

The Role of Technological Innovation in the Transformation of Accounting and Financial Processes

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Abstract. Technological innovation and digitization are partners that are dramatically changing accounting and financial processes in modern enterprises. This report explores the key role that modern technology is playing in the transformation of accounting and how it is creating new opportunities and challenges for the financial sector. The transition from traditional, manual accounting methods to the use of software solutions and cloud platforms does not sound like science fiction, as it did at the beginning of the last century, but a real trend. The benefits of this transition include greater efficiency, accuracy and increased ability to analyse financial data.

In addition, it looks at how artificial intelligence and machine learning are changing the way accounting operations are performed. These technologies are used to automate tasks such as categorizing transactions, predicting future financial trends, and optimizing business processes. The report also draws attention to the robotic processes in accounting that contribute to the elimination of routine tasks and the reduction of human error. Attention is paid to the impact of virtual and crypto-currencies in accounting and how they are counted and processed.

The report provides an overview of legislation and security related to the use of new technologies in accounting. Technological innovation is a key factor in the transformation of accounting and businesses that adopt it have the opportunity to significantly improve the management of their finances and achieve a competitive advantage in the market.

Keywords: *accounting, innovation, artificial intelligence, blockchain*

I. INTRODUCTION

In the current era of rapid technological change and digital transformation, accounting and financial processes are no exception. With the growth of information technology and the dynamic business environment, enterprises face the demands of more efficient, accurate and adaptive management of their finances. Technological innovation plays a key role in this transformation, changing the way accounting is done and how financial information is used. On the eve of the digital revolution and the increasing application of artificial intelligence, technology have no choice but to enter this sphere [1]. This exciting path to the future of accounting and financial processes is unthinkable without their use.

More and more businesses are using software products that use artificial intelligence and innovative technologies in their operations for more efficient work of accounting operations and making fewer mistakes. Enterprises that have implemented such technologies are very satisfied with the achieved results. Accounting software developers emphasize the implementation of new technologies to simplify and improve the manual work of accountants.

II. TECHNOLOGICAL INNOVATION

Technological innovation refers to the process of implementing and using new or improved technologies, products or services to improve production, commercial or service processes and outcomes. This type of innovation may involve creating new products, developing more efficient production methods,

improving business models, or using technology to solve challenges or achieve goals.

Technological innovation can be a key activity for the growth of the economy and the competitiveness of enterprises, as it can increase productivity, reduce costs, and improve the quality of products and services [2]. Examples of technological innovation include the creation of smartphones, the development of artificial intelligence, the implementation of robotic production lines, and the use of cloud technologies to manage data and applications.

Technological innovations in accounting and accounting software are essential for the transformation of this sector and the improvement of processes related to financial management and reporting. The use of cloud accounting software solutions is one of the most notable technological innovations in accounting. They allow companies to store and process their financial data online, which improves accessibility, security, and collaboration. Cloud solutions often come with automated features such as invoice processing, expense management, and integration with bank accounts [3].

The use of artificial intelligence and machine learning in accounting is a growing trend. These technologies can analyse large volumes of data, extract and summarize meaningful information, and automate many accounting tasks [4]. For example, artificial intelligence can be used to predict future financial trends, recognize incorrect transactions or optimize orders and investments. Robotic process automation is used to automate routine accounting operations. Robots can perform tasks such as processing invoices, making payments, balancing accounts, and even compiling financial reports without human intervention. This improves efficiency and reduces the likelihood of human error [5].

Blockchain technology was introduced in accounting to improve the transparency and security of transactions and accounting records. Cryptocurrencies, such as Bitcoin and Ethereum [6], provide new ways to track and record the value of assets and transactions, which can be important for businesses, investors and accountants. The processing of large volumes of data and their analysis are becoming increasingly important in accounting. Implemented data processing technologies and analytical tools can help to better understand financial data and trends and make real-time business decisions [7].

III. ELECTRONIC INVOICES

With the development of electronic invoices and data exchange standards, accounting processes have become faster and more efficient. This reduces invoice processing time and the risk of manual data entry errors. Electronic invoices (e-invoices) replace traditional paper or PDF invoices that often require manual data entry and manual auditing [8]. This process of manual entry and auditing can be laborious and prone to human error. With e-invoices, data are automatically transferred from one computer software to another, reducing the risk of errors and saving time. Electronic invoices are transmitted instantly and can be accessed for review and processing in real time. This allows accountants to keep a more up-to-date track of enterprise financial data and react more quickly to events and trends. E-invoices contain digital signatures and electronic traces that guarantee the integrity and authenticity of the data. This increases the security and transparency of transactions and can help meet legal requirements and regulatory standards. These invoices can be stored in digital format in the cloud or on servers, making them easily accessible and storable [9]. This makes it easy to archive and manage the data and makes it easily available for inspection, analysis, and reference in the future. Switching to e-invoices reduces the need to use paper and stamps, which reduces the negative impact on the environment. This aspect is important, both for businesses and for social and environmental responsibility.

IV. ARTIFICIAL INTELLIGENCE

Artificial intelligence provides significant potential to improve accounting and accounting software by increasing the efficiency and accuracy of financial processes. Artificial intelligence can be used to automate a number of routine accounting operations. This includes tasks such as processing invoices, recognizing data from bank statements, inventorying assets and liabilities, and compiling financial statements [10]. Products developed with the help of artificial intelligence can learn to recognize and process different types of documents and data with a high degree of accuracy and speed, which reduces the need for manual entry and auditing of information. Artificial intelligence uses data analysis algorithms and statistical models to predict future financial trends and risks. This can help businesses make better business decisions,

such as optimizing their investments, managing credit risks and predicting financing needs.

Artificial intelligence is used to analyse and monitor transactions to detect unusual and potentially fraudulent activity [11]. These kinds of systems can identify anomalies and inconsistencies in data and issue warnings about them, helping to prevent losses and protect organization assets. Artificial intelligence can be used to analyse customer data and provide personalized suggestions for products and services. This approach can encourage customers to more actively use the enterprise's services and direct marketing efforts to the most relevant target groups. By using AI-based chatbots and virtual assistants, businesses can provide better customer service and answer their questions about their financial data and transactions. In addition, their preferences will be understood and with the help of artificial intelligence, a product or service will be offered to satisfy them [12]. The customer will not waste time in unnecessary search, and a satisfied customer will make a free advertisement of the products or services that the enterprise offers. The importance of social networks and their impact on a company's marketing strategy should not be overlooked [13].

These applications of artificial intelligence provide significant benefits to accounting and accounting software [14]. They not only increase the efficiency of processes, but also improve the quality and accuracy of data and provide a greater degree of analysis and understanding on the financial aspects of the business.

V. BLOCKCHAIN TECHNOLOGY

Blockchain technology is a decentralized data storage system that provides security, transparency and immutability of information. It consists of a string of blocks, each block containing a group of transactions or data. Each block is linked to the previous block by a cryptographic link, creating a chain of blocks called a "chain of blocks" or "blockchain". Blockchain is not governed by a single central authority. Instead, information is stored and managed by a network of distributed computers called "nodes." This decentralized approach makes the system resilient to attacks and disruptions [15]. Cryptographic algorithms are used to create unique digital signatures for each block and for the link between blocks. This means that the data in each transaction is secure and can be verified and validated. All transactions and data on any blockchain are publicly available and visible to all

network participants. This provides a high degree of transparency and trust in the system. Once data are recorded on the blockchain, it cannot be changed or deleted without the consent of the majority of participants in the network. This ensures data integrity and immutability. Thanks to its authentication and validation system, Blockchain reduces the risk of fraud in transactions.

Blockchain technology offers several important applications and benefits in accounting and bookkeeping software. Blockchain provides a high degree of security and protection of financial data. Each block in the blockchain has a unique digital signature that is extremely difficult to forge or compromise. This makes blockchain data highly reliable and suitable for storing financial transactions and records. This quality of blockchain technology is extremely important when submitting documents signed with an electronic signature. It is guaranteed that the financial data is submitted by a specific person (legal or natural) and no one else can correct this information.

Blockchain provides a high degree of transparency as all transactions and data are visible to all participants in the network. This facilitates monitoring and verification of financial data and ensures that it is transparent and reliable. Once we have submitted and signed the documents with an electronic signature, they can be seen by all users of this data [16]. For example, when the financial statements are submitted to the commercial register, any user can check the statement of any enterprise, but if it has an electronic signature. This condition is necessary to monitor who has used this information and whether they wanted to misuse it.

The blockchain keeps the history of all transactions and data. This data cannot be deleted or changed without the consent of the majority of network participants. This ensures data immutability and reliability for the entire storage period. For example, we have made a transaction at the bank and it turns out that an error was made. In order to be able to reverse the payment order, it is necessary to notify the bank of the error made. Then the payment can be reversed, and if it has left the bank, permission from the other bank is also required.

The use of smart contracts, which are programs that execute conditions automatically when certain events occur, can optimize accounting processes. For example, a smart contract can execute an automatic payment

when the corresponding invoice is received or generate automatic tax returns on certain events. Blockchain can eliminate or reduce the need for intermediaries and transaction verifiers, as transactions can be directly and securely made between parties on the network [17]. This reduces costs and increases the efficiency of financial operations. We must not forget the saving of time and the automatic checking of the validity of the document. This helps avoid errors due to distraction or other reasons.

Blockchain can be used to store data about shareholders and their votes in companies. This method provides transparency and security and can be used to improve corporate governance and protect shareholder rights. Anyone can track when an offer was made, what the terms were, what decisions were made, etc.

Blockchain can be used to store and manage important accounting data and documents, such as financial statements, tax returns and contracts. This provides assurance of data integrity and backup, which is important for accounting and regulatory compliance purposes. Last but not least, Blockchain technology can revolutionize accounting and accounting software by providing more secure, transparent, and efficient ways to manage financial data and processes. It provides an opportunity to improve corporate governance, reduce costs and risks, and increase confidence in financial data and transactions.

VI. CONCLUSION

Technological innovations in accounting and accounting software play a key role in facilitating accounting processes, improving the accuracy and security of financial data, and increasing the operational efficiency of organizations. They allow accountants and finance professionals to focus on strategic analysis and decision-making instead of dealing with routine and difficult tasks.

In general, e-invoices significantly support accounting by optimizing processes, reducing the risk of errors, improving data accessibility and transparency, and saving time and resources. They are an important tool for modern organizations and accountants who want to be more efficient and accurate in managing finances and data.

Blockchain technology is used for a number of applications and fields, including cryptocurrencies such as Bitcoin, smart contracts, data and document

management, supply chain, and more. It is highly innovative and has the potential to change the way data and transactions are stored, shared and managed in the digital world.

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