

DIGITALES ARCHIV

ZBW – Leibniz-Informationszentrum Wirtschaft
ZBW – Leibniz Information Centre for Economics

Tsilvik, Oleg

Article

Consideration of standardization as a system management tool for electronic commerce enterprises

Reference: Tsilvik, Oleg (2022). Consideration of standardization as a system management tool for electronic commerce enterprises. In: Technology audit and production reserves 4 (4/66), S. 10 - 13.

<http://journals.uran.ua/tarp/article/download/265212/261326/611462>.

doi:10.15587/2706-5448.2022.265212.

This Version is available at:

<http://hdl.handle.net/11159/12794>

Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics
Düsternbrooker Weg 120
24105 Kiel (Germany)
E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)
<https://www.zbw.eu/econis-archiv/>

Standard-Nutzungsbedingungen:

Dieses Dokument darf zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden. Sie dürfen dieses Dokument nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen. Sofern für das Dokument eine Open-Content-Lizenz verwendet wurde, so gelten abweichend von diesen Nutzungsbedingungen die in der Lizenz gewährten Nutzungsrechte.

<https://zbw.eu/econis-archiv/termsfuse>

Terms of use:

This document may be saved and copied for your personal and scholarly purposes. You are not to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public. If the document is made available under a Creative Commons Licence you may exercise further usage rights as specified in the licence.

UDC 65.011.4:006.073:006.027

JEL Classification: L15, M21, F14

DOI: 10.15587/2706-5448.2022.265212

Article type «Reports on Research Projects»

Oleg Tsilvik

CONSIDERATION OF STANDARDIZATION AS A SYSTEM MANAGEMENT TOOL FOR ELECTRONIC COMMERCE ENTERPRISES

The object of the research is standardization as a system management tool. One of the most problematic areas of this topic is that the use of standardization in the system management of e-commerce enterprises is characterized by an insufficient degree of efficiency.

The study used the general scientific principles of a systematic approach and logical modeling of standardization processes on the example of Ukrainian e-commerce enterprises, the methodology of scientific theories, knowledge, problem setting and hypothesis formation. And also a system-target approach was used, a dialectical-logical method, which made it possible to analyze the system management of Ukrainian e-commerce enterprises for compliance with the requirements of the standards.

The work uses the necessary set of scientific research methods, including such methods as comparison, generalization, hierarchy building, classification, modeling based on deduction, as well as multivariate analysis. It has been established that standardization will allow achieving the optimal degree of orderliness in the field of e-commerce by fixing the norms, rules and terminology in the form of a regulatory document that has legal force. This is due to the fact that the proposed analysis of the standardization process can become a tool for building an effective business process management system, in particular, at domestic e-commerce enterprises. Creation of prerequisites for the unification of approaches to the organization of processes at e-commerce enterprises and the formation of a sequence of managerial decision-making will improve the culture of doing business and competition in this market segment. Considering the legal nature of the standard as a document intended for general and repeated use, it can be assumed that this will facilitate the transition of traditional trade enterprises to the digital format, will contribute to the formation of more transparent business processes in e-commerce enterprises. Compared to similar well-known approaches, this will increase consumer loyalty to e-commerce and improve the level of protection of their rights and interests.

Keywords: e-commerce enterprises, process unification, standardization, electronic commerce, e-commerce, business processes, business process management.

Received date: 07.07.2022

Accepted date: 26.08.2022

Published date: 31.08.2022

© The Author(s) 2022

This is an open access article

under the Creative Commons CC BY license

How to cite

Tsilvik, O. (2022). Consideration of standardization as a system management tool for electronic commerce enterprises. *Technology Audit and Production Reserves*, 4 (4 (66)), 10–13. doi: <http://doi.org/10.15587/2706-5448.2022.265212>

1. Introduction

An analysis of global trends in the formation and development of standardization of management systems shows that at the current level of development of commercial structures, management at e-commerce enterprises is characterized by an insufficient degree of efficiency. This leads to chaos in the information support of the management decision-making process and significantly reduces the competitiveness of commercial structures in the e-commerce segment.

Despite the fact that the issue of e-commerce development is relevant for researchers-economists, the vast majority of scientists focus their attention only on general issues of the industry functioning [1–3]. The impact of

standardization as a system management tool for domestic e-commerce enterprises has been little studied.

The global processes of digital transformation of economic relations in the context of the COVID-19 pandemic in the world [4–6] have acquired a rapid and inevitable character, and have radically influenced approaches to the formation of the logistics component of the entire e-commerce process.

System management using standardization tools helps to increase the overall economic efficiency of participants in commercial relations by obtaining a synergistic effect both at the level of the entire system and at the level of an individual business entity.

In this regard, there is a need to deepen the use of standardization as a system management tool for the effective

management of e-commerce enterprises, proper information support for the management activities of e-commerce enterprises. At the same time, the requirements of regulatory documentation at all levels of economic management and building constructive relationships with consumers should be taken into account.

Let's consider the current stage of development of e-commerce on the example of Ukraine. Achieving advantages by Ukrainian e-commerce becomes possible primarily due to the widespread introduction of standardization tools during their formation, as well as at the stage of operation. This is realized by building effective models of information support for the management process, which allows timely and high-quality assessment of compliance with the requirements for management systems at different economic levels. There is a growing need for theoretical and practical developments in the field of standardization, assessment of their compliance and information support, aimed at the effectiveness of managing the processes of system management of Ukrainian e-commerce enterprises.

In these circumstances, a deeper study of the issue of using standardization as a tool for the system management of e-commerce enterprises and the development of effective models for managing the integration of commercial structures in modern economic conditions is relevant.

Thus, *the object of research* is standardization as a system management tool.

The aim of research is to develop and scientifically substantiate approaches to the development of standardization as a system management tool for domestic e-commerce enterprises.

2. Research methodology

The following scientific methods were used in the study:

- systems approach that was used to evaluate the application of system management in domestic e-commerce enterprises;
- deductive method, which became necessary in the formation of the research methodology and allowed to explore standardization as a system management tool;
- structural and functional analysis, the essence of which is to identify the elements of the development system and further improve standardization as a system management tool for domestic e-commerce enterprises;
- dialectical approach and a system method, on the basis of which the essential features that influence the process of formation of the system management of domestic e-commerce enterprises are substantiated and disclosed in the general standardization mechanism;
- prognostic method, with the help of which more distant prospects for the development of the object under study are determined.

3. Research results and discussion

Standardization is the activity of applying rules and regulations to achieve savings while meeting certain parameters and with the participation of interested parties. Standardization is aimed at performing certain tasks:

- socio-economic development of the country;
- its integration into international standardization systems;
- improving the quality of life;
- improving the quality of trade services.

The International Organization for Standardization (ISO) defines standardization as «the establishment and application of rules for the purpose of streamlining activities in certain industries for the benefit and participation of all interested parties, in particular to achieve an overall optimal economy while observing functional conditions and safety requirements» [7].

Regarding the features of standardization of e-commerce enterprises, the following basic principles of this process can be determined:

- complexity and consistency of standardization;
- ensuring that the documents of the national standardization system comply with the achieved level of trade development;
- publicity of the development of documents of the national standardization system on the basis of consensus in the development of national standards;
- establishment in documents on standardization of requirements that provide the possibility of control over their implementation;
- consistency of national standards with each other;
- openness of information about standardization documents, taking into account the restrictions established by the regulatory legal acts of a particular country.

The importance of standardization as a system management tool is widely disclosed by the regulations recommended for the practical application of the country: standardization is aimed at achieving orderliness in the field of electronic commerce and its main goal is to serve and help business. In other words, standardization is designed to serve the field of e-commerce, as well as ensure that on this basis profit and budget filling. The economic benefits of standardization are enormous, both within individual enterprises and on a national scale. Standardization contributes to improving the quality of services, saving public resources, as well as protecting society and the environment from low-quality products, works (services) [8].

The development and application of standardization tools leads to a significant economic effect at the country level, ensuring the growth of gross domestic product, and at the enterprise level. According to the international organization ISO, the implementation and use of standards in enterprises increases the annual profit from sales by 4 %, and also saves up to 6 % on costs in the procurement, logistics, production, distribution and service processes. In accordance with the recommendations and requirements of the ISO 9001-2015 standard, as well as other standards in the field of management, the use of standardization tools improves the quality of management [9].

Thus, the development and application of standardization tools within the framework of the activities of various commercial structures has a positive impact not only on the performance of e-commerce enterprises, but also on their business processes.

For further research, let's define the main concepts related to the standardization of the activities of e-commerce companies. So, standardization as a system management tool for e-commerce enterprises is understood as a set of organizational, methodological, legal, technological, informational and other methods and means of activity, formed in accordance with the regulatory requirements of the standards. Their intended purpose is to ensure the competitiveness of enterprises, improve the quality of management decisions and the level of efficiency in the use of resources

throughout the business process chain for the provision of commercial services in the field of e-commerce.

Ensuring competitiveness through the use of standardization implies control over the completeness and effectiveness of their application in commercial business processes. Improving the quality of standardization refers to the activities of staff to monitor the relevance of existing standards and the formation, if necessary or on a planned basis, of proposals for making the necessary changes. These changes will help maintain the required level of quality standardization of the e-commerce enterprise and ensure the continuity of the process of increasing its competitiveness in a market economy.

It should also be noted that such principles as consistency, variability, repeatability and interchangeability are basic for standardization [10].

The standardization system is implemented at different levels – international, state, industry, corporate – and in general is expressed by the technology of interdisciplinary technical regulation (TR), which is built on top of the TR of objects. Standardization forms abstract types of objects, properties, processes and creates the basis for profit growth.

The society, as the creator of the environment for e-commerce subjects, that is, the organizer and consumer of business processes, is interested in ensuring that transaction processes operate safely for members of society (the person itself) and the environment, at the lowest cost, in the shortest possible time. The activities of the society in the search, development and establishment of norms in the process of implementing the system management of e-commerce enterprises form the basis of standardization.

Standards as a system management tool for e-commerce enterprises solve one of the most important tasks of standardization. However, the main goal of standardization activities is to achieve that the standards for products and processes are progressive, leading-edge [11].

In order to move to a new proactive standardization model, it is necessary to overcome the underestimation of advanced standardization in the development of breakthrough technologies and standardization practices in general.

It is very important to provide requirements for advanced developments in advanced standards. At the initial stage of development, it is necessary to include requirements for terminology, test methods, materials, operational properties, safety, and ecology [12].

Technical standards focused on the interconnection between devices and networks are a necessary but not sufficient basis for e-commerce. Support for transactions between business trading partners also needs so-called semantic standards in addition to syntactic standards such as the Internet Protocol. Among the first e-commerce standards were Electronic Data Interchange (EDI) standards such as EDIFACT, developed over the past thirty years by the United Nations Center for Trade Facilitation and Electronic Business (UN/CEFACT). This also includes the ASC X12 standard, developed by the American National Standards Institute (ANSI) and other self-regulatory organizations (SRO).

EDI standards define how information contained in business documents, such as invoices, purchase orders, and so on, is encoded and communicated between trading partners. As such, it deals with the meaning of the data, and not only with the possibility of efficient and reliable signaling in networks [13].

International and national standardization of approaches to business management has proven that within specific

enterprises it contributes to the improvement of the quality of services. It also allows reducing the financial costs of developing new methods of doing business, reducing the time and costing spent on routine procedures, and much more [13].

Standards are documents that include certain requirements, rules or regulations that must be followed. This system provides technical and information compatibility, as well as interchangeability of services, which is very important for commercial structures, considering the savings of all types of resources, etc.

One of the examples of the implementation of the use of standardization approaches as a system management tool for e-commerce enterprises can be considered the national standard of Ukraine DSTU-P 9172:2021 «Guidelines for e-commerce: basic provisions» [14].

This International Standard establishes general rules for key measures related to e-commerce. It also provides guidance on the use of certain mechanisms to assist e-commerce entities and their personnel responsible for implementing and/or improving e-commerce business processes.

This standard provides the main organizational and methodological recommendations for activities in the field of e-commerce in Ukraine.

This standard is relevant for the following parties:

- service providers that provide access to resources for the production of e-commerce and maintain their performance;
- trademark owners or their authorized representatives, as well as shops and trading companies that sell products or provide services through online catalogs;
- other market participants seeking to start their business on the Internet.

Key activities are defined in the standard as follows:

- 1) measures before buying;
- 2) purchase events;
- 3) post-purchase activities;
- 4) consumer support;
- 5) seller verification [14].

By applying this standard organization:

- a) operate in a more consumer-friendly way by:
 - developing approaches for presenting information online to make it easier for consumers to understand;
 - proactive (proactive) approach in communications with consumers, which increases their level of satisfaction;
 - convenient and easy access to the process of searching, choosing the product or service that the consumer needs and buying on the Internet, to improve the consumer experience in the field of e-commerce;
 - convenient and responsible management of payment options;
 - closer control of delivery processes, which will satisfy the needs of consumers;
- b) will have more diverse business processes and business policies in their activities, focused on customer satisfaction and strengthening communication with them [14].

In general, the modern process of standardizing the activities of e-commerce enterprises in the context of system management lacks consistency and dynamism, and the program-targeted project approach has not been fully implemented. An important problem and task of influencing the development of e-commerce enterprises is to determine reasonable priorities for the development of standardization

in the context of the digital transformation of the economy and a radical update of its technological base.

A significant part of the problems is of a subjective nature and is explained by the underestimation of standardization in the economic and social development of the state – both authorities and businesses.

The current Ukrainian national standards in the field of e-commerce do not form a unified system for managing commercial activities and do not address specific issues of interaction between system management and e-commerce standards. Let's believe that effective system management of e-commerce enterprises is possible only on the basis of standardization of this activity.

A serious problem is the lack of qualified specialists in standardization at enterprises. At the same time, representatives of the managerial level are not sufficiently aware of the approaches and principles of standardization. To remedy this situation, it is necessary to ensure the establishment of standardization units (services) in existing large e-commerce enterprises and at least introduce the position of a standardization specialist in small and medium-sized enterprises operating in the field of e-commerce. Ensure continuous professional development of employees who care about standardization and create conditions for their unhindered participation in the study of implemented business processes and integration with quality management services.

Modern science and technology cannot develop without using the principles and methods of standardization, in particular the streamlining and standardization of scientific and technical information, the volume and quality of which is constantly growing. In turn, standardization cannot successfully solve the problems facing it without using all the achievements of modern science, without developing itself as an independent branch of science [15].

Thus, the results of this study can be applied by managers of Ukrainian enterprises, primarily e-commerce enterprises, to improve the efficiency of activities based on the benefits of standardization. Further research in this direction should be directed to studying the features of the implementation of the national standard of Ukraine DSTU-P 9172:2021 «E-commerce Guidelines: Basic Provisions» as a system management tool for Ukrainian e-commerce enterprises.

4. Conclusions

As a result of the analysis, it has been concluded that the standards currently play and will play a leading role in the future as a tool for the system management of e-commerce enterprises. That is, where the level of competition is highest, the degree of state regulation is limited and there are increased requirements for synchronizing the management processes of various systems.

It has been proved that the main task of the system management of e-commerce enterprises today is the development of theoretical aspects of standardization in the context of technological transformation and digitalization of the economy in general and e-commerce in particular. This confirms the author's recommendation about the im-

portance of introducing into the practice of Ukrainian e-commerce enterprises the norms of the national standard of Ukraine DSTU-P 9172:2021 «Guidelines for e-commerce: basic provisions».

Conflict of interests

The author declares that there is no conflict of interest regarding this research, including financial, personal nature, authorship or other nature that could affect the research and its results presented in this article.

References

- Chawla, N., Kumar, B. (2021). E-Commerce and Consumer Protection in India: The Emerging Trend. *Journal of Business Ethics*, 3–13. doi: <https://doi.org/10.1007/s10551-021-04884-3>
- Išoraitė, M., Miniotienė, N. (2018). Electronic Commerce: Theory and Practice. *Integrated Journal of Business and Economics*, 2 (2), 73. doi: <https://doi.org/10.33019/ijbe.v2i2.78>
- Zheng, S., Khan, R. (2021). Performance evaluation of e-commerce firms in China: Using three-stage data envelopment analysis and the Malmquist productivity index. *PLOS ONE*, 16 (8), e0255851. doi: <https://doi.org/10.1371/journal.pone.0255851>
- Bettiol, M., Capestro, M., Di Maria, E., Micelli, S. (2021). Reacting to the COVID-19 pandemic through digital connectivity with customers: the Italian experience. *Italian Journal of Marketing*, 2021 (4), 305–330. doi: <https://doi.org/10.1007/s43039-021-00031-y>
- Chen, M., Bashir, R. (2022). Role of e-commerce and resource utilization for sustainable business development: goal of economic recovery after Covid-19. *Economic Change and Restructuring*. doi: <https://doi.org/10.1007/s10644-022-09404-5>
- Pratap, S., Jauhar, S. K., Daultani, Y., Paul, S. K. (2022). Benchmarking sustainable E-commerce enterprises based on evolving customer expectations amidst COVID-19 pandemic. *Business Strategy and the Environment*. doi: <https://doi.org/10.1002/bse.3172>
- International Organization for Standardization. Available at: <https://www.iso.org/>
- Bilivska, Yu. V. (2016). Regulation of E-commerce in Ukraine. *Young Scientist*, 10 (37), 336–339.
- Mizhnarodnyi standart ISO 9001:2015. *Quality management systems – Requirements*. Available at: <https://www.certification.ua/wp-content/uploads/2018/03/ISO-9001-2015-ru.pdf>
- Poliakh, V., Krivosheeva, N., Klochko, V., Sharapova, O., Chujko, N. (2017). E-commerce: theoretical and legal framework and the current situation in Ukraine. *ScienceRise*, 5 (1), 11–17. doi: <https://doi.org/10.15587/2313-8416.2017.101077>
- Tertychnyi, Ya. S. (2018). Essence and nature of the electronic commerce. *Visnyk Khmelnytskoho natsionalnoho universytetu. Ekonomichni nauky*, 3 (2), 277–284.
- Malinyska, N. M. (2016). Taxation of electronic business in Ukraine: current realities and perspectives. *Visnyk Odeskoho natsionalnoho universytetu. Seriya: Ekonomika*, 21 (7 (1)), 152–155.
- Steinfeld, C., Wigand, R. T. (2015). e-Commerce Standards. *The International Encyclopedia of Digital Communication and Society*, 1–7. doi: <http://doi.org/10.1002/9781118767771.wbiedcs160>
- Natsionalnyi standart Ukrainy DSTU-P 9172:2021. *Nastanovy z elektronnoi komertsii* (2022). Kyiv: DP «UkrNDNTs», 17.
- Melnyk, O. V. *Elektronna komertsii yak skladova chastyna elektronnoho biznesu*. Available at: <http://intkonf.org/melnik-ov-elektronna-komertsii-yak-skladova-chastina-elektronnoho-biznesu/>

Oleg Tsilvik, Postgraduate Student, Department of Management, State University of Trade and Economics, Kyiv, Ukraine, e-mail: o.tsilvik@knute.edu.ua, ORCID: <https://orcid.org/0000-0002-6652-7193>