

## THE ROLE OF THE DIGITAL CUSTOMER IN THE CONTEMPORARY MARKET. ASPECTS OF TRUST, RISK, AND SAFETY

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### **Abstract**

*At the end of the twentieth century, the whole world was enveloped in a turbulent birth and continuous improvement of a new means of interpersonal communication, a change that darkened previous revolutions - the Internet. The nature of the computer has changed from a tool used to control information to a device for exchanging information as well as promoting and selling products. Interactive multi-media applications and the Internet create opportunities for new businesses, ideas, for entire economies, operating through a network of all human thoughts and intelligence. The market created a new type of customer – a digital one. The world is striving to implement the vision of digitizing every level of the lives of consumers and enterprises. The consequence of this is the phenomenon of software domination over the human mind. It is the concept of the Internet of Things - connecting all possible devices to improve communication, data exchange, and intensify this process. These activities were also incorporated into people who have already exchanged information, established contact in a quick, and, above all, inexpensive manner (Skinner, 2018, p. 296), and can buy everything on-line. This is a theoretical and empirical article and its objective is to show the role of the digital customer in the market, especially focusing on trust, risk, and safety in the network. The article tries to answer, among many others, the following questions: 1. How can "digital customer" be defined?; 2. What is the basic element of a customer's trust?; 3. What are the determinants of digital risk?; 4. How can be created safety of the customer in the network?*

### **Keywords**

*Digital customer; trust; digital risk; cybersecurity; safety of the customer.*

### **Introduction**

The social changes we are experiencing in the second decade of the 21st century lead to the formation of new digital socialism, in which masses equipped with means of production self-organize themselves, creating so-called hyperarchic structures, working for free for a common purpose, and then sharing and using the "fruits" of cooperation free of charge. There are four levels of interaction within digital socialism<sup>6</sup>, and each of

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<sup>6</sup> **Digital activism (cyberactivism)** – a social movement in which citizens use ICT tools to influence social, economic and political reality.

them increases the complexity of consumer cooperation (Kelly, 1995, pp.22-23; Shirky, 2010, pp.130-135; Roszkowska-Menkes, 2015, pp.99-100):

1. Level One (sharing) - through services such as YouTube, Facebook, Instagram, and online forums, internet users share virtually everything from information about themselves, their well-being, their location, through photos, videos, music, to interesting news, articles, opinions about products and services; this is the simplest and least demanding form of networking that underpins the next more advanced levels of engagement.

2. Level two (conversation) – commenting on blog posts, YouTube videos or friends' activity on FB is the first step necessary to move to the next level, that is, to start group cooperation. Groups whose main activity is simple to exchange are simply a set of entities, but when these entities begin to communicate with each other and then cooperate, group identity is produced.

3. Level three (cooperation) – occurs when individuals work together to achieve a common goal; at this level, cooperation already requires, to some extent, negotiation and group decision-making; an example of cooperation may be the actions of so-called cyberactivists to develop social change or influence specific institutions; at this level, partnership production is also undertaken, defined as "a method of producing goods and services, entirely based on self-organizing egalitarian communities of people who voluntarily form a group striving to achieve a common goal". The final product is the result of the work of each participant of the project and would not have been created without their contribution e.g. Wikipedia.

4. Level four (collective action) – the most difficult, advanced, and at the same time the least common level of group initiatives in the network; the participants of the project undertake to make a joint effort towards a specific goal, assume joint responsibility for the project, and group decisions are binding on everyone; group cohesion becomes a critical factor for achieving the desired result; an example of collective action can be the community of clients of two Polish banks, namely mBank and Multibank.

It should be noted that the very role of consumers has been transformed from passive buyers into members of the culture-forming part of enterprises who are active in cyberspace, doing most online shopping, suggesting opinions on portals, blogs, or social media, and on the other hand, placing their insights and seeking information in IT programs and systems (Wereda, & Zaskórski, 2018, p.855).

The main purpose of this article is to present a modern digital customer, building trust in the web, bearing digital risk, and felt safe on the Internet.

### **A digital customer. Theoretical overview**

In modern online communities, the renaissance is experiencing a "culture of gift", that is, mutual endowment. These gifts are devoid of material or utilitarian value; they serve to build bonds. Examples include text messages that not only help convey information but are primarily used to maintain relationships between users. It was on the "culture of gift" that the Internet grew and such phenomena as open-source software and file

exchange services (Bendyk, 2004, pp.20-21). However, not all users engage in cooperative networking to varying degrees. Depending on the level of activity, the following categories of users are distinguished (Li & Bernoff, 2008, pp.41-45, Roszkowska-Menkes, 2015, p.102):

1. wizards – people who generate new values at least once a month, e.g. publish blog posts or articles online, run a website, upload audio-video files to the web, create further Wikipedia entries (in the USA about 25% of adult internet users, in Europe – 15%);
2. interlocutors - post status updates in communities and talk to others via the Internet (around 45% in the US and around 30% in Europe);
3. critics – a group that includes users reacting to content generated by other internet users, e.g. comment on blog posts or online forums, edit Wikipedia passwords, rate products or services (25% in the US and 20% in Europe);
4. gatherers – are RSS users (a contractual family of tag languages for sending news and news headers on rss sites of your chosen use), i.e. tagging (around 10% in the US and Europe);
5. participants – use social networking sites (in the USA – 25%, in Europe – about 12%);
6. viewers – consume content and products produced by others (around 50% in the US and around 40% in Europe);
7. passive – do not take part in any of the above activities (in the USA – 35%, in Europe – about 45%).

First, look at the history of the term 'digital customer/client'. In the 1990s, the field of computer science was only close to IT professionals and users who were able to use the network professionally. Now technology is undergoing a revolution and for today's users, who increasingly equate themselves with the word "citizen", the use of e-services has become a daily occurrence for them. Today, mobile devices that have dominated the computer market are undergoing a very significant revolution. The mobile phone has become a daily addition for users as it used to be things of general use - watches or wallet. Now everything can be replaced with a smartphone (Ronchi, 2019, p.5).

The author of the term "citizen of the network" was Michael Hauben, who in 1992 during his second year of the study wanted to deepen his knowledge and learn about the shaping world online and analyze the meaning of the concept of the citizen of the web. For this purpose, he researched to see if people use a global online communication network. From that moment on, he realized that a new society was being created – a society of networks (Hauben & Hauben, 2020).

The term "network citizen" is a translation of the original term derived from English netizen. It is a neologism created after the combination of two names "net" - Internet and "citizen", which means citizen (DeLoach, 1996). People who are referred to as "netizens" are described as using the Internet to assess values of social practices while taking into account the audience (Lanigan, 2016). Mr. Hauben himself defined them as a society that overcomes geographical barriers, which cares for and actively operates in the network, developing it to achieve the benefits of expanding the internet world (Kotler, Kartajaya, & Setiawan, 2017, pp.37-38). They understand the value of the work that is created by all users and the ability to create public communication networks. T. Goban-Klas called them an e-society. He defined this concept as a set of people

constituting an individual whole, that is, it is not only a society that has a collective collection of information on the web (all websites, magazines) but also that they see as a priority issue concerning the dissemination of the Internet, its way of operation and approach, the way of life of the audience who first come into contact with the problems raised in the online world (Goban-Klas, 2001, p.63).

According to Kotler, the term netizens refers to internet users who are true citizens of democracy because they want to actively participate in network and data improvement. Everything we can find on the web is shared by users to other audiences. Distance does not constitute any barrier for them to be able to share information and maintain contact with foreigners. The author also identifies them as (Kotler et al., 2017, p.38):

- social connectors because they like to be in touch with other people and share information with them. Online contact allows them to remain anonymous (thanks to the use of avatars, username), which arouses a sense of self-confidence in them;
- expressive evangelists - the possibility of being anonymous on the Internet very often arouses aggression among some users, which is expressed through cyberbullying, offensive comments directed at other participants, bullying. A positive aspect is the emergence of so-called brand evangelists, who inhibit the development of cyberbullying and engage in the development and promotion of the brand;
- authors of content - netizen's work on the web makes life easier for the rest of the users. The use of tags, markings, improves the process of searching for the information you need.

Since the emergence of the definition of the internet society as netizens, two uses of this concept have arisen. The first is the understanding of the citizen of the network concerning all users of the network regardless of purpose. This means that internet users can use the web for good and bad things. The second application is used to describe people who make positive use of the power of the Internet, work to create links among people, and create an environment that benefits citizens (Hauben et al., 2020).

For a very long time, there has been a superstition that the citizens of the network are people who use the Internet as an ordinary consumer and recipient. Now its importance has strengthened in the market and netizen skills have begun to be used to create more and more new technologies used on the Internet. Netizen, despite being a consumer of the goods offered on the market, is also an active activist (Cassells, Gilleran, Morvan, & Scimeca, 2020).

In international literature, both broad and narrow definitions of e-consumer categories can be seen, while fewer terms apply to the digital consumer. The term e-consumer is derived from a combination of the word "consumer" and the prefix "e" derived from the adjective "electronic". The consumer is a physical figure who experiences needs and satisfies them through the acquisition and use of goods and services (Maciejewski, 2010). The adjective "electronic" emphasizes the use of electronic devices (for example, mobile phone or computer) to connect to the Internet to achieve the intended purposes (for example, ordering products). A key assumption that classifies a customer as an electronic consumer is their use of the Internet.

The digital consumer is less demanding and conscious than a prosumer<sup>7</sup>. Also, not all consumers using mobile devices to search for web content are categorized as prosumers, which is why the concept of e-consumer has been highlighted. This term describes individuals who purchase products and services online (Wolny, 2012, pp.117-129). In fact, the concept of e-consumer is a narrower concept than a digital consumer. An e-consumer who is interchangeably referred to as an e-customer uses the online route to purchase products, but pre-purchase or post-purchase decisions can take place in the ordinary system. The purchased products are not only aimed at creating a sense of satisfaction for the buyer but also to satisfy the desires of the rest of the people living in the household. Benefits such as convenience are important for the e-consumer, taking into account the conditions under which he can purchase products and services, saving time, funds, and stability (Jaciow, Wolny, 2014, p. 109).

The distinguishing features that characterize an e-consumer are (Jaciow, & Wolny, 2011, pp.12-13):

- the desire to have comfort, which ensures that he can make purchases anywhere, anytime;
- a sense of importance and not to equate it with other customers;
- paying great attention to the use of your time;
- draws attention to the quality of service products and is therefore looking for the best opportunity to satisfy it materially and intangibly;
- can allocate more funds for certain and guaranteeing the delivery of the product on time;
- the desire to be a person who affects the change in the appearance and functionality of the product.

The concept of digital consumer has only recently appeared. Under this term, we mean a person whose inherent element of life is mobile devices. They are used for purchasing and technical purposes (Persaud & Azhar, 2012, p.420). These devices ensure that consumers are constantly online. Thanks to their wide application, they support the communication process and the purchasing process. Current consumers spend most of their free time in the virtual world, taking advantage of the wide possibilities of the network. It is believed that the behavior of digital consumers is based on the acquisition of information, consumption of goods acquired through devices such as phones, smartwatches, tablets (Toczydło, 2016, p.318). They need to acquire products "here and now". The capabilities offered by electronic devices mean that consumers can meet their plans anytime, anywhere. Brands now face a challenge. The availability of social media has resulted in easy and quick contact with the customer. Also, consumers have the opportunity to add feedback on a given product, which is visible to the rest of the users (Stępowski, 2016, p.93).

Three types of digital consumers can be distinguished (EY, 2020):

1. Digital informants - this group is the largest (63%). The most important values, according to them, are the brand and staying true to it. They do little to interfere

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<sup>7</sup> Prosumption is a modern concept of consumption which means that consumers are not only allowed from producers to actively change their products, but also take the initiative to use their innovative ideas in designing a product from scratch (Tapscott, Williams, 2008, p. 215).

with product development. They are a group that spends little time using the Internet.

2. Digital buyers - this group is the last in terms of the number of users (13%). Their main motivator for purchasing products is the price and hassle-free product acquisition. Most often they manifest the behavior of a creative prosumer, who wants to create products that meet their needs.
3. Digital multi-taskers - companies tie the greatest prospects to this group. It accounts for about 24%. They use their free time primarily to find information on the Internet, although they also feel good in physical stores. They are also called "omnichannel" consumers because they are flexible about changing their habits. The price of products, fidelity to the brand are not significant for them. They are also very skeptical about the media. This group is best characterized by eccentricity and high expectations.

The difference between digital consumers and their predecessors is the level of importance of information. Consumers are now exploring cyberspace when their predecessors had the information they had gathered. It should be mentioned that the digital consumer should not be equated with the user, since that term is not typically linked to the Internet. The digital consumer shall give a more detailed account of the actual state of the market. This means that they are perceived as an individual, not as a group, and are at the heart of the whole system. Users were not included in the system, while digital consumers played a significant role (Nicholas, 2009, p.26).

Literature was reviewed based on the Web of Science, Scopus, and Google Scholar databases, as of 12 October 2020. Records for the subject matter of the study were generated by entering passwords related to the aim of the research conducted (Table 1). In the case of the Web of Science database, due to the generation of a very large number of records, additional filters were applied, limiting the sophisticated results to publications in the following: management, social sciences interdisciplinary, public administration, multidisciplinary sciences, political science. However, the results of the search of the Scopus database were limited to publications in the field of social sciences and business, management, and accounting. For Google Scholar, the search results were organized by relevance and the literature search was completed when several more non-searchable publications were found.

**Table 1. Web of Science, Scopus, and Google Scholar search results (14.10.2020).**

The search term	Web of Science	Scopus	Google Scholar
E-customer (client)	7	332	4.470
Digital customer	812	4.023	4.830
Trust in cyberspace	29	82	170.000
Digital risk	901	3.789	3.160.000
Safety of the client in cyberspace	0	3	21.400

*Source: own work*

In conclusion, it can be said that the modern citizen of the network creates his/her image based on the things he/she owns. Its measurable is the achieved level in society, gained recognition among others. This leads the consumer to live in the constant belief that he should purchase new products to show his position in society. The unconvincing manufacturers and their offered products are causing disappointment among

consumers, which is why they want to be part of the co-creating market. In addition to consumption, they also focus on the process of creating goods (Szul, 2013, p. =347).

The most characteristic features and attitudes of the new generation are (Mróz, 2013, pp.75-78):

- active participation in shaping content on the Internet by writing blogs, giving in online forums, showing your private and professional life;
- willingness to create your own product, personalized for your own needs and taste;
- spend a large amount of time analyzing information through the use of technological capabilities. They observe the world around them very closely, which makes them easily capture lies and take a distrustful attitude towards content, people;
- the ability to identify ways of manipulation used by undertakings to change consumer behavior. They choose those companies that you can trust and choose ethical methods of contacting customers. Typically, negatively receive advertisement;
- increasing environmental awareness. They pay attention to what they buy;
- high awareness of investing in self-development;
- spending a lot of time on online entertainment;
- openness to learning new acquaintances from outside the country. They are happy to exchange their experiences, show their culture, but also implement the customs of cultures of other countries. Through such relationship creation, they can build strong relationships, global programs that foster the creation of international projects. This is influenced by emerging social networks, which are beginning to play a big role in the life of the digital generation;
- waiting for immediate answers to questions and the problem presented. They value instant access to knowledge using technological innovations. The priority for them is to update their knowledge about new products on the market - mainly electronic equipment.

The behavior of the modern consumer is shaped by factors such as the increase in the relevance of information in the lives of buyers, the oversaturation of the market with goods and services, technological developments, internet access, and changes in the influence of market players (Małysa-Kaleta, 2016, pp.144-145). Małysa-Kaleta calls them consumers of a new era. It characterizes them as autonomous people, determined to explore the market to obtain information, having a large view of the market. Some of the factors help consumers find themselves in the present day. They are called strengths, to which perks such as lack of fear through change, increased awareness of consumer protection, ecology, health, economics, the ability to adapt to market conditions can be classified. An equally important asset is conscious and responsible consumption (Małysa-Kaleta, 2010, p.120). In addition to these positives, there are also negative ones, called consumer weaknesses. A. Małysa-Kaleta attributes to them such behaviors as excessive conservatism, unconscious duplication of patterns, easy succumbing to the pressure spurred by global marketing activities, too hasty purchasing decisions, and consumerism, and prioritizing their affairs over the affairs of the rest (Małysa-Kaleta, 2016, p. 145).

Recently, consumer behavior based on so-called "research online, purchase offline" (ROPO), which talks about searching for information about a product online before buying it in a physical store, has become widespread. It is believed that at this point

every other person performs such a process. One of the arguments for changing consumer behavior is the emergence of a phenomenon called showrooming (Comarch, 2020). It is defined as a habit that is based on consumers searching for and evaluating a product in a physical store before using the Internet to verify other products or services on the market. The most visible phenomenon is to search for the best price opportunity, which consists of analyzing prices through the Internet, and then buying a given product in a competitive company, at a price lower than that found in a physical store. Information about the price of the product offered is important here (Bachrach et al., 2016, p.4). Table 2 shows the difference between traditional and digital customer acquisition. It should be borne in mind that these two consumer models continue to exist on the market and companies must take this into account in shaping their marketing activities.

**Table 2. Differences in traditional and digital customer acquisition in today's marketing**

Steps taken	Traditional consumer	Digital consumer
Search	products mainly inspect shopping malls, in magazines	looking for products online through the use of the Internet
Shopping	preferred visits to stationery stores	products checks by recommending Social media friends Uses store apps for regular purchases
Selection	physical view of the product in the store and decides on its purchase;	compares delivery time, costs, overheads;
Purchasing decision process and selection	purchases during certain opening hours of the store	based on assessment and ease of purchase makes a choice; saves items to buy in the "wish list" tab
Purchase a product	will stand in line to pay for the purchased product	one-click delivery, next day delivery, parcel delivery;
Gifts	requires additional effort to take, wrap, pack and send;	Uses automatic gift and reminder options, purchase from one address, and delivery to another address
Rentals	physically visits the store to arrange a lease;	Subscribes to music, rents properties, cars, and more with a single mouse click;

Source: Study based on Hanlon, 2019, p.28.

Considerations of buyer behavior in the modern purchasing market are distinguished by five characteristics that characterize the attitude of a new digital customer (Tapscott, 1999):

- choice – the online consumer expects a wide range of products with different specifications, among which he will be able to easily find the one most suitable for him; expects, therefore, full and easy access to information on the products and services offered;



- customization – the network is a very flexible environment in which users can customize individual applications and functions to suit their needs; whereas a consumer brought up in the digital world, therefore, expects a wide personalization of products and services, opportunities to participate in the process of their creation – he does not only want to consume but also to produce – he wants to be a prosumer;
- the ability to change decisions – on the web errors can be fixed with a single mouse click – a new generation of consumers shows the same approach when making purchasing decisions;
- the opportunity to try – modern consumers are not the recipients, but users, and therefore do not trust external expertise or advertising until they become convinced of the need to have a particular product, do not want to buy it; therefore, expect to be able to try it in advance;
- functionality – the form ceases to be important, the most important feature of the product or service is functionality.

### **Digital trust and customer risk on the web**

The changing technological environment influences the change in consumer behavior – his/her emotions and feelings. It changes his/her perception – the way he/she perceives some of the things that surround him/her. The technology has also resulted in the acquisition of skills with which the consumer has not yet been in contact. It also changes the definition of trust in other people or things. According to Falkenreck and Wagner (2017) trust is an underlying determinant that 'participates' in many decisions that managers, employees, and consumers make every day. What is more, trust guides both conscious and unconscious choices and can be amplified by digital technologies (Falkenreck & Wagner, 2017). In other words, "trust is based on knowledge, using evidence from the past". Contrastingly, faith is based on the complete absence of evidence. The reference to the past explains the power of trust, but also its fragility (Rousseau et al., 1998).

Digital trust is about making privacy controls and permissions more effective at a time when you have access to relevant data obtained through the right purpose and reason. The effects of deploying digital trust are not only visible in terms of security, but can also provide engagement that will impact business productivity and revenue growth. Digital relationships are built on numerous interactions that started at any given time. These interactions allow us to verify our behavior, interests, what roles we play. In the digital world, these interactions are so complex that companies are required to constantly test and study them because users are highly active and use multiple devices that are connected. This can create the intricacies of repeatedly entering passwords by the user to use a new application or platform to authenticate the data. Thus, digital trust should create a safe and uncomplicated user experience. To this end, enterprises are taking steps to maintain this level by implementing the appropriate technologies responsible for automating trust mechanisms (IBM Security, 2020).

Digital trust has a key impact on the functioning of businesses on the web. It serves to reduce the perceived risks and social uncertainties. With confidence in the company, the online service offered, consumers are more willing to engage in activities aimed at reducing existing risks and managing the environment. Thanks to the activity of Internet

users based on evaluating, commenting, and informing about the services and products offered by companies, users can estimate their reliability. Customer concerns are constantly growing and to reduce this, companies are taking steps to improve data security and privacy measures and enable customers to control their data. Building trust will become more and more complicated due to the desire to acquire a new kind of customer data, such as biometric data, location data (Wollan, 2018, p.9).

From a consumer perspective, digital trust is a result that can be influenced but not controlled. The level of trust in digital services used by consumers creates a sense of loyalty and creates a different type of relationship. It mainly refers to the level of trust in technological change, processes, and people themselves. Digital trust is a determinant of data protection, privacy, and security, system reliability (Marcial & Launer, 2019, p.1). The dynamics of virtual space expansion and its intersection with social relationships in the real world are genuine challenges (Dunnigan, 2010). Vulnerabilities and risks tend to arise (Grigorescu & Chitescu, 2018, p.829). The barrier among online consumers is precisely the existing risk and the way it is understood. Internet shopping is often considered in this respect. In marketing terms, several risks can be characterized in relation to enterprise-customer relationships (Table 3).

**Table 3. Typical risks in enterprise-client relationships**

<b>Model</b>	<b>Component</b>	<b>Main risks</b>
4P	Product	Risks associated with technical characteristics; the risk of material and raw material reinforcements; the risk of the attractiveness of the packaging/additional services; risk of the attractiveness of the product/service.
	Price	Risk of matching price to market segment; risk of price diversification in the product/service portfolio, risk of price attractiveness of the product/service; the cost-effectiveness of the production/service delivery process; liquidity risk of production/service processes.
	Promotion	Risk of market segmentation; the risk of selection of forms of promotion and composition of promotion tools; the risk of efficiency of product/service promotion processes; risks in the area of outsourcing in the promotion of products and services; risk of customer loyalty.
	Distribution	Risk of choosing distribution channels; the risk of the capacity of distribution channels; the risk of choosing commercial intermediaries; the risk of distribution costs; risk of trust in commercial intermediaries; the risk of the effectiveness of distribution channels; the potential of distribution channels.
5P [4P+1P]	People	Risk of sales/marketing effectiveness of employees; the risk of employees' competencies; the risk of training effectiveness; risk of employee loyalty.
7P [5P+2P]	Process	Risk of discontinuity of the service process; the risk of process effectiveness; quality risk; risk of process throughput; the risk of information flows in the process; the risk of reliability of the provision of the service; the risk of the place where the process takes place; technological risks.
	Certificate Material	Risk of the company's image; the risk of internal marketing effectiveness; brand value risk; material risk.

Model	Component	Main risks
10P [7P+3P]	"Purple cow" Marketing	Risk of market attractiveness of the service; the risk of the added value of the service; the risk of the service being different and unique; risk of service durability.
	"Inbound" Marketing	Risk of customer interest; the risk of persistence and bandwidth of the communication channel with the client; the risk of maintaining the customer's attention; the risk of choosing communication tools.
	Partnership	Risk of maintaining lasting relationships with customers; the risk of the customer being involved in the service delivery process; risk of trust on the part of the client; credibility and integrity of the customer.
4C	Client Desires	Risk of changing the customer's perceived value and value to the client; risk of evolution of customer desires and needs; risk of customer loyalty.
	Cost for customer	Risk of increased costs on the client's side; risk of insolvency of the client; risk of price attractiveness of the product/service.
	Convenience Purchase	Risk of customer loyalty; risk of product/service availability; the risk of availability of post-guarantee services; risk of changing customer requirements.
	Communication	Risk of the effectiveness of two-way communication; risk of communication efficiency.

Source: own study based on Kotler, Keller, 2012, pp. 27-28; Pazio, 2013, pp. 30-34; Woźniak, 2019, p. 68-69.

An example of the risk perceived by the consumer may be the conclusion of online transactions which may have a negative effect. There are three types of risk to the consumer online (Kim et al., 2008, p.564):

- the risk to the product – may be defective as it is not possible to view and test it;
- financial risk – a faulty online payment system and a duplicate order caused by a system suspension, technological errors, or an unwitting double-click on a product purchase;
- information risk – concerns the security of purchasing transactions and privacy. This is mainly due to the need to provide credit card details to pay for online purchases and the risk of losing funds as a result of fraud or data theft.

When analyzing the above types of digital risks borne by the consumer online, it can be concluded that it affects his behavior and decisions. A reluctance to shop online can be a risk that is sure to be higher than traditional product acquisition. This refers to the ability to view the product life, check its parameters, and test it before purchasing it. For online purchases, there is a risk of providing your personal information, phone number, and other sensitive data that is often necessary to complete the purchasing process.

Recently, quite popular phenomena regarding the risks borne by modern digital customers due to the development of technology are (Górski & Nowacki, 2018, p.48):

- impersonating a person or organization. In the age of internet development, impersonating another person is very simple, as there are very limited possibilities to verify the authenticity of an established account in social media or other communication channels;

- using the attributes of modern mobile devices such as fingerprint readers, faceID, and webcams. Many devices have security features that use these systems. This is also becoming popular in online banking, which poses a risk of hacking into an account or system.

What is more, the vulnerability is a weakness of a hardware or software system that allows unauthorized users to gain access to it. The main vulnerabilities in computer systems are physical, hardware, software, or human. Information systems are primarily vulnerable to classical attacks when a hacker manages to physically penetrate computing systems and evade confidential information. Every computer system has vulnerabilities, so we can say there is no 100% secure system, an attacker can act in many different ways. Ways of responding to these attacks generate, first and foremost, long time resources: identification of the aggressor, vulnerability and threat analysis, methods used, development of response elements, and counterattacks are necessary (Grigorescu & Chitescu, 2018, p.829).

To reduce the risks arising from the development of ICT, companies are taking steps to educate the recipients of the service or the product they have acquired. They provide knowledge about product security and how to protect data privacy. They also adapt effective legal protection in this respect and introduce consumer-acceptance-based marketing. The recipient is obliged to agree to the marketing activities of the company concerned (Frackiewicz, 2009, p.227).

### **Cybersecurity and the digital customer**

Online shopping, the exchange of goods, crowdsourcing, social media development tends to rise in percentage. Internet is gaining popularity and has tremendous scope for growth as computing devices and communication technologies are making rapid advancements and becoming cost-effective day by day. Mobile computing has remarkable potential to make e-commerce a very popular mode of shopping. Entrepreneurs want to provide quality of service to customers and maintain customer's trust by ensuring high availability, sufficient capacity, and satisfactory performance for their Web systems. Security is the main concern of customers that is hampering the rapid growth of online transactions and ways of communication. Security issues such as destruction, disclosure, and modification of data, denial of service, fraud, waste, and or abuse of network resources must be resolved to build the trust of customers in the market (Hamirani, 2020, p.2). What is more, increasing the vulnerability of personal systems to cyber-attacks of any kind is directly proportional to the ability to evaluate the data received by each user. Thus, the more we believe in the screen, the more automatic data will be taken, we will consider them real, without a concrete analysis of them, and without considering piracy of data or sources. The efficiency of an IT system should take into account a set of factors such as the value that needs to be defended, identifying attacks and cyber attackers, or analyzing the attack and finding ways to stop or reduce its effects. A first step in making an answer more efficient takes into account the fact that no system is invincible, that we must change the paradigm of the "non-breaking wall" assuming, the awareness that cyberinfrastructures are already penetrated, that there is no total protection. Attackers are interested in penetrating the informational infrastructure to either detect it for as long as possible to access as much filtered information as possible (Grigorescu & Chitescu, 2018, p.830).

Concerning network security, it can be considered in two ways: focusing on the user (user-centered) or the system (system-centered). The first way they are analyzed in the context of behaviors, skills, needs, and relationships of Internet users, while the second one focuses on the security of ICT systems and networks as well as data and information generated, stored, and processed in these systems. However, maintaining overall network security requires a holistic approach that integrates user and system location. It is not possible to ensure the security of the network user without appropriate system security, just as it is impossible to ensure the security of information and systems without properly educated attitudes, preserving the skills of their users. The threats resulting from the use of the Internet may be related to (Breźnicka & Motylińska, 2018, p.161):

- risky content (e.g. macabre, pornographic, racist, false, or harmful information);
- risky contacts (e.g. tracking, collecting personal information, bullying, stalking, seduction);
- risky behavior (e.g. gambling, illegal downloads and break-ins, harassment, creating/uploading pornographic material, giving unsafe advice, etc.).

### **Methodology and limitations of research**

The scope of this study concerned the issue of building trust in the customer-entrepreneur relationship in the digital environment, the perception of digital risk by customers, and the creation of their online security. The survey included a group of 320 people who use electronic purchases, with the respondent expected to make at least 5 electronic purchases in the last 6 months. It was assumed that the survey will be conducted on a group of 20 people from all provinces in Poland. Random selection was applied, proportional to the size of each age group in the province (age groups: 18-20, 21-39, 40-49; 50-74 and 75 years and more).

At the initial stage of research, the main research problem was formulated in the form of a question: what is the role of the client in the modern market in the context of trust, risk, and safety? To address the main research problem, specific problems have been identified: 1) what factors determine customers' trust in entrepreneurs in the digital environment?; 2) how do customers perceive digital risk?; (3) to what extent do customers take care of their security when making online purchases, especially in the context of the protection of personal data?

At the initial stage of the research, a working hypothesis was formulated in the form of the assumption that the trust of digital customers decreases as online risk increases, and the most important factor in the digital world is their security.

The studies were carried out using quantitative and qualitative test methods. The data for analysis were obtained using the diagnostic survey method (CATI method) using the survey technique. The survey was conducted in July 2020. The positive data has been processed. Statistica [StatSoft] software as well as Microsoft Excel software were used for this purpose. These tools were, among others, used to calculate correlations, percentage, and numerical indications of respondents' responses, as well as to perform other statistical calculations presented in this article, in the section containing the

results of the surveys carried out. Correlations were calculated based on Pearson's chi-squared coefficient.

Theoretical test methods were also used to achieve the objective of the studies, to respond to the research problems raised. Methods of analysis and synthesis were mainly used in the critical analysis of the literature of the subject. Its application has identified regularities in terms of building trust between the customer and the entrepreneur in the digital world, the perception of digital risk, and how customers ensure security, especially in the context of the protection of personal data. Apart from that, in turn, it made it possible to eliminate the less important characteristics and dependencies on the issue under investigation, but, on the other hand, to identify certain dependencies or to consider certain characteristics to be relevant. The generalization method allowed the disclosure of characteristics and reproducible phenomena of a general nature, as well as the formulation of conclusions.

The study should also indicate limitations. Indeed, the study provided an only general knowledge of the role of the customer in the modern market in the context of trust, risk, and safety. Although they were able to give their answers, in the vast majority of cases they merely chose from the proposed answers.

The study aimed to survey people making online purchases from all provinces in Poland and who are members of all of the indicated age groups, which ultimately succeeded.

## Results and conclusions

### *Characteristic of the respondents*

The study involved 320 people from the following age groups: 18-20; 21-39, 40-49; 50-74 and 75 years and above, representing all provinces in Poland. The size of each group was determined in proportion to the number of inhabitants living in the province (Table 4).

**Table 4. Age of respondents (by voivodships and gender)**

Voivodships	Respondents									
	18-20		21-39		40-49		50-74		75 +	
	M	W	M	W	M	W	M	W	M	W
dolnośląskie	0	1	3	3	1	2	4	4	1	1
kujawsko-pomorskie	0	1	1	5	1	3	2	5	1	1
lubelskie	1	0	4	3	1	2	5	2	1	1
lubuskie	1	0	2	5	3	1	3	4	1	0
łódzkie	0	1	5	1	1	2	5	3	1	1
małopolskie	0	1	0	7	1	2	3	4	1	1
mazowieckie	0	1	2	4	2	2	2	5	1	1
opolskie	0	1	4	2	0	3	7	1	2	0
podkarpackie	0	1	3	4	3	0	3	4	0	2
podlaskie	0	1	3	4	2	1	3	4	1	1
pomorskie	1	0	4	3	2	2	3	4	1	0
śląskie	1	0	3	3	3	0	2	6	2	0
świętokrzyskie	0	1	2	4	1	2	5	3	1	1
warmińsko-mazurskie	0	1	3	4	2	1	2	5	1	1

wielkopolskie	1	0	3	4	1	3	2	5	0	1
zachodniopomorskie	1	0	4	2	2	1	6	2	2	0

Source: own work

The majority of respondents have secondary education (188 people). There are 52 people in vocational education and 42 undergraduate educations. The least numerous group among respondents are people with higher education with a scientific title – 10 people (Table 5).

**Table 5. Respondents' education (by age)**

Education	Age					Total
	18-20	21-39	40-49	50-74	75 +	
Elementary	1	1	3	4	4	13
Vocational	3	12	8	20	9	52
High-school	12	66	28	68	14	188
Bachelor's	0	14	12	15	1	42
Higher - master's degree	0	8	1	8	1	15
Higher with a title	0	3	1	6	0	10

Source: own work

Respondents were asked to indicate which type of customer they represent. Four types of clients were identified (Wereda & Wozniak, 2018, pp.7-8):

1. Customer 1.0. - A customer who selects only certain product groups is not suggested by advertising. He has his opinion on products and is guided by their practical application in purchasing choice. It rarely takes advantage of market news.
2. Customer 2.0. - Customer Rules 1.0 are up to date but are supported by the development of consumerism and traditional marketing. The customer notices the brand, and its demand for products and services is strongly driven by marketing. It also reaches for market news advertised in the media.
3. Customer 3.0. - Customer Policies 1.0 and 2.0 are noticeable, but the buyer's behavior is extended to include an explosion of globalization and the Internet. The customer needs to keep him at the brand through various programs e.g. loyalty programs. The customer pays attention not only to the quality of the product, the brand but also to the best customer service and individual treatment of it by suppliers of products and services. He defines his shopping experiences and shares them with the public.
4. Client 4.0. - Client 4.0 is a person whose principles (based on customer experiences 1.0, 2.0, and 3.0) are still evolving, but are now complicated by huge choices, online platforms. Personal goals and creating your brand outweigh marketing. It is the client who tries to influence and be influenced by other customers, it is the one who applies new ways of working and thinking; who has high expectations, where the customer's journey is his unique journey, in which companies are only involved in enabling him to achieve his goals. This client is an internet user, very demanding, well informed by electronic devices, and looking for developing, competitive and innovative approaches to various challenges from different areas of life, such as banking, professional services, automotive and IT services, healthcare, education, municipal services (most aspects) production and construction, etc.

The survey involved 135 1.0. customers, 62 2.0. customers, 75 3.0 customers. and 48 customers 4.0. the most diverse group of customers are those aged 21-39 (Table6).

**Table 6. Clients' type (by age)**

Clients' type	Age					Total
	18-20	21-39	40-49	50-74	75 +	
Client 1.0.	9	22	20	69	15	135
Client 2.0.	3	27	10	14	8	62
Client 3.0.	1	35	14	23	2	75
Client 4.0.	3	20	9	12	3	48

Source: own work

Respondents were asked to determine the level of their social technology ladder according to Forrester Research, among the respondents most people identified themselves as observers (164 people). The second most numerous group are inactive people (58 people), with the majority of people aged 75 and over representing precisely this level of the social technological ladder (18 out of 29 people). The least numerous group are gatherers-4 people and critics - 6 people (Table7).

**Table 7. The level of the social technological ladder of the respondents (by age)**

The level of the social technological ladder of the respondents	Age					Total
	18-20	21-39	40-49	50-74	75+	
Creator	3	8	5	7	3	26
Interlocutor	2	15	5	7	0	29
Critic	0	1	2	3	0	6
Collector	0	2	1	0	1	4
Participant	2	6	7	15	3	33
Observer	8	67	27	58	4	164
Inactive	1	5	6	28	18	58

Source: own work

### **Client in the modern market in the context of trust, risk, and security**

During the survey, respondents were asked which of the indicated approaches to perceiving digital risk are most identified (Table 8).

**Table 8. Digital Risk Perception**

Digital Risk Perception	Number of answers	%
Digital risk as a source of threats (potential losses)	38	12
Digital risk as a source of both threats (losses) and opportunities (potential benefits)	176	55
Digital risk mainly as a source of opportunities (potential benefits)	35	11
I do not analyze digital risk and I do not think about its significance for my electronic purchases on a daily basis.	71	22

Source: own work

55% of respondents indicated that digital risk is both a source of opportunity and a source of potential risks. 12% of respondents expressly assessed the digital risk as a



source of potential loss and 11% as a source of potential opportunities. By contrast, as many as 22% of respondents do not carry out a digital risk analysis at all and do not think about its importance for their electronic purchases on a daily basis.

Respondents were asked to assess (on a scale of 1-5) individual factors in building trust in customer-to-business relationships, assessing both the frequency of contact with the factor and its importance/importance for respondents (Table 9).

**Table 9. Factors building trust in client-entrepreneur relations**

<b>Factors building trust</b>	<b>The frequency of the customer's contact with a given factor</b>	<b>Importance/ importance of a given factor for the client</b>
Received discounts during long-term cooperation	3,12	3,33
Minimizing the transaction risk in the long run	2,98	3,58
The prestige and brand of the company (the company's reputation on the market)	3,30	3,46
Personal contacts and acquaintances	2,93	2,96
Long-term cooperation based on personal contact	2,28	3,08
A large number of contacts and contracts concluded in a short period	2,72	3,02
Mutual loyalty	3,21	3,51
Influence of the environment, e.g. media opinions on the company's reputation, good public relations, etc.	3,41	3,48
Positioning the website in search engines	3,46	3,49
Ads on social media	3,42	3,39
Promoting products by famous people	3,42	3,08
Good business website	3,60	3,82
Loyalty programs	3,33	3,52

*Source: own work*

The trust-building factors most respondents encountered were a good company website (3.60), search engine positioning of the company's website (3.46), social media advertising (3.42), and celebrity product promotion (3.42). The least likely respondents were met with factors such as long-term cooperation based on personal contact (2.28) and a large number of contacts and contracts in the short term (2.72).

The survey showed that the most important factors in building trust in client-entrepreneur relationships are: good company website (3.82), minimizing transaction risk in the long term (3.58), and loyalty programs (3.52). The least important factors are personal contacts and acquaintances (2.96) and a large number of contacts and contracts concluded in the short term (3.02).

On the other hand, the determination of digital risks was mostly identified by respondents as a source of both risks (losses) and opportunities (potential benefits) – Table 10.

**Table 10. Digital Risk Perception**

Digital Risk Perception	Number of answers	%
Digital risk as a source of threats (potential losses)	38	12
Digital risk as a source of both threats (losses) and opportunities (potential benefits)	176	55
Digital risk mainly as a source of opportunities (potential benefits)	35	11
I do not analyze digital risk and I do not think about its significance for my electronic purchases on a daily basis.	71	22

Source: own work

During the survey, respondents were asked to indicate the level of consent to these data protection and privacy statements when making online purchases (Table 11).

**Table 11. The level of consent to the indicated statements regarding the protection of personal data and privacy when making online purchases**

I am sure that online stores:	Level of consent[%]				
	I strongly disagree	I disagree	I do not care	I agree	I strongly agree
process personal data lawfully and transparently, ensuring fairness towards natural persons.	11	21	17	31	20
have specific data processing purposes and indicate these purposes to individuals when collecting their personal data.	8	20	21	30	21
they collect and process only the personal data that is necessary to achieve the purpose of the sales.	9	21	22	22	26
ensure that personal data is accurate and up-to-date, having regard to the purposes for which it is processed, and correct it if not.	7	20	22	32	19
ensure that personal data is kept for no longer than is necessary for the purposes for which it was collected.	9	19	18	35	19
install appropriate technical and organizational security measures to ensure the security of personal data, including protection against unauthorized or unlawful processing and accidental loss, destruction, or damage, using appropriate technology.	7	17	24	27	25
in special cases, personal data is stored for a longer period for archiving purposes in the public interest or for scientific or historical research reasons, provided that appropriate technical and organizational measures are taken.	11	12	25	36	16
ensure that the data stored is accurate and up-to-date.	7	19	22	34	18

Source: own work

Research shows that 51% of respondents believe that online stores process personal data lawfully and transparently, ensuring fairness towards individuals. 32% of respondents do not agree with this statement. 17% of respondents are indifferent to the processing of their personal data by online stores, 51% of respondents believe that online stores have specific data processing purposes and indicate these purposes to individuals when collecting their personal data. 28% of respondents are of the opposite opinion. For 21% of respondents, the indicated issue did not matter. 48% of respondents believe that online stores collect and process only the personal data that is necessary to achieve the sales goal, but 30% believe that these stores also collect and process data that is not necessary for the purchase and sale transaction. For 22% of respondents, this issue is indifferent. More than half of the respondents (51%) indicated that online stores ensure that personal data is accurate and up-to-date, taking into account the purposes for which it is processed, and correct it if not. The opposite opinion is shared by 27% of respondents. The issue of up-to-date data processed by online stores does not matter for 22% of respondents. As many as 54% of respondents believe that online stores ensure that personal data is stored for no longer than it is necessary for the purposes for which it was collected. 28% of the respondents have a different opinion. For 18% of respondents, this issue is not important. 52% of respondents believe that online stores install appropriate technical and organizational security measures to ensure the security of personal data, including protection against unauthorized or unlawful processing and accidental loss, destruction, or damage, using appropriate technology. 24% of the respondents have the opposite opinion. The survey results show that 52% of respondents believe that in special cases personal data is stored by online stores for a longer period for archiving purposes in the public interest or scientific or historical research reasons, provided that appropriate technical and organizational measures are in place. 23% of the respondents have a different opinion. For 25% of respondents, this issue does not matter. 54% of respondents believe that online stores ensure that the data stored is accurate and up-to-date. 26% of the respondents are of the opposite opinion. The issue of timeliness and accuracy of data stored and processed by online stores does not matter for 22% of respondents.

Research indicates that online shoppers feel relatively safe. About half of them believe that online stores ensure the security of the personal data they provide. About 25% of the respondents are of the opposite opinion. What is puzzling, however, is the level of the indifference of customers shopping online. For each of the statements, it fluctuated at the level of 25%. This indicates the respondents' lack of interest in how the personal data they provide is processed.

## Conclusions

The digitization process provides consumers with more and more new purchasing opportunities, ways of contacting other network users, allows them to exchange their own experiences, search for countless information and opinions, which has led to the formation of a new type of consumer - consumer 4.0. The possibilities offered by the Internet increase the requirements of customers who want more and more and look for products personalized to their needs. However, in the virtual world, the risk is noticeable, and as it grows, the level of customer confidence on the Internet decreases.

It should be noted, however, that institutions more often develop cybersecurity programs.

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