

# FEATURES OF E-COMMERCE RISK MANAGEMENT IN MODERN CONDITIONS

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## ABSTRACT

*E-commerce has become a major trend of the contemporary economy where businesses have significantly shifted their transactions to online platforms in order to take advantage of the global market. Today, companies executing their business activities through the internet are among the largest and most profitable ventures. However, the growth of e-commerce is accompanied by an increase in risk exposure, meaning that risk management in online transactions is the most important factor in promoting the survival of business organizations in the long-term. Fundamentally, these risks relate to information security, fraud, e-commerce legislation, or payment methods, and they are generally referred to as cyber-security risks. To manage risk effectively, e-commerce companies have continued to invest in security-related technologies that also promote successful operations.*

**Keywords:** E-commerce, Risk Management, Information Security, Business.

**JEL Classifications:** L81, G32, M20

## INTRODUCTION

E-commerce entails the execution of business transactions through the internet, and it is a major trend in the contemporary world. Companies in various industries have shifted to e-commerce in order to optimize market opportunities, increase efficiency, and minimize the operating cost (Zirakja & Samizadeh, 2011). However, huge information is involved in these transactions, which imply that information security must be considered to eliminate the adverse effects associated with online business. Notably, information assets are prone to various types of threats, which can impact the operations of an organization both directly and indirectly. Business organizations have invested in intensive research to develop various models for identifying and managing potential threats to successful online transactions. In addition, the government has made significant interventions through regulations to assist in mitigation of different forms of threats to e-commerce. Vulnerability of information assets can lead to various adverse outcomes that impact integrity, authenticity, accountability, reliability, and confidentiality of information negatively (Kurnia et al., 2015). Noteworthy, effective management of e-commerce risks

minimizes vulnerability of different operations, resulting in efficient business environment. Additionally, adoption of sophisticated information management systems in e-commerce firms is meant to improve security of their databases in order to minimize malicious attacks that threaten their critical infrastructure significantly (Raghavan et al., 2017). As investment in e-commerce business increases, there is a growing need to adopt effective risk management techniques in order to safeguard such aspects as artificial intelligence, financial information, and trade secrets among other elements of companies' information resources, which are facing severe threats from cyber activities.

## **REVIEW OF RELEVANT LITERATURE**

E-commerce has become a new approach to business as a platform that allows individuals and organizations to use modern technology to execute business transactions. Studies have revealed that over the last 20 years, e-commerce has grown at a high rate, providing considerable advantages to both consumers and businesses through increased access to the market (Hagberg et al., 2016). Elimination of critical barriers to e-commerce will lead to continued evolution of this type of business in future as the world continues to embrace internet technology at a rapid rate. However, researchers have appreciated the role of risk in hampering successful growth of e-commerce industry. The majority of analysts contend that security is a major cause of concern as people continuously embrace the online business. Parviainen et al. (2017) postulated that protection of information, particularly the financial data for both the customers and service providers is paramount to guaranteeing sustainability of e-commerce sector. Effective risk management is incredibly vital to promoting smooth operations of firms in e-commerce industry, which have been found to engage in various developments and innovations to improve information security.

Risk management is the most crucial feature of e-commerce business, which is the main focus for both customers and companies. Assurance of confidentiality, integrity, and authenticity of information relating to online transactions is a major challenge facing the risk managers in e-commerce firms (Toleuuly et al., 2019). It has been established that the threat of cyber activities such as hacking increases as the online business expands. For this reason, it is essential to develop strong risk management strategies to achieve sustainable e-commerce industry. In most cases, consumers are concerned about the security of their financial data when transacting online while companies fear the breach of privacy as it has serious legal implications (Nguyen et al., 2018; Pappas, 2016). In the modern conditions, protection of information is critical to achieving sustainable business in e-commerce sector. Numerous potential vulnerabilities have developed as criminals shift their focus to activities taking place in the online arena. Thus, the implementation of advanced technologies for risk mitigation has become a vital undertaking as hackers constantly develop new techniques for executing malicious attacks. Software management is becoming a complex issue, resulting in increased vulnerability of critical information resources for business organizations. Various security mechanisms have been adopted to improve the effectiveness of different risk management strategies adopted by e-commerce firms.

## **METHODOLOGY**

A combination of qualitative and quantitative approaches is adopted in the analysis of features of e-commerce risk management in modern conditions. However, the qualitative approach was used to a large extent since the variables involved were more qualitative in

nature. Descriptive analytical procedure was adopted where various academic sources were reviewed to assess the common features of risk mitigation in e-commerce activities. The information gathered from various sources was subjected to quantitative measurement and descriptive statistical analysis to assess the overall role of risk management and features integrated into risk mitigation strategies to promote efficiency in e-commerce trade. The qualitative research method adopted helped to explore different technological innovations that have been adopted to improve the effectiveness of risk management techniques in the contemporary e-commerce industry.

## RESULTS

The government of the Republic of Kazakhstan pays great attention to the development of digitalization in the country. The relevant legislative framework is adopted and maximum opportunities are created to promote this sector. In accordance with the state program “*Digital Kazakhstan*” (2017), the share of e-commerce relative to retail trade ought to be 5% by 2025.

According to the statistics Committee of the Ministry of national economy of the Republic of Kazakhstan (2017), the share of e-commerce in the total volume of retail trade of the country in 2017 is amounted to 1.20% (Table 1).

<b>Indicators</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Volume of retail trade, total, in thousand tenge	5474 274,00	6332 253,00	6555 820,90	7974 442,10	8892 857,70
Electronic trade, in thousand tenge	28 046,428	41 262,845	50 919,872	78500,555	106918,149
Unit weight, %	0.51	0.65	0.78	0.98	1.20

Source: compiled by the authors on the basis of the report of the Committee on statistics of the Ministry of national economy of the Republic of Kazakhstan (2017)

E-commerce in Kazakhstan is gradually gaining momentum. According to official statistics, in 2017, the volume of the retail e-commerce market of the Republic of Kazakhstan is amounted to 107 billion tenge. In particular, through e-commerce, people have access to more goods at lower prices, for example by engaging in international trade. In terms of the impact on business, it is worth noting that the growing popularity of e-commerce leads to an increase in the number of people who want to open their own business in this sector.

Since 2018, 110 new e-commerce entities are registered. Today, the market has about 1700 online stores, and the number of customers is increased to 1.5 million people (Sevostyanova, 2018).

According to Zhandybaev (2019) the development of e-commerce carries a huge potential for economic growth. Firstly, it is a boundless increase in trade. Secondly, it is an opportunity to enter any market anywhere in the world. Thirdly, it is the development of transit potential.

At the same time, it is necessary to take into account a number of risks affecting the development of electronic commerce (Table 2). The results of the survey conducted by the statistics Committee of the Ministry of national economy of the Republic of Kazakhstan (2017) show that the participants of the e-commerce market focus not only on financial (34.4%) and business (34.3%) risks, but also risks related to information security (18.2%). When organizing access to the electronic platform, there are frequent technical failures of IT systems among the players of the e-commerce industry. At the same time, one of the most common problems

remains the inability to universally adapt systems to use them from mobile devices. The Ministry of trade and integration of the Republic of Kazakhstan is working in this direction.

NO	Types of risk	The results of the survey (%)
1	Financial risk	34.4
2	Entrepreneurial risk	34.3
3	Risks associated with information security (distrust of the population)	18.2
4	Risks associated with the protection of personal data of buyers	3.7
5	Other risk	9.4
	Total	100

Source: compiled by the authors on the basis of the report of the Committee on statistics of the Ministry of national economy of the Republic of Kazakhstan (2017)

According to the Minister of trade and integration of Kazakhstan, Sultanov (2019) Kazakhstan plans to develop trade through the Internet with the help of the world's leading corporations. On August 26, 2019, the Ministry and the largest online retailer in Russia “*Wildberries*” signed an Agreement on mutual cooperation, which provides for the participation of Kazakh exporters in international trade using e-commerce channels in all areas of presence of “*Wildberries*”. From 2020, it is planned to conclude a contract with a large electronic platform “*Alibaba*”. Serious players in this area will significantly and in the right direction help us to develop. Our entrepreneurs will be able to actively cooperate with world players, which will subsequently help to rapidly develop e-commerce in Kazakhstan.

The main challenge facing the sustainability of the e-commerce sector relates to protection of information against the threats of cybercrime. The extensive use of the internet in modern conditions has been the major source of the problems facing e-commerce transactions (Sharma et al., 2016). In the e-commerce industry, unscrupulous individuals can use a variety of techniques to cheat users. As a result, various features have been incorporated into the companies’ risk management strategies to improve security. Some of these features include:

### **Privacy-Enhancing Technologies**

Although there are numerous technologies for regulating the release of information, new techniques are being developed to enhance integrity, security, and confidentiality of information in modern conditions. PETs (privacy-enhancing technologies) are being strengthened to improve the capacity of e-commerce firms to safeguard their databases against emerging crimes.

### **Digital Signatures**

The intrusion of cyber criminals into the companies’ critical infrastructure has become a major concern to risk managers, resulting in introduction of sophisticated techniques for data protection. One such strategy is digital signature, which is a critical feature in risk mitigation that involves a cryptographic tag that can only be calculated by the author (Vos et al., 2014). This feature helps to curb such activities as hacking through unique encryption of information.

### **Encryption Technology**

Symmetric cryptosystems or public-key systems use a common key for encryption and decryption of information. The information system works only when both the sender and receiver have the same key. Firms in e-commerce business have continued to develop new strategies for strengthening the security of their databases through new encryption technologies,

particularly by analysing the faults in traditional information management techniques. In most cases, encryption technology is used in the payment systems to protect the financial information of users.

### **Digital Envelopes**

The security of online transactions depends on various features that are incorporated into the data protection systems to minimize the risk of cyber activities. Digital envelopes are among the critical developments that have been found to play a significant role in the protection of companies' critical infrastructure. Firms in the e-commerce business continue to introduce new features into their risk management techniques in order to respond adequately to emerging threats (Piotrowicz & Cuthbertson, 2014). In modern conditions, new attacks emerge from technological evolution, prompting the risk managers to invest in technologies that will enhance protection of information resources in their companies.

## **CONCLUSION AND RECOMMENDATIONS**

With the growing use of modern technology, the e-commerce industry continues to face new threats. Successful operations of companies that execute their business through the online platforms must involve development of effective strategies that will improve their capacity to respond to impending threats. Evaluation of traditional methods and introduction of new features into the risk management techniques contribute to efficient operations of firms in modern conditions. Policymakers in the e-commerce sector must continue to explore new strategies for risk management as new threats emerge with technological evolution. Certainly, such a strategy will help to sustain the operations of the industry in the future. Sophistication of technologies used to detect malicious attacks on companies' critical infrastructure is another approach that firms should contemplate in their attempt to improve risk management in online operations. Fundamentally, this strategy will help to advance the capacity of IT systems to detect and respond to emerging crimes. Besides, firms should ensure adequate staff training on various ways of detecting fraud and other risks associated with online transactions. Risk managers should ensure that employees have sufficient understanding of the company's risk mitigation policies to help in the management of various forms of internet-related threats.

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