digital sharable.

This revolution on retail is always highly correlated with the increasing quantity of the customers' new needs. In the first paragraph we will trace the history of the evolution of the retail sector, which has always accompanied industrial revolutions and has been the

driving force behind the transformation of habits and social values. More attention will be given on e-commerce, the new level of retail.

In this chapter we will analyse the new retail strategies: the combination between online and offline markets, the use of multi-sided platforms and how to satisfy the new needs and trends of market.

In the last paragraph, we will conclude discussing on the new important digital companies in retail: Amazon and Alibaba. Studying their strategies and future aims is very important to understand the future of retail and how to manage it.

## 3.2 History of Retail

Trade has always been the art of weaving relationships, satisfying needs, enhancing the quality of the result of working hours through the products selling.

A store is not just a business but an environment where the new needs of the customers can be clearly understood, the image and the values of the brand can be evaluated, new trends can be traced.

It is interesting to underline how the evolution in the retail field is always intertwined with industrial innovations and social changes. It could be argued that the transformation of consumers' habits and desires will influence the citizens.

It is possible to create a hypothetical retail time line on which retail historical moments can be placed. The experts have identified six major stages: Corner Storea, Department Stores, Malls, The Big Box, Specialty Retail, E-Commerce.

### *The Corner Store*

The corner shop is the best example of retail, and it is presiumably born around the first half of the twentieth century. The corner shop is the evolution of the "stall". The stable shop had many advantages: the creation of a stable and dry environment, always present. The customer was served directly by the shop assistant at all stages of the sale: from the choice of the product to the purchase. The customer's bargaining power was lower than that of the shopkeeper, as there were only few products to chose and there was no competition. The position of the store was the determining factor for the success of the business as the clients were conditioned by distance and lack of means of transport.

For this reason, the shop was an environment frequented during the daily hours, a key place in the community where local news spread.

The owners of the shops personally knew the clientele and for this reason he could foresee their purchases according to their tastes. Moreover, the owner knew so much the clients that he could grant them credit. This competence was subsequently defined as Customer Relationship Management (CRM).

### *The Department Stores*

In England, around the first half of 1800 a demographic explosion and an increasing of the welfare took place thanks to the industrial revolutions, to the increasing of raw resources and an improvement of the hygienic conditions. These factors helped the development of the middle bourgeoisie. Together with this new social class, the Department Store appeared as a new way of selling products. For this reason, a new recreational activity was born: shopping.

The department stores gave the possibility to make purchases of different goods, from food to clothes, "under the same roof" where everyone had the freedom to touch and try the products. London's Harrods and Newcastle's Bainbridge's are two good examples of Department Stores. For the first time attention is given to the creation of a refined environment, where art and commerce come together to create a light and experiential moment. These two places are recognised as the first forms of consumerism.

At the beginning of the 21th century, new concepts of selling appeared in the department stores: for example, the use of cash self-service terminals. The only moment in which customers and clerks speak or interrelate is when the customer has to pay at the cash desk.

In 1916, in Memphis (Tennessee), the Piggy Wiggly distributor became the first outlet with exposed shelves. They were placed in a precise way so that the customer had to follow a precise itinerary within the store.

Unlike the department stores, the clerk is no longer a counselor, but only as a cashier and storekeeper. The customer is left completely free to do the shopping and has the freedom to compare the products immediately, each of them with a label indicating the price.

### The Mall

When the car and the refrigerator became consumer goods, consumers had the opportunity to move more easily and be able to store and preserve the food. In 1962 the Walmart doors opened in Arkansas and the following year Carrefour in Paris. Wallmart and Carrefour were the first shopping centers that allowed their customers to access a greater selection of products at lower prices in fewer visits.

The mall is a large structure that can contain supermarkets, clothing stores, hairdressers, cinemas and any other kind of interesting activities for the consumer. The shopping centre became a sort of Main Street for the suburbs that did not have a clear epicentre and increased the value of the suburban areas. It is estimated that in 1987 in the United States almost 50% of sales took place within the mall. It is incredible that the shopping centres are suffering of a severe crisis: in Usa Sears closed 150 stores in the first half of 2017, including the 108 stores in partnership with Kmart. Macy's, which until the beginning of the millennium was synonymous of medium-high shopping, is now overwhelmed by a significant restructuring process that will lead to the closure of 100 locations (equal to 15% of the total) (Tognini;2017).

### The Big Box

The increasingly assertive price war has pushed the consumer at the forefront and gave him enormous power of choice. This price decreasing has generated an authentic quality problem which damaged the health of the community. This unregulated price competition has led to the closure of many small retailers.

Until the sixties there were laws which fought retailers who offered discounts for wholesale purchases. All this was done in order to maintain a healthier economic environment. The great "Race to Zero” began only when, in the name of the free market, these form of protection laws were totally dismantled.

### Specialty Retail

Specialty retailers were born to contrast the big box system. "Specialty retailers" aim to satisfy the need for uniqueness required and requested by a part of consumers. The typi-

cal customer of Specialty Retail is a wealthier consumer who prefers to pay a higher price to be fully served and obtain total attention.

The strong economy of the 80s helped the rising of specialty retailing, where the brand became increasingly important so that the consumer strived to identify himself with the company's values.

In this period the maisons of great designers (Valentino, Armani, Gap, Chanel, Dior) aimed to establish their presence in the global market and to increase their turnover exponentially. Nike invented a concept that from that moment would have forever transformed the consumers' expectations: Nike ID, the ability to customize your sneakers or any other accessories.

**The E-Commerce Opportunity**

The development of e-commerce has been possible since 1991, when the Internet and online transaction technology were mature enough to open the door to commercial use. In 1994, thanks to the Netscape's browsers, which improved the easiness and security on the web, the first e-commerce websites were born. Thanks to this, in 1995 the first two American portals dedicated to online shopping were created: Amazon and E-bay. But only in 1999 with the spread of the ADSL line, online shopping became available to everyone. So much so that in 2012, the value of e-commerce exceeded for the first time the threshold of one trillion dollars with an average growth of 21.1% compared to the previous year. The Ecommerce News Europe Report (2017) then illustrates the global e-commerce figures. In 2017, Internet sites reached 1.33 billion in 2017 and 4 billion people have accessed it (+ 10% compared to 2016). The total value of the e-commerce retail market was also $ 2,290 billion, + 23.2% more than the previous year and equal to 10% of the total value of retail sales (+ 1.3% compared to the previous year).

The main types of e-commerce are:

• B2B - Business to Business: a commercial transaction carried out between two companies in order to exchange updated information on real-time products and price lists, order goods and services and use electronic payments. The Cisco System, manufacturer

of software and network equipment, receives more than 80% of its orders through the Web. In addition to selling products and services online, businesses can use internet to strengthen relationships with important industrial customers;

• B2C - Business to Consumer: a commercial transaction carried out between the company and the final customer, who is able to choose and compare, through multimedia and interactive sites, catalogues and price lists with more detailed and updated information. Amazon represents the top among these type of sites. In the online exchange process, customers are considered active because they actively participate in all the phases of the transaction. On the contrary, traditional marketing is often addressing to one passive audience;

• C2C - Consumer to Consumer: it is the most recent form of electronic commerce and is becoming increasingly popular with the presence of new sites in which online auctions can be easily managed. It is about online exchanges of goods, services and information between final consumers. The transaction methods are managed from the seller and the buyer. Overall, the concept of C2C implies that buyers of the network not only use information on the products but they can create them on their own;

• C2B - Consumer to Business: in this last particular form of transaction, which is still developing, consumers set the price who are willing to pay for a product or service and at the same time the companies can decide whether to accept the offer or not. In this form of e-commerce the role of intermediaries takes on a new form and a new name: "Infomediary".

The setting up of an e-commerce site is actually the activation of a new channel of sales that has two further advantages compared to the traditional ones:

• a time advantage, since the site is active 24 hours a day, seven days a week (24/7);

• a geographical advantage, as a site allows sales to consumers residing anywhere in the world.

The customer also has the opportunity to access a wide and diversified selection of items. He will select the best option among the features of the products and the prices: it is possible to find unusual, specialized, amateur, nice products simply using a search engine.

With e-commerce, the purchasing process is changed, from a linear and unidirectional process to a multi-channel one, characterized by an intertwining of interdependent activities.

The setting up of an e-commerce site permits to skip the passage of the distribution, shortening the distribution chain and decreasing the price of goods for the benefit of both the final consumer, which increases its purchasing power, and the company, which reduces brokerage costs.

Another success factor for e-commerce are the CRM (Customer Relationship Manager) tools through which help quantitative and qualitative data are continuously collected, checked and analysed. Every single user can be quickly profiled in order to understand his consumption choices, purchase preferences and behaviors. The data collected will create a map of the purchasing behaviors of its customers and will better identify their needs., The company will surely exploit this information to target the offer and after-sales assistance.

History keeps teaching us how the retail sector has always been dynamic and proactive in its changes, and how certain values and habits, such as customer care and staff training, have been transformed according to need. It has been noticed that the shops have been the object of various crises over the centuries. Will they be able to win the fight against e-commerce and evolve again?

## 3.3 Retail 4.0

Retail is a very competitive sector, only those retailers who are able to change rapidly and have the capacity to follow new trends can survive.

Currently it is reductive to define retail as"*the sale of goods to the public in relatively small quantities for use or consumption rather than for resale*" (Oxford English Dictionary, 2017), because this definition does not include all those transactions that allow a consumer to use a product or service even if he/she doen't own it.

The following definition is more precise and accurate. Retail is "the temporary or permanent transfer of the possession of goods, and/or access to services, to the public in quantities targeted at the individual, for use or consumption"(Kowalkiewicz, et alt; 2017).

The digital transformation of retail has different steps, and according to them it is possible to understand the degree of integration in the digital world of this specific sector.

Only a few stores in the western world have not implemented or undertaken digital changes; this means that the main management activities are still resolved by using paper documents or through telephone conversations.
Scholars Alekseevna (et al., 2017) list in their article "*The concept of digital transformation of the society*" five levels which are linked to the digitalization of the retail sector:

- The zero stage

Digitization begins in the retail administrative department. As a result the use of paper documents is reduced because preferring electronic formats such as e-mails or management software are preferred. For example, digitalization is very useful for a warehouse cost accounting, or the emission of electronic receipts.

- The first stage

In this phase the automation of the chain of interconnected processes begins, such as the installation of new software and the distribution of online services.
The processes become more efficient within the system. Automating the main business processes of the store - such as the electronic management of the system documents or the managing system of the retail network - become an outstanding advantage.

- The second stage

The creation of online shops and the development of their e-commerce has led to the increasing of the online purchases and a new way of selling.
Now the customer has the opportunity to compare a wide range of products on his/her own. It becomes essential to develop a smooth e-commerce and a Customer Service ready to answer to all the customer’s requests and needs. Moreover, promotional newsletters can be sent to all the clients to inform them about brand-new products or services.
These innovations has also changed the relationship between store and supplier, improving the entire procurement cycle. This cycle can be monitored and evaluated by the suppliers through an electronic platform.

- The third stage

A retailer evolves with the help of a data analyst that allows him/her to create increasingly personalized offers. This is an effective way to promote and boost the activity. All the information given to the retailer are obtained from social networks, online purchases of other products, search queries and so on.

There are more ways of incrementing and retaining the number of customers: creating or accessing social network groups, signing up for newsletters or downloading a specific app.

- The fourth stage

In this phase there is an integration between the digital world and the physical store. Companies develop omnichannels; in this way the consumers can interrelate with them in the most suitable way: he can easily move between online and offline communication channels.

For example, a client can buy the product online and collect it in the store whenever he likes.

The information between warehouse, store and customer flows quickly and easily. The product history can be traced from the beginning so that a request of the product availability or an analysis of its features can be always fulfilled.

Omni-channel is based on the idea of putting the customer at the centre of all the channels, and therefore of the business. In this way, maximum customer satisfaction will be achieved. At the same time, the company receives a greater amount of information through which it will be possible to forecast and support sales. (Kuzin D.V., Yadova N.YE. Innovations in business communications
and management problems// Management science, No.1,2016. p.51 – 60)

From this initial analysis we can see how the business models have been transformed, including more and more the use of digital tools and developing the online area.

The development of an e-commerce platform or the use of a multi-sided digital platform is becoming more and more a necessary for the viability of a company. This refers in particular to the creation of Retail 4.0.

In the next section we will try to understand the functions and implications of the multi-sided digital platform.

### *Multi-sided platform*

The competition among retailers was based on three fundamental concepts in the retail sector : price, selection and position (Burt and Sparks, 2003; Leszczyc et al., 2004).

Now digitization has quickly developed a fast and competent customer service correlated with activities which improve the customer experience: customers have the opportunity to fulfill the hedonic needs because they can easily interact to virtual business or selling departments (for example Sashi, 012) which will surely assist and help them to obtain the perfect customization of the product for example Rintamäki et al., 2007; Grewal et al., 2009).

Recent studies such as Baršauskas et al. (2008) and the growing number of online sales people have showed that the retailers who adopted and followed the ecommerce rules have made flourishing businesses and contributed to change the business models.

A business model is the way in which a company creates and offers value to its consumers (Teece, 2010). It is important to understand that with the introduction of the digital platforms new rules for the market strategy have been created, taking full advantage of the technology adherence (Alstyne et al. al.; 2016).

In the last decade, research has focused on the evolution of platform management strategies such as platform casing and platform mutation (Tiwana, 2014; Mukhopadhyay et al., 2016).

The main difference between a traditional" platform and a multi-sided platform is linked to the different environment in which they work. The environment of a traditional platform is shaped/created by the platform owner and users and suppliers can be found in it. Whereas, in a the multi-sided platform the environment includes competitors, who in turn have their own platforms which consequentially create other environments (Autio and Thomas, 2014).

Multi-sided platforms are dynamic interdependent networks, which means that each participant with his own actions co-creates value and develops the platform.

For example, an Amazon customer during the process of purchasing a product not only provides his data to the platform but also he helps the software to identify similar or interconnected products. In this way, the software perceives and collects all data useful

for another almost certain sale . If the same customer makes a comment, this will directly improve and enrich the customer service of the platform.

The presence on the Internet of every single shopping sector will become more and more important, but above all the coordination with multi-sided platforms will play an important role.

In the retail sector, the advantages provided by the multi-sided platform are multiple: firstly, the acquisition of numerous data will define better the typology of customers and help to forsee their future purchases. Secondly, a multisided platform offers great visibility. Finally, the logistics level will increase their efficiency.

Retailers must begin to reconsider the selling methods: through the multi-sided platform the customer really becomes the centre of the sale, and he will be able to manage his relationship with the retailer. This will subvert what has always happened until now.

The retailers will have to develop the customer-managed relationship (CMR; Law, Lau, & Wong, 2003) and increase the customers' loyalty through the proposal of dedicated services which will perfectly suit the customers' need.

### *Online–Offline Channel Integration*

The main retail trends developed by technologies and multi-sided platform, (E-Commerce Italy Report, 2017) are:

• dynamic pricing: it makes possible to adapt the offer to the demand, potentially resulting more efficient than the fixed price model;

• the multiplication of touchpoints, have redesigned the purchasing process which, from linear and unidirectional, becomes multi-channelled and characterized by a interweaving of independent activities carried out by the users both online and off-line. According to data provided by GlobalWebIndex (2016), in fact, over 85% of consumers declare that the web is part of the decision-making process that precedes the purchase of a product;

• users profiling: it becomes a central process for marketing activities with the collection and effective systematization of data. The value of the individual customer will be maximized over time. The web allows the profiling of the client without the intermediation of the distributor. In this way, the preferences of the final consumer will be all captured;

• social commerce: it discovers and uses a lot of information available only on social networks on real or potential users to increase the value of the brand, creating special targeted advertising;

The analysis of these trends has revealed the need to implement a process of integration between online and offline, to maximize the value of retail following the new consumer buying habits (Gallino and Moreno, 2014).

During 2017 some historical groups like Gap and Toy R Us have been closed. These companies have not been able to start a technological innovation and so they couldn't provide a service different from that of e-commerce.
Despite this, 4000 new stores have been opened in the United States, which means that physical stores are not destined to be destroyed because they will surely evolve.

Shopping in stores will increasingly become an experiential moment, not just for buying or selling but more for sharing brand values and learning new product characteristics. For example, Huawei stores offer free photography, fitness and graphic courses to their customers or the opportunity to customize their device immediately. In this way, Huawei customers learn to use their device better and feel part of a group.

The omnichannel and customer-centric strategy, along with the adoption of technology, seems to be the secret for brands that continue to thrive. Retailers must be able to give consumers the opportunity to choose the best way, online or offline, to fulfill their needs.
Zara has created an area within each physical shop dedicated exclusively to the collection of online orders.
A store should not only be able to organize promotional events or engaging activities to test the products but above all it will have to be ready to meet the new needs of any customers: provide the possibility to pay in a traditional way ot through digital media, even with app such as WeChat.
Organization and logistics will be two important characteristics for the development of retail: the management of deliveries of goods both between suppliers and stores, be-

tween the various stores and shops and customers will have to become faster and more dynamic in order to get the product wherever and whenever the client wants.

At the organizational level, the customer can be given the opportunity to book online activities which will be carried out in the store. The client's flow inside the store will be diluted and the customer will be kindly followed and served by a professional team of people.

An example is given by the seamless experience of Sephora and Boggi. Through the online booking the customer can perform specific activities, whenever he prefers and with the attention he deserves to make the experience even more unique. Sephora proposed to perform Color IQ, a service that suggests the scanning of the skin in order to chose the best cosmetic products. Boggi Omnichannel Experience allows customers many usable possibilities: the online and offline recognition in order to buy products online and pick up them at the store. A client can always check online if a product is in store, buy in store and get free delivery wherever he wants. All these activities are carried out regardless of whether the purchase is made online or in store. (Ninja Marketing, 2017)

The smartphone is becoming increasingly present in the online sales industry. It is used as a payment tool, a fidelity card collector (Stocard), a device to buy online and to obtain information about the product. Google estimated that 42% of in-store users search on mobile before a purchase. Creating an app or site easy to use by mobile smart phones increases the number of sales and retains the customer.

## 3.4 Retail giants: Amazon and Alibaba

Data on online sales are impressive: in 2017 1.79 billion people worldwide have acquired at least once online and the trend keeps growing, an increase of 8% is forecasted for 2018 (Number of digital buyers worldwide from 2014 to 2021, eMarketer 2018). In 2021, 2.21 billion people will buy online.

According to Worldwide Retail and Ecommerce Sales eMarketer's Estimates for 2016-2021, the value of the retail e-commerce market in 2017 was estimated at 2.290 billion dollars, + 23.2% more than the previous year and equal to 10% of the total value of retail sales (+ 1.3% over the previous year). It is estimated that the share of total retail sales will reach 16%, for a value of 4.479 billion of dollars in 2021.

Amazon and Alibaba were the first to see the potential of this scenario and grow over time without being stubborn.

Amazon and Alibaba are considered the global giants of e-commerce, transiting in 2017 a total of 1.1 trillion dollars.

Analyzing these two companies and understanding what their future projects are is essential to understand how to deal with future changes in the retail sector.

Alibaba

Alibaba was founded by Jack Ma along with 18 other founders in 1999 as Alibaba.com, a commercial service with the aim of connecting Chinese producers with foreign buyers and distributors.

Alibaba Group, based in China, is made up of several sales platforms: Alibaba.com (B-to-B), Taobao (B-to-C), Tmall (B-to-C) and Aliexpress (from B to C). This makes it the largest online retailer in the world even though 90% of revenue comes from China.

The value proposition of Alibaba Group is based on connecting buyers with vendors and suppliers based in China through multi-side digital platforms that are the basis of a business model, in which the transitions take place quickly and securely without the need for a vertical integration (Hänninen et al., 2018).

Alibaba has created an ecosystem that includes various services for loyal customers such as travel or banking services.

This ecosystem allows Alibaba to earn through the sale of additional services such as digital marketing and data analysis. In this way, Alibaba is more competitive than its competitors and maintains greater control over its sales performance.

Amazon

Jeff Bezos founded Amazon in 1994 in Seattle, where he still has his conpmany’s headquarters.

The vision of Amazon has always been clear: "The uniting vision is that the philosophy is the same: customer-centricity, starting from the customer and working backwards, doing innovative things - the sort of cultural biases inside Amazon".

In following its mission, Amazon is proposing a B-to-C multi-sided retail sales platform that allows transactions to be executed in a safe and fast way, with a wide selection and low prices on the online market. All this on a global level. (Hänninen et al., 2018)

While retailing has maximum visibility, based on Amazon.com analysis, most of the profits come from Amazon's web services business cloud computing unit.

The elements of success, which have allowed Amazon to emerge, are directly attributable to the usability of the www.amazon.com website.Iits main features are: detailed product information, customized web pages tailored to customers, personalized notifications, secure systems and certificates of payment, the presence of editorials, reviews and comments by customers, the possibility for the customers to upload their own images as reviews and, as far as the books section is concerned, the "look inside the book" function. Moreover there are thousands of lists of recommendations and wishes and many guides of purchase.

It is important to remember that Amazon obtained its first profits in the fourth quarter of 2001, seven years after its foundation.

These features have allowed Amazon not to be considered just as a shopping platform but a way to get detailed information about a product and its operation.

The common aspect between Alibaba and Amazon that allowed them to become world leaders is the investment in services dedicated to their customers in sectors other than retail.

Amazon has proposed several new buttons for the purchase such as the Dash button, which allows you to make the purchase without the use of the mobile phone or other devices. You should have only a wi-fi connection and you should simple click on an icon.

The Amazon Prime subscription, whose annual fee is € 36 while the monthly fee is € 4.99 from April 2018, offers to the faithful consumers free deliveries but also music and video streaming, including original content. In 2017 44% of U.S. households have Amazon Prime.

Amazon Studios, launched at the end of 2010, is the division of Amazon.com that develops comics, films and TV shows dedicated to Amazon Prime owners. The first original film released by Amazon is Chi-Raq by Spike Lee in 2015. (Leena, 2017).

These types of service is profitable for companies because it guarantees a constant entry, satisfying a real need of the customer, who therefore, presumably, will not esitate to subscribe.

It is interesting how both Amazon and Alibaba have started investing both in the Asia-Pacifc area and in physical stores with a particular interest in food and fashion, which are considered two expanding sectors.

In fact, in the last two years Alibaba has invested about 8 billion dollars in offline retail: after the absorption of LAZADA, for which investments have reached 4 billion at the beginning of 2018, even the online retailer of Redmart food stores in Southeast Asia, in China, became part of the group. Moreover Alibaba has financed the Sun Art Retail Group7 (RT-Mart and Auchan), the largest supermarket operator and local hypermarkets, as well as Ele.me delivery food, on the luxury chain of Intime9 shopping centers, while in India focus was placed on Zomato (Forbes; 2018).

Amazon itself created Amazon Go, the shop where no traditional counters exist and, thanks to the artificial intelligence, the withdrawn products appear on the virtual account of customers who leave the shop without paying and then receive debit and receipt on the Amazon account.

Amazon, which in addition is considered to be the most imposing online player in the western world, has recently acquired the Whole Foods, a chain of physical stores. It has also opened its first physical stores, in order to create points of contact with the customer and make the omnichannel experience.

Amazon after revolutionizing the publishing world with the Kindle product, launched on the market in October 2009, proposed a new device that will change people's habits again: Amazon Echo and Alexa Voice Service.

Amazon Echo is an intelligent speaker that you can control with your voice thanks to Amazon Alexa, the intelligent virtual personal assistant.

Alexa is able to interact with the voice and to respond to the instructions given. It will perfectly know how to set the alarm, play music and provide information. But what's more alarming is that Alexa can recommend products and proceed with the purchasing operations through the Amazon app.

This new technology could change the characteristics of the retail sector once again: companies will no longer have to focus solely on developing the brand or packaging, but make sure that their product is one of the first on the list mentioned by Alexa's voice.

The consumer will have the opportunity to avoid sitting in front of a screen and, on the contrary, he will choose among a set of photos the best and suitable product. He will totally rely on and trust Alexa, which will buy the best product for him.

## 3.5 Conclusion

Retail is one of the sectors that has undergone the technological revolution.

It has been explained how the evolution of the store has been influenced by the training of new consumers' habits.

The brick-and-mortar shop can't be no longer considered as the only sales portal because global competition has intensified a lot through Internet and multi-sided platforms.

The challenge that retailers are currently facing is that of meeting the new needs and demands of the consumer.

The consumers of the Information Era, have the possibility to check and compare different types of products in a click and to buy them directly through their device, wherever they are.

For a store, shopping will become more and more a playful activity. A store's goal will be that of creating a unique experience for the customer. The store will become the place where it will be possible to experiment the product, acquire new skills and share the brand's values.

To do this it is necessary to undertake a process of integration between online and offline channels. The customer will buy in the way he prefers: type of payment, home delivery or pick-up in the shop will represent a kind of product customization diversified for every client.

It will be no more important where the purchase will take place, whether online or offline, but the customer service: the relationship between customer and salesman will be very important, no longer focused on the quantity of sales but on their quality.

The shop assistant will have the role of managing customers' requests and supervising the registers and verification systems for shopping and requests made through mobile devices.

A shop assistant will have to be able to solve problems and help customers, both online and offline, through the use these technologies.

We must always pay great attention to technological innovations and to the changes proposed by retail giants. In a relatively short period of time they can transform the consumers' habits and customize them: an example was the introduction of the Kindle in the editorial field. What will happen when Alexa will be present in many homes, like Amazon Prime?

# REFERENCES

## 4.1 Scientific articles & Books

Ala-Mutka, K., Punie, Y., and Redecker, C. Digital Competence for Lifelong Learning. 10.

Annosi, M.C., Martini, A., Brunetta, F., and Marchegiani, L. (2018). Learning in an agile setting: A multilevel research study on the evolution of organizational routines. J. Bus. Res.

Arntz, M., T. Gregory and U. Zierahn (2016). The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis, OECD Social, Employment and Migration Working Papers, No. 189, OECD Publishing, Paris.

Autor, D.H., Levy, F., and Murnane, R.J. (2003). The Skill Content of Recent Technological Change: An Empirical Exploration. Q. J. Econ. *118*, 1279–1333.

Berman, S.J. (2012). Digital transformation: opportunities to create new business models. Strategy Leadersh. *40*, 16–24.

Bessen, J.E. (2015). How Computer Automation Affects Occupations: Technology, Jobs, and Skills. SSRN Electron. J.

Brynjolfsson, E., and Hitt, L.M. (2000). Beyond Computation: Information Technology, Organizational Transformation and Business Performance. J. Econ. Perspect. *14*, 23–48.

Colbert (2016) The digital workforce and the workplace of the future (Academy of Management Journal).

Gallino, S., and Moreno, A. (2014). Integration of Online and Offline Channels in Retail: The Impact of Sharing Reliable Inventory Availability Information. Manag. Sci. *60*, 1434–1451.

Gates e Hemingway (1999 ) Business @ the speed of thought using a digital nervous system

Gubbi, J., Buyya, R., Marusic, S., and Palaniswami, M. (2013). Internet of Things (IoT): A vision, architectural elements, and future directions. Future Gener. Comput. Syst. *29*, 1645–1660.

Hershatter, A., and Epstein, M. (2010). Millennials and the World of Work: An Organization and Management Perspective. J. Bus. Psychol. *25*, 211–223.

Kunze, F., and Menges, J.I. (2017). Younger supervisors, older subordinates: An organizational-level study of age differences, emotions, and performance: Age Differences, Emotions, and Performance. J. Organ. Behav. *38*, 461–486.

Lin, J. Technological Adaptation, Cities, And New Work. Rev. Econ. Stat. 21.

Lyons, S. (2014) Generational differences in the workplace: A review of the evidence and directions for future research (Journal of Organizational Behavior)

Myers K. (2010) Millennials in the Workplace: A Communication Perspective on Millennials' Organizational Relationships and Performance (Journal of Business and Psychology ).

Prensky, M. (2001). Digital Natives, Digital Immigrants Part 1. Horiz. *9*, 1–6.

Schwartz, J., Collins, L., Stockton, H., Wagner, D., and Walsh, B. (2017). The changing nature of work and the future workforce.

Soule, D.L., Puram, A., Westerman, G.F., and Bonnet, D. (2016). Becoming a Digital Organization: The Journey to Digital Dexterity (Rochester, NY: Social Science Research Network).

Stewartm J. (2017) Managing millennials: Embracing generational differences (Business Horizons).

Twenge J. (2008) Generational differences in psychological traits and their impact on the workplace (Journal of Managerial Psychology)

Twenge J. (2010) Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing (Journal of Management).

Uhl-Bien, M. (2007) Complexity Leadership Theory: Shifting leadership from the industrial age to the knowledge era (Leadership Quarterly).

Westerman, G., Bonnet, D., and McAfee, A. (2014). Leading digital: turning technology into business transformation (Boston, Massachusettes: Harvard Business Review Press).

World Economic Forum (2016). The Future of Jobs Employment, Skills and Workforce strategy for the Fourth Industrial Revolution.

Worley, C.G., and Lawler, E.E. (2010). Agility and Organization Design: Organ. Dyn. *39*, 194–204.

Xu, Y., and Koivumäki, T. (2018). Digital business model effectuation: an agile approach. Comput. Hum. Behav.

Zuckerman, O., Arida, S., and Resnick, M. (2005). Extending Tangible Interfaces for Education: Digital Montessori-inspired Manipulatives. 10.