

# Chapter 12

## E-Commerce: Issues, Opportunities, Challenges, and Trends

**Vasco Santos**

 <https://orcid.org/0000-0002-3535-9377>

*ISLA Santarém, Portugal*

**Tatiana Augusto**

*ISLA Santarém, Portugal*

**Jorge Vieira**

*ISLA Santarém, Portugal*

**Lara Bacalhau**

*Polytechnic of Coimbra, Portugal*

**Bruno Sousa**

 <https://orcid.org/0000-0002-8588-2422>

*Polytechnic Institute of Cávado and Ave,  
Portugal*

**Daniel Pontes**

*Universidade Católica Portuguesa, Portugal*

### ABSTRACT

*E-commerce is a business model that allows organizations to explore global markets. The objective of this study is to identify all the key points involved in e-commerce business, along with several sub-themes related to e-commerce, namely the concept of e-business and e-marketing. Next, it was noted that e-commerce could express the connections between many purchase actors but is mainly used through the B2C model. The adoption of e-commerce is linked to different internet techniques and tools, which has several advantages and risks. This study also highlights the connections of e-commerce with globalization, e-marketplaces, and platforms. Finally, the authors present the KPIs in terms of sales, marketing, and customer service that the e-sellers should take into account when they are defining the e-commerce strategy and the age segmentation criteria that must be used to create homogeneous groups of e-buyers.*

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### **INTRODUCTION**

In the last decades, the landscape of commercial exchanges at a global level has undergone enormous changes with the great evolution of information technologies, communication systems and the Internet providing an increasing approximation between buyers and sellers. The COVID-19 pandemic has given a new and stronger impetus to E-Commerce, leading many end consumers, who until that moment had never made online purchases, to see this form of commerce as one of the main mechanisms to meet their needs during the period of confinement, a trend that remained rooted in consumer habits in the post-pandemic period.

In the last 30 years, consumption habits have evolved considerably. Consumers are now considerably more active, intensely sharing their shopping experiences, debating changes and transformations in society or simply analyzing, sometimes quite critically, the attitudes of a company, or the way in which a particular product or service is made available (Adolpho, 2012). With the impact of new technological developments and the growth of the Internet, consumer behavior has changed from a passive position to more active and interactive ways, starting to express their opinions and feelings. A simple opinion or comment of a consumer now has a relevance never seen before (Marques, 2014) because it can reach thousands, or even millions of other consumers, with an ease that until just 15 years ago, it was very difficult to imagine possible (Fonseca, 2015; Kotler et al., 2016), so customer opinions have a fundamental weight on communication strategies of companies. Nowadays, consumers read the comments of other consumers and share their experiences, instead of the passive attitudes practiced previously, which went through simply consulting the information provided by companies. Additionally, with recent technological advances, consumers now enjoy the benefits of access to innovative tools, which allow better access to commercial and corporate communication initiatives, from virtually anywhere on the planet and at any time. These new capabilities made available to consumers provide the power to search and select the best information, which supports better purchase decisions, reinforcing their power in the commercial transaction (Marques, 2014). The online consumer is at the center of the purchase decision process and is now much more demanding than the traditional consumer (Fonseca, 2015; Kotler et al., 2016).

Today the purchase process is much easier and democratized, being made available virtually to all consumers, through more sophisticated computers or even through a simple smartphone with Internet access. So is necessary to deep understand the electronic commerce, its determinants, types, benefits and risks, the places where that form of commerce takes place (e-marketplaces and platforms) and main costumers. So, in this chapter we will explore those themes.

### **DEFINITION OF E-COMMERCE, E-BUSINESS AND E-MARKETING**

The spread of information systems and increasing access to the Internet has led many businesses to migrate to digital platforms. The prefix “e-” was added to well-known business terms, indicating that that word now relates to an electronic environment. Three of these terms should be clarified at the outset, given that some may consider them synonymous, when they are not: e-Business, e-Commerce and e-Marketing.

Pereira (2016) defined **e-Business** as a business model that consists of a set of processes and transactions that involve all systems of the company, through a digital platform. This form of business allows greater control of the company’s activities because all transactions are monitored through that digital platform, but does not cover commercial transactions, being an exchange of values between the bound-

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aries of the organization. Clarifying, Nogueira (2018) says that e-business can be defined as the online business, through the Internet, that allows supporting all processes involved in the business, such as organizational communication, cooperation and also the integration of all activities, the management of relationships with customers, suppliers and as well as with other stakeholders.

From these definitions, it can be said that e-business is a very complex system where daily business activities are performed through electronic supports and it can include any part of a company operations, such as production, product design and engineering, purchasing, price manipulations, customer management, marketing, sales, online stores, invoicing and packaging, payment operations, order management, shipping and drop shipping, etc. It can be said that e-business is not limited to technology-related products and services, so it can benefit all types of business, helping companies to compete globally, promote and sell all around the world 24 hours/7 days, cutting costs and transaction times and improving customer management, communication, and support.

The definition of **e-Commerce** is not consensual. For example, on a simplest manner, Salvador (2013) says that Online commerce or Electronic Commerce or, for short, e-Commerce is a commercial transaction carried out through electronic devices, where goods, services or information are exchanged. In a more wider view, Albertin (1999) defines e-Commerce as the realization of the entire value chain of business processes in an electronic environment, through the intensive application of communication and information technology, meeting business objectives. Gunasekaran et al. (2002) underlines the role of e-Commerce as a key factor for the success of the companies, saying that e-Commerce is an electronic business process used for negotiation, selling and acquisition of products or services through Internet platforms between several entities, in order to achieve organizational objectives. In same way, Pereira (2016) consider the e-Commerce as an activity that is based on commercial exchanges between individuals and organizations, in these exchanges are involved the buying and selling of products, which are integrated with technology.

These e-commerce definitions show that there are no major differences between online and offline transactions. The biggest difference between e-Commerce and traditional commerce is at the level of technology and information management, currently fundamental for the success of the projects. In the Web environment, companies must follow some traditional techniques to influence decision-making power, but they must adapt the most appropriate marketing strategies, in order to create unique experiences and develop products and services adapted and attractive to their targets. Marketers must now combine some elements that go beyond the traditional view of the marketing mix and its 4 P's (Constantinides et al., 2010). In e-Commerce, the post-sales phase of consumer buying process assumes an even greater importance than in the traditional purchase-sale process. Therefore, the Internet has become a strong ally of the consumer, since it is a tool that allows collecting various information about the purchase process, in an accessible way to all consumers, even those less familiarized with the use of tools and computer devices (Gosling et al., 2020).

El-Gohary (2010) defined **e-Marketing** as the process of marketing products, services or information through electronic means, in order to satisfy the consumers' needs and also the organizational objectives. Taherdoost and Jalaliyoon (2014) presented a more profound definition of e-marketing, saying that this concept is related to the whole marketing process carried out through the digital medium and is composed of direct and indirect e-marketing, including all the processes of company-consumer relationships, brand expansion strategies etc.

Meng (2009) highlighted the link between e-marketing and e-Commerce, considering that the first concept is the main activity of the second, given that e-marketing allows expanding e-Commerce by

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allowing all marketing methods to be applied in e-Commerce, through digital means, to implement the activities of an online business.

E-marketing is the activity that uses all the marketing methods applied to e-Commerce, through digital means, to implement the activities in the online business. This concept is considered the main activity of e-Commerce, which allows it to expand (Meng, 2009).

Knowing the meaning of e-Commerce, it should be clarified that this word could refer to many different relationships between the actors of online buying and selling process. In next section, those relationships are explained.

## **TYPES OF E-COMMERCE**

In business planning, it is important and beneficial to know the different types of e-Commerce that exist. According to the element of negotiation, namely the type of market and the commercial relationship between the participants in the negotiation, the E-Commerce can be divided into different types of business models platforms. For Turban et al. (2015) cite by Pereira (2016) there are seven kinds of E-Commerce platforms: B2C (business-to-consumer), B2B (business-to-business), C2B (consumer-to-business), and C2C (consumer-to-consumer), P2P (Peer to Peer), B2E (Business to Employee) and G2B / C2G (Government to Business / Consumer to Government). Laudon and Traver (2016) cite by Nogueira (2018) consider that e-Commerce can be divided into six types, in which the first 3 coincide with the three of the seven indicated by Turban et al. (2015) (B2C, B2B and C2C), but add another three that eminently take into account the support in that e-Commerce originates from: Mobile e-Commerce (M-commerce); Social e-Commerce and Local e-Commerce. In this section, it will be clarified what is meant by each of these business models.

Business-to-Consumer (B2C) E-Commerce: is the form of electronic business model that regulates the relationship between the company and the final consumer and consists mostly in direct selling products and / or services between companies and final consumers, through Internet without intermediaries, namely in the purchase relationship, in the whole process since the attraction of customers, and even the supply of products, being that all the selling activity is responsibility of the company only (Henriques, 2012; Turban et al., 2015). Authors such as Ho et al. (2007) mentioned that B2C e-Commerce has been growing over time, due to technological advancement and market advancement.

Business-to-Business (B2B) E-Commerce: this a form of e-Commerce that allows business commercial transactions of products and services between organizations, with the aim of a greater cost reduction, since there is the possibility of integrating supply chains through the digital platforms where this business is inserted, achieving an optimization of all processes (Henriques, 2012). Carvalho and Encantado (2006) divided this form of electronic commerce into three major areas: e-Marketplace, e-Procurement and e-Distribution: the first area refers to portals where third parties (buyers and sellers) are grouped to establish commercial links to purchase and sell products and / or services; the e-Procurement are portals where partners establish external relations with companies that intend to maintain commercial connections, allowing to share information between companies, increase the proximity between customer and supplier and vice versa and reducing time and cost in supply chain transaction; the e-Distribution refers to intern portals (intranet) for collaborators (employees or other companies of the group) which are designed to integrate the companies with their distributors, subsidiaries and representatives and are

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used by the company employees or other companies of the group to communicate with any department of the company;

Consumer-to-Consumer (C2C) E-Commerce: is an e-Commerce business model that controls transactions from consumers to consumers. In C2C the consumer position does not prevent him from acting as a seller (Pereira, 2016), so is the consumer-seller that prepares the product for the market, makes the product available for auction or for sale at a stipulated price, then, to connect to the consumer-buyer, uses a digital platform that usually is operated by a third party. These third party can intervene in that transactions but it will only assume the role of mediator by providing a space for the negotiation and transaction to be carried out (like auction websites and mobile apps), or search engine or for the provision of information or for the payment-receipt, receiving a commission for this role of mediator, not being responsible either for the transaction of the product or for any logistical activity related to it. Some of these third parties are OLX®, Coisas.com®, Standvirtual®, Imovirtual®, Airbnb® (Pereira, 2016);

Consumer-to-Business (C2B) E-Commerce: this platform serves to foster a consumer-business relationship, in which the consumer gives feedback regarding the company's activity, in order to create value to the company, an example, the suggestion of a new product (Henriques, 2012);

Peer to Peer (P2P) E-Commerce: this e-Commerce model consists of a temporary network that enables a specific group of Internet users, with access to files installed in each other's hard disk, share them without passing through a servitor web central. This technology represents a low financial return and is most often associated with piracy and online virtual crimes (Pereira, 2016);

Business to Employee (B2E) E-Commerce: the B2E is defined as the electronic online commerce form that handles all the processes between company-employee, including the relationship between both, the activities carried out for attracting and keeping qualified teams, performing recruitment actions, communicate benefits and advantages offered, training opportunities, among others. This strategy covers seven elements from the employee's point of view: competence management; learning process; recruitment process; content management; websites; knowledge management, and corporate portals. It is therefore considered an online business model focused on the employee and also on adding value to it (Pereira, 2016);

Government to Business (G2B) / Government to Consumer (G2C) and (G2G) E-Commerce: in this form of e-Commerce all existing relationships between company and governments are regulated, for example, the platforms provided by the government that allow companies and consumers to pay taxes, license vehicles, among other activities, through an online method (Pereira, 2016);

Mobile e-Commerce or M-Commerce: refers to the use of smartphones and tablets to make online commercial transactions, using apps and mobile networks and wireless networks, where the activities are varied, from shopping for products, price comparisons, booking trips, checking the bank account, making transfers from anywhere, among others. It is a business model that has shown a marked growth in recent times (Nogueira, 2018);

Social e-Commerce: this e-Commerce form takes place on social networks, and focuses improving online shopping tools, notifications about pages where the content is evaluated through the number of "likes" and "shares", recommendations of "friends" on social media, among others (Nogueira, 2018);

Local e-Commerce: is a business model that aims to reach a certain group of consumers, according to their geographical area. It is mainly characterized by local vendors that use marketing to attract more customers, such as Uber (Nogueira, 2018).

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Many other classifications of e-Commerce can be found, but the authors normally identify three in a consensual manner: B2B, B2C and C2C. In next section it will be presented some of the main benefits and risks of the adoption of e-Commerce for consumers, companies, and society.

## **BENEFITS AND RISKS OF E-COMMERCE**

Offering several opportunities to be present in a worldwide global market, the use of e-commerce brings plenty of benefits and advantages when compared to the traditional purchase process, but also some risks and limitations that needed to be highlighted.

Niranjanaurth et al. (2013) and Turban et al. (2015) identified a set of benefits inherent in e-Commerce, which are steadily increasing and that can be organized in three levels: consumers, organizations and society. According to those authors, the main benefits associated with e-Commerce at the consumer level are related to: the inventory, given that a diverse set of sellers and products is available; ubiquity, because you can buy at any time, regardless of where you are; the prices of the products, which are more accessible given the high competition and the ease with which the consumer can compare them; the possibility of buying and selling to other consumers and, finally, the absence of waiting lines for the purchase of products.

At the level of organizations, Niranjanaurth et al. (2013) mentioned that the main benefits identified are: get access to the global market, allowing suppliers and consumers a worldwide level with low associated costs; reduction of costs inherent to processing, physical storage and distribution of products; reduction of the number of employees, namely, of the sales team, and, also, flexibility of schedules. One of the key benefits is that e-Commerce can be developed through new business models and also that the initial investment for the business is low cost. As for society, Niranjanaurth et al. (2013) and Turban et al. (2015) identified the following benefits: the existence of a greater number of public services, through e-government platforms and the increase in quality of life, due to affordable prices.

In addition to the existence of numerous benefits related to e-Commerce at three levels (consumer, organization and society), there is also a set of limitations of technological and non-technological nature related to e-Commerce, which should be taken into consideration when implementing an e-Commerce strategy. For Niranjanaurth et al. (2013), Turban et al. (2015) and Miyazaki and Fernandez (2018) the main non-technological limitations are the lack of physical touch with the product; the resistance to change; the scarcity of collaboration in the value chain and the fact of a large investment in security and privacy of the information transmitted of consumers in e-Commerce, viruses, and password spying, bogus stores. Additionally, for those researchers the main technological limitations are the requirement to establish universal standards of quality, security, and reliability; the need to use special platforms, increasing the costs associated with e-Commerce; a high degree of dependence on website operation; and the high need for B2C businesses to use automated warehouses to be able to respond to consumer orders.

The benefits and limitations pointed to the adoption of e-Commerce, in most of the cases, have a connection to the environment in this kind of activity is conducted: the Internet. So, in next section, we will explain de relationship of e-Commerce and Internet.

## **E-COMMERCE, INTERNET AND 5G**

The birth of Internet is thought to took place in late 1960 by the Department of Defense of United States of America, “to connect researchers, government workers and defense contractors who were providing systems and data to government agencies” (Anil, 2019a, p. 2). This network grew rapidly worldwide, connecting billions of computers and its users allowing the exchanges between companies and persons of many business, educational and research networks. Currently, it is estimated that more than 4 billion individuals are connected to the Internet worldwide, of which more than 85% are online, at least once a day. Of these, about 93% connect through their mobile devices. Consumers now spend more time on their mobile devices and consuming digital media. Accessibility to the Internet and mobile devices and digital innovation is causing profound changes in consumer behavior and strongly influencing the way they interact in the purchasing process. In 2016, the European average regarding the use of the Internet and the existence of e-shoppers was 43% (Pereira, 2016) but this number increased greatly with the COVID-19 pandemic. The relevance of Internet and e-Commerce is so big that, for example, about 94% of the Portuguese population with Internet access has already carried out at least one online transaction and the classes of goods and services most traded by the Portuguese are touristic products and services, event tickets, fashion products, books, music, office supplies and technology products (Nielsen, 2019).

Off course, the Internet is not just a new communication channel, it is a new type of channel where interaction is the key to success (Boas & Sousa, 2022). With the old security problems solved by technological advances, Internet-based platforms have now become the biggest business channels (Lin & Rauschnabel, 2016; Ryan & Jones, 2009). It has also developed changes in the way persons and the organizations communicate, work, obtain information and access product and service offerings (Caro et al., 2011). As a result, the world has become smaller, extraordinarily more dynamic. What now separates a person from any information and anywhere in the world is just a click on his device (Kotler et al., 2016). For example, in the tourism sector, the Internet has quickly become the main communication and purchase channel worldwide, as it uses standardized communication processes, facilitating the apprehension of knowledge of the product or service to be acquired, regardless of the country that provides the offer and of the product/service offered (Veloso et al., 2020), allowing the creation of a new type of relationship between companies and consumers. The Internet is rendering obsolete some communication channels and some forms of commerce, which used to be successful but that nowadays consumers no longer adhere to them, for the benefit of e-Commerce (Gretzel, 2018).

The Internet contributes to e-Commerce with many tools and technologies. Anil (2019a) classifies Internet technologies in five categories: Web Pages, Web Browsers, Hypertext Markup language (HTML) and HTML Tags. A web page is a single unit of information, often called a document that is available via the World Wide Web (www), that is created using HTML standardized codes or “tags” used to define the structure of information on a web page, which can be viewed in a web browser (e. g. Google Chrome, Safari, Microsoft Edge, Mozilla Firefox, Samsung Internet, Opera). Anil (2019a) also indicates that there are five Internet tools: Search Engines, E-mail, Newsgroups, Internet Relay Chat (IRC) and Video Conferencing. In e-commerce the main Internet tools used are the E-mails which are electronic messages sent from one computer to another and which may be business related and include attachments with images or other documents; and Search Engines (e. g. Google, Bing, Yahoo, Duck Duck Go) which are websites that help search the Internet for other websites based on keywords provide.

The growing number of online sales encourages companies to feel increasingly encouraged to create a digital presence, but quickly can be realized that, with the monstrous number of potential competitors

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existing globally, it's not enough to have an online store. It is necessary for the products to be advertised and for the company's website to be found. Thus, in E-commerce it is also necessary, when defining your action strategy, to consider digital Ad platforms and SEO techniques.

As Google is the search engine most used worldwide. So, the natural choice for the advertising management of ads for most companies is Google Ads, which allows you to create and generate Search Ads (in which sponsored links are featured prominently in results at the beginning and end of the Google search page (SERP (Search Engine Results Page)) when the potential consumer enters a keyword or based on their cookies), Display Ads (in which an ad banner appears somewhere in a content page such as on a blog, websites, news pages), Youtube Ads (where ads appear at the beginning, during or at the end the exhibition of a video chosen by the user), Gmail Ads (these are personalized ads that are viewed directly in the email inbox) and in Ads in Apps like the Play Store (these are the ads that look specifically in mobile apps).

Google Ads is considered by e-Commerce businesses as a marketing tool that offer sales support through a tool that facilitates the management of ads and their associated costs for companies that use e-Commerce business models. This tool works through keywords, whereby, when these keywords are mentioned in the search engine by consumers, Google sends ads related to that searches, allowing businesses to reach various customers from all corners of the globe (Tricahyadinata & Za, 2017). For this Google tool to work so that businesses achieve success, there are some prerequisites to take into account, such as: defining keywords, defining the type of match and search terms, increasing ad ranking (organizing a group of keywords, and also creating an appealing ad (Tricahyadinata & Za, 2017).

Another digital tool that companies can use to put their websites in first positions of Google Search page is Search Engine Optimization (SEO). This process involves technical improvements in the website structure of the company, coding of the text during writing and content creation, and strategies for promotion and brand awareness. These is a processes that allows to alter the web page to make it more visible, putting algorithms into the search engines (Weideman, 2007). Some of technical improvements that can be made in website structure are putting the e-commerce store on https system, which secure that customer information is secure; have pages with fast load time and mobile responsive; high-quality backlinks and compelling meta-descriptions; alt tags on the images; user-friendly URL structure, etc. The improvements of SEO of writing and content creation, could be including appealing expressions like "Free Shipping" or "On Sale" to maximize page CTR; describe all products in-depth through a rich text with a minimum of 1,000 words of content using 3-5 times the main keywords; make post that compare products, display videos with product demos, etc. For promoting e-commerce store and increasing brand awareness should be present some texts or videos with personal recommendations or 5-star system reviews, have an affiliate program, sponsor a local event or conference, display social sharing buttons, etc.

Due to de development of the Internet tools and techniques and its application to e-Commerce, seller can have a global digital presence and the customers can made their purchase in any place of the world at any time of the day, so we should better understand the contribute of the e-commerce to the globalization phenomenon. According to Kumar (2018), 5G cellular services are expected to be commercially available in developed countries later this year. These services, on their own or in combination with other technologies, are likely to have a transformative impact on e-commerce activities. The development of 5G networks, platforms, and devices certainly require high investments. There are, however, important economic benefits as well as psychological or intangible benefits associated with 5G. The faster speed of 5G networks and high-resolution screens of 5G-enabled devices might lead to a higher degree of customer willingness to engage in e-commerce activities, more time spent on e-commerce websites, and



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more purchases online. The features of 5G can also lead to a higher degree of effectiveness of ecommerce vendors' activities such as online advertising. Finally, faster speeds and higher-resolution screens are also associated with a higher degree of enjoyment (psychological or intangible benefits) when consumers engage in e-commerce activities.

## **E-COMMERCE AND GLOBALIZATION**

E-Commerce has no barriers or borders. It is a completely transnational form of trade. E-Commerce is based on the phenomenon of globalization, to which it contributes decisively. That's why e-Commerce is changing the economic structure of countries. The world is moving towards the knowledge economy or e-economy (Anil, 2019b). Globalization is a key factor in the development of e-Commerce. Organizations with a global presence use e-Commerce more intensively than companies with smaller structures. Companies that face competition on a global scale are subject to greater competitive pressure and, therefore, more quickly adopt new technologies such as e-Commerce, as a way of maintaining competitiveness, maintain or increase their market share and develop more efficient ways of working. Companies with global operations are more sensitive to aspects related to optimizing their operations and reducing total costs. Commercial activity based on online platforms allows for greater speed and control of transactions, greater optimization of logistics and also allows the collection of valuable information regarding the operations and customers involved, reducing the overall costs of the operation and simplifying all the processes involved. Globalization has different impacts on the adoption of e-Commerce in B2B and B2C commerce, with global companies being more involved in the B2B channel. As a result, B2C e-Commerce can be a greater opportunity for companies with regional or local operations (Semerikov et al., 2019), namely if the seller selected the right platform or e-marketplace to adopt a e-Commerce strategy.

## **E-COMMERCE AND E-MARKETPLACES AND PLATFORMS**

To have a digital presence in the global market provide by the use of Internet, the seller as to choose if he wants to have his own online store or just sell through a e-marketplace or both.

An e-commerce platform is an end-to-end software application where sellers and buyers come together to make transactions. For potential buyers, e-commerce platforms are used to search for products, add them to a shopping cart and, at the end, complete the purchase by checking out. These platforms, for sellers, are services that encompasses e-Commerce website builders where online stores can be created, equipped with customer service infrastructure and stock management and accounting systems. The most popular platforms are Shopify, BigCommerce, Magento, WooCommerce (including WooCommerce website builders like Elementor), Wix, Squarespace and Yo!Kart.

Sellers have numerous advantages when using an e-commerce platform, for example, having control over the structure of the website, they have direct control over all its features, design and navigation, being able to easily introduce data collection mechanisms on the website. customers for future marketing campaigns and to increase brand awareness and controls third-party access to the store, preventing competitors from displaying their ads there, for example. However, these platforms also have disadvantages as all the financial and time effort needed to build and maintain the online store falls on the seller, who also has to promote initiatives that bring traffic to the store and customer engagement.

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Thus, choosing an e-commerce platform is one of the first and most important decisions that the seller must make, since there are several market opportunities and risks. Table 1 presents the main e-commerce platforms, their features, and tools:

Table 1. Main E-Commerce Platforms. Source: Amorim and Traina (2018, p. 7)

Platform	Features	Tools
Software as a Service (SAAS)	This platform is provided by other entities, and carries monthly fee costs, its installation is fast, however, the e-Commerce business organization has little customization power.	- CloudShop - Tray commerce - UOLHost - Mercado livre
Licensed	It is a platform acquired from a third party, through the request of a license for its use.	- SAP Hubris - Oracle
Proprietary	This platform is developed by the organization and needs a qualified and specialized team to implement and monitor it. It represents high costs for the company and requires some time for implementation.	- Customized by the e-Commerce company
Open Source (Free Software)	This platform is easy to access, contains a free download, the company can customize it, but needs a qualified team (not very expensive), for its implementation and customization.	- Magento - OpenCart - PrestaShop - WooCommerce - OsCommerce

A Marketplace is the place where buyers and suppliers of certain offers and demands of goods or services meet. The greater diversity of suppliers and product offers in a given location, common to all, favors greater demand from customers, given the greater variety of offers available. Examples of this are local markets, supermarkets and hypermarkets, shopping centers and the like (Kotler & Armstrong, 2018).

The convenience provided by the Internet and ease of access to digital platforms, from virtually anywhere and from mobile devices, allowed expanding the concept and developing platforms that created high-scale digital marketplaces. E-marketplaces are websites or apps that facilitates shopping from many different sources because, although the marketplace’s operator doesn’t have any inventory, it provides a place where sellers can show their products to customers and enable transactions. In E-marketplaces there are a very high and varied offer of products and services, to which are added the advantages of online shopping: convenience, ease of comparison of the different offers, easy access to information regarding the different offers, access to experts and other consumers, simplicity in completing the purchase and payment process with an optimized logistics chain for a quick shipment of the purchased product in a short time, regardless of the consumer’s geographic location.

Due to the wide variety offered, e-marketplaces generate much higher consumer traffic than individual or single-brand e-Commerce stores. In this way, they generate habits of consultation and frequent purchase, make consumers loyal to the purchase and payment processes, as a result of greater trust and familiarity with the entire purchase process and after-sales service, especially in the event of incidents and the need for complaints and returns. of purchased products. The high availability of products facilitates the creation of product bundled offers, the offer of promotions, cross-selling strategies and price bundling policies. Thus, it becomes simple to define strategies to increase the potential of the customer and increase the value of the purchase. The success of these e-marketplace companies is now in plain sight.

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Given their high success, nowadays e-marketplaces are no longer exclusive to large e-Commerce websites and apps with truly global structures, such as Amazon©, Aliexpress©, Ebay©, Etsy© or Google Shopping©. We are now witnessing a rapid evolution from traditional e-Commerce stores to an e-marketplace logic, even those with a regional or local scope. This fact is due to these e-Commerce sites generate high traffic and, therefore, suppliers of other products, whose sharing of traditional sales channels would be incompatible, now see the possibility of exploring new opportunities in the digital channel, taking advantage of the high number of visits (traffic) that these sites offer. E-marketplace platforms offer high advantages to all actors involved in the buying and selling process. The creators of the e-marketplace globally benefit from the high volumes of traffic generated, the greater presence of customers and suppliers. Customers are offered the advantages of convenience, trust, diversity, simplicity and confidence in the purchase process, that are the most identified determinants of the success of the e-commerce, as we will see. To the external suppliers, the e-marketplaces offers immediate access to a wide range of consumers, duly qualified leads, to which it is possible to develop sophisticated segmentation and targeting strategies, as well as to develop various sales strategies, with cross selling, promotions, among others. It is also possible to access all metrics related to the traffic generated on the e-marketplace, to correct or align promotion strategies according to the needs at any given moment, and in real time. In next section, those metrics are identified.

## **KPIs AND PERFORMANCE METRICS IN E-COMMERCE**

The decision to build and maintain an online store or the use of marketplaces must be based on the definition of the objectives to be achieved by the selling company. To verify that these objectives are achieved, KPIs must be defined.

Key performance indicators (KPIs) represent a strategic objective, that is, they evaluate performance related to an established goal. Implemented within e-Commerce, Ahmed et al. (2017) states that KPIs can be divided by:

- **Sales KPI's:** in the sales department, the objectives to be defined to understand the sales revenues per hour/day/week/month/year, to understand what the shopping cart abandonment rate is (when the consumer selects products to buy and in the process of making a purchase decision, gives up), what the average order size is, and also what the conversion rate is
- **Marketing KPI's:** in marketing department the objectives to be defined are to understand the percentage of clicks on advertisements, what is the time of each consumer on the website, the number of page views, compare the number of one-time visitors and the number of recurrent visitors, and also the rejection rate.
- **Customer service KPI's:** in customer service department the objective refers to goals directly related to counting the level of customer service email and email marketing adherence and also counting consumer interaction and feedback.

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### DETERMINANTS OF E-COMMERCE

A seller, when defining his form of digital presence, through his own online store or through marketplaces, and, consequently, the KPIs to be achieved, must keep in mind the elements that contribute to the success of the online purchase process. The existing literature on e-Commerce allows us to identify a set of determinants that emerge as explanatory variables of the online shopping process. Vieira et al. (2020) isolated a set of ten determinants of online shopping behavior: offer of products and services online, website quality, confidence, convenience, price, online experience, social media platforms, reviews from other consumers on e-Commerce sites, Word-of-Mouth (WOM) and Electronic-Word-of-Mouth (EWOM). Those determinants of e-commerce are detail below.

- **Offer of products and services online:** Technological advances and the availability of the Internet have made consumers less loyal to brands and more demanding about the products and services they consume as they can now easily compare their experiences with those of other consumers. With consumers more informed and aware of their purchase decisions, the offer of products and services tends to be much larger and more varied, also leveraged on the resources that Internet technology makes available, namely the global availability of offers on digital platforms. As a result, consumers have a greater and more varied offer that, in itself, encourages consumption and the purchase of goods and services online.
- **Website quality:** websites must be well-built, simple to use, intuitive, rich in information for the online shopping process. The consumer, when interacting with the e-Commerce platform, intends to complete the purchase process with the least effort, in the shortest possible period of time, and with the greatest confidence in the entire purchase process. Online shopping platforms must provide information that is clear and simple to understand and must be very easy for the consumer to operate. There is a positive and significant relationship between the ease of use of online shopping platforms and purchase intentions.
- **Confidence:** this determinant is fundamental, simply no consumer will buy if there is no trust in the entire purchase process. However, there is no evidence that opportunistic behaviors exist in e-Commerce platforms (Chen et al., 2007). The concept of trust is extended here to encompass ethical and social behaviors. Thus, the consumer will not follow dirty companies. Commercial, social and ethical behavior does not generate the confidence necessary for the decision and consummation of the purchase process, given that the perception of risk will be globally high. Often the perception of lack of trust is simply due to a lack of communication between the company and its target consumers.
- **Convenience:** the use of online shopping technologies results from the recognition of the advantages of using these means, namely convenience (easy access to the purchase process) but also the reduced effort and time spent in the purchase process. Online consumers associate e-Commerce with the convenience resulting from the simplicity of searching and comparing the different alternatives, and the complete management of the entire purchase process, until its conclusion.
- **Price:** in any purchasing process, regardless of the channel, price decisions are one of the most important and valued by consumers. For many years, price was one of the most important determinants for evaluating the quality of offers. Nowadays, the importance of price in purchasing decisions varies according to the products and services offered, being less evident in highly differentiated goods, goods whose comparability is difficult and when there are no substitutes, as well as in

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luxury goods. However, this determinant is fundamental for some generations of consumers, the younger generations, who still have less purchasing power. In e-Commerce, price is a fundamental and highly sensitive determinant, due to the ease of comparison of different offers by consumers. On the other hand, this channel allows for very quick price adjustments, sometimes in real time, thus allowing an immediate response to initiatives by competing companies.

- **Online experience:** The success of companies in e-Commerce is strongly dependent on the quality and intensity of the shopping experiences provided to consumers on the Marketplace and, therefore, strongly dependent on the quality of the technologies used. The consumer, when choosing an online purchase process, seeks advantages in relation to other purchase channels, namely in relation to purchases in physical stores, in order to better satisfy their needs. These advantages can, for example, go through the simplicity and ease of use of the e-Commerce platform, speed of completion of the purchase process, speed of delivery, confidence transmitted throughout the purchase process.
- **Social media platforms:** used by most online consumers, are an important means of disseminating information, often in real time, changing the way we all communicate today. These platforms allow the dissemination and sharing among consumers of information regarding consumption or experiences obtained. This fact allows everyone to be active content promoters.
- **Reviews from other consumers on e-Commerce sites:** some authors consider this to be the first step in the online purchase process. When consumers share their online shopping experience, they form their opinion and attribute a certain value to the experience. Other consumers capture this perceived value as added value in the product offering to better support their purchase decisions.
- **Word-of-Mouth (WOM) and Electronic-Word-of-Mouth (EWOM):** WOM and EWOM have, nowadays, a very high impact on the performance of companies, in terms of their reputation. This relevance is due to the use of social networks, in which consumers often share their experiences, whether positive or negative. WOM can be defined as traditional information sources, which involve family and friends, in order to collect information and opinions about a particular product or service, using informal communication (Ladhari et al., 2011). EWOM is similar, changing only the means used to share opinions, in this case using digital media and online platforms, with particular relevance to social media, blogs and specialized forums.

Although Vieira et al. (2020) did not point out the **available payment methods and the activities of logistics, distribution and transport** as decisive elements in e-commerce, these activities are also decisive factors for the success or failure of companies operating through electronic commerce.

Regarding payment methods, Mota (2021) attests that they are a differentiating factor of e-Commerce and there are a large diversity of payment methods that could be used to bring security, confidence and convenience to e-buyer, namely:

- **Bank transfer:** this is not a widely used method, because there is the sharing of confidential information and the receipt of the value is a lengthy process, since the company establishes a payment deadline, and the consumer can pay up to the limit of that deadline. Many times, this process incurs costs related to bills;
- **ATM reference:** this is already a more flexible method, as it can be made through cell phone applications or ATM services, at any time, using the reference and entity sent by the company. This method is also interconnected with MbWay and Mbnet;

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- **MbWay or Paypal or Credit Card:** these are the most used methods, since they are practical and easy to use, once the payment is made through these applications the other party immediately receives the amount. These methods do not incur any transfer costs;
- **Ifthenpay:** is a payment system through ATM references and Mbway, without associated costs, and with a high level of security;
- **Online platforms:** these are platforms on the Internet that allow you to make payments and money transfers, in a simple way, but with some costs, considered low, namely: Strip and Skrill;
- **Adyen:** is a global payment company, which allows businesses to accept mobile, e-Commerce and point of sale payments.

We can see that there are numerous payment methods for e-Commerce businesses, however, in Portugal, the recommended payment methods are ATM, PayPal, Mbway and bank cards (credit/debit). In general, the least recommended method is bank transfer (Mota, 2021).

Regarding to de logistics, it is the activity that shortens the distance between the company and the consumer and is responsible for the entire process of distribution and handling of products, so that they arrive at the right time and in the right conditions to the right consumer, focusing on keeping the consumer loyal to the brand. To do that, the company needs to have minimum stocks and an information system that is capable to deal with security of data exchange, payment methods, high number of little orders and the fractioned deliveries to geographically dispersed locations which makes route planning difficult and increasing drastically delivery costs (Pereira, 2016). Other challenge of e-commerce logistics is the fact that there is a higher number of order returns, it happens many times due to the fact that at the time of purchase decision making there is no possibility of physical touch (Alves, 2005).

So, if the company wants to be successful in e-commerce activity, it should decide if the logistic, distribution and transport activities are performed by the company itself or with the collaboration of other companies. Thus, it is necessary for e-Commerce companies to take into account that if they need strategic business partners (win-win), there will be involved at least three parts: the e-Commerce company itself (responsible for the whole process of purchasing goods and interacting with the consumer), the logistics operator (this is responsible for processing orders and deliveries) and a delivery company (responsible for getting the right product to the right destination at the right time) (Alves, 2005).

Bornia et al. (2006) identified five tools to apply in e-Commerce logistics:

1. **Postponement (postponement of logistics):** this tool aims to delay production as long as possible to decrease the error in sales forecasts. A warehouse cannot only create product stock but must also involve activities of pre-finishing the packaging of the product (assemble, pack, and move) and thus the concept of postponement is put into practice, this concept also advocates that the differentiation of the product takes place in the final stage before the order is sent for delivery.
2. **Dematerialization:** dematerialization is based on the replacement of material flows with information flows, such as software.
3. **Resource exchange:** this concept is the integration of systems between partners so that everyone has access to information on all activities and operations taking place.
4. **Leveraged shipments:** this tool aims to calculate costs in relation to the number of orders and their respective destinations and also the kilometers traveled with the deliveries. The formula to perform this calculation was defined, which is:

$$DVD = \frac{\text{total order volume}}{\text{distance traveled per trip}}$$

5. **CAM model:** this strategy can only be applied when the e-Commerce company operates simultaneously in the traditional market, in order to facilitate the delivery process and in turn minimize the costs associated with this factor, the delivery of orders is made at the physical point of the company, and the customer has to pick up at that same physical point.

The seller, even considering all the determinants of e-commerce success identified here, must also be aware that some of the buyers of his products may not be online or, state-of-the-art, the level of adoption of information technologies. and the internet is not identical for all ages of the customer market. Thus, in the last section of this work, we intend to clarify the age segmentation that must be carried out in the final consumer market so that an e-seller can best define its e-commerce strategy.

## DIFFERENT GENERATIONS OF CONSUMERS AND E-COMMERCE

According to Étienne et al. (2008) the segregation of populations in generations allows a better characterization of groups of individuals who, born in similar historical periods, have very similar cultural and social patterns, which result in very similar perceptions, interests and behaviors. However, generations are quite different in these attitudes and behaviors. These cannot be defined only by a small sample of individuals of the same age, but also by a set of values, concepts and lifestyles, which each generation shares in common (Silva, 2017). There seems to be some consensus in the international literature, which results in the identification of five different generations. However, the limits that separate each of them are not completely coincident, which is otherwise understood, given the difficulty in establishing these boundaries precisely. The five generation identified are: the Silent Generation (before 1945), the Baby Boomers (born between 1946 and 1964), Generation X (born between 1965 and 1977), Generation Y (born between 1978 and 1994) and Generation Z (born between (1995 and 2009) and Generation Alpha (those born after 2010) (Chaney et al., 2017; Williams & Page, 2011).

Of these, the most recent generations, Generation Y and, above all, Generations Z and Alpha, assume a particularly relevant behavior in e-Commerce since they are generations of consumers who are born and grow up “connected to the Internet”. In particular, the natives of Generations Z and Alpha, have great difficulty in conceiving a World without permanent and ubiquitous access to digital networks, a reality they have never known. If the natives of Generation Alpha are still not very relevant given their reduced purchasing power, the natives of Generation Z now assume enormous relevance. Also called “screen addicts”, homo sapiens digitalis, digital natives or post-millennials, this generation was born under the influence and advent of new technologies, smartphones, tablets, wi-fi, online gaming and social networking, creating a huge cleavage between this generation and previous generations, in particular with the Baby Boomers (Barclays, 2013; Meirinhos, 2015). It is a generation characterized by mastery of new technologies, innovative capacity, enthusiasm and entrepreneurial spirit. But they are also defenders of high ethical and deontological standards, as well as staunch defenders of environmental causes and sustainability. They use the Internet to share information, express opinions, share consumption desires (Vizcaya-Moreno & Perez-Canaveras, 2020). The consumption behaviors of the

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natives of this generation are different. They favor the discovery of new experiences, are enthusiastic in sharing experiences, are prudent with regard to the money paid for the purchase of goods or services, making purchase decisions only after intensive research on the best offers and the best value for money (Berkup, 2014; Posner, 2015). Digital natives are much less sensitive to traditional marketing techniques and communication through conventional media. However, marketing strategies must try to reach these consumer groups, as they already represent an important percentage of the total consumers, which will gradually increase in the future.

Despite the growing interest in the consumption behaviors of younger generations, the scientific information available on these generations of consumers is still relatively underdeveloped. This fact is surprising since the younger generations already have an important impact on consumption in general, despite their purchasing power being more limited than, for example, Generation X. Generation Z already represents a significant consumer force: for example, in the tourism sector, in 2015 around 23% of all tourists were between 16 and 29 years old and around 33% of total hotel reservations were made by this group of consumers. The total number of young consumers is expected to double in the short term in the coming years (Cavagnaro et al., 2018; Monaco, 2018).

Therefore, the younger generations of consumers represent a high opportunity for companies. Not only because of their already high purchasing power and decision-making power in the purchase process, but also because these generations will gradually replace the still predominant generations of older consumers. Therefore, companies must take into account the most appropriate communication processes and channels, in order to reach this specific target, which will be the predominant generation of consumers in the next decade. As generations of Internet natives, digital marketing should be carefully designed taking into account this reality and e-Commerce assumes a particularly high prominence in these consumers, who should be the priority target in the use of this sales channel (Cavagnaro et al., 2018).

## **CONCLUSION**

With this article, we can conclude that e-Commerce is a very complex business, and that in order for it to be successful, it is necessary to pay attention to several elements, which are diversified from one another, but are all interconnected. It was also possible to realize that e-Commerce is a global market, but that it has been in constant evolution in recent times, and that the adhesion to this means of business has been growing sharply. E-Commerce has proven to be an ideal medium for more assertive positioning of companies and successful launches of others.

This business model has many benefits for both consumers and companies, all of which can reduce the effects of the business limitations identified during the research.

In addition to being a very complex market, it is also a multipurpose market, since it can be applied in diversified ways, from business-consumer, consumer-consumer, business-government, among others.

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## KEY TERMS AND DEFINITIONS

**5G:** 5G is the 5th generation mobile network. It is a new global wireless standard after 1G, 2G, 3G, and 4G networks. 5G enables a new kind of network that is designed to connect virtually everyone and everything together including machines, objects, and devices.

**Consumer Behavior Online:** The study of individuals, groups, or organizations and all the activities associated with the purchase, use and disposal of goods and services, including the consumer’s emotional, mental, and behavioral responses that precede or follow these activities in the online environment.

**Digital Marketing:** Is the marketing of products or services using digital technologies, mainly on the Internet, but also including mobile phones, display advertising, and any other digital medium.

**E-Commerce:** The term electronic commerce (e-commerce) refers to a business model that allows companies and individuals to buy and sell goods and services over the Internet. E-commerce operates in four major market segments and can be conducted over computers, tablets, smartphones, and other smart devices.

**Online Relationship:** Is an integrative and multidimensional concept, such as relationship quality in an offline context.