UNIVERSITÀ POLITECNICA DELLE MARCHE
FACOLTÀ DI ECONOMIA "GIORGIO FUÀ"

Corso di Laurea Magistrale in International Economics and Commerce –
curriculum Business Organization and Strategy

THE DIGITAL TRANSFORMATION OF MARKETING: A FOCUS ON E-COMMERCE STRATEGIES.

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Anno Accademico 2020 – 2021

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INTRODUCTION

Nowadays we live in an era called “digital era”. It is the result of a revolution within the industry resulting from the need to reduce production times and make the production process more flexible, but also to decentralize and make more efficient use of resources by automating work processes. Industry 4.0 is a new industrial age from which companies can benefit to achieve higher industrial performance by going through a digitalization process.

The digital transformation in a company is a complex process that affects not only the internal organization of production processes, but also external relations and managerial perspective. During this thesis, the opportunities and challenges of digitalization will be presented, with a focus in the area of digital marketing and, even more in depth, in the field of e-commerce.

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Therefore, it will be presented Industry 4.0 and digitalization as the context that has given rise in companies the need for a digital transformation with a focus in the field of digital marketing. Subsequently, starting with a quick look at the Internet and the web, the technological drivers that have enabled and are enabling this digital transformation of marketing such as mobile devices, the Internet of things, big data, artificial intelligence, and social media will be presented. An

overview will be given on how these technological drivers impact different fields of digital marketing such as e-commerce, digital advertising, and data analysis. Moreover, the importance and centrality of the customer in marketing, the new consumer in the digital era and how technological drivers have impacted the customer journey, the customer experience, and the customer engagement from both a consumer and a business point of view will be discussed. Then, the concept of electronic commerce will be explored, representing an important innovation and profit opportunity generated by digitalization. Will be presented the recent trends related to applications of artificial intelligence and pricing techniques that in recent years are affecting the field of e-commerce generating opportunities and challenges for companies.

Finally, will be analyzed the business case of Elisabet srl shoe factory in Monte Urano about its digitalization process, with a particular focus on e-commerce.

CHAPTER 1. MARKETING IN A DIGITAL WORLD

1.1 THE DIGITAL TRANSFORMATION FRAMEWORK

The term Industry 4.0 dates to 2011, when it was used for the first time at a fair in Germany and was then proposed to the German Federal Government as the "Industry 4.0 Plan". Industry because this revolution took place in the secondary sector of the economy where products are mechanized and automated. (Lasi et al., 2014) 4.0 because it is the fourth industrial revolution, that is the last in a series of revolutions that began in the last quarter of the 18th century with industry 1.0 (use of energy in manufacturing), followed at the end of the 19th century by industry 2.0 (use of electricity and oil that started mass production) and in the decade of 1960 by industry 3.0 (the first introduction of Information and Communication Technologies) in factories. (Dalenogare et al., 2018)

Industry 4.0 is the consequence of an industry that is facing new challenges that require less time, flexibility throughout the production process, decentralization, efficient use of resources and the growing mechanization and automation of work processes. (Lasi et al., 2014)

Therefore, we can define this current industrial revolution as "a new level of organization and control over the entire value chain of the life cycle of products". (Vaidya et al., 2018) In this context, products, logistics and services are united

and connected through cyber-physical systems[1] to increase the productivity of companies and reduce time and costs. (Tohanean et al., 2018)

More specifically, the resulting advantages for companies are of three types:

- Vertical integration: refers to the integration that occurs between ICT systems and the various hierarchical levels within the company, from management to production;
- Horizontal integration: is the integration between companies that collaborate and exchange information and between the company and customers;
- End-to-end engineering: the integration of engineering takes place throughout the product value chain.

In table 1.1 we find the reference and the corresponding definition of the technologies that support industry 4.0 and that allow the realization of these advantages for companies. (Dalenogare et al., 2018)

[1] "A new generation of systems with integrated computation and physical capabilities that can interact with humans through many modalities." (Baheti & Gill, 2011)

Table 1.1: Technologies of the Industry 4.0

Technologies	Definition
Computer-Aided Design and Manufacturing [CAD/CAM]	Development of projects and work plans for product and manufacturing based on computerized systems (Scheer, 1994).
Integrated engineering systems [ENG_SYS]	Integration of IT support systems for information exchange in product development and manufacturing (Kagermann et al., 2013; Bruun et al., 2015; Abramovici, 2007).
Digital automation with sensors [SENSORING]	Automation systems with embedded sensor technology for monitoring through data gathering (Saldivar et al., 2015).
Flexible manufacturing lines [FLEXIBLE]	Digital automation with sensor technology in manufacturing processes (e.g. radio frequency identification – RFID – in product components and raw material), to promote Reconfigurable Manufacturing Systems (RMS) and to enable the integration and rearrangement of the product with the industrial environment in a cost-efficient way (Brettel et al., 2014; Abele et al., 2007).
Manufacturing Execution Systems (MES) and Supervisory control and data acquisition (SCADA) [MES/SCADA]	Monitoring of shop floor with real time data collection using SCADA and remote control of production, transforming long-term scheduling in short term orders considering restrictions, with MES (Jeschke et al., 2017).
Simulations/analysis of virtual models [VIRTUAL]	Finite Elements, Computational Fluid Dynamics, etc. for engineering projects and commissioning model-based design of systems, where synthesized models simulates properties of the implemented model (Saldivar et al., 2015; Babiceanu and Seker, 2016).
Big data collection and analysis [BIG_DATA]	Correlation of great quantities of data for applications in predictive analytics, data mining, statistical analysis and others (Gilchrist, 2016).
Digital Product-Service Systems [DIGITAL_SERV]	Incorporation of digital services in products based on IoT platforms, embedded sensors, processors, and software enabling new capabilities (Porter and Heppelmann, 2014).
Additive manufacturing, fast prototyping or 3D impression [ADDITIVE]	Versatile manufacturing machines for flexible manufacturing systems (FMS), transforming digital 3D models into physical products (Weller et al., 2015; Garrett, 2014).
Cloud services for products [CLOUD]	Application of cloud computing in products, extending their capabilities and related services (Porter and Heppelmann, 2014).

Source: Dalenogare et al., 2018

These pillars allow the transition from isolated and independent production stages to an integrated and automated production process, making changes not only in the physical performance of manufacturing platforms that become smart, but also in the role of human workers. (Vaidya et al., 2018)

The realization of this revolution within companies must be supported by human capital that has new skills and competences in order to make the organizational performance able to exploit the potential advantages of this new industry and become digital organizations.

There are different definitions of organizational performance, but they can be summarized as the overall outcomes given by the performance of different areas: financial, product market and shareholder return. The digitization of

organizational performance implies the use of the technologies we have talked about by workers with a view to sharing and simultaneous collaboration. (Tohanean et al., 2018)

Although the advantages that this industrial revolution can bring to companies, there is no lack of issues and challenges closely related to the benefits and technologies of industry 4.0, especially in the implementation phase of digitization. In fact, although companies are now supported in the decision-making process, it requires a self-organized system; the need for a bandwidth able to quickly manage communications and Big Data transfer; the ability to know how to manage and analyze the amount of data that this new era makes available to companies; take the risk regarding cyber security[2]; corporate reorganization to a flexible model; investment issues relating to new technologies and the implementation of corporate digitalization itself. (Vaidya et al., 2018)

When we talk about the digital economy, we refer to terms like "digitized, tracked, connected, shared personalized and direct". (Afonasova et al., 2019) The digital era is a process currently underway closely linked to industry 4.0, which is transforming society and the world economy. Digitalization means the use of new technologies to transform what is analogue into digital in all aspects of society by

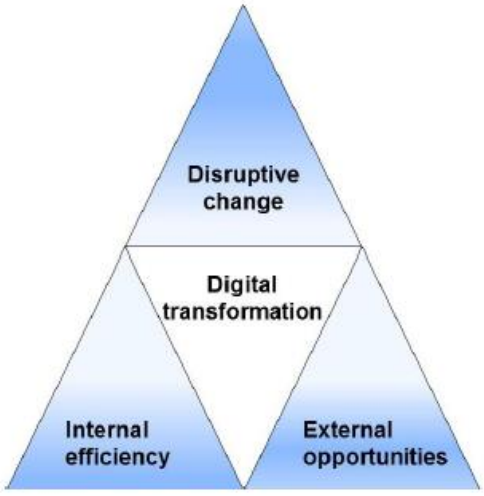
[2] "Cybersecurity is the collection of tools, policies, security concepts, security safeguards, guidelines, risk management approaches, actions, training, best practices, assurance and technologies that can be used to protect the cyber environment and organization and user's assets." (Veale & Brown, 2020)

people and organizations. Digitization is made possible by companies that strive to implement a digital transformation within their company, by automating the entire business model, that is by understanding the processes, organization, business and corporate level (work and decision making). (Parviainen et al., 2017)

This phenomenon, before becoming as we know it today, has gone through several phases: from digitization of the analogist to digital, through the advent of the Internet and finally SMAC (Social Mobile Analytics Cloud) technologies. (Legner et al., 2017)

However, this phenomenon, as well as industry 4.0, has many benefits but also some critical issues. Figure 1.1 shows us three macro areas in which digital transformation impacts within a company.

Fig. 1.1: Digitalization impact



Source: Parviainen et al., 2017

A potential benefit concerns the internal efficiency of a company that allows to automate and therefore speed up activities in order to make the results more accurate and available in the short term, facilitating the entire organization through internal and external integration. The internal efficiency also results in the living conditions for the workers who will boast of better working conditions and more time. The external opportunities provided by this transformation allow to improve the relationship with customers and make them even more at the center of every activity, not only in terms of customer care but also in terms of customization and greater variety of goods and services offered. Disruptive changes concern the possibility of changing one's business model, including digital technologies. Despite this, deciding to undertake this transformation within a company means meeting various obstacles and challenges. (Parviainen et al., 2017) Disruptive changes, for example, require the company to reorganize itself not only on a material level, but also on a cultural and mental level. Adopting a digital perspective means being willing to have a new approach at an operational and managerial level and that is why companies run the risk of not changing their mentality, ending up losing the market due to increased competition. Furthermore, although living conditions for workers may be improved, it leads to a reduction in jobs, requiring specific medium/high level skills and abilities which consequently increases wage differences. Finally, there is an additional risk linked to a great benefit that is Big Data, in fact, although they allow companies to collect and

analyze a large amount of data, there is the risk linked to the security of such data. (Ivanova et al., 2019)

One way to take up the challenge of digitalization is represented by the model for tackling digital transformation in Figure 1.2 which shows the steps that a company can take to get to the implementation of this transformation.

Fig. 1.2: Model for tackling digital transformation

Source: Parviainen et al., 2017

First, it is important to analyze the impact of digitalization for the specific company and consequently decide on the digital positioning that you want to achieve in terms of digital transformation objectives, considering that it requires

continuous adaptations to changes in the market and in the business environment. Subsequently, the internal and external analysis of the current state of the company takes place in relation to the predetermine digitization objectives. Then, a detailed plan is defined that leads to the achievement of these objectives, starting from the identification of the differences between the current state and the desired state, identification of the needed actions and their feasibility. Finally, the designated plan is implemented to assess whether the previously chosen digital transformation objectives are achieved or not. (Parviainen et al., 2017)

1.2 DIGITAL MARKETING

As previously mentioned, the digital transformation concerns the company as a whole, bringing about changes in multiple disciplines, from organization, to technology, to the supply chain and to marketing. (Eller et al., 2020)

By convention, the term digital marketing is used when we talk about the meeting between marketing and digitalization, but in order to understand the meaning of this term it is more correct to talk about marketing in a digital age.

The application of digital in marketing finds its cause in the phenomena of industry 4.0 and digitalization that have allowed this discipline to use the technologies resulting from this revolution. (Chaffey & Ellis-Chadwick, 2019)

In order to define this new marketing approach, we can define it as the application of digital technologies in order to achieve marketing objectives, that is, the

acquisition and retain of customers, promote the brand and increase sales. The approach with the consumer and partners becomes pro-active through a collaboration that allows the creation of value for the customers themselves and stakeholders. (Kannan & Li, 2017)

First of all, it is important to understand what marketing is, how it was traditionally used and how it developed in a digital age.

Marketing was born as a result of market changes that took place after the two wars that led the customer to have power over the company and no longer vice-versa. Therefore, the need arose for companies to orient themselves to the market and be "at the service" of the customer in order to understand, attract and satisfy him. (Durmaz & Efendioglu, 2016) Marketing is a process of planning and carrying out the conception, pricing, promotion and distribution of ideas, goods and services in order to create exchanges that enable the goals of individuals and organizations to be achieved. The goal of this discipline within the company is to create value for current and potential customers, but also for the company itself in terms of profitability and competitiveness. The focus of the company, as already mentioned, is entirely on the customer, because a satisfied customer is a customer who generates value for the company. "The aim of marketing is to know and understand the customer so well the product or service fits him and sells itself" (Peter Drucker). In terms of paradigm, we can talk about the customer-based view, that is, focusing attention on the customer, as a generator of value for the

company. The customer value proposition defines the designed value, specifying how the performance generates a differential value compared to competitors for the chosen target. To this end, it is important to identify the customer's needs and how to satisfy them in advance of the customer's awareness of this need. (Todor, 2016)

The transition to digital marketing occurred with the emergence of opportunities created by new technologies and the advent of the Internet which created a two-side connection between company and customer. It is precisely from the relationship between the latter two that we can begin to consider the differences between traditional marketing and digital marketing. Starting from the very purpose of the marketing activity, while traditional marketing creates the product / service and tries to motivate the customer to purchase it, digital marketing adapts to the customer's needs, trying to provide the solutions requested by him in the shortest time possible. (Durmaz & Efendioglu, 2016) This sort of transition from push to pull is also visible in the concept behind digital marketing, that is, inbound marketing. While in traditional marketing we acted in an outbound marketing perspective where the company created messages for the customer and stakeholders in a unilateral way, inbound marketing are those marketing activities implemented to attract the consumer who is looking for information or experiences that may be in line with the specific product/service. (Chaffey & Smith, 2017)

The framework on which a marketing strategy is outlined hinges on four pillars of marketing that form the marketing mix, they are represented by McCarthy's 4Ps: product, price, promotion, place. In the digital age, these four pillars are modeled to meet the new needs of the context in which marketing works. Starting from the product policy, in which decisions regarding individual products and the product portfolio are defined, the changes occur around two characteristics: digital services and network technologies. The challenge that the company tries to achieve is to create new value for the customer that allows the creation of new business models, and this is pursued thanks to the addition of digital services or the total digitization of the product itself which becomes a digital service and / or the use of the rental economy thanks to digital networking. These transformations make possible the complementarity of digital formats, the reduction of the marginal cost, but above all the customization giving users the possibility to choose options to the basic product that meet more and more every single need. Pricing policies, that is, the definition of the price of each product / service, in the digital marketing era are strongly influenced by the low, almost zero, marginal cost of digitization which at the same time allows for higher profits. Although the possibility of being able to compare multiple offers with less time waste can pose a threat to pricing policies, technologies allow companies to have a large amount of data available to analyze demand, competitors and therefore find solutions faster. ensuring flexibility in the creation of the content package offered.

The promotion concerns customer communication policies that lead to the purchase of a specific good/service. The most effective way to exploit the possibilities of digital technologies is to use customized promotion methods on an individual level that positively influence purchase behavior. A further method is the e-WOM, that is the electronic word of mouth that allows people to share ideas, information, and experiences with a wide range of individuals globally and is considered, even with the use of digital, very trustworthy and reliable. This phenomenon is not just something generated spontaneously by the customer but can be induced by the company that offers the possibility of generating it in its own digital spaces.

Finally, when we talk about place, we refer to the distribution of the good to make it available to the customer, which applied to digital marketing, refers to online channels. The touchpoints made available to the user are represented not only by traditional offline channels, but they are integrated with online channels with an omnichannel approach which we will discuss in more detail in the next paragraph. This interaction between the offline and online environment allows to benefit both the customer and the company in terms of value creation, acquisition of new customers and greater loyalty. (Kannan & Li, 2017)

In the table 1.2 digital marketing channels are classified according to the level of control that the company can exercise and the type of communication (one-way or two-way). One-way channels are those tools in which the company provides

unilateral communication to users/consumers, but this is not always synonymous with full control of the company as, for example SEO and SEA, they can be influenced by strategic decisions taken by the company in this regard, but their effectiveness depends on multiple factors (competition, user and so on). On the other hand, we have two-way channels in which communication takes place both by the company and by the consumer who can express opinions, ideas, reviews and experiences. Although on the one hand the company can have greater control over blogs or its communities as they are strictly managed by it, social media are channels in which the power is in the hands of the customer. (Taiminen & Karjaluoto, 2015)

Table 1.2: Classification of digital marketing channels

	High company control	Low company control
One-way	Website E-mail newsletters Online directories Banner adverting	SEO (Search engine optimization) SEA (Search engine advertising)
Two-way	Company generated blogs Company's own communities	Social media

Source: Taiminen & Karjaluoto, 2015

Comparing traditional marketing from digital we should consider that, if the marketing plan is carried out effectively, traditional marketing can guarantee higher levels of trust, durability of the materials created and good results, but

digital marketing manages to eliminate many problems related to costs, customization of offers, greater amount of data that allows measurability, content created with the users themselves. Many studies suggest that it is necessary to find a balance that makes the two approaches co-exist and at the same time integrate them with each other. (Todor, 2016)

Now is the time to see what digital marketing is all about. As previously stated, it is an approach that, using digital platforms, pursues marketing objectives. In the figure 1.3 are shown some of the areas in which digital marketing develops as it is an "umbrella" concept, and we can see how they are closely related to the digital marketing channels mentioned in the 4Ps as it is in them that digital marketing takes place.

Fig. 1.3: Digital marketing areas

Source: Mandal & Joshi, 2017

Let us analyze some of these areas. Starting from Search Engine Optimization, for the company it represents a tool that allows it to appear among organic searches through indexing and obtaining high rankings, thus being able to attract traffic, leads and generate sales. An SEO strategy requires 4 steps: set the objectives to be achieved thanks to the benefits of this tools; on-page optimization, i.e. defining keywords, content, meta tags and site structure in order to allow the search engine to correctly index its page; off-page optimization, i.e. dealing with everything that may affect one's position in the results and which cannot be managed within the page; analyze the data resulting from the planning made in order to identify improvements or errors. (Dodson, 2016) Search Engine Marketing is another tool that, unlike SEO, through an auction mechanism allows companies to buy position in search results and is based on a Pay-per-click mechanism in which the price is paid every once a user clicks on the company page.

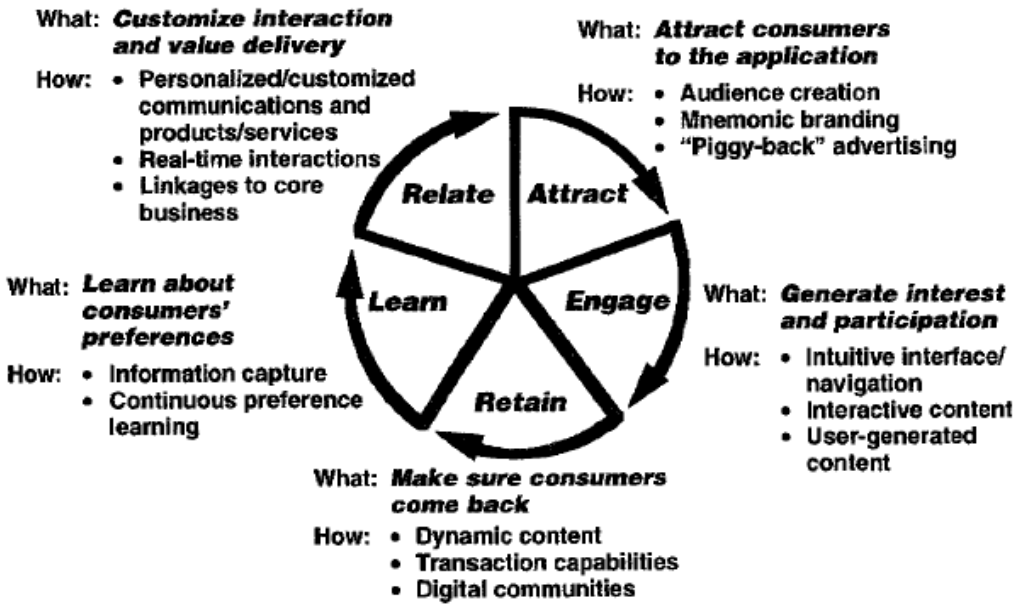
Another area of interest concerns e-mail marketing, that is a channel used to transmit marketing communication to its subscribers. In this case the four steps are: data, that is having a certain amount of subscriptions (e-mail contacts) that can be segmented into groups in order to make the message content even more personalized; design, in which the content of the message is decided and implemented from text to images in order to convey the right message and in a engaging and attractive way; delivery, in which the day and time of sending is scheduled based on an analysis of the target subscribers; discovery, the use of

analytic tools to analyze and measure the actions taken and discover their successes and errors. (Dodson, 2016)

Those proposed by the graph are just some of the branches of digital marketing, just remember for example e-commerce which will be discussed in more detail in the next chapters.

What we can deduct from this figure is how the concept of digital marketing is very broad and represents a marketing approach rather than a new. It brings changes and transformations to what has already been known in the world since the early 20th century. The first studies concerning this marketing discipline in a digital context immediately discovered the advantages and opportunities that they would bring to companies: the information delivery opportunity, the relationship building opportunity and the channel opportunity. These three aspects summarize what we have already extensively explained in terms of advantages, and specifically the relationship building opportunity is built around a circle of opportunities shown in the figure 1.4.

Fig. 1.4: Digital marketing framework and levers



Source: Parsons et al., 1998

Attracting consumers, as we have already seen, is one of the elements that differentiates digital marketing from traditional marketing. From a pull perspective, the company tries to create content that is captivating based on its audience in order to induce it voluntarily in its interactive/visual spaces (social media, website, search engine, and so on). Engaging the consumer represents a phase following the attraction. Once the user is in the company space, it is important that he/she interacts and participates in order to generate an action and, to make it possible, content created ad hoc in form and substance is required. (Parsons et al., 1998) However, in a context in which the consumer has the ability

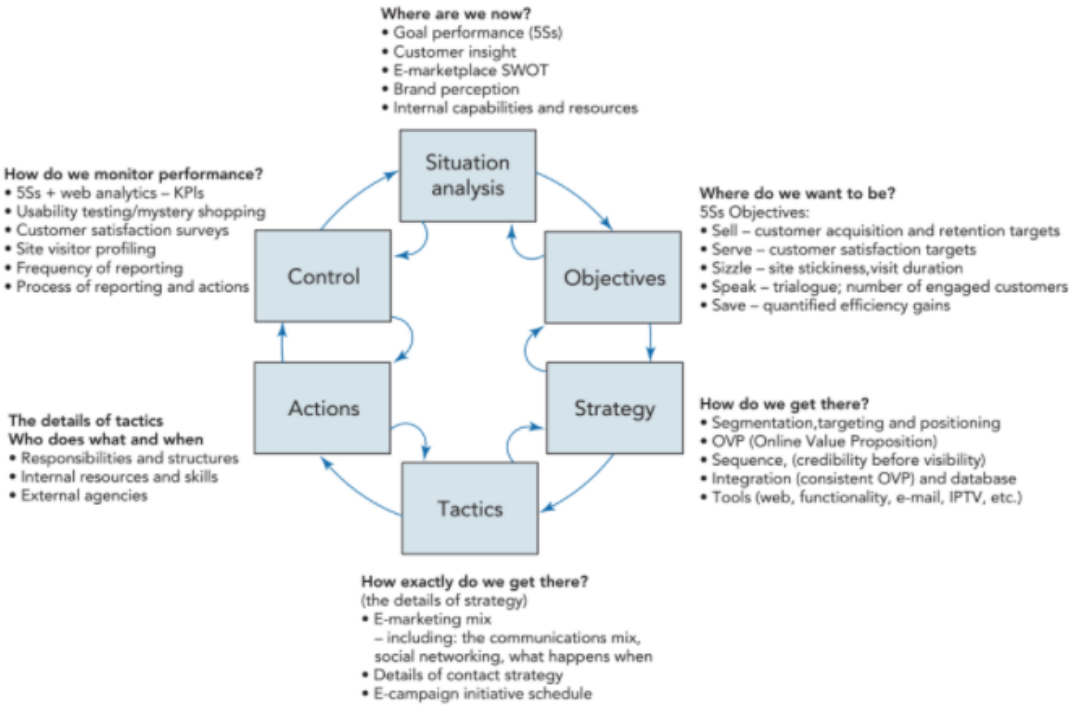
and the possibility to interact and influence, content is often created directly from him/her and we therefore speak of user-generated content. This is the case, for example, of the e-WOM but also of more direct ways put in place by the company to involve the consumer in the design of a product / service itself. (Kannan & Li, 2017) Then, it is important to pursue the goal of retaining the consumer, that is to ensure that it returns. To do this, the company should establish a relationship with the user and keep its digital spaces continuously active and updated. A further advantage of digital marketing derives from the possibility of learning about consumers' preferences in terms of information, behavior, attitudes in order to continuously improve the offer and experience provided. Finally, an important opportunity to create value comes from relate. The ability to continuously learn about the customer allows the company to create increasingly personalized content and communications on an individual level that we know to be essential in a digital and industry 4.0 era. (Parsons et al., 1998)

To ensure the pursuit of marketing objectives and the maintenance of a sustainable competitive advantage, the marketing activity has always required a planning that summarizes the strategy to be adopted. Marketing planning has a circular and cross-functional nature as the three macro-steps are not a simple sequence, but they influence each other and are not interrupted. The three macro-steps are: analysis, planning, control and again analysis, planning and control, and so on. In the analysis phase, the company deals with analyzing the external and

internal environment of the company. In the planning phase, it starts by setting the objectives (they must be Specific, Measurable, Achievable, Realistic, Time-bound) and the strategic choices (target, positioning, marketing mix), then the operational plans (product, price, promotion, and place) are finalized and finally a forecast income statement is drawn up. In the control phase, the company is responsible for evaluating the performance and effectiveness to detect any deviations and then the corresponding corrective actions.

The circularity and inter-functionality of the planning steps continues even in digital marketing, where the macro-phases are integrated and modified by new needs and new opportunities. In the figure 1.5 the planning framework proposed by SOSTAC is presented.

Fig. 1.5: SOSTAC planning framework



Source: www.sostac.org

When we refer to digital marketing, the objectives can be summarized in the 5Ss, that are Sell, Serve, Speak, Save and Sizzle, and they are the ones that guide all the planning. Sell refers to sales growth that can be pursued directly or indirectly through digital channels. Direct online revenue contribution is expressed through the sale of a product or service directly through a digital tool, that is online sales. Otherwise, indirect online revenue contribution concerns the influence of online sales that can then take place offline, or the ability to create leads. Serve refers to the increase in value, more specifically trying to increase the value that the

company creates for the customer by improving the experience provided in the pre-sales, during the sale or post-sales phases. Speak refers to the communication with the customer. The goal is to get closer to the customer and to create a relationship with them to increase awareness, attract new customers, keep current customers through communications and exchange of opinions using the chosen digital tools. Save refers to effort, time but especially to money. As already explained in the previous paragraph, digital technologies make it possible to have an almost zero marginal cost and this, together with the increase in sales thanks to online, has a positive effect on corporate profitability. Sizzle refers to the extension of the online brand. The goal is to build and strengthen the brand through digital channels as it is synonymous of trust and relationship between company and customer. The added value can also be pursued through the brand understood as “reality” or the experience that allows the consumer to live and “perception” that is to improve the positive association of the company with the brand. (Chaffey & Smith, 2017)

The 5Ss objectives can be pursued through the construction of a digital marketing strategy based on fundamental steps. The analysis performed in the planning is essential to be able to build the company own buyer personas, that is the ideal customer/s. To identify them, the analysis in this case focuses on some aspects concerning demographic and psychographic information. As suggested by the graph, the marketing objectives must be identified in line with the company

objectives and then evaluate which digital tools are suitable for the company to use for these purposes. Once identified, the company takes care of creating a content plan for the digital channels that will help it achieve the set goals. (Mandal & Joshi, 2017)

So far, the opportunities and benefits that digital marketing creates for companies have been widely exposed, but as we have seen for digitization, many of those risks are also reflected in this discipline. A company that decides to adopt a digital approach to marketing encounters problems related to copyright, Internet connection, the lack of "materiality", possible decline in consumer confidence in what is offered, dependence on technology and so on. (Todor, 2016)

The complexity and speed with which this digital revolution continues to exist and to impact more and more in every area has therefore led to challenges that, on the one hand, can become great opportunities, but on the other can turn into threats. So, let us analyze the ten tensions created by digital marketing.

The first challenge concerns one of the foundations of the company, namely the business model. It is a system that represents the organizational logic that the company adopts to create value for itself and for customers and stakeholders. Digitalization requires that business models be integrated or redesigned taking into account the digital tools and technologies chosen by the company. The second tension concerns customer insights. In a world of Big Data, of broad connectivity between individuals, being able to generate customer insights

becomes essential to be able to learn about the customer, evaluate their choices and optimize the marketing strategies. But this amount of data must not only be able to draw and exploit for the benefit of the company, but also be able to handle it because it requires the ability to know how to identify and measure such a large and complex data set. The third challenge is closely related to the previous one as the large amount of data can involve the risk of losing or decreasing the level of creativity in marketing, focusing more on fact-based decisions. The fourth challenge concerns the influence of customer opinions, reviews, and ideas. Although the interrelation between users regarding a brand can result in an increase in trust and awareness, this does not always happen. The other side of the coin is that the ease with which individuals can influence a company in positive, can turn into value destruction when a negative e-WOM is generated over which there is a lack of control. Another tension concerns the online target. The use of digital channels does not occur in the same way in all age groups, and this can cause failure, especially for older ones who are more likely to find barriers associated with the Internet. One way to reach this target as well is, as already suggested, to integrate the online and offline channels in an omnichannel perspective. The sixth tension is given by the transparency of prices which, if for the consumer represents a positive consequence, for companies that do not have a business model that has been resized also in terms of costs or that have not themselves integrated price comparability into their business model, this turns out

to be a crucial element. There is also the challenge created by the automation of interactions that can generate discontent or negative feelings for the consumer, so it is important to monitor the effects it has on customer satisfaction. In the analysis phase, the brand encounters an important challenge which is the use of online measures and their strong relationship with offline measures. Very often, companies tend not to correctly analyze data and results, focusing only on the last phase of the customer journey (it will be analyzed later) and therefore omitting data or attributing it to the wrong cause. The penultimate challenge concerns the talent gap between supply and demand for skilled workers. Digitalization requires specific and professional skills and knowledge and, in this field of marketing intelligence, specialists. However, the great need for these figures does not meet the low availability. Therefore, companies find themselves outsourcing these tasks to agencies or professionals or, in a few cases, providing internal training. However, having the skills and abilities required internally represents a strategic point for companies, so it is important to be able to invest in these resources. Moreover, this challenge affects not only companies that adopt digital tools, but also training institutes that must provide specialization courses in order to increase the supply of skilled workforce. The last tension concerns organizational challenges. As already seen for digitalization, this requires the adoption of a digital perspective throughout the company, but the difficulty in redesigning the organization leads to a dispersion of responsibilities and to the emergence or

intensification of tensions between the various departments, especially in the link between marketing and others. (Leeflang et al., 2014)

It is now clear how everything revolves around the customer who is still the center of all business activity and above all of marketing activity today. The change in the way of doing business and marketing in the digital age is a consequence of the changes that have taken place in consumers in an era in which digital impacts every aspect of an individual's life.

1.3 PATH TO PURCHASE

1.3.1 New customer

The advent and evolution of digital technologies have generated profound changes in the economic and social life of everyone. While we have extensively discussed the influence that industry 4.0 and digitalization has had in companies, in their business models and especially in marketing, digital technologies have meant that consumer behavior has also changed and is changing. The digital metamorphosis of consumer behavior has led to the emergence of two new concepts that revolve around the sphere of the consumer: "Digital consumer" and "Digital Consumer Culture".

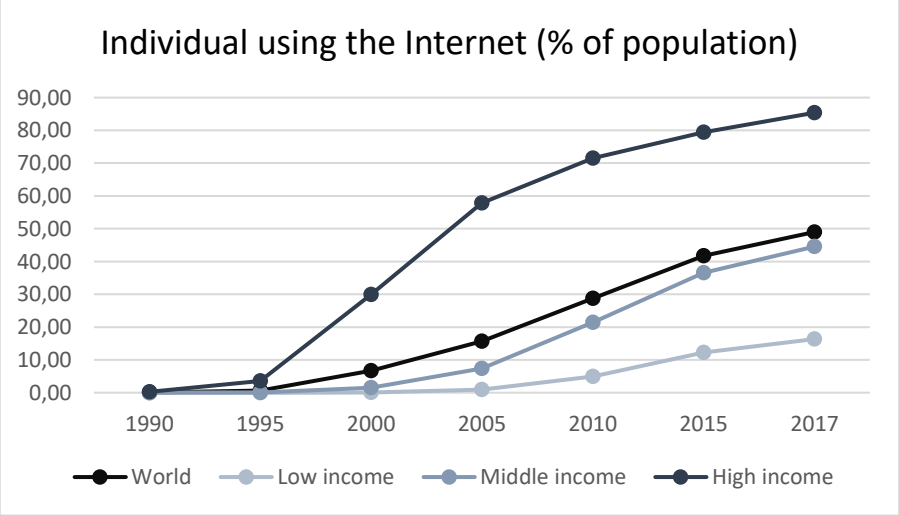
Given the centrality of the consumer in the company's business and especially in marketing, there is a need for companies to identify the factors that influence

consumer behavior in order to satisfy the customer's needs and create value for it and for the company.

The concept of consumer culture refers not only to the consumption action of an individual, but rather to a social phenomenon that concerns the interrelation between the life experiences of an aggregation of individuals and what surrounds them through the marketplace. When this phenomenon develops in a digital age, we are talking about digital consumer culture, that is, the behavior that arises from the interaction of people with digital technologies. (Dey et al., 2020)

To realize the influence that digital technologies have on consumer behavior and how this in turn impacts on marketing, we must first look at the graph of the figure 1.6.

Fig. 1.6: Percentage of individual using the Internet



Source: World Data Bank (personal elaboration)

It shows the percentage of individuals using the internet compared to the total world population and broken down by income level. It is immediately evident that since the advent of the Internet, the curve has an increasing trend, especially in high-income countries, reaching an average of 50% of the world population in 2017 and about 85% in countries with high income in the same year. This explains how the adoption of a digital perspective within the company has become a strategic point to be able to meet the changes in the needs and lifestyles of individuals.

As already mentioned in the previous paragraphs, the advent of digitalization has led to a shift of power from the company to the consumer. We talk about consumer empowerment when we refer to a process through which the consumer consciously acquires increasing levels of power over businesses, thanks to which he/she is able to exercise greater control over purchasing and consumption. This transfer of power in the hands of the consumer was influenced by the possibility of accessing the Internet thanks to the digital technologies available which consequently made it possible to acquire information (increasing bargaining power) and finally the aggregation of individuals through social networks to global level. Consumer empowerment derives mainly from the coexistence of four sources: two individual-based and two network-based. The first two are: demand-based power and information-based power. Demand-based power is a source that already existed before the advent of the Internet and in fact concerns the impact

that purchasing, and consumption behaviors have outside of digital technologies and the use of the Internet. This consumer power derives from the purchase and consumption choices of the demand on which the power of marketers was scarce as they lacked sufficient feedback to be able to answer. With the advent of technologies, demand-based power remains and refers no longer only to purchase decisions, which are now also translated into the online environment, but also to the actions that the individual can perform online towards the brand. Information-based power is expressed through two channels: through content consumption and content production. The first form of power deriving from information refers to access to information relating to a product / service that is created by the company or by other consumers, while the second form of power refers to user-generated content. User-generated content, as we have already seen, concerns the possibility for the user to generate content that expresses himself/herself through, for example, social media, blogs and so on. This source of power, unlike demand-based power, gives marketers the ability to have consumer feedback and information to balance this power imbalance. The other two sources are: network-based power and crowd-based power. Network-based power refers to the power deriving from the actions carried out in social networks to create, disseminate, modify and/or complete content to create value. The difference from information-based power is that if the former is born as a one-way broadcast of self-created content, network-based power derives from a multi-way broadcast that aims to

influence and co-create content that generate value added. Crowd-based power refers to crowd-creation, crowdfunding, crowdsourcing, crowd-selling, and crowd-support. It concerns the possibility of managing resources in such a way as to create benefit for the individual or a community, extending the powers that derive from the previously explained sources. This power can become a source of value for the company as the company can influence the creations of individuals or communities through rewards or by making available resources that bring out this power of the consumer. (Labrecque et al., 2013)

The new consumer is driven by new needs. He wants to be treated individually, that is, he/she wants to be able to have products and services available that are customized to the specific needs of the unique individual. He/she seeks convenience as we live in a digital world that has made life fast, simple, and fun so this is reflected in the consumer's willingness to see his/her needs met as quickly as possible in order to build a loyalty base towards who meets these needs. The modern consumer seeks a human connection, that is, they seek experiences that make them feel in emotional connection with others and with companies. Finally, they are guided by the desire to buy from companies that not only provide a good or service, but that offer experiences and are involved in interests shared by consumers such as environmental impact. (Belleghem, 2016)

Now let us analyze the main characteristics of the consumer in the digital age.

The most important feature concerns the fall of the clear division between producer and consumer, the figure of the prosumer is born. The producer is “the organization that make or supply products or services for sale”, while consumers are “people who use a product or a service”. (Piccinini et al., 2015)

This distinction of terms falls when the consumer also becomes a producer. We can define prosumerism as “the increased involvement of customers in the production process, typified by the use of customer feedback and direct design request in high-tech industries”. The prosumer is the consumer who not only consumes a good or a service, but who becomes an active consumer through the creation of “content, opinions and comments about goods or services that are shared in a community with similar tastes”. This concept is the definition of what has already been analyzed in terms of the possibility for the user to interact and co-create value for himself/herself (user-generated content), at the request of the brand or voluntarily for a co-production with the company. The trend that follows prosumerism goes towards an unpaid value creation perspective. What pushes the prosumer to be such is the desire to be the first vehicle of a trend (social purpose) or the gain he/she derives through the resulting solutions that satisfy the individual’s need. (Alderete, 2017)

A second characteristic of the digital consumer is that he/she is part of a community. The Internet has made it possible to break down geographical barriers and to shorten distances. An online user can now easily get in touch with others

thanks to social networks, making online communities a popular method of interaction. Online communities are social networks in which several individuals group together for common interests, purposes, or characteristics to interact and create relationships guided by factors such as “usefulness, commitment, trust self-efficacy and outcome expectation”. (Zhou, 2011) A business strategy useful to manage a community rather than being influenced by it without control is to provide a platform to exploit the power of the community in which users can talk and benefit from content, events and discounts and in which they can exercise the crowd-based power.

The new consumer is driven by curiosity thanks to the possibility of having a lot of information available in real time and immediately through online searches. In fact, unlike the traditional consumer, the digital consumer is guided by knowledge, that is, they tend to rely primarily on consumer reviews and information about a brand and then search for the best offer or price. He/she is suspicious of content firms and tends to rely on his/her own communities and user-generated content.

Another feature concerns the impatience of the consumer. The speed and ease with which the internet has made it possible to access information, especially with the advent of mobile technologies, has made the consumer looking for solutions that are immediately available when he/she has a need and wants to satisfy it. (Szwajca, 2019)

Finally, the digital consumer is multitasking and always connected. Access to various electronic devices allowed the consumer to use multiple devices at the same time and therefore to be always connected 24/7 with the consequence that the attention span is reduced from 12 seconds to 8 seconds, even less than a goldfish. (Berman & Kesterson-Townes, 2012)

1.3.2 Path to purchase, customer journey and customer experience

Technological developments and changing consumer behavior and need result in a further change in the consumer buying process.

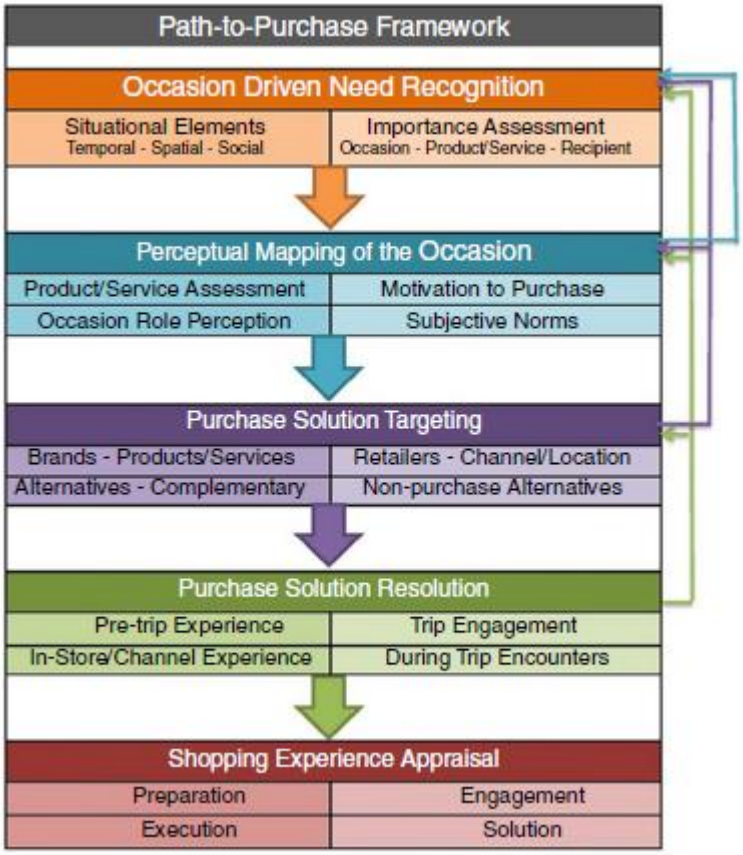
Traditionally in the era in which digital was not yet part of the lives of individuals, the purchase process (funnel) was a simple and linear process, whose framework used to push the consumer to buy was "AIDA", that is "to-interest-to-desire-to-action". (Sun et al., 2021) It consisted of three macro-phases that the individual goes through: pre-purchase, purchase, post-purchase and which are expressed in: awareness, familiarity, consideration, purchase intent and satisfaction. These four stages were carried out entirely in an offline context and whose purchase stage was carried out in the bricks-and-mortar stores. (Colicev et al., 2019) With the advent and development of digital technologies, the opportunities for marketers and consumers to get in touch have increased and have also expanded into the online environment. (Srinivasan et al., 2016)

For a long time, and in some cases still today, offline and online funnels were considered as two separate processes in which marketers tried to engage the

consumer and through which data was collected and analyzed separately. However, marketers have become aware of the effects that integrated strategies between the offline and online channels would have brought in terms of reaching and engaging the consumer, ending up adopting an omnichannel approach. This new strategic approach is not just about the use of multiple channels, but also the awareness of a need for consistency between the channels that the consumer can use in the purchasing process and their interrelation. (Sun et al., 2021)

The linear purchasing process has therefore become obsolete, leaving space for a new purchasing system that is no longer fixed or sequential called path to purchase. (Srinivasan et al., 2016) We can define the path-to-purchase as "a decision-making process to solve an occasion-specific purchase need" (Jones & Runyan, 2016), that is a process through which the consumer arrives at the purchase and satisfaction of a need. This new purchasing process is also characterized by the four above-mentioned, but what causes the desire to purchase, the channels and outcomes of each phase are now complemented by the opportunities of a digital age. (Srinivasan et al., 2016) With this in mind, let us analyze the stages of the purchase process in the path to purchase as indicated in the figure 1.7.

Fig. 1.7: Path-to-purchase framework



Source: Jones & Runyan, 2016

The first stage is called “occasion-driven need recognition”, which shows us how the driver of the willingness to satisfy a need has changed. In this stage there is not only the recognition of a need, but many situational elements come into play regarding the context in which the occasion occurs. (Jones & Runyan, 2016) Very often the initial purchase demand arises simply from a feeling of a gap between the current state and the desired state, while sometimes it is the consequence of

shopper marketing. The latter concerns “planning and execution of all marketing activities that influences a shopper along, and beyond, the entire path-to-purchase” and can intervene in all phases of the purchase funnel. (Willems et al., 2017) Once the need is recognized, traditionally the search for information takes place, but there is now the “perceptual mapping of the occasion” in which we consider the role that the buyer has in the occasion in which he/she finds himself/herself (beneficiary or not of the purchase), the motivation that drives the purchase, and the rules concerning the product/service. Then there is the “purchase solution targeting phase” which concerns the search for information regarding the brands, the location, the products, the channels and their evaluation as single and in combination.

This is followed by the “purchase solution resolution phase” in which the buyer evaluates a purchase strategy aimed at choosing the channels and location that guarantee success and value creation. Finally, there is the “appraisal shopper experience” in which the benefits of the purchase resulting from the entire process are assessed in relation to the need that the occasion has generated. (Jones & Runyan, 2016) During all stages of the purchasing process, firm generated content (FGC) and consumers generated content (UGC) play a fundamental role, generating information and persuasive effects. In the awareness phase, as we have already seen in” occasion driven need recognition”, FGC and UGC are expressed through the information effect as they make the user aware of the existence of the

brand and its identity. In the following phases of consideration and purchase intent they act through persuasive effects, proposing attractive content from companies and positive/negative feedback from other consumers that affect whether that brand can satisfy their need. In the last post-purchase phase in which the customer evaluates the benefits of the shopping experience compared to the need to classify it as satisfactory or not, the FGC produces effects through the information effect, for example by providing content regarding the use of the purchased product. The UGC comes into play by providing advice through personal experiences with the product. (Colicev et al., 2019)

We know that the main objective of companies is the customer, so at the center of digital transformation there is the need to reach and engage customer in a more efficient way and that takes advantage of new opportunities. This allow us to understand how the customer experience and the customer journey are the primary goals for marketers of the digital age. (Shawn & Ivens, 2002) The customer experience represents a series of perceptions that are generated in the consumer during his path-to-purchase in moments in which there is an interaction with products, services, and stimuli generated by the company. The perceptions to which it refers involve different spheres including “rational, emotional, sensorial, physical and spiritual” (Jain et al., 2017) and take place on four dimensions: “informativeness (cognitive), entertainment (affective), social presence (social), and sensory appeal (sensory)”. (Bleier et al., 2019) However, it is not only caused

by evoked emotions, but also combines them with a physical experience, that is, linked to characteristics such as quality, activities, environment, products, price, range, delivery, location, availability, accessibility, and services. (Shawn & Ivens, 2002)

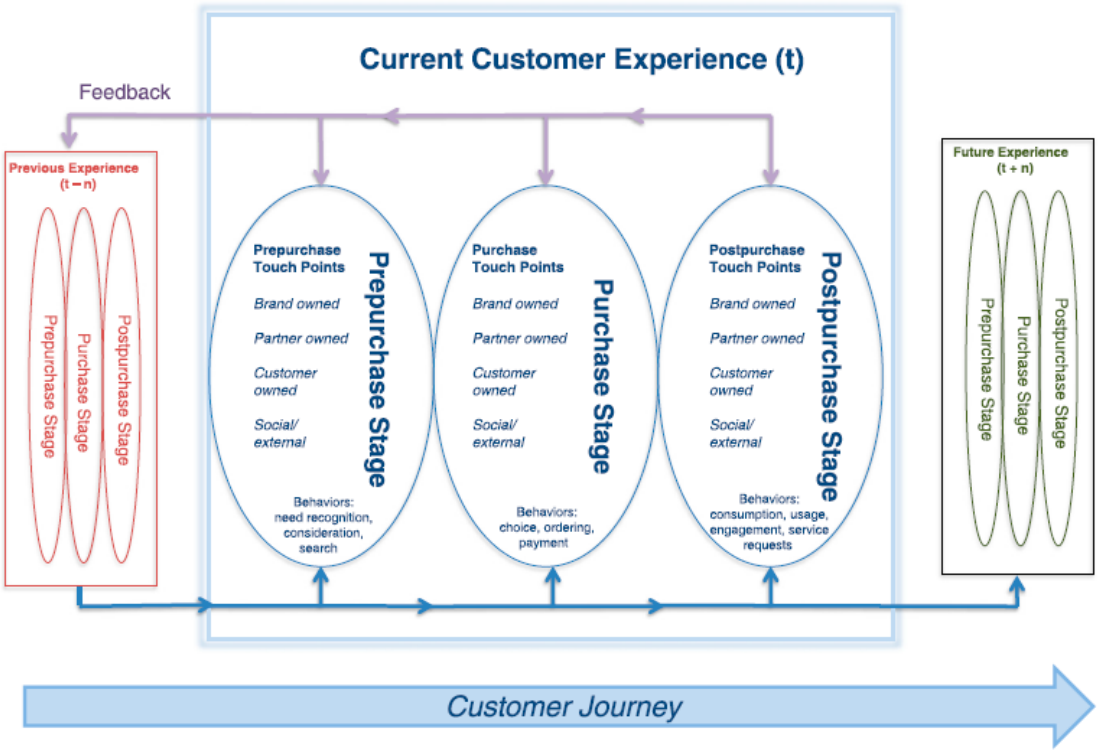
The importance of the customer experience for marketers is based on the influence it has on customers' preferences which in turn condition purchasing decisions. (Foroudi et al., 2018) This helps us to understand how the new consumer is no longer guided simply by the search for value linked to characteristics and benefits, but rather by experiences that are rich in meaning and personalized. (Jain et al., 2017) Therefore, the company finds itself seeing in the customer experience the possibility of gaining a competitive advantage, which is why we are talking about customer experience management. The five ways through which reach and engage the customer to provoke feelings, perceptions and attitudes are: "sense, feel think, act and relate" and fall within the three macro-phases in the purchase funnel, that is pre-purchase, purchase, and post-purchase. (Jain et al., 2017) This competitive advantage comes from the ability to achieve customer loyalty, secure a long-term differentiator, and possibly reduce costs. (Shawn & Ivens, 2002)

However, investing in the customer experience and improving it turns out to be a challenge for companies due to the fact that it is not linear and static, but it requires continuous studies and adaptations. It requires the ability to manage the

continuous changes that occur in consumer behavior, to understand the degree and type of information that consumers are able to collect, to optimize customer processes, the above-mentioned change in business models that integrate new digital technologies and finally the ability to know how to change the business environment. (Sahu et al., 2018)

What has pushed companies to focus on the customer experience is the possibility provided by digitization to get in touch with the company through offline and online touchpoints along the customer journey. (Lemon & Verhoef, 2016) There is no common definition for the customer journey, but we can say that it as a process through which the interaction between the company and the customer takes place and it is a useful means to understand and design customer experiences. (Følstad & Kvale, 2018) The touchpoints are "any situation in which a customer comes in contact with a brand or a company". They make up the customer journey and provoke the customer experience. (Jain et al., 2017) In figure 1.8 there is a "process model for customer journey and experience" which shows the phases from which the customer journey is generated, the three macro-phases of the purchasing process and how the customer experience comes into play within them. (Lemon & Verhoef, 2016)

Fig. 1.8: Process model for customer journey and experience



Source: Lemon & Verhoef, 2016

The customer experience that is generated in the three stages can derive from different touch points that can be created by the company and therefore they are under its control, such as company's media and elements of the marketing mix. Touch points can be directly created by business partners such as agencies, distributors, and so on and/or come from the external environment, more specifically from the social context with which the consumer comes into contact. Finally, it is the consumer himself/herself who can generate touch points that are

not controllable by the company, and which refer to choices made by the consumer. It is important to note that the customer journey is not only expressed in the phases of the path-to-purchase of a specific moment, but also considers past experiences of purchase and consumption and in turn generates effects for future ones. (Lemon & Verhoef, 2016)

The identification, recognition and "internalization" of the new consumer, of the new purchase funnel and the role of the customer journey and customer experience thus become on the one hand strategic points for a company that adopts a digital transformation and on the other new challenges for marketers of the digital age.

CHAPTER 2. DRIVERS OF DIGITAL TRANSFORMATION IN MARKETING

2.1 TECHNOLOGICAL DRIVERS

As mentioned in the previous chapter, the digitization and development of marketing in the digital age has been possible because of the possibilities for companies and users to access the Web and the Internet.

In order to understand what has been discussed so far and the developments we will see later, it is important to present an overview of the advent and development of the Web and the Internet.

In 1960 the Internet was born, and it is a system of networks and devices connected via cables or wireless; it's a physical infrastructure made by a series of computers that can communicate with each other and exchange digital information. It was in 1989 that Tim Berners-Lee presented the World Wide Web, which is "a system of interlinked hypertext documents accessed via the Internet." (Khanzode & Sarode, 2016) After its birth, the Web has gone through various stages of evolution and transformation and today it is still in continuous development.

The first form of Web 1.0 is the so-called read-only Web. It was seen by many as "a technological network of servers accessible over the Internet" that allowed the exchange of information between computers. It was characterized by simple static websites that collected documents (text, images, and sound) organized into pages

where user interaction was minimal and enabled by technologies such as the Hypertext Transfer Protocol and the Hypertext Mark-up Language that led to other related information. It was a space in which organizations and web developers delivered content to allow the user to search for information and read it. (Khanzode & Sarode, 2016)

However, the limitations that the read-only web presented, soon led to the need to add meaning to the resources on the web but also to provide the user with the possibility to perform more complex tasks. It is at the beginning of the twenty-first century that, thanks to Tim O' Reilly, web 2.0 or also called the web of people was born. The growing number of users put people at the center of the web. They became active contributors and no longer passive through the creation of content (user generated content) thanks to the first blogs, and this was the reason why the services within the web began to grow and develop leading to the birth of new business models. The user is not only a content creator but can also interact with the content created by other users, organizations, and web developers thanks to the new dynamism of content. Thus, there was then the shift to read-write web. (Hall & Tiropanis, 2012) The web becomes a platform that not only distributes but allows active participation and contribution in a bi-directional way. It is in this context that the first social media were born, and e-commerce developed, where interaction is greater, but control begins to diminish, raising ethical issues. (Khanzode & Sarode, 2016) In 2006, the term web 3.0 was coined

for the first time by John Mark, also called “executable web”. It is also known as the Semantic Web, that is a vision about an extension of the existing World Wide Web where computers can make meaningful interpretations of data like the way humans process information to achieve their goals. Digital literacy reached a level where people were not only able to create content, but also to crowd-source data and develop applications to share and use it. (Hall & Tiropanis, 2012) The web of data was characterized by creation, sharing, interrelation, free access and reuse by all users, generating a volume of data that is still growing today. But although this represents a great benefit for companies and users, there are limits introduced by this new form of web. The problems are related to the vastness of data, the vagueness of requests and concepts, the inconsistency generated by the combination of several sources and finally the deceit to the detriment of the information consumer.

The evolution of the web is still going on today and we talk about web 4.0, web 5.0 and even web 6.0. At the basis of these innovations is the symbiotic web that allows interaction between humans and machines thanks to developments in telecommunication and nanotechnology that have allowed the birth of technologies such as artificial intelligence, which we will discuss later. (Khanzode & Sarode, 2016)

If, therefore, the Internet and the web represent the basis for digital marketing, it is in this context that the so-called technological drivers develop. The emergence

and evolution of mobile, the internet of things, big data, artificial intelligence, and social media have enabled marketers and companies to adopt new business models pursuing the goal of creating value by reaching and attracting consumers to their products and/or services in an ever-evolving digital context. (Kim et al., 2021)

2.1.1 Mobile revolution

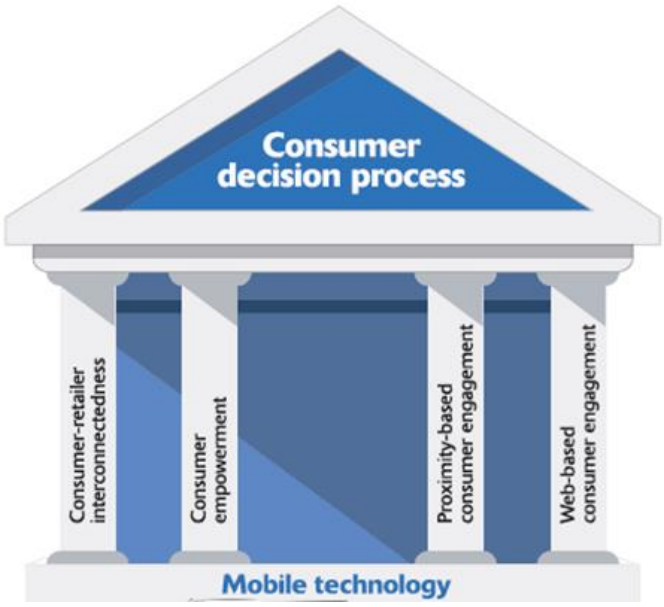
In the first chapter, the new form of consumer, the prosumer, was analyzed, and one of its distinguishing features is its constant connection to the world of the web and the Internet. What made this possible was the birth of the mobile phone. It dates back to the 1890s with the wireless telegram, then developed into a stationary telephone system during the 1900s, moving on to analogue in the 1980s and finally into digital mobile systems at the end of the 20th century. (Öztaş, 2015) Over the years, mobile has undergone a real revolution due to the purpose of its use. It started out as a system that put two people in contact through a call, but thanks also to the development of the Internet, today it represents "a means of communication that people use when they are on the go and need to communicate with others" using services provided by an Internet connection. (Öztaş, 2015) Mobile devices are the first thing people reach for in the morning and the last thing people put down at night. They are entwined with people lives and, in many instances, the mobile device has driven consumer behavior. The possibility of being always connected and in every place has revolutionized the aforementioned

path-to-purchase not only out-of-store but also in-store, making the purchasing funnel a circular process where cognitive processes and physical and virtual channels meet and cross. (Bellini & Aiolfi, 2019) The consequence for companies is the possibility to tap into new forms of touchpoints that allow them to get in touch with the potential consumer without limits of space and time thanks to the constant connection, the possibility to have one-to-one communications and therefore create relationships or contacts that are personalized and adapted to each individual consumer. More in detail, it represents for companies a means of communication with which to influence the purchasing behavior of the user through digital marketing activities that exploit the use of mobile. (Öztaş, 2015) Mobile has become a purchasing-planning tool for the consumer, creating an obstacle for the effectiveness of marketing efforts in influencing purchase choices and stimulating impulse purchases. This is because consumers who plan their purchases tend to be less influential and therefore less likely to make impulse purchases. The purchasing process thus generates more rational and organized choices. The two sides of the coin show, however, that although mobile can make the consumer more planner of the shopping experience, it can also become a distracting tool, generating impulsive choices that can then lead to dissatisfaction with the experience of a product or service. (Bellini & Aiolfi, 2019) In fact, performing several actions simultaneously can generate a delay in the decision-

making process due to the loss of attention and going to create a bottleneck for the consumer with a consequent decrease in the quality of the outcome.

More specifically, there are three areas in which the use of mobile has affected retailers. First, as can be seen from what has been said so far, the need to no longer focus on influencing the consumer's final decision, but proactively influence their decision-making process. Mobile technologies provide the consumer with more power, which we can define as "m-power" whereby the purchasing process is no longer a sequence of actions, but a continuous state, where the individual has the possibility to always make decisions based on multiple information accessible to everyone. The risk of not being able to generate impulse purchases, or that they occur in a "distracted" way, leads companies to a change of mindset towards a more holistic approach that no longer focuses only on the decision outcome but on the whole decision-making process during the macro phases of pre-purchase, purchase, and post-purchase. (Faulds et al., 2018). Figure 2.1 shows the 4 pillars by which mobile technologies impact the consumer's decision-making process for both the consumer and the retailer.

Fig. 2.1: The four pillars of mobile shopping



Source: Faulds et al., 2018

The first pillar, that is consumer-retailer interconnectedness, due to the possibility of being connected 24 hours a day in every place, allows a two-way exchange of information and data. Therefore, if on the one hand the customer has greater power due to the amount of information he can collect about a company, on the other hand the company can exploit this possibility to individualize the path to purchase in advance and act on it by exploiting the touchpoints of the shopping journey. This becomes a key point of differentiation for companies using mobile marketing tools such as: offering coupons and personalized promotions, locating, and attracting potential customers through reminder messages or offer messages and so on. Creating efficient and fast customer communications generates

satisfaction for the individual by optimizing the customer experience, but also for the company by increasing sales. (Faulds et al., 2018)

The second pillar concerns consumer empowerment, given by the possibility of the consumer to have access to a lot of not only firm-generated but especially user-generated information. The m-powered consumer is becoming aware of his or her position of advantage towards the company and it is therefore crucial for companies to be able to exploit this possibility of access to data to their advantage by personalizing the customer experience through the various touchpoints (e.g. digital shopping lists, welcoming messages, convenient checkout procedures and so on). (Faulds et al., 2018).

Proximity-based consumer engagement represents the third pillar and refers to the possibility to engage the consumer through instant identification of geographical location. The effect of marketing actions using this technology is reflected in the increase of unplanned purchases (customer engagement) and customer loyalty. (Faulds et al., 2018).

Finally, the last pillar is web-based consumer engagement, that is applications and mobile websites. With the evolution of mobile, the need to make websites user friendly also in these devices has become essential to be able to attract the consumer and to be able to maintain and gain a portion of the market. Their use mainly belongs to the early stages of the buying process but also as a last touchpoint before relying on a brick and mortar or online purchase. The use of

apps by consumers is mainly for the speed, usefulness, efficiency, and the possibility to boast a personalized shopping experience. It is therefore worthwhile for a company to invest in a mobile app, but it requires a well-structured development that incorporates the concepts of the four pillars explained so far to be efficient. (Faulds et al., 2018)

The development of mobile and its wide use has therefore become a key point for the whole company, from production to marketing, leading to the emergence of links with other marketing and business tools, thus making it a strong differentiator and value-added factor. (Öztaş,2015)

2.1.2 Internet Of Things

When we talk about apps that exploit geolocation, we are talking about one of the applications of the Internet Of Things (IoT).

As mentioned above, the Internet and the Web are constantly evolving, and so are the technologies related to Sensor Networks. It is from the meeting of these two paths that we can talk about IoT. (Whitmore et al., 2015) The concept of the Internet of Things dates back to 1999 when Kevin Ashton used it for his work on networked radio-frequency identification infrastructures to count and track assets without human intervention, but only in recent years has its use expanded to include sensors, actuators, tags, mobile phones and so on applied to everyday items. (Wortmann & Flüchter, 2015) In fact, there is no common definition for this term as it varies depending on what the emphasis is on. We can give a

definition to the Internet of Things that allows to understand its mechanism: “a dynamic global network infrastructure with self-configuring capabilities based on standards and interoperable communication protocols; physical and virtual things in an IoT have identities and attributes and are capable of using intelligent interfaces and being integrated as an information network”. (Li et al., 2015) It consists of three layers: thing or device where specific hardware and software can be added, connectivity to enable communication between the thing and IoT cloud. (Wortmann & Flüchter, 2015)

Although the evolution of the web has led to humans playing a more active role in this scenario, the IoT tends towards a return to a more passive interaction between humans and machines to make room for machine-to-machine interaction. (Rose et al., 2015) The ultimate goal is “to make possible the efficient sharing of real-time information among autonomous networked actors”, enabling interaction between the physical and digital worlds. (Lu et al., 2018) The IoT makes it possible to detect events or changes in the environment, collecting information in the form of data, storing them, and then transmitting or acting on them.

The Internet of Things has a strong impact on human life by providing everyday objects with new technological functions that interfere in the perceptual sphere of the consumer. In order for these technologies to bring benefits to users and organizations, it is important to first study and analyze the perspective that the user has towards them. (Lu et al., 2018) The consumer is always looking for the

experience related to the buying process and in this case the IoT links the characteristics of this network to the decision to buy including IoT product design, promotion, and management. The experience can be functional and therefore refer to objective cognition and emotional. The IoT features that impact in the customer experience are connectivity, interactivity, telepresence, intelligence, convenience, and security. (Lu et al., 2018) Moreover, a new concept is emerging called Social IoT which concerns the juxtaposition of IoT operation with human social networks (Li et al., 2015) which also impacts on user perception. In fact, it adds three more essential characteristics for the user in the purchase decision: effectiveness and consistency, privacy, and flexibility as there is a prevalence in wanting things that can improve and make everyday life easier. However, a further type of user perception that is crucial is that towards the technology itself. The user is looking for a technological performance that is not only easy to use and useful, but that guarantees an enjoyable experience and is tailored to the individual with respect to the task to be performed and the individual abilities of the user. Therefore, we can summarize three characteristics that lead the user to accept to adopt IoT services: user-friendly, better effectiveness in the purchasing process and satisfaction of the customer's senses. (Lu et al., 2018)

While the IoT represents a disruptive revolution leading to a "smarter" world thanks to the myriad of possible applications (smart factory, smart home, smart

city and so on), there is also a side full of issues and challenges. (Rose et al., 2015)

One of the main issues related to IoT is security and it is because devices are usually wireless and located in public spaces, generating more vulnerability to cyber-attacks and malfunctioning. (Rose et al., 2015) The individual who uses the Internet has a level of risk tolerance below which their level of trust towards the Internet and its applications increases, so it becomes necessary to make IoT devices powerful enough to support encryption to make them more secure. (Whitmore et al., 2015)

The second issue concerns the regulatory and legal aspect. It refers to the amount and variety of data that the IoT collects, which often include sensitive and personal data that become part of cross-border data flows. Moreover, the use of this data can be discriminatory in terms of pricing practices or unfair services. The impact they have on civil rights and jurisdictions often requires new legislation that does not yet exist to regulate the operation of these devices. (Rose et al., 2015)

Finally, there is the issue of privacy: lack of individual's consent, uncontrolled dissemination and use of data, lack of anonymity and inadequate authentication. Despite this, attention to privacy becomes less of an issue in the decision to adopt IoT when compared to the perceived benefits for the user. However, the need for a

legal aspect that can also regulate the privacy issue remains crucial. (Lu et al., 2018)

IoT systems and applications, as well as other digital technologies, represent an innovative way for companies to create value. As mentioned in the previous chapter, to achieve a competitive advantage, companies need to respond to changes in the environment and innovate and adopt new technologies, replacing traditional methods with digital methods. (Haaker et al., 2021) Changes in technology and its integration within the company inevitably require a change in its business model. (Whitmore et al., 2015) We know that BM represents the logic behind value creation, that is the "description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams". (Kiel et al., 2017) IoT represents for companies the creation of a connected environment within the organization that can create more value and improve customer services. The economic value generated by these systems can relate to optimizing operations through "the transaction and processing speed, accuracy, convenience, product and service quality, as well as the level of security" and more accurate customer feedback. (Lu et al., 2018) IoT transforms the concept of product into service thus requiring a business philosophy based on a business model that seeks

to meet the needs of its stakeholders in all its dimensions: “value proposition, value delivery, value creation and value capture”. (Haaker et al., 2021). Companies are therefore faced with the need to invest in this new technology to achieve a competitive advantage, but paying attention to ethical aspects, the development of robust IoT standards and user education in their use. (Lu et al., 2018)

2.1.3 Big data

Closely related to the technological developments discussed above is the concept of Big Data. “The term big data is often used to describe massive, complex, and real-time streaming data that require sophisticated management, analytical, and processing techniques to extract insights” (Gupta & George, 2016). They encompass different types of data derived mainly from three sources: Internet of Things, self-quantified, multimedia, and social media data. In fact, we have seen the volume and amount of data that the IoT can produce and in addition there are data that are directly generated by people (self-quantification data), multimedia data that are derived from text, audio, images and video and finally social media data that are generated by the social platforms used by the individual. (Yaqoob et al., 2016).

The literature presents the opportunities arising from Big Data through the description of five of its characteristics. The first is the volume of data, that is the size of the data, then there is the variety due to the different sources of data

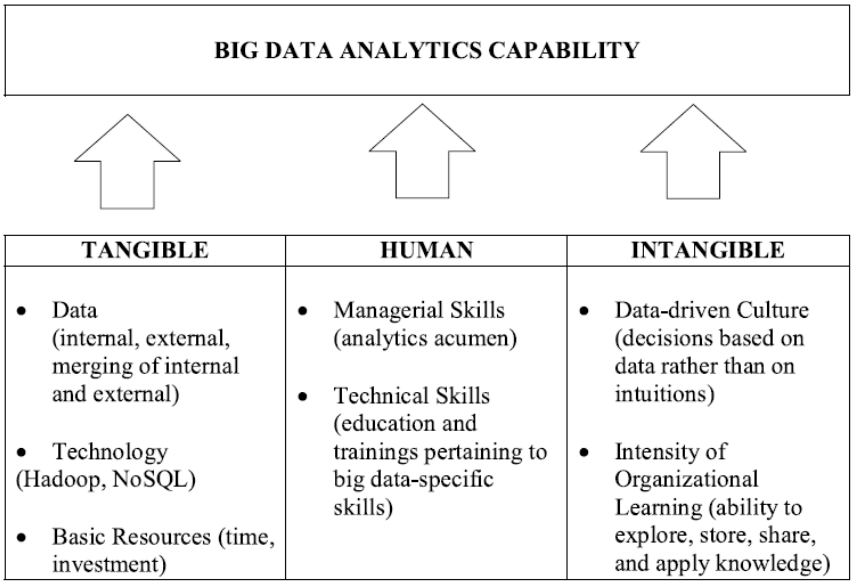
creation, the velocity of data production which is constantly growing, the veracity that is the accuracy of the data and finally the value that big data generates. (Özköse et al., 2015) In these five characteristics we find the biggest challenge that big data generates linked to the exponential growth rate of data compared to the actual ability to manage it and the biggest opportunity that lies in the value that they are able to produce. (Yaqoob et al., 2016) The value expected to be obtained from the use of Big Data is of two types: social and economic. Social value refers to the well-being that individuals and society can derive from it in terms of, for example, employment, surplus and productivity. Economic value refers to the benefits that the company can derive in terms of profits, growth, decision-making process, and achievement of competitive advantage that depend on strategic goals. (Günther et al., 2017)

There are essentially three main reasons for companies to adopt technologies that use Big Data: to minimize hardware costs, to reduce process-related costs and a predictive check on the value that can be generated before investing resources. (Yaqoob et al., 2016) The implementation of Big Data within companies requires the need for resources to build Big Data analytics capabilities, that is "firm's ability to assemble, integrate, and deploy its big data-specific resources". (Gupta & George, 2016) The resource-based theory (RBT) considers not only the resources that the firm currently possesses, but also how they can be used correctly to achieve a competitive advantage by relating resources and

performance. (Gupta & George, 2016) The main purpose in using data is to extract valuable information from it through analysis. Thus, there are several analysis techniques that allow this large amount of data to be analyzed efficiently and in a short period of time. These are data mining which allows to summarize data into meaningful information and web mining which allows to extract information from the web through the web content or the connection structure of websites. Then there are visualization methods which allow us to understand data and machine learning which refers to the outcomes generated in computers thanks to data. Finally, there are optimization methods that refer to those strategies that allow to cope with optimization problems and social network analysis. (Yaqoob et al., 2016).

To generate a big data analytics capability, it is not only technological resources that play an important role, but the adoption of a data-driven decision-making culture that is spread across all levels of the company, from management to employees. The three types of resources that the company should possess to ensure that the investment in Big Data creates value are illustrated in fig. 2.2.

Fig. 2.2: Classification of Big Data Resources



Source: Gupta & George, 2016

Tangible resources refer to what can be sold and bought in the market and in this case are data, technology, and basic resources such as investment and time. Data is in fact considered today as an additional resource like labor and capital and can be internal or external or, to develop big data capabilities, a combination of the two. Technology is strictly necessary for Big Data, especially considering that the variety of data is also linked to the fact that many of them are in an unstructured format and require innovative methods to store and analyze them. However, tangible resources alone are not able to create competitive advantage but require the integration of human and intangible resources. Human resources refer both to technical skills, that is statistical and IT skills and know-how, and to managerial

skills, that is those skills intrinsic to individuals within the company who can analyze and understand the current state and predict future needs. Finally, the intangible resources are the data-driven culture spread throughout the company that allows to base decisions on the results and meanings that data provide, and the intensity of organizational learning, that is the possession of specialized knowledge of individuals that are shared with the entire organization and their use to develop the big data analytics capability. (Gupta & George, 2016)

There is no shortage of major challenges that companies face in creating value through Big Data. The first one is the approach to big data analytics which can be inductive (collecting data without having first set a purpose and then acting on it to gain insights) or deductive (having a theory and using data to test it). The second concerns the use of algorithms or human intelligence in processing and interpreting data. There are also considerations regarding the organization model (developing internal competency centers or decentralizing) and stakeholder considerations regarding data access, privacy, and security issues. What is common to all the above challenges is that there is an ideal solution and that is to balance all the alternatives to eliminate the individual issues related to each of them. (Günther et al., 2017).

Therefore, we can say that although the growth rate of data is undergoing an exponential growth greater than the human capabilities related to its use and

interpretation, the individual's actions and knowledge remain key points in the exploitation of this innovation. (Yaqoob et al., 2016)

2.1.4 Artificial Intelligence

The growing amount of online data has led to the emergence and development of technologies that can not only collect and store it, but also use it in various ways and for various purposes. We have talked about mobile, the Internet of Things and big data, but these are not the only technologies that present strong opportunities in this field. Closely related to them is Artificial Intelligence. (Haaker et al., 2021)

The term artificial intelligence dates back to the 1955 John McCarthy conference and today can be defined as "the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages". (Jarek & Mazurek, 2019).

The major developments in artificial intelligence are attributed especially to machine learning, that is "machine's ability to keep improving its performance without humans having to explain exactly how to accomplish all the tasks it's given" (Brynjolfsson & Mcafee, 2017), and in particular to two areas: perception and cognition. These developments can be attributed to what can now be done in the five areas of AI: voice recognition, text recognition, image recognition, decision-making systems and autonomous robots and vehicles. The biggest difference between machine learning and algorithms is that its approach changes:

while algorithms exist to achieve a certain purpose by "digitally translating" the knowledge possessed by humans, ML learns from examples and notions provided to it to draw conclusions. (Brynjolfsson & Mcafee, 2017)

Although thanks to the speed with which it develops and with which it reduces the margins of error, it seems that machine learning is replacing humans, going to solve Polanyi's paradox[3], this is not correct. Automation of tasks is indeed made possible by AI, but humans are still an important factor. Machine Learning is the input to automation as it is only able to predict so it requires a complementary set of human skills in terms of judgement. The more machines can predict, the more it will be necessary to be able to identify and apply the correct and necessary predictions. (Agrawal et al., 2017).

So far, we have talked about a particular category of machine learning, supervised learning systems, in which you provide the machine with a series of inputs and examples of correct answers that the machine will be able to associate. However, there is a further category called unsupervised learning systems which is not yet very well developed and in which machines are able to learn by themselves and provide patterns that humans are not yet familiar with. Moreover, there is also another area that is still under development, that of reinforcement learning. The approach taken here is to provide a specific goal to be achieved and to specify the

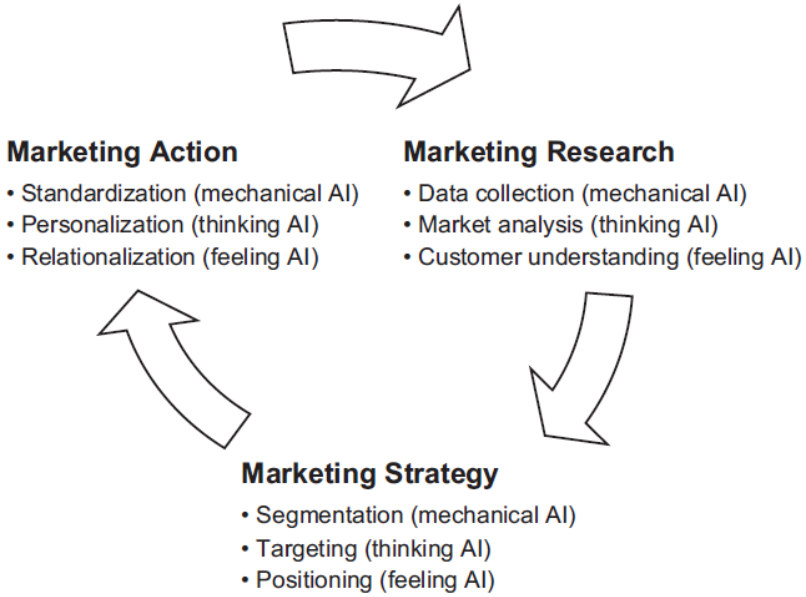
[3] It "not only limits what we can tell to one another but has historically placed a fundamental restriction ton our ability to endow machines with intelligence." (Brynjolfsson & Mcafee, 2017)

current situation, the possible actions and for each of them the limits that the environment imposes on its outcome. (Brynjolfsson & Mcafee, 2017)

What has been said so far is why AI has also become important in other fields than the traditional one, and one of these is marketing. Applications of AI in marketing are for example in shipping and delivery, to reach new customers, to provide in-store personal assistants and so on. We can therefore say that it becomes strategic in all areas of marketing and across all five areas of artificial intelligence mentioned above. (Jarek & Mazurek, 2019)

To illustrate the application of artificial intelligence to marketing we use two factors: the three-stage strategic planning framework and the three AI intelligences. As we already know, the marketing process is a circular process that can be summarized in three stages: research, strategy, and action. The three AI intelligences are: mechanical AI, that is automating tasks, thinking AI, that is processing data to arrive at an output and finally feeling AI, that is interacting with the human being. These three can be applied to any field, but the distinction depends on the purpose to be achieved by using them. Figure 2.3 shows the match between the two factors considered. (Huang & Rust, 2021)

Fig. 2.3: AI and strategic marketing decisions



Source: Huang & Rust, 2021

Regarding the use of AI in marketing actions, reference is made to its application in McCarthy's 4Ps. Starting with the product, it allows new product development, ensuring greater product customization, providing automatic recommendations and solutions that go beyond the product category. In pricing, AI can bring benefits in both price management and price setting. In product access (place), it can automate the process by ensuring speed and simplicity, new distribution channels, to facilitate in-store shopping and customer service. Finally, in promotion, it allows to extend the personalization of communication, to minimize disappointment and to improve the customer experience. (Jarek & Mazurek, 2019)

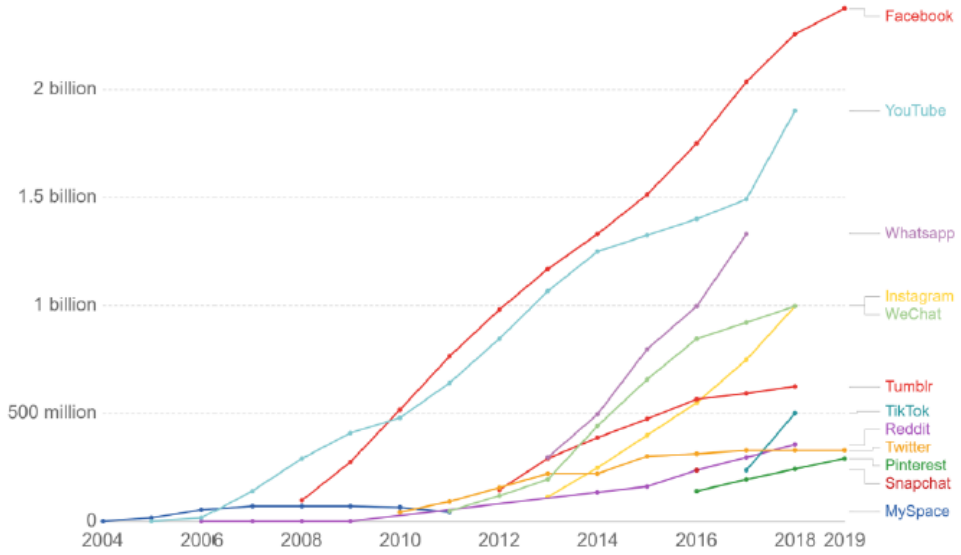
Nevertheless, the three AI intelligences have limitations. They concern the ability to collect data from many sources and the possibility of losing direct contact with the customer due to machine-to-machine communication. Furthermore, the non-neutrality and not total transparency of the outcome can generate distorted or unmappable results. Finally, there is still no machine capable of recognizing and reacting to human emotions. (Huang & Rust, 2021)

Like the various recent and rapidly developing digital technologies we have discussed, AI represents both a huge opportunity and considerable risks. However, companies that can grasp and implement this technology by redesigning the tasks and skills required, transforming their business processes, and adopting new business models, will be able to gain a competitive advantage in the digital landscape. (Brynjolfsson & Mcafee, 2017)

2.1.5 Social media

Social media should certainly be mentioned as another technological driver of digital marketing. Their origins lie in the early 21st century with the development of Web 2.0. As already mentioned above, it was the birth of social media that revolutionized the web in those years thanks to the possibility to be active users and to introduce a new one-to-one communication method, replacing the one-to-many. (Ngai et al., 2015) In Figure 2.4, since the birth of social media, the number of users of these platforms has grown exponentially for the first and most popular platforms. (Onețiu, 2020)

Fig. 2.4: Number of people using social media platforms



Source: Onețiu, 2020

Today, social media are used by billions of people around the world, spending many hours a day on the various platforms through both mobile devices and personal computers. For this reason, social media have become an integral part of business strategies and marketers' strategies, first as a communication channel and then expanding the fields of application. (Appel et al., 2020)

Among the various definitions, we can identify social media as "new media technologies facilitating interactivity and co-creation that allow for the development and sharing of user-generated content among and between organizations and individuals", and differently social media networking services as "an electronic service, application, platform, or site used by individuals who

have a common interest, beliefs, attitudes, culture, activities and really life relationship". (Alalwan et al., 2017) The term social media in fact refers to the use of digital technologies by users in which to exchange information and content and in which to create an online social environment. (Ngai et al., 2015).

As a first use, it is evident that social media represents an important communication channel for companies in the digital era in which we live. Today, it encompasses two key aspects: the platforms and the use cases. (Appel et al., 2020) The applications of social media by companies have become multiple and go far beyond online advertising. (Ngai et al., 2015) One of them is marketing. We talk about social media marketing as "a dialogue often triggered by consumers/audiences, or a business/product/service that circulate amongst the stated parties to set in motion a revealing communication on some promotional information so that it allows learning from one another's use and experiences, eventually benefitting all of the involved parties". (Alalwan et al., 2017) Investing in online communities for a company becomes an opportunity to increase loyalty through trust, customer satisfaction and perceived value. In addition, providing customers and potential customers with the information they need through various social networks also allows them to influence purchasing decisions at all stages of pre-purchase, purchase, and post-purchase. (Ngai et al., 2015) A further marketing activity in social media is brand building, which is closely linked to the generation

of user trust and loyalty towards the brand, positively increasing the level of brand reputation. (Alalwan et al., 2017).

A further application of social media concerns the care of the relationship between the company and its customers, using systems such as customer relationship management. "The more capable can organizations build and sustain emotional and social ties between their customers and with their brands, the more such organizations could have a close and solid relationship with those customers." (Alalwan et al., 2017)

There is also the possibility of sharing information and knowledge related to products and customer experience by the company and among users in the virtual community driven by factors such as altruism, reciprocity, identification, and shared language. (Ngai et al., 2015) Social media also enable the generation of e-wom (electronic word of mouth), made possible by feelings of trust and normative influence that allow the sharing of experiences with other users representing an opportunity but also a risk for companies. (Alalwan et al., 2017) There are also other applications of social media such as being able to generate collaboration in design processes between the user and the company and the development of forms of communication within the company as well. (Ngai et al., 2015).

Although social media is now considered a technology that is already widespread not only among users but also among small, medium, and large companies, there are new challenges that are shaping the future of this technological driver. We can

classify these challenges according to the urgency of their response. In the immediate future there are three themes. The first is the omni-social presence due to the widening boundaries of social media which are now integrated into further websites and applications and the influence they have on all steps of the consumer's decision-making process. Then there is the growing influence generated by celebrities, called "influencers", which generate the need for companies to incorporate them into their marketing strategies, as well as the application of AI that allows the emergence of figures called "virtual influencers". The last current issue is related to privacy, which is eroding users' trust and therefore requires specific actions to ensure transparency. Three further themes concern the near future. The need to combat the loneliness and isolation generated by the growing use of social media that have a negative impact on user wellbeing, for example by providing self-control tools and services aimed at creating real relationships. Then there is the need to ensure ever better customer care services thanks to the application of AI to the extent of being able to anticipate problems that may arise and the fact that they are becoming political tools. In the future, the issues that are linked to social media are those concerning virtual and augmented reality, the growing need to converge online and offline, and finally the interaction with bots generated by the Internet of Things and artificial intelligence. (Appel et al., 2020)

2.2 FIELDS OF APPLICATION IN DIGITAL MARKETING

The emergence and rapid development of the digital technologies presented in the previous section are the drivers of the emergence and development of marketing in the digital age that individuals and companies are experiencing. There are many applications of these technologies in marketing and the fields that seize the opportunities, but also the challenges and risks they present. We will now analyze some of these fields that, by seizing the opportunities, have been born, or rather have developed and integrated the online with the already existing offline.

2.2.1 E-commerce

One of the major trends related to Industry 4.0 and digital marketing is electronic commerce. We will now give a general overview and then go into more detail in the next chapter.

Information and communication technologies appear to be one of the factors that have driven economic growth, initially only in the form of investments in hardware, and then expanding to a range of ICT systems including electronic commerce. (Falk & Hagsten, 2015) It is precisely the development of ICT that has required the integration of new technologies within industries to maintain a competitive advantage. (Choshin & Ghaffari, 2017)

E-commerce is not new, but it is a concept that dates back to the 1970s when it was used by large corporations as a means of private communication through networks and for exchanging documents and making financial transactions.

However, it was with the development of the internet in the 1900s that the possibilities and opportunities of this medium expanded. (Dos Santos et al., 2017) E-commerce is “buying and selling over the Internet or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network”. (Shahjee, 2016) However, with the continuous digital developments and fields of application of e-commerce, it needs a more complex definition, that is “the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals.” (Shahjee, 2016)
We have already seen that the increasing use of mobile has had a strong influence on the purchasing decision-making process, making the individual a potential full-time shopper. (Faulds et al., 2018) One of the uses of mobile is that related to e-commerce, which is called mobile e- commerce. It “is defined as all activities related to a (potential) commercial transaction conducted through communications networks that interface with wireless (or mobile) devices.” (Dhingra et al., 2015)
With the development of social media thanks to web 2.0 and the widespread use of mobile devices, an evolution in e-commerce has taken place: social commerce. It represents the merging of e-commerce and web 2.0. We can define social commerce “as an Internet-based commercial application, leveraging social media and Web 2.0 technologies which support social interaction and user generated

content in order to assist consumers in their decision making and acquisition of products and services within online marketplaces and communities". (Huang & Benyoucef, 2013) However, the impact of social media in e-commerce does not only concern the communication part, but the purchase phase in its narrowest term. Indeed, we talk about social shopping when we refer to "online shopping with social media tools and platforms and sharing shopping experiences with friends." (Turban et al, 2016)

The amount of data produced on the web through the Internet has exploded in recent years. E-commerce is a generator of big data, but it is also a user. Companies using big data analytics see their productivity increase by making decisions based on data. Indeed, the use of big data allows them to track the user's behavior, thus enabling companies to adopt effective strategies to convert occasional customers into repeat customers. Moreover, big data allows companies to reduce costs, time and transactions and even make them more efficient. The biggest challenge remains big data regarding how to collect, analyze and generate meaningful output from a vast amount of structured and unstructured data. (Akter & Wamba, 2016)

The development of artificial intelligence is also having impacts in online commerce. Such application generates opportunities that can make the shopping experience simpler, more efficient, and responsive for the customer, and for companies an additional method of generating data and optimizing e-commerce-

related operations. (Enache, 2019) Specifically, the applications of AI in e-commerce cover a variety of fields. One of them is the artificial intelligence assistant, that are robots that interact automatically and immediately with the customer. Then there is its application to logistics, that is the use of information technology in the supply chain in terms of both control and equipment. The ability of AI to use data quickly allows this technology to be adopted for price adjustment of products to achieve the optimal one. (Song et al., 2019) Finally, the application of machine learning for recommendation engines. Product recommendation allows users to be guided through many products, allowing them to discover new products and find what meets their needs based on what similar customers have previously purchased (collaborative filtering) or based on product content (content-based filtering). (Enache, 2019) These techniques related to AI within e-commerce therefore represent something that meets the needs of the new consumer while providing companies with additional data to improve their performance. (Song et al., 2019)

Furthermore, a strong impact in e-commerce is also due to the Internet of Things. Two factors characterize this technology and find application in online commerce: two-dimension code technology and sensor technology. The application of these two features generates benefits for companies that decide to integrate them into their strategies. First, it allows them to improve logistics service quality thanks to the possibility of tracking every single good at any time, optimizing and speeding

up the distribution phase and obtaining feedback in terms of data. (Yu & Zhang, 2017) Moreover, IoT allows to improve the monitoring of product quality, to integrate the information flow of e-commerce with that related to logistics and to impact capital flow thanks to new payment methods that are fast and less expensive for users. (Guo et al., 2017) All these benefits benefit companies as well as consumers who can thus rely on more realistic and reliable information services provided by electronic systems. (Yu & Zhang, 2017)

2.2.2 Digital advertising

Advertising is a very old concept and is traditionally described "as a form of controlled communication that attempts to persuade consumers, through use of a varieties of strategies and appeals, to buy or use a particular product or service". (Rodgers & Thorson, 2017) The Internet and the development of technologies such as mobile have also represented a great opportunity for advertisers who now have new methods and formats to reach and attract customers. We are talking about digital advertising, that is "all brand-initiated communication with the intent to have an impact on people that occurs through digital media channels". (Hudders et al., 2019) More broadly, the application of digital in advertising has enabled the generation of a digital advertising ecosystem consisting of five segments. The demand side, that are those who invest in advertising (advertisers) and the supply side, that are those who provide advertising inventory (publishers for examples). Then there is the marketplace where the first two actors meet, the

data generated within the ecosystem and finally the user whit whom close relationships can be built. (Stallone & Klaas, 2019) We can link digital advertising to two phases of the development of industry 4.0 that have generated two specific applications for advertising: online advertising, linked to the advent of the Internet, and mobile advertising, made possible by the advent and development of mobile. (Chen et al., 2016)

Online advertising consists of providing advertisements using the Internet and the Web. The benefits of this form of advertising are diverse, from improving the branding, the possibility of not having geographical barriers, but also reaching your target audience and the speed and breadth of information provided. There are also economic benefits such as more affordable prices and better ROI[4]. (Deshwal, 2016)

Mobile advertising, on the other hand, consists of providing online advertisements and in-apps. M-advertising is "the business of encouraging people to buy products and services using the wireless channel as a medium to deliver the advertisement message". (Wong et al., 2015) This advertising channel allows companies to deliver personalized messages about the product or service at any time and in any place, thanks to the advantages that mobile provides: multimedia proficiencies, interactivity and being addressable. (Wong et al., 2015)

[4] Return on investment is a performance measure that provides the relationship between net profits and the related investment. (Friedlob & Plewa, 1996)

A strong impact in digital advertising comes from social media. They represent an excellent platform to communicate with the company's target customers. Indeed, including social media in advertising campaigns allows companies to seize the opportunities related to the strong attractiveness and interactivity that these platforms offer. (Alalwan et al., 2017)

Let us now look at the main characteristics of digital advertising that also represent the differentiating factors from traditional. Firstly, the lower level of user resistance and scepticism due to the interactivity of digital advertising. (Rodgers & Thorson, 2017) In fact, the user is no longer an individual who passively receives an advertisement but becomes an active actor. He is an active distributor thanks to the possibility of sharing what he finds online and a contributor because with the possibility of commenting publicly he can influence the campaign itself. Moreover, he is also a co-creator of content for advertising, just think of influencers in social media, but also of the user himself who shares online experiences with a brand. (Hudders et al., 2019)

Interactivity is also due to the possibility for the user to interact with the advertisement shown to him, allowing advertisers to extend the time of appearance, and thus making the brand more visible. It also makes it possible to decrease the distance between the advertisement itself and the purchase decision thanks to the use of techniques linked to new technologies that "with one click"

take the user to the web shop, thus generating more impulse purchases. (Hudders et al., 2019)

Another feature of digital advertising is the personalization of content and delivery thanks to the data collected on the user. Personalized advertising allows firstly to reach the company's target audience and secondly to become more attractive and persuasive for the individual user as it links their interests and needs to the specific brand.

Finally, the increased user engagement through digital advertising, that is the interaction of the customer with the advertising provided. (Rodgers & Thorson, 2017).

Therefore, we can conclude that this last characteristic represents the purpose of this new form of advertising and something that encompasses on a macro level the two previously described characteristics and is applied to both branches of digital advertising.

2.2.3 Customer relationship, customer engagement and customer experience

One of the biggest changes that digital and technological drivers have caused is in the customer experience. We have already seen that today the focus of companies is the customer and how being able to identify and map the customer journey is essential to be able to develop ad hoc strategies to reach, engage and retain the customer.

We will now analyze the concepts of customer relationship, customer engagement and customer experience under the influence and application of technological drivers.

The importance of the customer relationship has evolved over the years to the need for a tool to manage information for sales and marketing purposes but also for a more effective customer interaction: Customer Relationship Management (CRM). (Gil-Gomez et al., 2020) It dates back to the 1970s and is “a process that maximizes customer value through on-going marketing activity founded on intimate customer knowledge established through collection, management and leverage of customer information and contact history”. (Khedkar, 2015)

The objective of CRM is to manage the customer relationship with current and potential customers and make it profitable and durable over time by generating trust. In fact, “Know you customer and you know what they buy” can be the foundation of this process. (Raab et al., 2008)

It is evident how the objectives of CRM are centered on the customer. First, knowing how to understand the customer's expectations and how to maintain relations guaranteeing customer satisfaction. Therefore, leading the customer to repeat purchase actions. This is possible thanks to strategies based on CRM that tend to guarantee a positive purchase and post-purchase experience, thus allowing not only the repetition of the purchase, but also the generation of an effective word of mouth. (Khedkar, 2015) In fact, the greater the trust and satisfaction, the

more repeat sales and the fewer customers who leave, allowing for increased profits. Moreover, there is also an impact on the prices that the company can charge as repeat customers become less price sensitive and therefore allow the company to charge higher prices than the competition. (Raab et al., 2008)

The impact of mobile in customer relationship management has been named M-CRM. It enables the use of CRM systems via mobile devices, allowing a more efficient use of these technologies due to their ease of use and functionality. In addition, the ability to take advantage of geolocation technologies, companies can locate the customer in real time, generating databases and real-time information available to the entire organization. Furthermore, the customer and the company can benefit from increased interaction and communication making contact closer and easier. (Rodriguez & Boyer, 2020)

The application of big data in customer relationship management is essential. Knowing how to collect and use the data that the company receives on and from the customer is fundamental to understanding the customer and developing effective retention and satisfaction strategies. In fact, applying big data to CRM makes it possible to analyze the customer's path-to-purchase, to generate proactive customer retention, to predict customer satisfaction or disappointment to take preventive action and finally to use the data to generate tailored recommender systems. (Zerbino et al., 2018)

The relationship between big data and CRM is influenced by social media which has increased the volume of seed and un-structured data regarding customers and the market. We talk about social CRM as "a customer relationship management process that provides communication through social media sites, such as Facebook and Twitter" (Paliouras & Siakas, 2017) The customer engagement created by social CRM follows three stages. Customer relationship orientation which concerns the implementation of a strategy to understand the needs of customers, relational information processes which concerns the acquisition and use of information that comes from social media and finally CRM technology adoption which the acquisition and analysis of data. The output that can be generated is increased trust, co-creation, and brand loyalty. (Paliouras & Siakas, 2017)

When we talk about customer engagement, we refer to "A psychological state that leads to frequent interactions with the focal object (for example mobile shopping apps) that goes beyond the transactional motive of immediate purchase intention". Four key experiences related to customer engagement have been identified. The intrinsic enjoyable experience resulting from the absorption of concentration, strong interest, and involvement. The utilitarian value, that is the evaluation of the benefits and sacrifices of functional but also emotional aspects. The temporal experience that guarantees the user a pleasant and distracting experience. Finally, the social facilitation that refers to the possibility of taking advantage of online

content in the relationship with others and with one's own communities. (Thakur, 2019)

Customer engagement and customer experience can generate customer satisfaction. It is the goal of every digital business. An additional technology to achieve this goal is the internet of things which can bring various benefits. One of them is promotional marketing, as companies can create personalized marketing campaigns tailored to each individual customer by collecting data and information directly from the sensors they meet. On-demand pricing allows companies to use live streams of data to implement on-the-fly promotions and to customize the prices of products and services to the customer. In addition, real data from IOTs allows companies to improve customer service by having the flexibility to generate quick and highly targeted service campaigns and predict what services the customer will need. A further benefit is for the business organization as the data captured by the Iot is made freely and transparently available to the entire organization, generating trust and improving employee morale. (Yerpude & Singhal, 2018)

The customer experience is also strongly influenced by the emergence of new technologies related to artificial intelligence. Among them there are: augmented reality, that is the possibility to live an add-on and interactive experience in a real world through digital devices, virtual reality that simulates an environment in which the individual can physically move and finally mixed reality in which the

real and virtual worlds co-exist. Further technologies are virtual assistants, chatbots and robots. The two blocks of technologies interact in the three phases of the customer journey in different ways. The first three have a greater impact in the pre-purchase phase as they influence the imagination of the customer by providing information and generating positive feelings and curiosity. They also have an impact in the purchase and post-purchase phases by providing methods to enable the initiation of the payment transaction and enriching the consumer experience. The last three technologies allow to acquire necessary information and customize choice sets and advice recommendations in the pre-purchase phase. Moreover, they can become an actor in the negotiation of the purchase phase and allow to apply prices that reflect supply and demand. In the post-purchase phase, they provide feedback and recommendations. (Hoyer et al., 2020)

2.2.4 Data analysis and Business Intelligence

In this chapter, the topic of data analysis was introduced and discussed. Indeed, the technological drivers discussed in the first section are not only generators of vast and varied types of data but some of them are also data warehouses and generators of insights.

We have also discussed how the ability to collect and analyze data from this digital age and gain insights from it is a competitive advantage for companies. In fact, data analysis allows companies to look at the current environment in order to

seize opportunities and threats and generate decision-making based on real-time insights from data.

However, we have seen that to achieve this, companies need to transform their business models, acquire the necessary skills, and adopt a data-driven business mindset.

Companies have started to need tools that can analyze the amount of data that comes from digital technologies and the Internet. This is where Business Intelligence and analytics comes in. They are “sets of tools and techniques which help transformation of raw data into useful information for business analysis purposes.” (Kakhki & Palvia, 2016)

The implementation of such techniques within the company allows to have a positive impact on business performance. It is defined as “the set of metrics used to quantify both the efficiency and effectiveness of actions” such as ROI and ROS (Return on Sales), profitability, market share, customer satisfaction, and sale growth. (Kakhki & Palvia, 2016).

In fact, knowing how to obtain meaningful insights from data is not only synonymous with competitive advantage, but allows companies to improve the products offered and the efficiency of the company, increase sales, improve investments and marketing actions, gain user visibility and generate useful information for the customer. (Ukhalkar et al., 2020)

All of this is possible because the variety of data and the sources from which they are derived allow companies to have data about their stakeholders and their market. Although the opportunities in terms of cost, speed and decision-making based on real and timely data may be the key to entering this digital era, the challenges and risks that digital and big data bring still remain a major factor.

CHAPTER 3. E-COMMERCE

3.1 E-COMMERCE

As mentioned earlier, electronic commerce represents an important innovation and change brought about by digitization. Although it is a concept that dates back to the 1970s, it is since the early 2000s that its use has extended to many fields and that companies in every sector have begun to exploit its opportunities. Therefore, we will analyze this area of business and the role of the consumer in making it a profit opportunity.

3.1.1 Theoretical background

The term e-commerce is often used interchangeably with the term e-business, but there is a distinction between the two. Electronic business is “the processes or areas involved in the running and operation of an organization that are electronic or digital in nature” and therefore refers to all areas of business both direct and indirect. In contrast, electronic commerce is about trade, that is, all activities associated with the exchange of goods and services that occur using the Internet. (Shahjee, 2016)

E-commerce and e-business also impact other areas of business. The impact in computer science is through the need for the development of technologies that support e-commerce. In the finance and accounting the impact happens through the on-line banking and in the global economy to which the digital approach is demanded. The impact in production and operations management is given using

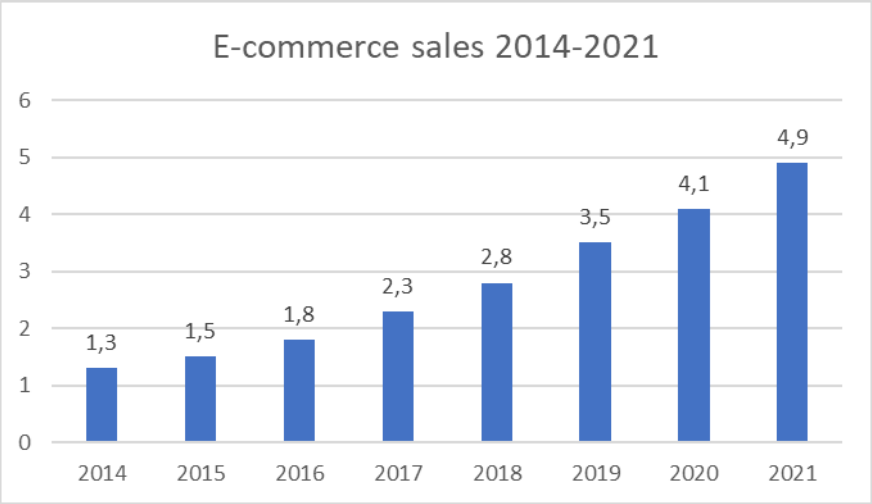
technologies and systems (such as ERP[5]) that reduce time and facilitate flexibility. In addition, they also impact management information systems, human resource management and business law and ethics. Of great importance is the impact they have on marketing. (Tassabehji, 2003)

The differences between offline stores (brick-and-mortar) and online shopping are many. First, the place where the transaction takes place is different because online shopping does not take place in a physical shop, but in a digital environment, that is the Internet. The difference in space and time is linked to the location, as a physical store has limited opening hours and is in a specific place, whereas online shopping is accessible 24/7 and wherever there is an Internet connection. Also, the response to market changes of an online store is faster and easier than an offline store. However, there are risks associated with the non-materiality of the goods you want to buy online in the pre-purchase phase. In addition, there are differences in establishment and maintenance costs, flexibility, breadth of product range, speed of transactions and so on. (Nisar & Prabhakar, 2017).

From the graph in Figure 3.1, the number of e-commerce-related sales is experiencing exponential growth. (Oprescu, 2019) However, this growth is related to key factors in the development and implementation of e-commerce strategies.

[5] Enterprise resource planning is a "framework for organizing, defining, and standardizing the business processes necessary to effectively plan and control an organization so the organization can use its internal knowledge to seek external advantage." (Blackstone & Cox, 2005)

Fig. 3.1: E-commerce sales (triliarde $)



Source: Oprescu, 2019

The key drivers of e-commerce refer to three macro areas: environment, firm, and e-commerce technology. (Li & Xie, 2012) The first area concerns political, social, and economic factors. Specifically, political factors refer to legislation and government policies, while economic factors relate to the economic well-being of a nation. (Tassabehji, 2003) Social factors relate to national culture (Li & Xie, 2012) but also IT education and training. (Tassabehji, 2003) The key drivers related to the company refer to the firm size and flexibility of the structure, the orientation of the corporate strategy and the managerial attitude towards innovation. Moreover, foreign competition due to globalization and the influence of customers and suppliers play an important role. (Li & Xie, 2012) Finally, technological factors concern the level of development and adoption of those

technological drivers mentioned in the previous chapter that are becoming essential within e-commerce strategies. (Tassabehji, 2003)

"Electronic commerce is the achievement/realization of the entire chain of value of the business processes by means of intense use of communication and information technologies, thus reaching the business's objectives." (Dos Santos et al., 2017) It thus generates transactions that occur between two or more parties. Table 3.1 shows the classification based on the parties that carry out this transaction.

Table 3.1: E-commerce models (types of possible transactions)

Acronym	Name	Description
B2B	*Business-to-business*	Transactions between companies.
B2C / C2B	*Business-to-consumer/Consumer-to-business*	Companies making transactions between companies and the end consumer.
C2C	*Consumer-to-consumer*	Transactions between end consumers.
G2C/C2G	*Government-to-consumer/ consumer-to-government*	Transactions between government and end consumers.
B2G/G2B	*Business-to-government/ government-to-business*	Transactions between government and companies.
G2G	*Government-to-government*	Transactions between government departments.

Source: Dos Santos et al., 2017

The first case is B2B, that is, business-to-business where the exchange of information, goods or services takes place between two companies. (Tassabehji, 2003) Transactions can be direct sales of goods or services, exchange of information on the web or e-procurement, that is "the automation of the purchase

of products and services besides dynamism in purchasing, a considerable cost decrease can be noted, also a shorter decisory time can be reached." (Dos Santos et al., 2017)

In B2C/C2B the actors are the company and the consumers, while in C2C the interaction is between consumers who can exchange information, opinions, or goods/services.

The next three categories are government, that is where the transaction occurs between the government and consumers (G2C/C2G), between the government and companies (B2G/G2B), or between government departments (G2G). (Dos Santos et al., 2017) Especially, in the B2G relationship the transaction can be e-procurement services, it can be about a virtual workplace or rental of on-line applications. (Tassabehji, 2003)

We know how important is the concept of business model for a company that decides to go digital. The decision to follow an electronic commerce strategy requires an assessment of the type of business model to be adopted. The two most common business models in the world are online stores and marketplaces. The online store of a company represents an e-shop where the products/services of the specific company are present and where the customer can find information, make orders and payments and track shipments. "A marketplace is a form of product sales, which is a trading platform on the Internet, which facilitates online meetings between the seller and potential buyer and their cooperation." (Pavlishyna & Kot,

2020) However, there is more than just the pure form of marketplace. Initially, online retailers acted as resellers, that is they bought products at a wholesale price from manufacturers and then became independent in transactions with customers. The emergence of the marketplaces model has made online retailers less flexible and autonomous as they act as intermediaries between the buyer and the seller, applying the seller's terms and sharing revenues between the two. However, there is an opportunity to adopt a hybrid form of business model in which the online retailer is a reseller for some products and an online marketplace for others. (Tian et al., 2018)

The choice to rely on one or more marketplaces to sell own products or services is driven by factors such as the presence of a loyal audience, geographical unlimitedness, available digital marketing, optimization for the mobile version, wide assortment that provides organic traffic, individual pages for service and the availability of analytical tools. (Pavlishyna & Kot, 2020)

We mentioned earlier that one of the areas in which e-commerce produces consequences is marketing. In fact, it requires a reconfiguration of the classic 4Ps marketing model. The product in e-commerce can be of three types: the material product linked to a series of digital services, digital goods, and information. The price in e-commerce is dynamic and allows price discrimination strategies thanks to the reduction of costs and the rapidity with which to respond to market changes. The place is Internet and more specifically the sites and/or marketplaces.

Finally, promotion in e-commerce uses new tools such as online advertising, social media, smart bots, search engine marketing and e-word of mouth. (Pogorelova et al., 2016)

E-commerce represents an opportunity for businesses, consumers, and society, but it still presents limitations and risks. From a society's point of view, the benefits associated with e-commerce relate to flexibility in working methods that increases the quality of life, makes goods and services accessible to all, and enables public services to be offered online. However, the increase in the amount of time individuals spend online is time that is taken away from physical interaction and can generate social divisions between those who can use technological means and those who do not. Moreover, there is the difficulty of establishing policies that prevent online crime. (Tassabehji, 2003)

From a business perspective, the benefits are many. It allows to be competitive thanks to the reduction of operational and telecommunication costs closely related to the accuracy and speed that the digital allow. There is also the possibility of getting in touch with clients or potential clients at any time without time limits and the customization of products and services, but also of promotions and sales. Moreover, the aforementioned ability to adapt quickly and at a lower cost to changes and to make prices more flexible and dynamic and the possibility of entering the international market. (Dos Santos et al., 2017)

Nevertheless, there are risks that companies adopting e-commerce face. As we have seen with digitalization and technological drivers, among the risks are those related to security and privacy not only for consumers, but also for businesses. Risks related to rapid development and innovations that require continuous adaptation and foresight to maintain a competitive advantage. (Tassabehji, 2003) Moreover, also for e-commerce there is the need for a digital-oriented business mentality, the need for new skills related to this area of business and finally the challenges that increasingly active customers require. (Dos Santos et al., 2017). Finally, the benefits of e-commerce also fall on the consumer. The already discussed characteristics of the new consumer of the digitization era allow us to understand how much the emergence and spread of e-commerce in many fields of industry is the meeting of the new needs of the prosumer. E-commerce gives consumers the possibility of not having constraints of time and space, of being able to boast of a highly competitive market in which the possibilities of choice increase thanks to a greater variety and vastness of products. In addition, consumers can improve their decision-making process and the entire customer journey thanks to the possibilities and continuous developments in the field of e-commerce. However, there is no shortage of risks and difficulties that the consumer faces. The need to have technological means and the ability to use them is the first obstacle, especially for the generations that were born before the advent of these technologies. Of relevant importance are the issues related to the lack of a

physical evaluation of what an individual is buying until he/she receives it and the security and privacy that lead to the lack of trust that, as we will see, is essential in e-commerce. (Tassabehji, 2003)

3.1.2 E-trust, E-satisfaction, and E-loyalty

E-commerce is an important tool not only for making transactions, but also a channel through which companies interact with potential and current customers to attract, engage, and retain them to create long-term relationships. This is possible by generating a feeling of trust in the customer and offering a customer experience that generates satisfaction so that the goal of loyalty can be achieved. (Dos Santos et al., 2017)

Convenience and timesaving represent the two main benefits that drive an individual to buy online, thus generating success for e-commerce. Thus, we can identify three macro-objectives in e-commerce that are interrelated and put the customer at the center: e-trust, e-satisfaction, and e-loyalty.

E-trust in e-commerce is something essential as it allows to balance the risks and uncertainties that online presents to the consumer, thus allowing to stimulate purchase. (Sullivan & Kim, 2018) E-trust can be defined as “the consumer’s commitment to trust that an offeror will successfully fulfill your online deal, understanding successfully as in accordance to stablished terms.” (Fernández-Bonilla, 2020)

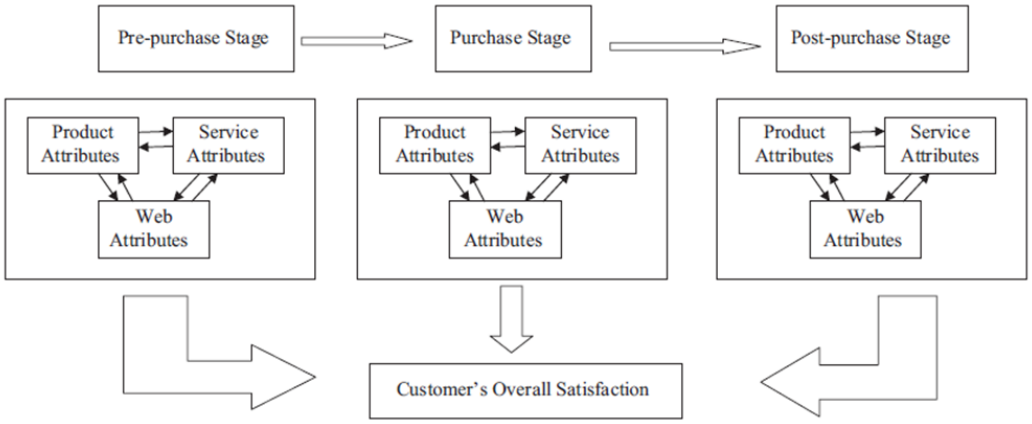
Factors that influence e-trust are related to websites in terms of perceived usefulness, that is "the degree to which people believe whether using a technology will improve their performance" (Sullivan & Kim, 2018) and reputation, that is, the relationship between what is promised and what is fulfilled. (Sullivan & Kim, 2018) Moreover, trust arises from feelings of security and privacy that those selling online manage to convey, functionality and quality of products and customer services. (Fernández-Bonilla, 2020)

However, e-trust alone is not enough to ensure e-commerce success and achieve customer loyalty. In fact, being able to map the customer journey and offer a positive customer experience remains a key point for e-commerce as well. The online shopping experience offers new opportunities that can generate satisfaction in the customer and induce them to purchase and repurchase as a form of loyalty. (Manaf et al., 2018).

Customer satisfaction represents a feeling that the consumer has as a response to an experience that, in e-commerce, arises from an evaluation of the entire purchasing process in all its phases as can be seen from Figure 3.2. "Satisfaction is the fulfillment of requirements, goals or desires and this can be reflected by the overall customer attitude towards e-commerce retailers, or an emotional interaction with respect of between what online customers expect and what they really obtain." (Nisar & Prabhakar, 2017)

In e-commerce, we talk about e-satisfaction, which is “a customer’s evaluation of a product or service based on the shopping experience on an e-commerce site.” (Manaf et al., 2018) E-satisfaction is influenced by four main elements: website design, delivery and refund service, the extent of product information provided, and product variety. (Nisar & Prabhakar, 2017)

Fig. 3.2: Conceptual model of e-satisfaction



Source: Endo et al., 2012

The website is a factor of great importance in the customer experience as it is a key step in e-commerce that allows companies to attract and retain potential customers and generate satisfaction. The efficiency and effectiveness of a website depend on various factors related to design, system, and content. (Colla & Lapoule, 2012) Efficiency refers to the ease of use while effectiveness refers to perceived usefulness. (Dospinescu & Percă-Robu, 2017) Both of them take into

consideration various characteristics that influence the success of the e-commerce platform. First, availability and accessibility are basic factors to influence consumer interest. Then, the simplicity of the design and the presence of user-friendly features allow keeping the consumer within the website. (Oprescu, 2019) Also very important is the level of interactivity provided and the speed of navigation. Then there are the aspects related to the quality and quantity of information that allow content comprehension as it needs to be organized in such a way that it allows smooth and easy navigation. (Dospinescu & Percă-Robu, 2017) Moreover, there are features related to the system, which are the payment system, tracking and security of navigation and data. (Huang & Benyoucef, 2013) The efficiency and effectiveness of the website allow not only to push the user to purchase, but also to create a positive reputation of the site and the brand that lead to the emergence of feelings of trust. (Sullivan & Kim, 2018)

Another characteristic that influences customer satisfaction in e-commerce concerns delivery, that is logistics. The preparation of the order and the delivery of products in the promised time and place, with the right items and complete with all the products related to an order, are factors that generate trust in the consumer and contribute to his/her satisfaction. (Colla & Lapoule, 2012) Therefore, it is very important to adopt the right logistics strategy related to e-commerce, taking into consideration four elements. First, inventory ownership and location that can be in a reseller's warehouse (shorter order cycle time) or maintained by the

manufacturer. The order picking policy and preparation are necessarily influenced by the inventory ownership and can include a point of sale, a joint warehouse with the offline or a warehouse dedicated to online. Finally, there are the order assembly policy and the order delivery policy that can involve home delivery, pick-up points or points of sale and using external couriers or owned vehicles. (Ghezzi et al., 2012)

The success of an e-commerce depends on a further factor, that is product variety. "If an item isn't easily accessible, the wider assortment of products may be more attractive to customers and therefore e-satisfaction would be increased." (Nisar & Prabhakar, 2017) In fact, the ability to offer a wider assortment of products meets the expectations of the consumer who decides to rely on e-commerce. This leads to the consumer being more likely to meet their needs and being able to make comparisons that lead to choices that positively impact the customer experience. Moreover, not only the quantity of products but also the complementarity and synergy between products and services offered online are an indicator of success. (Colla & Lapoule, 2012) Strictly related to this concept are product-related strategies that companies can adopt to increase the effectiveness of their e-commerce and increase consumer satisfaction, such as cross-selling and up-selling strategies. These techniques are often used in combination and allow companies to increase transaction value using customer relationship management logic. The cross-selling strategy consists of proposing to the already acquired customer

further products connected in some way to those that are being bought or have been bought. The strategy of up-selling consists instead in proposing to the customer a product that is better in a certain aspect regarding the product that it is going to buy before that the final transaction of purchase happens. (Kubiak & Weichbroth, 2010)

The success in e-commerce given by the e-satisfaction is measured in terms of quality. When we talk about quality in e-commerce it is not only referred to the quality of the product itself, but also to how it is perceived by the consumer regarding the website, services and in comparison, with the price. (Manaf et al., 2018) We can divide the quality element into two categories: the one related to the service and the one related to the web. In the first case the elements that affect the quality of the service are intangible and are for example dependence, transparence, warranty, and sympathy. In the second case we refer to function, interaction, and information. (Nisar & Prabhakar, 2017) Product quality can generate a positive experience when it meets the customer's expectations in the post-purchase and is influenced by digital marketing activities such as advertising, but also by brand reputation. (Wibowo & Haryokusumo, 2020) Although product quality is usually associated with a high price, in online they are the quality of the services and website that allow perceived value even if the perceived price is lower. (Sullivan & Kim, 2018) Therefore, “good service quality will be an

advantage for the company to provide good feedback, and it is not impossible to become a repeat buyer." (Manaf et al., 2018)

"E-loyalty is a form of customer willingness for ongoing visits websites virtually that will creating brand recognition to consumers by combining customer spending and attitude behavior to commit repeat purchases on the website and do not move to other e-commerces." (Manaf et al., 2018) Therefore, consumer loyalty is the ultimate outcome of an e-commerce strategy oriented towards creating trust and customer satisfaction. It represents the ultimate goal and proof of success of an e-commerce because it is what drives the consumer to repurchase. However, e-loyalty is not only the result of a satisfied customer but is itself a determinant of it as they feed off each other. (Nisar & Prabhakar, 2017)

3.2 RECENT TRENDS

The e-commerce has been born thanks to Internet and in the years, it has been developed thanks to the use of the new digital technologies. In the previous chapter we have seen the impact that technological drivers have had on this area of business. We have seen how mobile commerce and social commerce have provided e-commerce with new tools on which to expand and through which to provide greater benefits to consumers in this digital age. The Big Data phenomenon is linked to e-commerce as it is itself a generator of such data, but it can also take advantage of it by going to integrate it within strategic processes.

Finally, artificial intelligence and the internet of things make it possible to improve the customer experience and improve the efficiency of companies thanks to their ability to make processes automated and therefore faster and more accurate. However, we know that technological developments are constantly evolving, and the digitalization process is still ongoing. Moreover, the expansion of this digitalization process at global and industry level and the figure of the new consumer are making e-commerce more and more widespread and necessary. Therefore, e-commerce is continuously expanding and developing hand in hand with new technologies. In particular, the most recent trends that are generating new opportunities and challenges for companies concern virtual and augmented reality, dynamic pricing, and voice commerce.

3.2.1 Virtual reality and augmented reality

We have seen that the customer experience during the path-to-purchase is a fundamental factor for the company because the more positive and pleasant the experience is for the consumer, the more satisfied he/she is and consequently will be pushed to make repurchases and thus become a loyal customer. This is also valid for e-commerce. However, there are still many limits in the e-commerce in comparison to the offline purchases and one of these in particular turns out to impact a lot in the customer experience, customer satisfaction and purchase intention: the lack of physicality. (Leonnard et al., 2019) In traditional e-commerce systems, products are displayed by the user through web pages in 2D

format and with more or less detailed information in a textual way. This is the main wall that exists between online and offline and in many cases, it drives the consumer to choose offline commerce, especially in industries concerning footwear, clothing, furniture, and jewelry. (Lu & Smith, 2008)

The implementation of virtual reality to e-commerce allows this barrier to be broken down. Virtual reality is a computer technology that uses three-dimensional graphics and 360° video to show content. It can create a virtual/artificial environment that looks realistic to the user and through which the user can interact. "VR is a technology that allows people to have a realistic experience by experiencing the five senses of the human body (visual, auditory, olfactory, taste, touch) by providing experiences or environments that are difficult or impossible to obtain by using artificial technology." (Lee & Oh, 2016) E-commerce using virtual reality technologies usually use JAVA applets through which to provide real-time 3D product models and the ability to act on them such as zoom, rotate and translate them. (Lu & Smith, 2008)

The main features of this technology are immersion, interactivity, and imagination. In fact, through VR the user is able to enter a virtual space that simulates a possible reality that pushes him/her to imagine how that object can become part of the real world and allows him/her to acquire information about the product through virtual interaction. (Yu & Pan, 2012)

It allows for the enhancement of the human experience through three states. First, affect in the form of emotions, that is the feelings generated by an experience, affective appraisal, that is specific feelings related to the features that the virtual space displays and discomfort, that is given by wearing the devices that allow the user to view that space. Second, cognition, that is what the individual perceives with respect to that experience. In virtual reality it is expressed in a feeling of presence. Third, the conation, that is the intention to do something, in this case the purchase. This last aspect is related to human action that in e-commerce concerns the purchase intention. The need is therefore to create an immersive environment that can create feelings and emotions in the user that positively impact the sense of presence that in turn generates the purchase intention. (Martínez-Navarro et al., 2019)

However, virtual reality has a limit. It generates a virtual world that replaces the physical world but does not allow the intersection between the two. Nowadays, it is possible thanks to a technology that we can define as an evolution of VR: augmented reality. “AR is a technology which can mix or overlap computer-generated virtual objects with real world scenes or objects.” (Lu & Smith, 2008) Augmented reality follows the same purpose as VR of enriching the customer experience but with the difference that the virtual world enters the real world. In detail, “it is a live, direct or indirect, view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as

sound, video, graphics or GPS data." (Kannaiah & Shanthi, 2015) Usually, e-commerce web pages that integrate AR technology features use ActiveX controls that allow the user to view the object in the real environment through a camera and thus displaying the product information and its semi-realistic essence. (Lu & Smith, 2008)

Virtual reality, as well as augmented reality, are methods through which a company seeks to increase and improve the customer experience during electronic shopping to influence purchasing decisions. What influences the user's evaluation regarding the quality of these technologies and therefore their effectiveness are interactivity and vividness. Interactivity can be defined in terms of technology as the outcome produced by the technology or the ease and level of involvement in the interaction with the content. Moreover, interactivity from a user perspective can be viewed as the subjective perception of the sense of interactivity. Vividness results from the ability of the technology in combining the sensory and non-sensory experience, which in e-commerce translates into the quality of the offering from the technology regarding product presentation. (Yim et al., 2017) Moreover, other factors that influence consumer response are virtual presence, device used, immersion, and usefulness. (Leonnard et al., 2019)

Therefore, virtual and augmented reality allow e-commerce to break down the limitation of direct impact with the product, allowing the user to virtually integrate it into their real world and capture information that is not viewable in a

traditional system. Furthermore, it allows to increase the success of e-commerce because it increases the probability with which the consumer decides to choose e-commerce, going to influence the purchase intention. (Yim et al., 2017)

3.2.2 Dynamic pricing

"More than 60% online shoppers worldwide consider e-commerce pricing as the very first criteria for buying decision, and 70% of online shoppers believe that they would get a better deal in the online shopping than in brick & mortar stores." (Balamurugan & Selvalakshmi, 2019)

The digital age has allowed the consumer to gain bargaining power thanks to the benefits that the Internet and the World Wide Web have brought. Today the consumer is able to make more rational purchasing decisions thanks to the ability to access a lot of information quickly and easily and to make comparisons between brands, prices and products. In addition, technological developments related mainly to big data, the internet of things and business intelligence have allowed companies to have at their disposal a large amount of data about the market, competitors, and consumers and to drastically decrease costs. Among them are the so-called "menu costs" that refer to those costs incurred to make price changes. (Narahari et al, 2005) Furthermore, the use of e-commerce by companies in recent years has grown and is growing leading to increased competition and the need to remain competitive. Since we know that price in e-commerce is a crucial factor in consumer choice and that competitiveness leads to

the need to charge prices that are competitive following the goal of maximizing profits, there has been a shift from using fixed prices to dynamic prices in e-commerce. (Chornous & Horbunova, 2020)

We can define dynamic pricing as a “form of intertemporal price discrimination that entails price changes over time due to fluctuations in supply, demand, competition, or other factors.” (Priester et al., 2020) The factors that determine price dynamics are varied. They depend on customer behavior and characteristics, the perceived value of the product and their price fairness, that is “consumer’s evaluation and understanding whether the difference between seller's and other party’s prices is reasonable, acceptable or justifiable.” (Deksnyte & Lydeka, 2012) Moreover, the level of competition within the market of a company affects prices (monopoly, oligopoly, perfect competition) as well as product demand and seasonal fluctuations of some types of goods. (Deksnyte & Lydeka, 2012)

Dynamic pricing is a form of price discrimination, which is a way that sellers use to sell products at different prices. (Victor et al, 2018) The term dynamic pricing is often associated with two other terms which are flexible pricing and customized pricing. (Narahari et al, 2005) “Personalized pricing is a technology-based pricing system in which different prices are set for the same goods for different consumers.” (Chornous & Horbunova, 2020) Therefore, dynamic pricing can be seen as a form of personalized pricing in which prices for goods or services vary

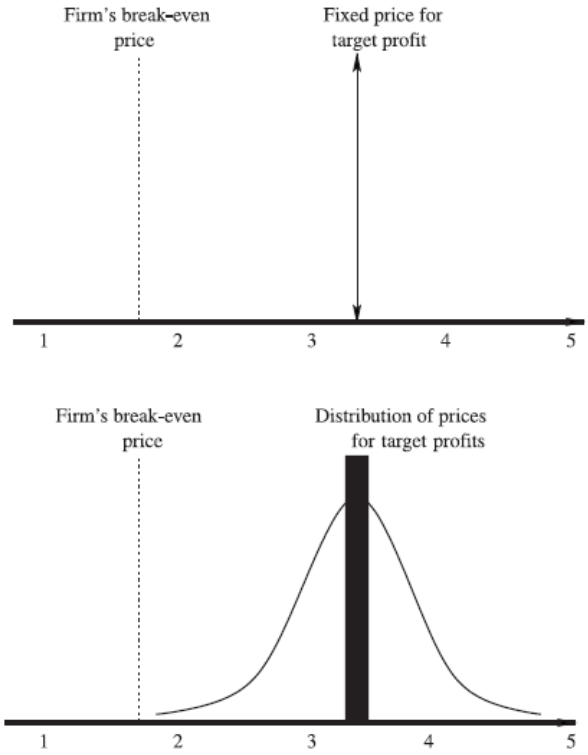
based on the previously mentioned factors and for one or more consumers based on the degree of price discrimination. (Priester et al., 2020)

There are three degrees of price discrimination. The first in which the discrimination is perfect because the prices are fixed in base for the specific person. The second degree in which the price does not depend on the individual who purchases but on the amount of product purchased, giving the consumer the ability to self-select. Finally, the third degree of price discrimination involves price differentiation based on consumer segments. (Narahari et al, 2005)

Moreover, in addition to price discrimination there is another aspect related to dynamic pricing: price variance. It can be spatial, that is the price of the product varies from seller to seller, or temporal, that is the price of the product offered by the same seller changes over time. (Chornous & Horbunova, 2020)

To understand the difference between fixed pricing and dynamic pricing, in Figure 3.3 the willingness to pay of the company and the consumer is used. In the upper part the situation is illustrated in case of fixed pricing and in the lower part in case of dynamic pricing.

Fig. 3.3: Fixed pricing vs. dynamic pricing



Source: Narahari et al, 2005

From the two graphs it is obvious as the application of a fixed price allows to meet only the consumers 4 and 5, that are those disposed to pay that price. On the contrary, applying different prices allows to meet all the consumers that are beyond the firm's break-even price because their willingness to pay is satisfied. (Narahari et al, 2005)

The dynamic pricing is part of the pricing strategies of competitive type together with the penetration strategy. Other types of pricing are consumer-oriented pricing

based on the consumer’s perceived or estimated value of the product or service and psychological pricing strategies. Moreover, there are pricing strategies that follow discounts and promotions (Balamurugan & Selvalakshmi, 2019) and complete pricing in which the purchase of complementary products makes the total price lower. An additional pricing strategy is cost-based, that is the most standard strategy and involves applying a margin to the unit cost of the product. (Chornous & Horbunova, 2020)

Optimizing dynamic pricing in e-commerce is critical to its success. One way to make this strategy robust is to apply the solution of five modules for the product life cycle in which these modules can coexist or in which only one can be implemented. The first module is the long-tail module where the company sets the introductory price for new or long-tail items through intelligent product matching. Then, there is the elasticity module in which the price varies according to the factors that affect the demand. The third module is the KVI (key value item) in which the key products are identified and modifications are made to their prices. Finally, there are the competitive-response modules in which the price changes based on competitors' prices and the omnichannel module in which the price is the result of coordination between online and offline. (BenMark et al., 2017)

With the increase in the amount of big data and the development of computer technologies, the ability to apply dynamic pricing strategies that identify the optimal price has increased. Therefore, the use of methods that analyze the

parameters that influence price in real-time allows for quicker and more accurate outcomes. (Chornous & Horbunova, 2020) Some of the mathematical models used in dynamic pricing are inventory-based models, data-driven models, game theory models, machine learning models and simulation models. (Narahari et al, 2005)

However, we know that the consumer is a key determinant of e-commerce success and is very price sensitive. In particular, the use of dynamic pricing raises in the consumer worries about the fairness perception, which is influenced by the amount of information that the seller hides to the consumer. In fact, in order for the dynamic pricing strategy to positively affect revenues in the long run, it is important to focus on the consumer's behaviors and reactions and allow him/her to perceive this strategy as a fair benefit. (Victor et al., 2018)

3.2.3 Voice commerce

Artificial intelligence and the Internet of things have had a great impact in the lives of consumers. In resuming what was said in the previous chapter, these technologies allow data to be collected, interpreted and a response generated through a constant process of learning. The possibility of relying on objects to perform activities using human intelligence has made it possible to entrust the performance of certain actions to these intelligences. These technologies integrate voice mechanisms that are called voice assistants. (Mari, 2019) They are "conversational agents that perform tasks with or for an individual- whether of

functional or social nature- and own the ability to self-improve their understanding of the interlocutor and context." (Mari et al., 2020)

The function of this technology is to ensure a better customer experience by increasing customer satisfaction. To understand how this happens a study has identified some personality traits of the VA that affect it through the quality of interaction. First, the functional intelligence that concerns the informativeness dimension of the task requested by the consumer, that is efficiency, usefulness, effectiveness, and reliability of the information offered. Then, the aesthetic appeal of the interface, that is the attractiveness of the design for the consumer. Moreover, there are sincerity, creativity, and protective quality traits. Finally, sociability traits and emotional intelligence refer to the more "human" traits of the voice assistant. All these traits allow the user to develop emotions related to a sense of confidence, control, and interest in interacting with such technologies, which then results in a satisfying experience and thus increased use. (Poushneh, 2021)

Although from a marketing standpoint, the voice assistant represents a new touchpoint between company and consumer, recent developments in this technology and the spread and success of e-commerce have led to the emergence of voice commerce. The voice commerce is a technology that, using the voice assistants, "provide consumers with computerized voice technologies (e.g., speech recognition, voice identification, and text-to-speech) to execute these business

transactions. These systems involve natural language processing (NLP), intent recognition, speech synthesis, recommender systems and artificial intelligence (AI) technologies." (Kraus et al., 2019) Consumers therefore have the ability to make purchases with minimal effort, especially low involvement purchases but an effortless decision-making process on the part of the consumer and relying almost entirely on an algorithm does not ensure optimal satisfaction of the user's request. (Mari, 2019)

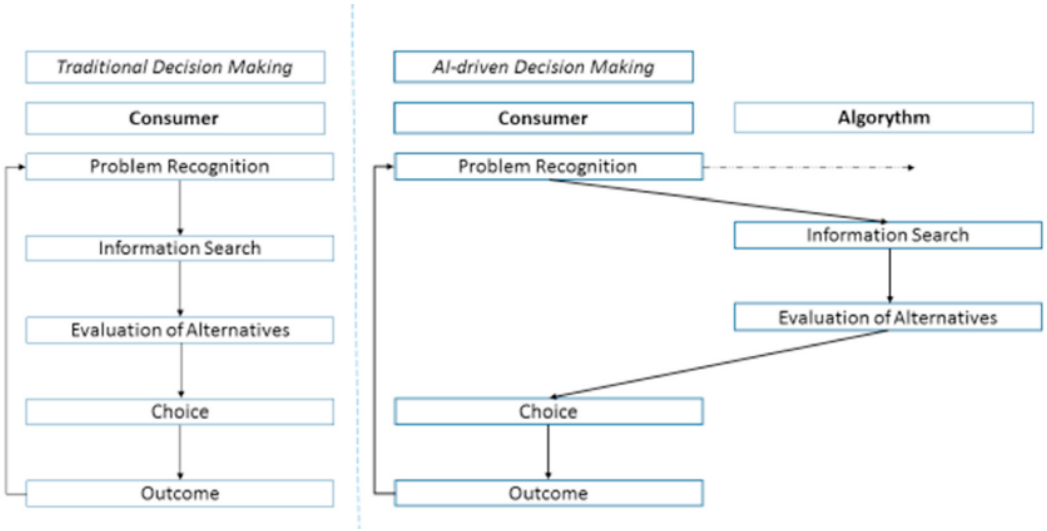
The biggest change that voice commerce brings to the consumer shopping process is the ability to have some level of interaction like the bricks-and-mortar store shopping experiences. Therefore, the use of voice assistant in e-commerce allows for another barrier to be broken down that separates online and offline shopping. (Klaus & Zaichkowsky, 2021)

More specifically, consumers who rely on a voice assistant during the purchase process expect to receive benefits related to efficiency (time saving), convenience (ease of use), and enjoyment. (Rzepka et al., 2020) The convenience of voice commerce refers to the ability to perform a task with minimal effort and saving physical and cognitive time. It represents a high-value feature for the consumer and allows to affect the loyalty towards such companies. Enjoyment refers to the traits related to the "human" characteristics of the voice assistant that allow to generate positive feelings that increase the level of trust in the purchasing process and in the brand itself. (Klaus & Zaichkowsky, 2021) Moreover, transaction

process efficiency is another factor related to customer satisfaction in voice commerce, that is “a combination of efficiency, total transaction time, clearness of the process and response time for each step.” (Kraus et al., 2019)

The use of these technologies tied to the artificial intelligence inevitably involves a change also in the decision-making process of the consumers. Figure 3.4 shows how in the AI-driven decision-making process, the steps of searching for information and evaluating alternatives is carried out by the algorithm. (Klaus & Zaichkowsky, 2021)

Fig. 3.4: Traditional vs. Current AI-driven Decision-Making Process



Source: Klaus & Zaichkowsky, 2021

In this process, AI through its algorithm presents itself as a recommender system. It tries to suggest the alternative that can meet the specific person using data

collected from past experiences or preferences explicitly expressed by the user. "Higher accuracy of suggestions from a platform translates into not only an increase in consumer satisfaction but also their overall trust in the technology." (Mari, 2019)

However, consumers are often limited by the risks and difficulties they expect to find, such as limited transparency on the process followed by the system, and low technical maturity. Therefore, implementing such technologies requires acting on the customer's perceived risks to increase the likelihood of using voice commerce. (Rzepka et al., 2020) Furthermore, it is important to leverage the strengths that voice commerce presents and therefore go to increase the ease of use, make the entire purchasing process as fast as possible through the voice assistant, limit the steps required and integrate voice assistants into the devices most used by users such as mobile. (Kraus et al., 2019) An additional risk that brands run in implementing voice assistant technologies is that related to the bargaining power of VA technology owners that risks overpowering that of manufacturing companies. (Mari, 2019)

CHAPTER 4. CASE STUDY: ELISABET SRL

4.1 COMPANY BACKGROUND

The company Elisabet srl was founded in 1980 by the three Vallasciani brothers, Marcello, Nazareno and Claudio. It was born and developed as a shoe factory in the Marche region, specifically in Monte Urano in the province of Fermo, making the company a guarantee of Made in Italy.

The company deals with production and distribution of footwear, especially children's shoes. In the first years the company faces the Italian footwear scene through the production of shoes for third parties. Subsequently, it begins to deal also with distribution and not only with production, presenting the owned brand Walk Safari for creating high quality footwear for children.

Over the years, exclusive license agreements have been signed for the production and distribution of footwear with internationally renowned brands. Thanks to them, today Elisabet produces and distributes kid and junior collections of brands such as Tommy Hilfiger, Manila Grace Girl, Bikkembergs and Alviero Martini 1ª Classe Junior.

Moreover, the company also covers the junior and teen sectors with its owned brand Morelli and the world of first steps with the brand owned Walkey.

Flexibility and transversality are Elisabet's strong points that have led it to make strategic choices regarding production and distribution. In fact, if at the beginning the company focused on one market only, the Italian one, and with only one

factory owned in Monte Urano, today the company's approach is renewed. These two characteristics can be found today in the company's distribution strategy. In fact, the company has made the strategy of risk-country diversification one of its strategic factors where 80% of the distribution concerns the foreign market, mainly the EMEA (Europe, Middle East, and Africa) territory and 20% the Italian market.

Elisabet operates with a view to achieving a balance between brand positioning and the quality-price ratio of the product with respect to its own brand portfolio (own or under license).

Although tradition and know-how represent the company's values, business innovation processes at all levels of the company complement and enhance them, allowing Elisabet to be a competitive, effective, efficient and flexible company.

4.2 ELISABET'S DIGITAL TRANSFORMATION

4.2.1 Digitalization

Elisabet shoe factory is a medium-sized company that was traditionally born as a manufacturing company and that has, subsequently, undertaken a process of digitalization in many forms and in various aspects.

This process started from the perception of the company on what was happening in the surrounding world, picking up those signals which represented the opportunities that digital was and would bring to it. The company soon saw the

need to introduce digital into its business context, believing in this innovation and seeing it as a direction that would have a future.

The first investment in the field of digital was in advertising, using and testing different tools in order to find what best suited the company and its purpose. The objectives that guided this choice were to support the brands and the b2b activity that represents the prevailing business within the company and is formed by distributors and retailers. Therefore, the company was driven by the need to use digital so that the processes would be more simple, effective, and up to date.

Later, Elisabet decided to enter the world of e-commerce around 2012 with an e-commerce dedicated to b2b and an e-commerce dedicated to b2c. The consumer already represented for the company a figure with whom to establish a direct relationship using physical retail but investing in e-commerce represented a new challenge in driving sales. Moreover, e-commerce also represented an opportunity to support owned brands and retailer activity by allowing brands to be exposed to a consumer channel to help generate demand to retailers and thus strengthen the b2b business.

Elisabet's e-commerce was established right from the start with a vision aimed at integrating this online channel with the already present offline channels used by the company, making this tool an amplification and a parallel to the traditional channels and working in synergy with them.

Over the years, e-commerce has proven to be a highly strategic point for the entire company, even though it has faced challenges and limitations.

4.2.2 E-commerce

The e-commerce of this company has gone through various evolutionary steps, undergoing mutations, and adapting to the needs and innovations.

It was introduced in the company with directly controlled platforms: e-commerce b2c (elisabet.shop) and e-commerce b2b (shop.elisabet.it). As previously said, the e-commerce addressed to the final consumer represents for the company a direct channel with the consumer that integrates the traditional offline sales network. Similarly, e-commerce directed to wholesaler customers (retailers and distributors) exhibits the same characteristics of b2c e-commerce, but it was born with the aim of disintermediating traditional channels and as the main means to allow business customers to reorder goods through a digital channel.

Subsequently, the company decided to expand its e-commerce structure, going to invest on the visibility that an international and well-established e-commerce platform could offer. Elisabet decided to establish a presence on the e-player par excellence for the footwear world, that is Zalando. Today, the company is active in Zalando Italy in two different ways: using it as a marketplace and as a wholesaler. Elisabet in Zalando marketplace has its own showcase and shop for some brands, where it manages sales independently, while in Zalando as a wholesaler, it represents a customer for some of Elisabet's brands, that is it buys

from Elisabet and resells the products independently. Zalando represents a driver for the e-commerce of the company, being not only a visibility tool, but also providing the possibility to intercept consumers in an easier and faster way and to test international markets.

Among the strengths of e-commerce for Elisabet there is, not only the support to other activities such as offline, but also the generation of insights and direct feedback from and about the final consumer. In particular, the proprietary sites and the Zalando marketplace generate insights into the entire consumer funnel, providing useful data for strategic planning.

The pricing aspect of e-commerce is adapted and aimed at creating a balance between online and physical network, keeping pricing policies differentiated by country. In detail, prices for licensed brands are set by the brands themselves and Elisabet's control is limited, while the price for owned brands is set by the company and for its retailers represents a recommended retail price. Therefore, the company takes continuous strategic considerations to maintain a balance between the online and offline networks.

Digitization within Elisabet has touched other aspects over the years that have indirectly and directly influenced the evolution of its e-commerce.

The social networks of the brands owned by the company contribute to creating and sustaining awareness, acting at the top of the purchase funnel. They are linked to the company's e-commerce in an indirect way, that is each social network has

the purpose of creating awareness by conveying the user towards the brand sites and finally converting him into a buyer.

An important factor is the complete digitization of logistics, which has made it possible to boast of a digitized process. This allows the company to facilitate the internal and external interaction, allowing the transfer of data in a streamlined and fast way. Today the e-commerce warehouse, that is a dedicated warehouse, is automated and has a platform that connects it to the company ERP, allowing Elisabet to have real time information on the stock, but also to reduce the percentage of error that a manual and traditional process involves.

A further aspect related to e-commerce that has been automated is the photographic aspect. Initially the company relied on external agencies to provide this service, while today the company has internalized this process and automated it, improving the result, effectiveness, and timing.

The b2b e-commerce and the Zalando e-player have also influenced the company's internationalization process. On the one hand, b2b e-commerce has allowed the company to boast of a tool through which retailers and distributors in foreign markets can access more easily and more quickly to meet their demands, and on the other hand Zalando has allowed the company to have a space to test new markets and gain visibility.

4.2.3 Towards the future

Even though currently the company's b2c e-commerce does not play a role in the internationalization process, the company is taking the first steps towards this direction by evaluating the team and budget investments, the necessary vertical campaigns different for each country and the benefits they could bring to the company. However, thanks to Elisabet's presence in the Zalando e-player, the opening of Zalando in various northern European countries is planned in the short term.

A further step that the company is moving towards the future concerns the internalization of the aspects related to e-commerce that have long been supported and outsourced and the integration of the business unit related to e-commerce with the whole company. In this regard, the union of e-commerce systems and processes with the company's ERP systems has taken place, allowing an administrative management that is easier and less prone to errors, guaranteeing the company direct control, reduced timing, and increased scalability.

The internalization of the activities related to e-commerce has been a significant change that allows the company to manage the entire process from data entry to customer care and to logistics, although still relying on external partners that are scalable thanks to an internal team that has acquired the necessary skills.

The company is also projected towards future trends. First is voice search, that is an innovation created to cope with the wide use of smartphones by consumers and

potential consumers that generates about 96% of site visits via mobile. Moreover, the wide use of smart personal assistants and the path towards which SEO is heading are further reasons for the company to move towards this innovation. Secondly, after voice search, artificial intelligence is another innovation the company wants to move towards especially for customer care through artificial intelligence bots. Awareness of the need to have efficient tools has led the company to take its first steps in this direction by using artificial intelligence bots to test the effectiveness of an automatic responder for first level customer care.

4.3 FINDINGS

The case study on the company Elisabet regarding its digitalization process and the birth and development of the e-commerce model is confirmed by what has emerged during this thesis.

It turns out that digitization is an ongoing process in many companies that do not necessarily have a digital core business but have a broad vision of the market and an open mind to change. To be effective and successful, the digitization process requires significant investments and to face limits and challenges, especially in companies with a traditional business. In fact, there is a need for a planning phase that brings out the importance of the previously mentioned model for tackling digital transformation. Setting goals around which to build a plan that leads to a

testing and verification phase allows companies to undertake this process in a way that benefits the company and allows it to be competitive in a global market.

It is evident that the digitization process is not a separate phenomenon with respect to the company organization, nor does it have a limited impact on the area in which it is implemented. The automation of processes and the digitization of business areas are transformations that have an impact on company efficiency in terms of costs and time. Being able to boast of digitized processes allows companies to align themselves with the demands of the digital age and of an active, informed, and aware consumer. From the business case, it became clear how critical this has been for the company. The automation of activities has allowed the development of e-commerce and has influenced the process of integration of the business unit related to e-commerce with the entire business organization, generating clear benefits for the entire company. Therefore, it emerges the necessity of a business synergy and of a shared optics that allows to pursue together towards common objectives through a shared and coordinated job.

Internalizing activities are another key step in the digitalization process. The shift from external to internal management allows companies to give a further cut to costs and a further boost to optimization by moving control internally and creating the basis for faster and more effective development. In this regard, the need to have a company team that has the skills and know-how is a focal point in this

digitization process. In fact, it is a factor that a company cannot ignore in order to have a competitive advantage that will last in the long term.

Digitalization of marketing represents a process through which companies focus on the needs of the new consumer in order to create value for the consumer and for the company itself. The importance of the consumer emerges not only from the literature, but also from the business case. In fact, the first field in which the company started its digitalization process is advertising. Moreover, the decision to consolidate the direct relationship with the consumer through the opening of a b2c e-commerce that would integrate the already present offline network allows us to understand the importance that a direct contact between company and consumer has in terms of satisfying the needs of the consumer. The opportunity that a direct channel and its digitalization presents to companies in terms of feedback and insights coming directly from the consumer and without filters represents not only a tool for analysis and planning, but also a means to pursue marketing objectives regarding the customer, the brand, and sales. Furthermore, the business case allows us to understand the importance of the shopping experience also using social media and the approach to artificial intelligence. Social media represent for the company a channel through which to create awareness and convey to the brand sites and finally to the shop, converting the user into a consumer. This is where the concept of path to purchase finds application.

The omnichannel perspective is a vision and strategy that follows a conscious digitalization process. Recognizing the importance of offline and online channels as opportunities to meet the customer and the interdependence in a digital world is a key point for companies that integrate digital internally. The business case confirms the importance of this aspect, illustrating how the emergence of e-commerce has not represented a transformation of offline commerce, but rather an amplification of those traditional channels, showing how the co-existence and collaboration between the two expands the opportunities for businesses and consumers.

Secondly, the importance of the shopping experience for the business case company is also evident from the willingness to approach artificial intelligence firstly in customer care to automate an additional activity but above all to guarantee the customer a first direct contact and a one-to-one communication quickly and efficiently. However, the challenges and limitations of artificial intelligence emerge, such as the need to map customer requests and have a machine that is able to provide correct outcomes, minimizing error.

Furthermore, the need to adapt to the developments of technology in the digital field and the mobile revolution emerge in the business case. The company has recognized the explosion of this phenomenon in the life of the consumer by investing in the field of mobile devices, especially smartphones. In addition, the increase in the use of these devices has an impact in many fields of marketing,

making it necessary for companies to integrate new tools such as voice commerce in the business case.

From the business case emerges the hybrid marketplace model in which the online retailer acts as a reseller for some brands and as an online marketplace for other brands. The benefit that this form of electronic commerce offers to companies is not only sales in the strict sense, but also the visibility offered and the achievement of target customers, confirming the literature in terms of factors that drive the choice of this model. Moreover, a further advantage that the presence on an e-player benefits companies that want to face an international market is the possibility of having a space in which to test these markets.

When we refer to the internationalization process and the role that e-commerce plays in it, it is essential to adopt not only planning, but also the need to have an e-commerce business unit that is consolidated and thus able to address the needs of individual foreign markets.

Therefore, digitalization and e-commerce are drivers for companies towards achieving and maintaining a competitive advantage. However, as the business case has shown, the digital era is still ongoing and requires continuous adaptations and developments. Therefore, to run as fast as these needs, companies need to avail themselves of skills as well as a managerial mindset that is not focused on tradition but knows how to enhance it through innovation.

CONCLUSIONS

Literature and business case analysis have provided insight into the phenomenon in which businesses, consumers, and more broadly society and the economy are living.

The fourth industrial revolution presents new opportunities driven by the impact of technology and digital. Businesses today live in a context where developments in information and technology systems have changed the marketplace, making consumers more aware and active and competitors greater in number with the entry of smaller companies. Lowering costs, reducing time, and reducing error rates are among the biggest benefits that digitization offers.

The ways and areas in which digitization can occur within a company are varied. Among the areas where digitization has had and is having a strong impact is marketing. The opportunities arising from the advent of the internet and subsequent technological drivers have enabled the relationship between the company and the customer to be redefined. The active and involved role of the digital consumer allows companies to get in touch with the customer and attract him, boasting of voluntary or induced feedback in order to know in advance the needs and demands of the customer. Moreover, marketing in the digital era is influenced by the new consumer and by a path-to-purchase that is no longer linear and sequential and in which traditional touchpoints are integrated with new contact opportunities enabled by digital. Therefore, the need for an integration

between offline and online arises, given by an omnichannel approach that allows to manage the absence of a barrier between the two.

The areas of digital marketing are various and in this thesis, I have analyzed in particular an area that has undergone a great influence, that is e-commerce. E-commerce today represents a great opportunity not only for large companies but also for small and medium-sized. It is not just a simple tool for online sales, but also a channel through which to generate shopping experiences that satisfy customers in order to create lasting relationships based on trust. Moreover, the possibility of breaking down geographical barriers gives companies an opportunity to turn their attention to foreign markets aware of the reduction of costs and time.

In a context that is developing around technologies, big data, cloud, and artificial intelligence, the human factor tends to be considered at risk. However, rather than an extinction one could think of the human factor as something that needs to change. The need to have skills to know how to use new technologies and exploit them efficiently and the need to have a managerial mindset aimed at innovation to make companies keep up with digital developments and innovations demonstrate the shift that the human factor must make. Moreover, in an era where technology has become part of every individual's daily life, threatening ethics and privacy, it is important that decisions are made in government to safeguard consumers and provide support to companies that invest in a digitization process.

The business case analyzed in the fourth chapter has provided support to the literature on digitization and e-commerce, highlighting not only the benefits that digitization can bring to small and medium enterprises but also the need for a cultural transformation aimed at adopting an open attitude to change in order to survive and gain a competitive advantage in the dynamic environment that is the digital era.

BIBLIOGRAPHY AND SITOGRAPHY

- Afonasova, M. A., Panfilova, E. E., Galichkina, M. A., & Ślusarczyk, B. (2019). Digitalization in Economy and Innovation: The Effect on Social and Economic Processes. *Polish Journal of Management Studies*, *19*(2), 22–32. https://doi.org/10.17512/pjms.2019.19.2.02
- Agrawal, A., Gans, J. S., & Goldfarb, A. (2017). What to expect from artificial intelligence. *MIT Sloan Management Review*.
- Akter, S., & Wamba, S. F. (2016). Big data analytics in E-commerce: A systematic review and agenda for future research. *Electronic Markets, 26*(2), 173–194. https://doi.org/10.1007/s12525-016-0219-0
- Alalwan, A. A., Rana, N. P., Dwivedi, Y. K., & Algharabat, R. (2017). Social media in marketing: A review and analysis of the existing literature. *Telematics and Informatics, 34*(7), 1177–1190. https://doi.org/10.1016/j.tele.2017.05.008
- Alderete, M. V. (2017). The Age of Prosumerism: Some Micro-Economic Analysis. *Journal of Theoretical and Applied Electronic Commerce Research*, *12*(3), 1–12. https://doi.org/10.4067/S0718-18762017000300002
- Appel, G., Grewal, L., Hadi, R., & Stephen, A. T. (2020). The future of social media in marketing. *Journal of the Academy of Marketing Science, 48*(1), 79–95. https://doi.org/10.1007/s11747-019-00695-1

- Baheti, R., & Gill, H. (2011). Cyber-physical Systems. *The Impact of Control Technology*. www.ieeecss.org.
- Balamurugan, S. & Selvalakshmi, M. (2019) E-Commerce Pricing Opportunities: And How to Exploit Them. *International Journal of Recent Technology and Engineering*, *8*(2S10), 486–488. https://doi.org/10.35940/ijrte.B1084.0982S1019
- Bellini, S., & Aiolfi, S. (2019). Impulse buying behavior: The mobile revolution. *International Journal of Retail & Distribution Management, 48*(1), 1–17. https://doi.org/10.1108/IJRDM-12-2018-0280
- BenMark, G., Klapdor, S., Kullmann, M., & Sundararajan, R. (2017). How retailers can drive profitable growth through dynamic pricing. *McKinsey & Company*.
- Berman, S. J., & Kesterson-Townes, L. (2012). Connecting with the digital customer of the future. *Strategy & Leadership*, *40*(6), 29–35. https://doi.org/10.1108/10878571211278868
- Blackstone Jr., J.H., & Cox, J.F., 2005. APICS Dictionary, 11th ed. APICS: The Association for Operations Management
- Bleier, A., Harmeling, C. M., & Palmatier, R. W. (2019). Creating Effective Online Customer Experiences. *Journal of Marketing*, *83*(2), 98–119. https://doi.org/10.1177/0022242918809930

- Brynjolfsson, E., & Mcafee, A. (2017). Artificial intelligence, for real. *Harvard Business Review*.
- Chaffey, D., & Ellis-Chadwick, F. (2019). *Digital marketing* (Seventh edition). Pearson.
- Chen, G., Cox, J. H., Uluagac, A. S. & Copeland, J. A. (2016). In-Depth survey of digital advertising technologies. *IEEE Communications Surveys & Tutorials*.
- Chornous, G., & Horbunova, Y. (2020). Modeling and Forecasting Dynamic Factors of Pricing in E-commerce. *Information Technology and Interactions* 71-82.
- Choshin, M., & Ghaffari, A. (2017). An investigation of the impact of effective factors on the success of e-commerce in small- and medium-sized companies. *Computers in Human Behavior*, 66, 67–74. https://doi.org/10.1016/j.chb.2016.09.026
- Colicev, A., Kumar, A., & O'Connor, P. (2019). Modeling the relationship between firm and user generated content and the stages of the marketing funnel. *International Journal of Research in Marketing*, *36*(1), 100–116. https://doi.org/10.1016/j.ijresmar.2018.09.005
- Colla, E., & Lapoule, P. (2012). E-commerce: Exploring the critical success factors. *International Journal of Retail & Distribution Management*, *40*(11), 842–864. https://doi.org/10.1108/09590551211267601

- Dalenogare, L. S., Benitez, G. B., Ayala, N. F., & Frank, A. G. (2018). The expected contribution of Industry 4.0 technologies for industrial performance. *International Journal of Production Economics*, *204*, 383–394. https://doi.org/10.1016/j.ijpe.2018.08.019
- Deksnyte, I., & Lydeka, Z. (2012). Dynamic pricing and its forming factors. *International Journal of Business and Social Science, 3*(23).
- Deshwal, P. (2016). Online advertising and its impact on consumer beahvior. *International Journal of Applied Research, 2*(2), 200–204.
- Dey, B. L., Yen, D., & Samuel, L. (2020). Digital consumer culture and digital acculturation. *International Journal of Information Management*, *51*, 102057. https://doi.org/10.1016/j.ijinfomgt.2019.102057
- Dhingra, K., Bhardwaj, A., & Aggarwal, A. (2015). M-Commerce. *International Journal of Engineering Research and General Science, 3*(2), 704–706. http://www.ijergs.org/
- Dodson, I. (2016). *The art of digital marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns* (1st ed.). Wiley.
- Dospinescu, O., & Percă-Robu, A. (2017). The Analysis of E-Commerce Sites with Eye-Tracking Technologies. BRAIN-Broad Research in Artificial Intelligence and Neuroscience, 8(3), 85-100.

- Dos Santos, V. F. dos, Sabino, L. R., Morais, G. M., & Goncalves, C. A. (2017). E-Commerce: A Short History Follow-up on Possible Trends. *International Journal of Business Administration*, *8*(7), 130. https://doi.org/10.5430/ijba.v8n7p130
- Dunarea de Jos University of Galati, Romania, & Enache, M.-C. (2019). Machine Learning in E-commerce. Annals of Dunarea de Jos University of Galati. *Fascicle I. Economics and Applied Informatics, 25*(1), 169–173. https://doi.org/10.35219/eai1584040920
- Durmaz, Y., & Efendioglu, I. (2016). Travel from Traditional Marketing to Digital Marketing. *Global journal of management and business research (E) Volume XVI Issue II Version I*. Global Journals Inc. (USA)
- Eller, R., Alford, P., Kallmünzer, A., & Peters, M. (2020). Antecedents, consequences, and challenges of small and medium-sized enterprise digitalization. *Journal of Business Research*, *112*, 119–127. https://doi.org/10.1016/j.jbusres.2020.03.004
- Endo, S., Yang, J., & Park, J. (2012). The investigation on dimensions of e-satisfaction for online shoes retailing. *Journal of Retailing and Consumer Services*, *19*(4), 398–405. https://doi.org/10.1016/j.jretconser.2012.03.011
- Falk, M., & Hagsten, E. (2015). E-commerce trends and impacts across Europe. *International Journal of Production Economics*, 170, 357–369. https://doi.org/10.1016/j.ijpe.2015.10.003

- Faulds, D. J., Mangold, W. G., Raju, P. S., & Valsalan, S. (2018). The mobile shopping revolution: Redefining the consumer decision process. *Business Horizons, 61*(2), 323–338. https://doi.org/10.1016/j.bushor.2017.11.012
- Fernández-Bonilla, F. (2020). E-commerce: Determining factors and the importance of the e-trust, ITS Online Event, 14-17 June 2020, International Telecommunications Society (ITS), Calgary
- Følstad, A., & Kvale, K. (2018). Customer journeys: A systematic literature review. *Journal of Service Theory and Practice*, *28*(2), 196–227. https://doi.org/10.1108/JSTP-11-2014-0261
- Foroudi, P., Gupta, S., Sivarajah, U., & Broderick, A. (2018). Investigating the effects of smart technology on customer dynamics and customer experience. *Computers in Human Behavior*, *80*, 271–282. https://doi.org/10.1016/j.chb.2017.11.014
- Friedlob, G. T., & Plewa, F. J. (1996). Understanding return on investment. *Wiley*.
- Ghezzi, A., Mangiaracina, R., & Perego, A. (2012). Shaping the E-Commerce Logistics Strategy: A Decision Framework. *International Journal of Engineering Business Management*, *4*, 13. https://doi.org/10.5772/51647
- Gil-Gomez, H., Guerola-Navarro, V., Oltra-Badenes, R., & Lozano-Quilis, J. A. (2020). Customer relationship management: Digital transformation and sustainable business model innovation. *Economic Research-Ekonomska*

Istraživanja, 33(1), 2733–2750. https://doi.org/10.1080/1331677X.2019.1676283

- Günther, W. A., Rezazade Mehrizi, M. H., Huysman, M., & Feldberg, F. (2017). Debating big data: A literature review on realizing value from big data. *The Journal of Strategic Information Systems, 26*(3), 191–209. https://doi.org/10.1016/j.jsis.2017.07.003
- Guo, P., Han, M., Cao, N., & Shen, Y. (2017). The Research on Innovative Application of E-Commerce in IoT Era. *22017 IEEE International Conference on Computational Science and Engineering (CSE) and IEEE International Conference on Embedded and Ubiquitous Computing (EUC)*, 410–413. https://doi.org/10.1109/CSE-EUC.2017.263
- Gupta, M., & George, J. F. (2016). Toward the development of a big data analytics capability. *Information & Management, 53*(8), 1049–1064. https://doi.org/10.1016/j.im.2016.07.004
- Haaker, T., Ly, P. T. M., Nguyen-Thanh, N., & Nguyen, H. T. H. (2021). Business model innovation through the application of the Internet-of-Things: A comparative analysis. *Journal of Business Research*, 126, 126–136. https://doi.org/10.1016/j.jbusres.2020.12.034
- Hall, W., & Tiropanis, T. (2012). Web evolution and Web Science. *Computer Networks, 56*(18), 3859–3865. https://doi.org/10.1016/j.comnet.2012.10.004

- Hoyer, W. D., Kroschke, M., Schmitt, B., Kraume, K., & Shankar, V. (2020). Transforming the Customer Experience Through New Technologies. *Journal of Interactive Marketing*, 51, 57–71. https://doi.org/10.1016/j.intmar.2020.04.001
- Huang, M.-H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science, 49*(1), 30–50. https://doi.org/10.1007/s11747-020-00749-9
- Huang, Z., & Benyoucef, M. (2013). From e-commerce to social commerce: A close look at design features. *Electronic Commerce Research and Applications, 12(4)*, 246–259. https://doi.org/10.1016/j.elerap.2012.12.003
- Hudders, L., Van Reijmersdal, E. A., & Poels, K. (2019). Editorial: Digital advertising and consumer empowerment. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 13*(2). https://doi.org/10.5817/CP2019-2-xx
- Ivanova, I. A., Pulyaeva, V. N., Vlasenko, L. V., Gibadullin, A. A., & Sadriddinov, M. I. (2019). Digitalization of organizations: Current issues, managerial challenges and socio-economic risks. *Journal of Physics: Conference Series*, *1399*, 033038. https://doi.org/10.1088/1742-6596/1399/3/033038

- Jain, R., Aagja, J., & Bagdare, S. (2017). Customer experience – a review and research agenda. *Journal of Service Theory and Practice*, *27*(3), 642–662. https://doi.org/10.1108/JSTP-03-2015-0064
- Jarek, K., & Mazurek, G. (2019). Marketing and Artificial Intelligence. *Central European Business Review, 8*(2), 46–55. https://doi.org/10.18267/j.cebr.213
- Jones, R. P., & C. Runyan, R. (2016). Conceptualizing a path-to-purchase framework and exploring its role in shopper segmentation. *International Journal of Retail & Distribution Management*, *44*(8), 776–798. https://doi.org/10.1108/IJRDM-09-2015-0148
- Kakhki, M. D. & Palvia, P. (2016). Effect of Business Intelligence and Analytics on Business Performance. *AIS electronic library*.
- Kannaiah, D, & Shanthi, R. (2015). The impact of augmented reality on e-commerce. *Journal of Marketing and Consumer Research*, 8, 64-73
- Kannan, P. K., & Li, H. "Alice." (2017). Digital marketing: A framework, review and research agenda. *International Journal of Research in Marketing*, *34*(1), 22–45. https://doi.org/10.1016/j.ijresmar.2016.11.006
- Khanzode, K. C. A., & Sarode, R. D. (2016). Evolution of the world wide web: From web 1.0 to 6.0. *International Journal of Digital Library Services, 6*(2). http://www.ijodls.in/uploads/3/6/0/3/3603729/ijodls121.pdf

- Khedkar, E. B. (2015). Effect of customer relationship management on customer satisfaction and loyalty. *International Journal of Management (IJM), 6*(5), 1–7. http://www.jifactor.com/
- Kiel, D., Arnold, C., & Voigt, K.-I. (2017). The influence of the Industrial Internet of Things on business models of established manufacturing companies – A business level perspective. *Technovation, 68*, 4–19. https://doi.org/10.1016/j.technovation.2017.09.003
- Kim, J., Kang, S., & Lee, K. H. (2021). Evolution of digital marketing communication: Bibliometric analysis and network visualization from key articles. *Journal of Business Research*, 130, 552–563. https://doi.org/10.1016/j.jbusres.2019.09.043
- Klaus, P., & Zaichkowsky, J. L. (2021). The convenience of shopping via voice AI: Introducing AIDM. *Journal of Retailing and Consumer Services*, 102490. https://doi.org/10.1016/j.jretconser.2021.102490
- Kubiak, B. & Weichbroth, P. (2010). Cross- And Up-selling Techniques In E-Commerce Activities. *Journal of Internet Banking and Commerce 15 (3).*
- Kraus, D., Reibenspiess, V., & Eckhardt, A. (2019). How voice can change customer satisfaction: a comparative analysis between e-commerce and voice commerce.
- Labrecque, L. I., vor dem Esche, J., Mathwick, C., Novak, T. P., & Hofacker, C. F. (2013). Consumer Power: Evolution in the Digital Age. *Journal of*

Interactive Marketing, *27*(4), 257–269. https://doi.org/10.1016/j.intmar.2013.09.002

- Lasi, H., Fettke, P., Kemper, H., Feld, T., & Hoffmann, M. (2014). Industry 4.0. *Business & Information Systems Engineering*, 239-242. DOI 10.1007/s12599-014-0334-4
- Lee, S., & Oh, Y. (2016). Study on Virtual Reality and E-commerce. *International Journal of Advanced Culture Technology*, *4*(4), 70–74. https://doi.org/10.17703/IJACT.2016.4.4.70
- Leeflang, P. S. H., Verhoef, P. C., Dahlström, P., & Freundt, T. (2014). Challenges and solutions for marketing in a digital era. *European Management Journal*, *32*(1), 1–12. https://doi.org/10.1016/j.emj.2013.12.001
- Legner, C., Eymann, T., Hess, T., Matt, C., Böhmann, T., Drews, P., Mädche, A., Urbach, N., & Ahlemann, F. (2017). Digitalization: Opportunity and Challenge for the Business and Information Systems Engineering Community. *Business & Information Systems Engineering*, *59*(4), 301–308. https://doi.org/10.1007/s12599-017-0484-2
- Lemon, K. N., & Verhoef, P. C. (2016). Understanding Customer Experience Throughout the Customer Journey. *Journal of Marketing*, *80*(6), 69–96. https://doi.org/10.1509/jm.15.0420
- Leonnard, L., Paramita, A. S., & Maulidiani, J. J. (2019). The Effect of Augmented Reality Shopping Applications on Purchase Intention. *Esensi:*

Jurnal Bisnis Dan Manajemen, *9*(2), 131–142. https://doi.org/10.15408/ess.v9i2.9724

- Li, P., & Xie, W. (2012). A strategic framework for determining e-commerce adoption. *Journal of Technology Management in China*, *7*(1), 22–35. https://doi.org/10.1108/17468771211207321
- Li, S., Xu, L. D., & Zhao, S. (2015). The internet of things: A survey. *Information Systems Frontiers, 17*(2), 243–259. https://doi.org/10.1007/s10796-014-9492-7
- Lu, Y., Papagiannidis, S., & Alamanos, E. (2018). Internet of Things: A systematic review of the business literature from the user and organisational perspectives. *Technological Forecasting and Social Change*, 136, 285–297. https://doi.org/10.1016/j.techfore.2018.01.022
- Lu, Y., & Smith, S. (2008). Augmented Reality E-Commerce: How the Technology Benefits People's Lives. In I. Pavlidis (Ed.), *Human Computer Interaction*. InTech. https://doi.org/10.5772/6301
- Manaf, P. A., Rachmawati, I., Witanto, M., Nugroho, A. (2018). E-satisfaction as a reflection of e-marketing and e-sequal in influencing e-loyalty on e-commerce. *International Journal of Engineering & Technology.* 7(4.44), 94
- Mari, A. (2019). Voice Commerce: Understanding shopping-related voice assistants and their effect on brands. In: IMMAA Annual Conference. Northwestern University in Qatar, Doha (Qatar). October 4-6, 2019

- Mari, A., Mandelli, A., & Algesheimer, R. (2020). The Evolution of Marketing in the Context of Voice Commerce: A Managerial Perspective. In F. F.-H. Nah & K. Siau (Eds.), *HCI in Business, Government and Organizations* (Vol. 12204, pp. 405–425). Springer International Publishing. https://doi.org/10.1007/978-3-030-50341-3_32
- Martínez-Navarro, J., Bigné, E., Guixeres, J., Alcañiz, M., & Torrecilla, C. (2019). The influence of virtual reality in e-commerce. *Journal of Business Research*, *100*, 475–482. https://doi.org/10.1016/j.jbusres.2018.10.054
- Narahari, Y., Raju, C.V.L., Ravikumar, K. & Shah, S. (2005). Dynamic pricing models for electronic business. *Sadhana 30*, 231–256. https://doi.org/10.1007/BF02706246
- Ngai, E. W. T., Moon, K. K., Lam, S. S., Chin, E. S. K., & Tao, S. S. C. (2015). Social media models, technologies, and applications: An academic review and case study. *Industrial Management & Data Systems, 115*(5), 769–802. https://doi.org/10.1108/IMDS-03-2015-0075
- Nisar, T. M., & Prabhakar, G. (2017). What factors determine e-satisfaction and consumer spending in e-commerce retailing? *Journal of Retailing and Consumer Services*, *39*, 135–144. https://doi.org/10.1016/j.jretconser.2017.07.010

- Onețiu, D. D. (2020). The Impact of Social Media Adoption by Companies. *Digital Transformation. Studia Universitatis „Vasile Goldis" Arad – Economics Series, 30*(2), 83–96. https://doi.org/10.2478/sues-2020-0014
- Oprescu, P. G. (2019). Influence of New Technologies in E-Commerce. *ECONOMY INFORMATICS JOURNAL*, *19*(1/2019), 23–33. https://doi.org/10.12948/ei2019.01.03
- Özköse, H., Arı, E. S., & Gencer, C. (2015). Yesterday, Today and Tomorrow of Big Data. *Procedia - Social and Behavioral Sciences*, 195, 1042–1050. https://doi.org/10.1016/j.sbspro.2015.06.147
- Öztaş, Y. B. B. (2015). The Increasing Importance of Mobile Marketing in the Light of the Improvement of Mobile Phones, Confronted Problems Encountered in Practice, Solution Offers and Expectations. *Procedia - Social and Behavioral Sciences*, 195, 1066–1073. https://doi.org/10.1016/j.sbspro.2015.06.150
- Paliouras, K., & Siakas, K. V. (2017). Social Customer Relationship Management: A Case Study. *International Journal of Entrepreneurial Knowledge, 5*(1), 20–34. https://doi.org/10.1515/ijek-2017-0002
- Parsons, A., Zeisser, M., & Waitman, R. (1998). Organizing today for the digital marketing of tomorrow. *Journal of Interactive Marketing, 31-46.* https://doi.org/10.1002/(SICI)1520-6653(199824)12:1<31::AID-DIR4>3.0.CO;2-X

- Parviainen, P., & Tihinen, M. (2017). Tackling the digitalization challenge: How to benefit from digitalization in practice. *IJISPM - International Journal of Information Systems and Project Management*, *5(1)*, 63–77. https://doi.org/10.12821/ijispm050104
- Pavlishyna, N., & Kot, L. (2020). THE PRECONDITIONS FOR THE EMERGENCE AND DRIVERS OF MARKETPLACES DEVELOPMENT IN E-COMMERCE. *Baltic Journal of Economic Studies*, *6*(5), 137–147. https://doi.org/10.30525/2256-0742/2020-6-5-137-147
- Piccinini, E., Gregory, R. W., & Kolbe, L. M. (2015). Changes in the Producer-Consumer Relationship – Towards Digital Transformation. AIS Electronic Library. http://aisel.aisnet.org/wi2015
- Pogorelova, Elena and Yakhneeva, Irina and Agafonova, Anna and Prokubovskaya, Alla, Marketing Mix for E-Commerce (July 19, 2016). INTERNATIONAL JOURNAL OF ENVIRONMENTAL & SCIENCE EDUCATION, 2016, VOL. 11, NO. 14, 6744-6759, Available at SSRN: https://ssrn.com/abstract=2848818
- Poushneh, A. (2021). Humanizing voice assistant: The impact of voice assistant personality on consumers' attitudes and behaviors. *Journal of Retailing and Consumer Services*, *58*, 102283. https://doi.org/10.1016/j.jretconser.2020.102283

- Priester, A., Robbert, T., & Roth, S. (2020). A special price just for you: Effects of personalized dynamic pricing on consumer fairness perceptions. *Journal of Revenue and Pricing Management*, *19*(2), 99–112. https://doi.org/10.1057/s41272-019-00224-3
- Raab, G., Ajami, R. A., & Goddard, G. J. (2008). Customer relationship management: A global perspective. *Routledge*. https://www.taylorfrancis.com/books/e/9781315575636
- Rodgers, S., & Thorson, E. (2017). Digital advertising: Theory and research (Third edition). *Routledge, Taylor & Francis Group*.
- Rodriguez, M., & Boyer, S. (2020). The impact of mobile customer relationship management (mCRM) on sales collaboration and sales performance. *Journal of Marketing Analytics, 8*(3), 137–148. https://doi.org/10.1057/s41270-020-00087-3
- Rose, K., Eldridge, S., & Chapin, L. (2015) The Internet of Things: An Overview. Understanding the Issues and Challenges of a More Connected World. *The Internet Society (ISOC)*, 1–53.
- Rzepka, C., Berger, B., & Hess, T. (2020, January). Why another customer channel? Consumers' perceived benefits and costs of voice commerce. *In Proceedings of the 53rd Hawaii International Conference on System Sciences*.

- Sahu, N., Deng, H., & Mollah, A. (2018). Investigating The Critical Success Factors Of Digital Transformation For Improving Customer Experience. AIS Electronic Library. http://aisel.aisnet.org/confirm2018
- Shahjee, R., (2016). The Impact Of Electronic Commerce On Business Organization. *Scholarly Research Journal for Interdisciplinary Studies.4* (27), 3130-3140.
- Shaw, C., & Ivens, J. (2002). *Building great customer experiences*. Palgrave Macmillan. http://site.ebrary.com/lib/alltitles/docDetail.action?docID=10262204
- Smith, P. R., & Chaffey, D. (2017). *Digital marketing excellence: Planning, optimizing and integrating online marketing* (Fifth edition). Routledge, Taylor & Francis Group.
- Song, X., Yang, S., Huang, Z., & Huang, T. (2019). The Application of Artificial Intelligence in Electronic Commerce. *Journal of Physics: Conference Series*, 1302, 032030. https://doi.org/10.1088/1742-6596/1302/3/032030
- Srinivasan, S., Rutz, O. J., & Pauwels, K. (2016). Paths to and off purchase: Quantifying the impact of traditional marketing and online consumer activity. *Journal of the Academy of Marketing Science*, *44*(4), 440–453. https://doi.org/10.1007/s11747-015-0431-z

- Stallone, V. & Klaas, M. (2019). The digital advertising ecosystem visualization – Literature review. DOI: 10.33965/es2019_201904R001
- Sullivan, Y. W., & Kim, D. J. (2018). Assessing the effects of consumers' product evaluations and trust on repurchase intention in e-commerce environments. *International Journal of Information Management*, *39*, 199–219. https://doi.org/10.1016/j.ijinfomgt.2017.12.008
- Sun, C., Adampoulos, P., Ghose, A., & Luo, X. (2021). Consumers' Path to Purchase Journeys: An Omnichannel Deep-Learning Model. https://ssrn.com/abstract=3814630
- Szwajca, D. (2019). Digital Customer as a Creator of the Reputation of Modern Companies. Foundations of Management, 11(1), 255–266. https://doi.org/10.2478/fman-2019-0021
- Taiminen, H. M., & Karjaluoto, H. (2015). The usage of digital marketing channels in SMEs. *Journal of Small Business and Enterprise Development*, *22*(4), 633–651. https://doi.org/10.1108/JSBED-05-2013-0073
- Tassabehji, R. (2003). Applying e-commerce in business. Sage Publications.
- Thakur, R. (2019). The moderating role of customer engagement experiences in customer satisfaction–loyalty relationship. *European Journal of Marketing, 53*(7), 1278–1310. https://doi.org/10.1108/EJM-11-2017-0895
- Tian, L., Vakharia, A. J., Tan, Y. R., & Xu, Y. (2018). Marketplace, Reseller, or Hybrid: Strategic Analysis of an Emerging E-Commerce Model.

Production and Operations Management, *27*(8), 1595–1610. https://doi.org/10.1111/poms.12885

- Todor, R. D. (2016). Blending traditional and digital marketing. *Bulletin of the Transilvania University of Braşov. Series V. Vol. 9 (58) No.1 – 2016.* Transilvania University Press.
- Tohanean, D., Toma, S., & Dumitru, I. (2018). Organizational Performance and Digitalization in Industry 4.0. *Journal of Emerging Trends in Marketing and Management – Vol I, No. 1/2018*. www.etimm.ase.ro
- Turban, E., Strauss, J., & Lai, L. (2016). Social Commerce. *Springer International Publishing*. https://doi.org/10.1007/978-3-319-17028-2
- Ukhalkar, P. K., Phursule, R. N., Gadekar, D. P., & Sable, N. P. (2020). Business Intelligence and Analytics: Challenges and Opportunities. *International Journal of Advanced Science and Technology, 29*(12s), 2669-2676
- Vaidya, S., Ambad, P., & Bhosle, S. (2018). Industry 4.0 – A Glimpse. *Procedia Manufacturing*, *20*, 233–238. https://doi.org/10.1016/j.promfg.2018.02.034
- Van Belleghem, S. (2016). How the digital world is shaping the modern consumer. *Strategic Direction*, *32*(5), 1–2. https://doi.org/10.1108/SD-02-2016-0026

- Veale, M., & Brown, I. (2020). Cybersecurity. *Internet Policy Review*, *9*(4). https://doi.org/10.14763/2020.4.1533
- Victor, V., Joy Thoppan, J., Jeyakumar Nathan, R., & Farkas Maria, F. (2018). Factors influencing consumer behavior and prospective purchase decisions in a dynamic pricing environment—an exploratory factor analysis approach. *Social Sciences, 7(9)*, 153.
- Whitmore, A., Agarwal, A., & Da Xu, L. (2015). The Internet of Things—A survey of topics and trends. *Information Systems Frontiers, 17*(2), 261–274. https://doi.org/10.1007/s10796-014-9489-2
- Wibowo, B. S., & Haryokusumo, D. (2020). Capturing Opportunities in the Industrial Revolution 4.0: E-Commerce, Digital Marketing, Prestige, and Instant Online Buying. *Jurnal Dinamika Manajemen*, *11*(2), 198–206. https://doi.org/10.15294/jdm.v11i2.24507
- Willems, K., Smolders, A., Brengman, M., Luyten, K., & Schöning, J. (2017). The path-to-purchase is paved with digital opportunities: An inventory of shopper-oriented retail technologies. *Technological Forecasting and Social Change*, *124*, 228–242. https://doi.org/10.1016/j.techfore.2016.10.066
- Wong, C.-H., Tan, G. W.-H., Tan, B.-I., & Ooi, K.-B. (2015). Mobile advertising: The changing landscape of the advertising industry. *Telematics and Informatics, 32*(4), 720–734. https://doi.org/10.1016/j.tele.2015.03.003

- Wortmann, F., & Flüchter, K. (2015). Internet of Things: Technology and Value Added. *Business & Information Systems Engineering, 57*(3), 221–224. https://doi.org/10.1007/s12599-015-0383-3
- Yaqoob, I., Hashem, I. A. T., Gani, A., Mokhtar, S., Ahmed, E., Anuar, N. B., & Vasilakos, A. V. (2016). Big data: From beginning to future. *International Journal of Information Management, 36*(6), 1231–1247. https://doi.org/10.1016/j.ijinfomgt.2016.07.009
- Yerpude, S., & Tarun Kumar Singhal, D. (2018). Internet of Things based Customer Relationship Management – A Research Perspective. *International Journal of Engineering & Technology, 7*(2.7), 444. https://doi.org/10.14419/ijet.v7i2.7.10860
- Yim, M. Y.-C., Chu, S.-C., & Sauer, P. L. (2017). Is Augmented Reality Technology an Effective Tool for E-commerce? An Interactivity and Vividness Perspective. *Journal of Interactive Marketing*, *39*, 89–103. https://doi.org/10.1016/j.intmar.2017.04.001
- Yu, H., & Zhang, X. (2017). Research on the Application of IoT in E-Commerce. *22017 IEEE International Conference on Computational Science and Engineering (CSE) and IEEE International Conference on Embedded and Ubiquitous Computing (EUC)*, 434–436. https://doi.org/10.1109/CSE-EUC.2017.269

- Yu, X., & Pan, L. (2012). Electronic Commerce Applications Based on Virtual Reality Technology. *2012 International Conference on Management of E-Commerce and e-Government*, 7–9. https://doi.org/10.1109/ICMeCG.2012.96
- Zerbino, P., Aloini, D., Dulmin, R., & Mininno, V. (2018). Big Data-enabled Customer Relationship Management: A holistic approach. *Information Processing & Management, 54*(5), 818–846. https://doi.org/10.1016/j.ipm.2017.10.005
- Zhou, T. (2011). Understanding online community user participation: A social influence perspective. *Internet Research*, *21*(1), 67–81. https://doi.org/10.1108/10662241111104884
- Mandal, P., & Joshi, N. (2017). Understanding Digital Marketing Strategy. *International Journal of Scientific Research and Management*. https://doi.org/10.18535/ijsrm/v5i6.11