

JEL Classification: G21, H83, M15, M41, O34

**Yulia Manachynska**, Candidate of Economic Sciences,  
Associate Professor,  
<https://orcid.org/0000-0001-9155-3417>  
**Galina Melnichenko**, student,  
Chernivtsi Trade and Economics Institute KNUTE, Chernivtsi

## **ACCOUNTING IN THE ARTIFICIAL INTELLIGENCE (AI) UNDER CONDITIONS**

### *Summary*

In the conditions of business processes and digital economy complex digitalization, artificial intelligence (AI) is one of the advanced modern technologies, the application of which is possible in almost any field of activity. Due to its ability to promote consumer innovation, this technology allows users to make faster and more informed decisions that turn out to be more efficient. However, the use of artificial intelligence (AI) in the banking sector was not widely recognized and slowed down until the advent of Internet banking. Recently, the banking sector has become an active adapter of artificial intelligence, researching and implementing this technology in a new way. Accordingly, the rational organization of accounting for intellectual assets in banks is an important factor in the current assessment of the banking institutions effectiveness in financial markets, which confirms the relevance of this study.

This article aims to study and to substantiate the peculiarities of artificial intelligence accounting and methods of information generalization about intellectual assets included into bank's assets.

In the process of research, general scientific theoretical methods of cognition were used: system analysis – to clarify the main categories of research; abstract-logical method – for the implementation of theoretical generalizations and conclusions about the current level of banking operations digitalization in artificial intelligence conditions, tabular method – for visual representation of typical accounts correspondence for fixing in the accounting system of intellectual assets banks, as well as forming schedules of all-Ukrainian AI technologies.

The article attempts to theoretically substantiate the concept of "artificial intelligence" (AI), in the process of which AI is considered through a systematic approach in its broadest sense. The existing options for the use of artificial intelligence in the banking sector, areas of investment in the development of artificial intelligence technologies in banking have been viewed, and based on the studying the author's forecast assumption as to the development vector of artificial intelligence technologies and machine learning usage in the banking services improvement through the prism of accounting has been formed. A description of the balance sheet accounts has been proposed for the use in accounting for intellectual assets transactions. The authors, on the example of banks, revealed the main aspects of the artificial intelligence (AI) use in their practice, as well as the features of accounting for such operations. The need for further improvement of synthetic accounting of intellectual assets for the rational organization of this part of the accounting cycle and the revival of information about these objects in the financial statements has been corroborated.

The peculiarities of artificial intelligence (AI) accounting in the Ukrainian banking sector system are comprehensively and widely substantiated, which allowed to objectively follow the synthetic accounting in this area, the methodology of accounts grouping in the Chart of Accounts of Ukrainian banks and the specifics of their reflection in the accounting system in the conditions of digital economy and complex business processes digitalization. Examples of the latest technologies application in banking institutions have been given. The advantages and disadvantages of artificial intelligence (AI) functioning have been considered.

Implementation of theoretical and practical justification of the need to interpret artificial intelligence as the main mechanism for accelerating accounting and finance transformation to today's conditions; directing

efforts to further digitalization and the transition of the country's population to online bank payments. Main peculiarities for the key areas of artificial intelligence use are as follows: rapid data analysis, staff training, interaction with customers, security and protection systems, risk assessment and ensuring demands compliance.

*Keywords:* artificial intelligence, bank, accounting, management, efficiency.

*Number of sources – 19; number of tables – 2.*

## References:

1. Kozlova, O.V. (2016). Advantages of expert systems over traditional systems of artificial intelligence. *Systemy ozbroiennia i vijs'kova tekhnika [Arms and military equipment systems]*, vol. 1 (25), pp. 104–106 (in Ukr.).
2. Lahman, K.V. (2021). Is it worth afraid of artificial intelligence? URL: [http://polit.ru/article/2012/12/16/ai\\_fears](http://polit.ru/article/2012/12/16/ai_fears) (Accessed 17 October 2021) (in Russ.).
3. The role of artificial intelligence in accounting (2021). URL: <https://buhgalter911.com/uk/news/news-1044623.html> (Accessed 29 September 2021) (in Ukr.).
4. What is artificial intelligence and how it works (2021). URL: <https://bit.ly/2Hnny1g> (Accessed 29 September 2021). (in Ukr.).
5. Artificial intelligence in accounting and finance (2021). URL: <https://bit.ly/33Ubyf6> (Accessed 02 October 2021) (in Ukr.).
6. Artificial Intelligence in Accounting (2021). URL: <https://bit.ly/2G2Q1Zj> (Accessed 02 October 2021) (in Ukr.).
7. About Copyright and Related Rights, Law of Ukraine of 14.08.2021. №3792-XII. 2021. URL: <https://zakon.rada.gov.ua/laws/show/3792-12#Text> (Accessed 29 September 2021) (in Ukr.).
8. On Approval Instructions for accounting of fixed assets and intangible assets of Ukrainian banks, Resolution of the Board of the National Bank of Ukraine from 01.03.2020. № z0040-06. URL: <https://zakon.rada.gov.ua/laws/show/z0040-06#Text>(Accessed 02 October 2021) (in Ukr.).
9. Lytvyn, N.B. (2017). *Finansovyj oblik u bankakh (u konteksti MSFZ) [Financial accounting in banks (in the context of IFRS)]*. Tsentru uchbovoi literatury, Kyiv, 676 p. (in Ukr.).
10. Emerging Technologies: The Competitive Edge for Finance and Operations (2021). URL: <https://www.oracle.com/a/ocom/docs/dc/esg-research-oracle-emergingtech-0220.pdf> (Accessed 02 October 2021).
11. Hasin, M.A. (2020). Artificial intelligence in banks. TADVISER. Gosudarstvo. Biznes. Tehnologii [Business. Technologies]. URL: <https://www.tadviser.ru/> (Accessed 02 October 2021).
12. The Future of Jobs Report 2018. The World Economic Forum (2018). URL: [http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2018.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf) (Accessed 29 September 2021).
13. Japan's banks plan 33,000 job cuts in digital downsizing. Finextra (2021). URL: <https://www.finextra.com/newsarticle/31267/japans-banks-plan-33000-job-cuts-in-digital-downsizing> (Accessed 29 September 2021).
14. Goldman Sachs Has Invested In A Company That Could Replace Analysts With Algorithms (2021). Business Insider. URL: <http://uk.businessinsider.com/goldman-sachsinvestment-in-kensho-2014-11> (Accessed 02 October 2021).
15. Baranova, A.O., Naumova, T.A., Kashperka, A.I. (2017). *Audyt [Audit]*. Kharkiv, 246 p. (in Ukr.).
16. Ernst & Young (2021). URL: [https://www.ey.com/en\\_ua](https://www.ey.com/en_ua) (Accessed 01 October 2021).
17. Mysyuk, V.O., Matkovskaya, D.A. (2021). Artificial Intelligence in the Audit. URL: <http://www.spilnota.net.ua/ua/article/id-3424/> (Accessed 02 October 2021) (in Ukr.).
18. AI in the banking sector: chat-bots, breaking up debts and fighting fraudsters. URL: <https://aiconference.com.ua/uk/news/ii-v-bankovskoy-sfere-chat-boti-vibivanie-dolgov-i-borba-s-moshennikami-96949>(Accessed 29 September 2021) (in Ukr.).
19. As banking institutions use AI in its activities. URL: <https://www.everest.ua/yak-bankivski-ustanovy-vykorystovuyut-shtuchnyj-intelekt-u-svoyij-diyalnosti/>(Accessed 01 October 2021) (in Ukr.).