

Informacijski sustavi, internetsko trgovanje, razvoj i utjecaj

Information Systems, Internet Trading, Development and Influence

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Abstract

The research goal of this research paper was to publish our latest comparative research on the development and impact of information systems on online commerce and vice versa. Our research methods were mainly qualitative and comparative. We historically examined different opinions, behaviours, and experiences of researchers and experts in their research that were related to our research objective. We collected and analysed relevant data from reference texts. We made comparative analyses to establish certain conclusions and confirm our findings. We trusted all logical conclusions and tried to resolve all illogicality based on additional analyses and comparisons. The main results of our research are an original comparative research approach in analysing and comparing the development and state of online commerce in Croatia, the EU, and the world, and findings on common trends. These trends include a similar legal framework, continuous growth, and monitoring of technological progress. The rapid progress of digital and telecommunications technology has been observed, which has an irreversible impact on our daily lives and on the operations of companies in the information age. Today, terms such as network economy, cyber economy, digital economy, web economy, and e-economy better describe the modern economy. A strong development of information systems with the growth of online commerce and changes in sales methods has been observed. The increasingly advanced online commerce now has an increasing market share and has a strong impact on the modern Croatian economy. All this requires new regulations to ensure fairness, protect consumers, and prevent monopolies of large companies at the national level and within the EU and beyond. Modern online commerce offers several ethical challenges for both merchants and consumers. There are significant differences in the development of online commerce and the predicted pace of its further expansion. A proposal for further research is the need for deeper and broader research into social progress and the development of digital transformation that relies on the development of information systems and online commerce.

Keywords

Changes in consumer habits, Development, Effects on the economy, Information systems, Internet trading

Introduction

The subject of this research paper is a partial theoretical, chronological and comparative analysis of the impact of the development of information systems and online trading on the Croatian, European and global economy with an emphasis on the impact on the Croatian economy. The development of information systems inevitably and continuously creates new opportunities for online trading. These will be compared with the development in the Republic of Croatia, the European Union (EU) and the world through available historical and statistical data from secondary sources, and an attempt will be made to confirm or deny the two previously set hypotheses. One aim of this paper is to determine how much the development of information systems and online trading has affected consumers and the market. Based on the work, the following hypotheses will be confirmed: H1: The development of information systems influences the development of online commerce, which is continuously increasing its market share. H2: The development of information systems and online commerce has influenced the change in consumer habits in Croatia. Certain challenges and limitations have been identified, which are a direct consequence of the extremely rapid technological development of information systems and online commerce. Few aspects of business have experienced exponential growth and development in the last thirty years as information systems and online business. There are no single definitions of information systems and online commerce, nor a single position on determining their necessary elements that should be considered in the context of online business analysis and to achieve a comprehensive approach. Therefore, the paper provides a historical overview of the digital transformation of society, namely the development of information systems, which directly influenced the development of online commerce.

1. Historical development of information systems and internet trading

"Electronic business or e-business is a newer and more modern form of business that emerged at the end of the 20th century as a result of the synergy of market globalization and the development of new information and telecommunications technologies" (Garača, 2008, 143). A small number of the world's population does not use some form of online trading that requires an adequate information system. Online trading is the process of buying and selling products or services via the Internet, enabled by reliable information systems.

The network economy, also known as the digital economy, refers to an economic system that relies on information systems, Internet and digital technologies to create value and facilitate business. In the network economy, trade, communication and transactions take place via digital platforms. This includes online shopping, social networks, digital services, so-called "cloud" computing, online banking and cryptocurrency trading. The network economy promotes the creation of new business models, innovation and global connectivity, providing users with a wide range of products and services available via the Internet.

Historically, the existence of information systems and online commerce occupies only a small fragment in the time of trade that has been taking place in all parts of the world for millennia and has followed the development of human civilization. The first historical data on trade date back to ancient civilizations such as the Sumerians in Mesopotamia. Sumerian clay tablets from 2000 BC mention trade in grain, livestock and textiles. They provide insight into trading practices, especially the exchange of goods for goods (barter). Barter is the first historical form of trade in which goods were exchanged for goods without the mediation of money (Croatian Encyclopaedia, online edition 2021). The development of information systems that have enabled the development of digital banking has created the prerequisites for online trading. Account balances and electronic money do not exist in material form but represent the right of the user and the obligation of the bank or other financial institution. This is the so-called deposit money (Croatian Encyclopaedia, online edition 2021). It is precisely this money, reliable information systems, online banking, and transactions that enable the operation of online stores and represent a turning point in the development of trade.

Online trading cannot exist without the Internet. The Internet was developed in the 1950s and 1960s, initially in the United States Department of Defence, which sought to improve its telecommunications systems for more efficient command and control. According to Panian (2000, 11): "In 1969, the ARPANET network was built, ..., and it is estimated that the ARPANET network really began to function in 1971." The more computers in the network, the larger their memory, the greater the possibilities for using this network potential. "In 1986, the NSFNET supercomputer network was implemented, which connected to ARPAnet and assimilated it somewhat, and ... almost by accident, the Internet was born. By connecting an increasing number of private networks of large companies, the Internet reached a point in

1992 when it included a million larger computers. That is why that year was declared the year in which the Internet became a common good of humanity" (McKnight, Bailey 1999, 83).

The first online store was founded in 1994 in the United States. "The beginning of the e-business period is located in the middle of the 1990s of the 20th century, when the first Internet, i.e., web (World Wide Web - abbreviated www or web) stores appeared, oriented towards the end customer, and then also web services oriented towards business users, The development of the Internet provided companies with numerous opportunities to improve their business ..., which focused the business on the end user and enabled specification in the creation of products and services according to the needs of the market" (Garača 2008, 144). Today, the Internet is a common, everyday occurrence in private, business and public environments, with billions of users. "At the very beginning of Internet sales, there were very few online customers, and they belonged to a very narrow demographic segment: upper and upper middle class, men, in their 30s, interested in technology and able to afford a personal computer and an Internet connection" (Doherty et.al., 1999, 22).

The first online store in Croatia was launched in 1999 under the name "Supermarket" by Supermarketi.com d.o.o. This beginning marked a turning point in online business in Croatia, paving the way for the development and growth of online commerce in Croatia. According to data from the Marker.hr website (2017), others are opening soon, such as: the Advent.hr online store (2000), which was engaged in the distribution of healthy food, Jelen.hr (2001), an online store of a Čakovec manufacturer of work and safety footwear, Frigo-kor.hr (2001), a store for the import of air conditioning and refrigeration equipment, Superknjižara.hr (2002), which sells books, Vrutak.hr (2003), which focuses on the sale of beverages, Mobis.hr (2003), which sells mobile devices and technology, and many others. Since then, online shopping in Croatia has expanded to various sectors and has become an important part of the retail market.

FIGURE 1: STATISTICAL DATA FOR CROATIA PRESENTED BY THREE GRAPHS „INTERNET USERS“, „E-SHOPERS“ AND „SEARCH ENGINE MARKET SHARE“
Croatia



Croatia (with Serbia) is one of the leaders in Eastern Europe. Based on data until 2019, 2020, 2021, 2022, 2023 and 2024(F), Internet users and online shopping in Croatia (where Google has 97% of whole search engine market share) has shown (Figure 1) constant growth (Weltevreden, 2024, 69). But the competitive market and challenges related to logistics, payments, and digital infrastructure remain key factors that require additional efforts to achieve competitiveness and keep pace with the modern development of technologies and services that are constantly improving in the global market. The development of digital infrastructure, improving security and simplifying online payments and adapting logistics services, primarily delivery and returns of goods, were key factors that increased the growth of online shopping in Croatia. A particular increase in online shopping in was recorded during the COVID-19 pandemic, given certain social distancing measures and restrictions on movement.

Online commerce within the EU is regulated by numerous regulations relating to consumer protection, data privacy, e-commerce, taxes and other fees. For example, traders operating within the EU must comply with very strict regulations relating to the protection of personal data, in particular the General Data Protection Regulation (GDPR). Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals regarding the processing of personal data and on the free movement of such data repealed Directive 95/46/EC (General Data Protection Regulation). The Regulation is binding and provides a legal framework for the handling of personal data of service users in the European market. The EU strives to ensure a safe and secure environment for buyers and sellers engaging in online commerce within its borders.

Another extremely important act is Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic

commerce, in the Internal Market (Directive on electronic commerce). It was adopted with the aim of regulating and standardising electronic commerce, i.e. creating a legal framework for the free movement of information society services between Member States.

In Croatia, online stores are regulated by various regulations relating to electronic business, consumer protection, data privacy and electronic communications. The most prominent are the Electronic Commerce Act, which contains provisions on mandatory information on traders' websites, electronic contracts and consumer rights. The Consumer Protection Act regulates consumer rights in online transactions, including the right to return goods and complaints. During 2022 and 2023, the Act fully harmonized national legislation with the acts of the EU, which it exhaustively lists in Article 2. Among other regulations, it is important to mention the Trade Act. It applies to electronic commerce when a special regulation (the Electronic Commerce Act) has not regulated something. "To carry out trade activities, it is necessary to meet the minimum technical and other conditions in accordance with Article 12 of the Trade Act, which must be met by sales facilities, equipment and means used to conduct trade, and other conditions prescribed by special regulations with regard to the manner of conducting trade" (Šarić, 2017, 111). Earlier scientific works also examine other aspects of online store operations: "To sell goods online, the retailer must ensure appropriate storage of the goods it sells or offers outside the store and handle the goods in a manner that ensures the preservation of their quality. To conduct retail trade online, it is necessary to have a warehouse and obtain a decision from the competent office on meeting the prescribed conditions for the said warehouse, except in the case where the goods that are the subject of retail trade are delivered to the buyer from an existing retail facility (warehouse, store), for which a decision on meeting the prescribed conditions has already been obtained" (Marečić, 2008, 198).

2. Analysis of the effects of information systems and e-commerce development on business dynamics

Certain conclusions are imposed. The rapid technological development and the ubiquity of information systems in the everyday life of modern people and trading via Internet stores has inevitably led to significant changes in the dynamics of business, encouraging companies to adapt to the speed of the digital environment and the needs of online consumers. According to Panian (2002, 47): "the impact on the New Economy, three basic characteristics of the

global network are important: 1. Spontaneity in the development of the network, which resulted in its unmanageability, or lack of regulation 2. The basic philosophy of its functioning, which manifests itself as a client-server architecture 3. Standardization of services, or services, that individual, individual and collective entities provide via the Internet".

Companies are forced to continuously innovate their products and services and improve the user experience to remain competitive in the market. The integration of technology and digital tools has become necessary for the optimization of all aspects of business. The financial situation in the context of making important decisions can be viewed as the cumulative result of investment and financial decisions, and the success of the business using the net effect of the business (profit or loss) in a certain period according to the impact on equity (Tintor, 2014, p. 42). "Seen generically, electronic commerce is trade that is carried out in a specific way, considering the way in which the bearer of information and legally relevant messages is defined and determined, which is an electronic medium" (Matić 2008, 5). Internet commerce is most often analysed by dividing minimum it into two large segments. The first is trade between business entities, the so-called B2B (Business to Business), and the second is trade directed towards end customers/consumers, the so-called B2C (Business to Customer). "Trade between business entities refers to a type of business that is oriented towards the exchange of goods, services and services between economic entities." (E-business, 2018). The legalities of this type of trade have the characteristics that are common between business entities, from the purchase of usually larger quantities of goods, special discounts, delivery and payment methods. "Business to Customer (B2C) is electronic retail. It is characterized by sales through an electronic catalogue, where the buyer learns about the product indirectly, through images, descriptions, drawings, etc." (E-business, 2018). This type of trade is directed towards the end customer/consumer, so advertisements, methods of notification, discounts and payment methods are personalized and adapted to the individual buyer, a natural person. The choice of products is greater due to increased competition among sellers and better access to information, and the goods are delivered to the buyer directly to his address. The purchasing process itself is faster and cheaper. Online stores are open 24 hours a day and it is major comparative advantage to traditional stores.

The golden rule of every trade and business is that the customer is always the most important. Online stores have an immeasurably greater ability to collect

and analyse data. With the help of customer data analysis, they can focus on the customer. It is important to take care of customer feedback.

The analysis of the impact of information systems and e-commerce on advertising methods follows. Online shopping has significantly changed the methods of advertising, encouraging the transition from traditional advertising methods to digital strategies. Companies are increasingly turning to digital marketing, using new (usually supported with Artificial Intelligence Tools) platforms. Online store advertising includes the use of digital marketing, such as paid ads on social networks, search engines and applications, search engine optimization, email marketing, influencer marketing, creating specially created content such as blogs and videos, and interactive participation in similar activities.

Online shopping is a perfect tool for promotion of business, presenting products and services and placing messages to customers that are accompanied by attractive multimedia content. Various strategies and technical solutions have been developed that companies use to manage advertising effectively and increase sales in online stores. In interesting article technological processes in marketing are mentioned: "1. Monitoring of marketing campaigns and analytics ... 2. Tagging management ... 3. Marketing Automation ... 4. Customer Relationship Manager (CRM) ... 5. Data Management Platform (DMP) ... 6. Content Delivery Network (CDN) ... 7. Optimization of conversions ... 8. Campaign management applications ... 9. Email Marketing tools ... 10. Optimization for mobile devices ... 11. Advertising networks ... 12. Remarketing ... 13. Search engine marketing ..." (Novi list, 2017). When choosing the most appropriate combination for advertising an online store, it is necessary to consider the visual identity of the online store and its ease of use (and that search engines recognize it). Email marketing provides direct access to the user and reminds them of promotions and other benefits along the way. Emails usually contain links to the website of the online store. Newsletters, or periodic emails that contain news, updates, promotions and actions, to which the customer agrees in advance in exchange for additional benefits when purchasing. Social networks, Facebook, Twitter, Instagram and others have also become important platforms for advertising, where individuals can also play the role of sellers. All the above requires regular interaction with customers. Due to the global nature of online stores, it is necessary that they are also multilingual.

The analysis of the impact of information systems and e-commerce on distribution methods follows. Internet commerce has significantly changed the

established traditional patterns of product distribution. Products are now distributed directly to consumers through specially created Internet platforms, which has allowed companies to reach the global market without developing a network of physical sales outlets and warehouses. Distribution chains have become shorter, and consumers have a wider choice of products and services from the comfort of their own home, office or any other place where they have access to the Internet. Internet commerce has opened the development of new logistics models such as express delivery and brokerage services that facilitate the delivery of products on a global scale. Innovations are aimed at ensuring the efficient delivery of goods and services to consumers around the world. This includes the implementation of advanced technologies such as shipment tracking, automated warehouse systems, robotics and smart warehouse technologies. Technologies such as data analytics and artificial intelligence are used to optimize the inventory management process and demand forecasting. The introduction of fast and reliable delivery, as well as the adaptation and optimization of logistics networks to support fast delivery times, are also key innovations resulting from the growth of online commerce. Prominent examples of new ways of distributing products, due to the development of online commerce, are direct-to-customer (DTC) models. It is also important to mention the giants of online commerce, which are large marketplace platforms such as eBay, Amazon, Alibaba, which, in addition to providing a platform for companies offering products on their sites, also provide extremely extensive distribution chains. An effective way to avoid warehouses is the so-called "drop shipping", in which products are delivered directly from suppliers to customers, which significantly reduces warehousing, logistics and transport challenges. Online commerce offers the possibility of subscription-based services. Products are regularly delivered to customers, creating a stable and predictable distribution model. Distribution is no longer limited to physical goods. Products that are no longer in physical form are primarily various software, music, books, and the like. They are distributed to users around the world with a few clicks. Mobile commerce is also a clear example of a rapidly growing market. With the increase in the number and increasingly sophisticated performance of mobile phones, consumers can shop anytime and anywhere. They transform the distribution landscape, making it increasingly accessible and immediate. Another phenomenon related to distribution is the so-called social commerce. Platforms such as Facebook, Instagram, and the like enable companies, but also all

their users, to sell directly through their "marketplaces" by combining social interactions with commerce. Distribution chains and all possible versions of them are countless.

More on the analysis of the impact of information systems and e-commerce on sales methods follows. Online commerce has drastically changed the way sales are made. Due to the virtual selection of products and the virtual interaction between buyers and sellers, previously unseen techniques and tools are being applied. Companies have had to adapt their strategies and change the methods of training staff as well as the training programs themselves to respond to the needs of online buyers. Due to the necessity of ensuring an interactive approach to sales, it was necessary to design and implement numerous digital tools such as the so-called "chatbots", which are computer programs created in a way that simulates a conversation between two people. They use common language and phrases and "understand" and "answer" inquiries and provide information or perform tasks according to their capacities and performance. Then personalized marketing materials and online customer support, which is often expected that it is available 24 hours a day.

The key factor for a successful way of selling online is simplicity. Simplicity in online sales implies a complete and smart, interactive, secure and visually beautifully designed site that will not create difficulties for the customer but will successfully and easily guide him towards a safe and fast purchase. The greatest impact on the ways of selling online is visible in the coexistence of retail stores with company websites. Both have their own common and specific laws. Every retail physical and virtual store must be designed in such a way as to provide the customer with the necessary information and guide him smoothly through its store, in such a way as to ensure the clarity of the goods, the logical arrangement and interrelationships, and to successfully present new product lines, trends and campaigns implemented by the company. First, online and traditional shops must be well organized, and the information intended for customers must be unambiguous and understandable. This is achieved by systematizing products that enable navigation and navigation through the assortment.

The online store doesn't have working hours. In an online shop, the transaction takes place digitally. The buyer and the seller are not in physical contact. The buyer does not have the opportunity to physically examine the products during the selection process, nor try them on, but relies on the images with which the products are presented in the online shop. The above can also be considered the biggest disadvantage of

online sales. The most significant effects of Internet commerce on sales are global reach, accessibility, efficiency in resource allocation and low operating costs, the ability to offer a diverse range, customer feedback in the form of reviews or ratings of services, products or variety of offerings, 24/7/365 availability, supply chain efficiency, digital payments, competitiveness and the challenges posed by competition in a robust cyberspace.

Only some of the advantages have been analysed in more detail: Accessibility – online sales provide an accessible and simple shopping experience for users, allowing them to search, compare and purchase products from the comfort of their home or any other place, literally on the go. Offering a diverse range – online platforms enable the offering of a wide range, thus allowing customers to purchase a wide variety of products that would be unthinkable and practically impossible to keep in the same space in traditional retail stores. Digital payment – Internet sales have popularized digital payments and influenced the development of various digital payment methods, which has made the transactions themselves more efficient and secure. Competitiveness and the challenges posed by competition in a robust cyberspace - although online sales open many opportunities, they also create completely new challenges such as increased competition, rapid copying of goods and services, which requires investments in cybersecurity and rapid adaptation to extremely dynamic and changing market conditions and changes in technology.

3. Comparative analysis of internet trade in Croatia, the EU and the world

By analysing the phenomena and comparing the available data on Internet trade in Croatia, the EU and the world, it can be concluded that Internet trade and its representation in the overall market of goods and services is recording continuous growth, in quantitative terms. It is also noticeable that the development of technology is increasing the number of "platforms" from which this Internet trade is carried out and there is a noticeable increase in the types of devices from which trade is carried out. All the above is accompanied by the hyperproduction of regulations, and guidelines of national, supranational and global bodies that seek to regulate Internet trade and keep it within the framework of achieved civilizational standards relating to the obligations and rights of sellers and buyers around the world. A major challenge, in addition to frequent changes in regulations, the adoption of new ones and their

implementation, is their harmonisation, which is an inevitable consequence of the globalization of the Internet market. To ensure that these processes are efficient and timely, special institutions have been established at the global level that seek to manage these processes. It should be noted the Organization for Economic Cooperation and Development (OECD), the EU, the World Trade Organization and other national and supranational institutions in the fields of politics and finance. Although every trade in modern times is global and dependent on numerous factors that go beyond local, regional and national frameworks, the most prominent example of the interdependence of national, regional and global markets is precisely Internet trade. Trends that affect segments spill over to other parts at lightning speed.

Since it is carried out via the Internet, Internet trade has posed a challenge to tax authorities from its very beginning. In addition to the fact that the headquarters of the company that places goods on the market does not have to be in the same country in which the trade takes place, or takes over the goods, there are also other international elements (transport, storage, transit) of the entire process. Economic authors (Bezić, Gašparini, Bagarić, 2009.) generally agree that the most challenging task for tax authorities when taxing e-commerce is identifying the transaction itself and the place where it took place, i.e. identifying the person responsible for paying the tax. Therefore, the question arises as to who the taxpayer is and which state has the right to collect the tax and from whom. (Doernberg, Hinnekens., Hellerstein, 2001). The deliberations of experts have given rise to an internationally accepted principle – the destination principle, when it comes to the taxation of online transactions. Therefore, taxation is carried out in the country where the final consumption occurs (Šimović. J.; Šimović. H., 2006). When this principle is applied, exports are not taxed, and tax is paid according to the tax rate of the importing country. This clearly shows the interdependence of the global market and national economies, and the interest in regulating Internet trade in a harmonized manner at all levels is undeniable.

What are the specific indicators of the increase in the share of Internet trade in the European market? A good example is Eurostat data, which are regularly monitored and further analysed by economic experts. According to data published on March 4, 2023, in the article "E-commerce continues to grow in the EU" on the mreza.bug.hr website, it is emphasized that Internet shopping in the EU continues to grow. According to the published data in 2022, 91% of people aged 16 to 74 in the EU used the internet. As

many as 75% of them bought or ordered goods or services for private use. An increasing trend of customers was observed, and the number of customers increased from 55% in 2012 to 75% in 2022, which is an increase of 20%. The source "<https://mreza.bug.hr/e-trgovina-nastavlja-rasti-u-eu/>" (30/08/2025) should be analysed, which indicates Internet users who bought or ordered goods or services during the 12 months of 2012 and 2022. An analysis of the same source shows the percentage of customers who bought or ordered goods or services for private purposes during the 12 calendar months in 2012 and 2022. During 2022, the highest percentage of online purchases was recorded in the Netherlands (92%), Denmark (90%) and Ireland (89%), while below 50% of Internet buyers are residents of Bulgaria (49%). It is also interesting to note that the greatest growth from 2012 to 2022 was recorded by Estonians (+47%), Hungarians (+43%), Czechs and Romanians (+41%). The above data shows heterogeneity in the EU market, but without exception, each observed member state in the analysed ten-year period recorded a significant increase in the percentage of buyers who used Internet shopping. The source "<https://mreza.bug.hr/e-trgovina-nastavlja-rasti-u-eu/>" (30/08/2025) should be analysed, which indicates the percentage of buyers and types of goods purchased via the Internet in the EU in 2022. The source shows data on the percentage of customers and the type of goods and services that were purchased online in a three-month period in 2022. The data shows that customers in the EU most often bought clothes, shoes and accessories online in the observed period (42%), then ordered food (19%), followed by other items such as cosmetics (17%), furniture (17%) and others. The least purchased were films on DVD (under 3%). Data analysis highlighted the great diversity of purchased goods and the increasing presence of certain types of goods that were traditionally purchased exclusively in traditional retail outlets (for example, bicycles, mopeds and cars).

The analysis of the impact of Internet trade on business and the development of the Croatian economy follows. Online commerce has a significant impact on the business and development of the Croatian economy. Online commerce makes the products of Croatian companies and entrepreneurs visible on the global market and encourages international trade. It also encourages the purchase of foreign goods and services by Croatian citizens and entrepreneurs, which significantly affects competitiveness and lower prices. Companies, small entrepreneurs and craftsmen have access to a customer base that is unimaginable in the classical form of trade, without significant additional

investments. The digital world enables unimaginable levels of innovation development, new business models, and increased overall efficiency. There are also challenges that primarily relate to cybersecurity and the necessary IT literacy that needs to be achieved to ensure sustainable growth in this constantly changing environment. Online commerce and the number of its users in Croatia are also recording continuous growth. The combination of e-commerce and quality mobile applications, along with quality advertising through the media, are the best sellers a company can have. (Marker.hr, 2014.). In the excellent article "E-commerce report: Croatians are increasingly buying in online stores" published on December 10, 2022 on the lidermedia.hr website, some indicators of the development of online shopping in Croatia are graphically presented. The research was conducted by Valicon and Jeftinije.hr in October 2022. Online purchases were observed, based on a sample of 1,965 consumers. The frequency of online purchases in the period from 2015 to 2022 in Croatia should be further analysed, according to the source "https://lidermedia.hr/zivot/e-commerce-izvjestaj-hrvati-sve-vise-kupuju-u-internetskim-trgovinama-147208" (30/08/2025).

For the analysis of economic growth and the impact of online shopping on the economy of Croatia, it is important to highlight the impact of the availability of technology, its accessibility and the IT literacy of users. Electronic technology is a very important factor in economic growth. Investments in new technologies, programs and industries enable the inclusion of companies in the "digital economy". At the national level, it is clear that e-business has several positive effects on the economy in Croatia: "acceleration and automation of business processes of entrepreneurs, reduction of business costs, achievement of significant savings, creation of added value in business, increase of competitiveness, increase of business transparency, reduction of the shadow economy." (Ministry of Economy, Entrepreneurship and Crafts: e-business, 2019.)

A great revolution in Internet business in Croatia occurred with the introduction of the electronic invoice in 2019. Its introduction has brought significant savings in time and finances for many businesses and facilitated national and international payments. By observing the devices from which online shopping users in Croatia made purchases in the period from 2017 to 2022, certain trends are observed, and it becomes clear that mobile devices are slowly but surely taking over. This shift has also affected businessmen and entrepreneurs who had to adapt the content of their websites to the new, most common

user interface. The large screen of a desktop or laptop computer, or tablet, has been replaced by smaller screens of mobile devices, and it was necessary to adapt the content of the pages and the ability to view them to the new platform. The changes are significant and very fast. This is one example of the dynamism of business in online shopping. Continuous investments in new technologies, monitoring trends and rapid adaptation to the changes are becoming a necessary condition for survival in the market. The source "https://lidermedia.hr/zivot/e-commerce-izvjestaj-hrvati-sve-vise-kupuju-u-internetskim-trgovinama-147208" (30/08/2025) which analyses the devices used when shopping in Croatia clearly shows the representation of different types of devices used when shopping in the six-year observed period. Before making a purchase, customers usually inform themselves about the product they intend to buy. In traditional retail, this comes down to crowds in shopping malls and visits to similar retail stores of different manufacturers. Online shopping has greatly facilitated this laborious task. By analysing the sources of information before shopping in Croatia, based on the source "https://lidermedia.hr/zivot/e-commerce-izvjestaj-hrvati-sve-vise-kupuju-u-internetskim-trgovinama-147208" (30/08/2025) which analyses various useful tools that customers in Croatia accessed the Internet to obtain information before making a purchase.

During the COVID-19 pandemic, a significant increase in online sales of various product categories was recorded in Croatia. Categories such as food products, household appliances, electronics, clothing and footwear, as well as household products stood out. Services such as food delivery, digital content and online services also experienced significant growth. The IT literacy of the population also increased significantly. After the COVID-19 pandemic, significant changes in consumer habits were observed around the world, including in Croatia. Many consumers became more inclined to online shopping than before, because they simply got used to it. Awareness of sustainability and social responsibility of brands has increased, and there has been an increase in interest in local products and support for small entrepreneurs.

The most important factors of the current and future development of information systems and online commerce in Croatia are: the development of technology and supporting infrastructure, the development of information systems and their availability and security, the necessary funds for the acquisition of technology and the construction of infrastructure, the availability of the most modern technology, the IT literacy of society, changes in

regulations and changes in consumer habits. Changes are expected, primarily related to ensuring competitiveness and fairness in the market and the adoption of new regulations with new technological changes and types of services, as well as the security of information systems. Online commerce in Croatia should strive to be in line with global trends.

"One example of the symbiosis of the business world and AI is the software from the company NEWTON Technologies Adria for converting speech into text, which is also adapted to the Croatian language and is already used in healthcare and the judiciary in Croatia. (...) An additional option is to connect the online and offline worlds, in such a way that the chatbot can suggest that the customer come to a real store." (Lider Media, 2019). For online commerce in Croatia to develop in new segments, i.e. combine online commerce and artificial intelligence and achieve further growth in mobile business, it must first align classic online commerce with global trends.

4. Conclusion

Based on the research, both hypotheses (H1: The development of information systems influences the development of online commerce, which is continuously increasing its market share. H2: The development of information systems and online commerce has influenced the change in consumer habits in Croatia.) were confirmed, through quantitative and qualitative indicators. The future of online commerce holds significant potential for economic growth. Challenges such as cybersecurity, regulatory volatility, and ethical challenges are a constant source of concern. It will be necessary to increase investments in innovation and cybersecurity and redefine business strategies and processes to match the extremely fast dynamics of online business. Only safe, efficient, customer-centric business can guarantee sustainable and long-term development of online business and commerce.

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