Serbian Journal of Engineering Management
Vol. 10, No. 1, 2025
Original Scientific Paper/Originalni naučni rad UDC/UDK: 62:004.9]:657
Paper Submitted/Rad primljen: 15.11.2024.
Paper Accepted/Rad prihvaćen: 28.01.2025.
DOI: 10.5937/SJEM2501057D

Industrija 4.0 i neophodne kompetencije i znanja u savremenom okruženju na primeru računovodstvene profesije

Goran Dašić[1], Ana Anufrijev[2]

[1]Modern Business School, Belgrade
[2]Modern Business School, Belgrade

Industrija 4.0 i neophodne kompetencije i znanja u savremenom okruženju na primeru računovodstvene profesije

Apstrakt: Rad istražuje međusobnu vezu između znanja i veština neophodnih u kontekstu četvrte industrijske revolucije i računovodstvene profesije. Četvrta industrijska revolucija ili Industrija 4.0 karakteriše se brzim napretkom tehnologije, uključujući veštačku inteligenciju, automatizaciju, internet tokove i velike podatke, što direktno utiče na evoluciju računovodstvenih praksi. Kroz analizu uticaja ovih tehnoloških inovacija na računovodstvo, istražuje se kako se tradicionalne uloge računovođa transformišu, naglašavajući potrebu za lnovim znanjima i veštinama. Konačno, analizira se kako ova transformacija utiče na ulogu računovodstvene profesije u pružanju dodatne vrednosti organizacijama u dinamičnom poslovnom okruženju.

Ključne reči: Industrija 4.0, znanje, veštine, kompetencije, računovodstvo

Jel klasifikacija: O19, F63, M41

Industry 4.0 and the necessary competences and knowledge in the modern environment on the example of the accounting profession

Abstract: The paper explores the mutual relationship between knowledge and skills necessary in the context of the Fourth Industrial Revolution (4IR) and the accounting profession. The Fourth Industrial Revolution or Industry 4.0 is characterized by rapid technological advancement, including artificial intelligence, automation, Internet of Things, and big data, which directly influences the evolution of accounting practices. Through an analysis of the impact of these technological innovations on accounting, the study investigates how traditional roles of accountants are transforming, emphasizing the need for new knowledge and skills. Finally, it analyzes how this transformation affects the role of the accounting profession in providing additional value to organizations in a dynamic business environment.

Keywords: Industry 4.0, knowledge, skills, competetion, accounting.

Jel clasification:O19, F63, M41

1. Introduction

The fourth industrial revolution represents an era of accelerated technological progress that is transforming global business in all sectors. In this turbulent environment, the accounting profession is no exception, but faces the challenge of adapting to new technological paradigms in order to remain relevant and effective.

A key factor that determines the success of accountants in the era of the fourth industrial revolution is their ability to acquire and apply the advanced knowledge and skills that these technological advances require. This paper explores the deeper interrelationship between the knowledge and skills necessary in the context of the contemporary fourth industrial revolution and the accounting profession. The focus is on identifying key technological innovations such as artificial intelligence, automation, the Internet and big data analytics, which directly affect the evolution of accounting practices.

Special attention is paid to the transformation of the traditional roles of accountants and the need for new competencies is emphasized in order to respond to the challenges and take advantage of the opportunities brought by the Fourth Industrial Revolution.

It will further be analyzed how this transformation affects the role of the accounting profession in the context of providing additional value to organizations in a dynamic and digital business environment. Through a review of the relevant literature, this paper should provide insight into key strategies and guidelines for the education, training and professional development of accountants in order to successfully navigate through the challenges and opportunities brought by the era of the fourth industrial revolution.

The work should also open up new questions for the professional and scientific public.

2. Knowledge as the most important resource

In the 17th century, the famous English philosopher, lawyer, and statesman Francis Bacon proclaimed that "knowledge is power." Even then, he recognized the potential of knowledge to empower and improve individuals and societies. He believed that by acquiring knowledge and understanding the world, people could gain control over it and use its resources to their advantage. Bacon based his view on the belief that knowledge is not just theoretical or abstract, but also has practical implications. In other words, it enables individuals or societies to make informed decisions, solve problems, and achieve their goals.

Over time, knowledge became increasingly important and came to be regarded as a critical resource, alongside physical resources (material goods), capital, land, etc. The concept of knowledge is vast, encompassing many different components, and is constantly evolving. For this reason, there is still no single definition of knowledge. Various authors define knowledge in different ways and from different perspectives. From the perspective of epistemology, the branch of philosophy concerned with human knowledge, knowledge is the same as consciousness (Inkpen, Tsang, 2005). According to another group of authors, knowledge is equivalent to experience, or knowledge is seen as the sum of human cognitive experience. From the perspective of ontology, knowledge is a unique resource produced through the interaction between living and non-living matter. From an economic perspective, knowledge is viewed in relation to human capital and information at the microeconomic level, while at the macroeconomic level, it is mainly considered in relation to technological factors that underlie growth theory (Kešeljević, 2013).

Knowledge is traditionally defined as true, justified belief (Johansson, 2016). The Oxford Dictionary defines knowledge as (i) information, understanding, and skills acquired through education or experience, (ii) awareness of a particular fact or situation (knowledge of something), and (iii) information considered a resource that is used and delivered to industries instead of producing goods (Oxford Dictionary, 2024). According to the Merriam-Webster Dictionary, knowledge is "the fact or condition of knowing something with familiarity gained through experience or association" (Merriam-Webster, 2024).

The concept of knowledge is penetrating, evaluative, agentic, and objective (Vega-Encabo). Penetrating refers to the fact that we are introduced to knowledge from a young age. Evaluative refers to the idea that possessing certain knowledge implies meeting a particular standard or norm. The next characteristic assumes the existence of agents engaged in cognitive tasks and practices. Finally, objectivity is seen in the existence of an objective answer. Moreover, knowledge is crucial in many aspects of human life, as it allows for better decision-making, problem-solving, innovation, and progress. In modern society, knowledge is often viewed as a key resource for economic development, competitiveness, and technological advancement.

3.1. Types of knowledge

The breadth of the concept of knowledge has led to the differentiation of several distinct types of the same: (Whelan, 2024)

- Explicit knowledge
- Implicit knowledge
- Tacit knowledge
- Procedural knowledge
- Declarative knowledge
- A posteriori knowledge
- A priori knowledge

Explicit knowledge is knowledge that covers topics that can be easily documented (in writing) and shared on a large scale. Implicit knowledge refers to learned skills or knowledge. It is acquired by taking explicit knowledge and applying it to a specific situation. Tacit knowledge is intangible information that can be difficult to explain directly, such as things that are often "understood" without necessarily being spoken, and are often personal or cultural. This type of knowledge is informal, learned through experience over time, and usually relates to a particular situation. Declarative knowledge, also understood as propositional knowledge, refers to static information and facts specific to a given topic, which can be easily accessed and retrieved. Procedural knowledge focuses on the "how" behind how things work, and is demonstrated through one's ability to perform a task. A posteriori knowledge is a subjective type of knowledge gained from individual experience. This type of knowledge allows individuals to understand their strengths and weaknesses that arise from their experiences. A priori knowledge is the opposite of a posteriori knowledge and is acquired independently of experience or evidence. This type of knowledge is often shared through logical reasoning or one's ability to think abstractly.

3. Types and characteristics of skills

In the 21st century and the modern turbulent business market, both business operations and performing tasks require a certain level of skills. A set of skills is a list of abilities or capabilities to perform a specific task effectively. Historically, the term "skill" was used to refer to the expertise and technologies of craftsmen (Abdel-Wahab et al., 2005). Skills encompass everything from reading, precision in writing, communication, reasoning, problem-solving, to motivation and self-confidence, judgment, leadership, teamwork, customer orientation, self-control, and continuous learning (Payne, 1999). In short, a skill is an ability that enables an individual to apply their knowledge in practice in order to successfully complete tasks, solve problems, or perform specific activities. Skills are acquired both through learning and through experience.

More than fifty years ago, Knapp (1963) defined skills as a learned ability to achieve predetermined results with maximum certainty, often with minimal use of time or energy, or both. A skill is used to denote expertise developed through training and experience, which includes trade and craft skills gained through training, as well as high levels of performance found in many domains, such as professional practice, art, games, and athletics.

Understanding the difference between knowledge and skills is crucial for personal and professional development. Knowledge refers to the information and understanding acquired through learning and experience. This includes familiarity with facts, theories, and concepts about a subject. On the other hand, skills are the practical application of knowledge to perform tasks efficiently. They develop through practice and experience and involve the ability to apply knowledge in real-world situations.

While knowledge provides the foundation and understanding of concepts, skills enable individuals to execute tasks and achieve specific outcomes. For example, in a professional environment, knowledge of project management theories (knowledge) is different from actual project management (skill). Similarly, understanding coding principles (knowledge) differs from writing programs (skills).

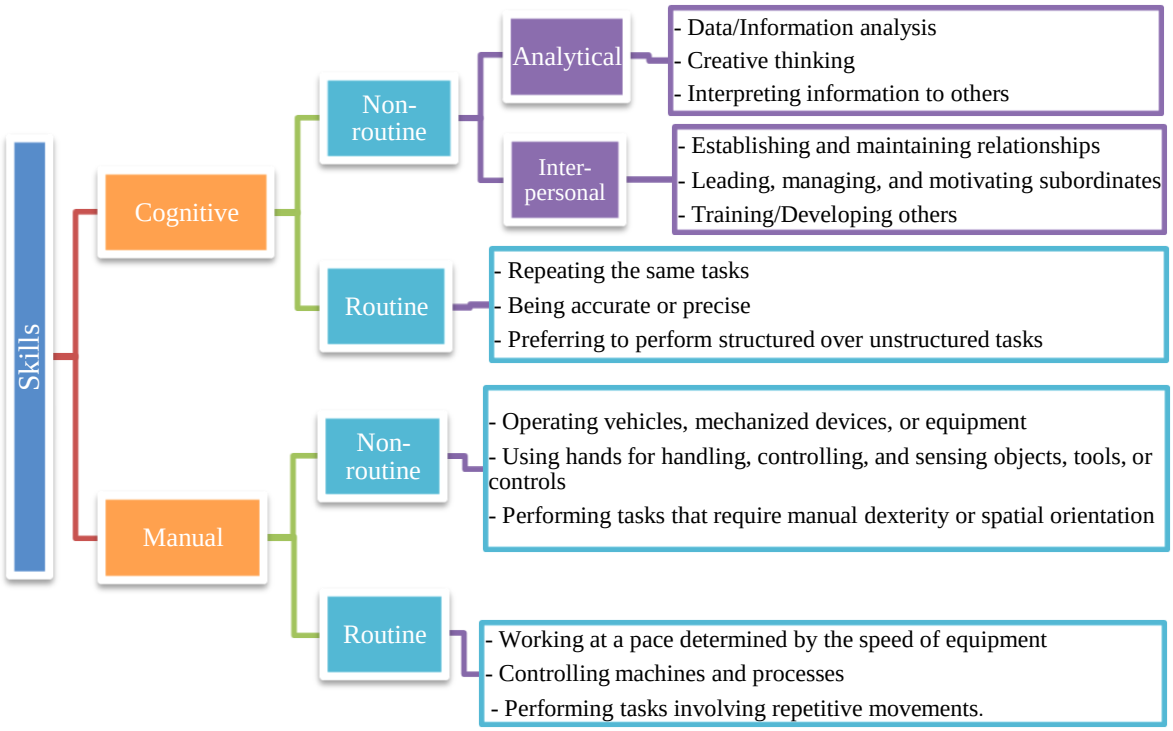
Both knowledge and skills are important. Knowledge provides the theoretical framework, while skills turn that knowledge into action. Employers often seek candidates who not only possess relevant knowledge but also demonstrate practical skills that can contribute to the organization's goals.

In short, knowledge is what you know and understand, while skills are what you can do with that knowledge. Both are essential components of competence and success in various aspects of life.

The complexity of today's world, among other things, is reflected in hyperconnectivity. In such a world, possessing a range of different skills is of vital importance for the survival and success of every individual, as the ability to define, develop, and use one's skills is considered a crucial part of personal and professional affirmation. In this context, it is necessary to make a distinction between different types of skills. Today, the professional literature offers various classifications of skills.

The classification proposed by the World Bank (2013) divides all skills into two main groups: cognitive and manual. With regard to their use, both groups are further subdivided into two subgroups: non-routine and routine skills. Cognitive non-routine skills can be analytical and interpersonal. A detailed typology of skills and sub-skills applied by the World Bank, as well as the characteristic activities, is presented in Figure 1. This success largely depends on acquiring and maintaining both soft and hard skills.

Figure 1: Types of skills and sub-skills



Source: (Adapted from Aedo et al., 2013)

Another typology commonly encountered in the literature is based on the idea that skills are related to an individual's performance level on a specific task or their ability to effectively perform a job, which can be divided into technical elements and behavioral elements (Noe et al., 2015). Technical elements represent hard skills, while behavioral elements constitute soft skills. Hard and soft skills are key components of a well-rounded skill set that individuals use in performing their professional activities. Understanding the differences and synergy between these two types of skills is essential for personal and professional development.

Hard skills refer to specific, teachable abilities that can be quantitatively measured and defined. These skills are typically acquired through formal education, training programs, certifications, and practical experience. Examples of hard skills include: (Indeed, 2024)

- Analytical skills – skills related to data analysis and management: data collection, data analysis, summarization and categorization, reporting, data searching, data visualization, web analytics.
- Sales skills – skills focusing on sales and its aspects, including: sales presentations and demonstrations, product knowledge, client engagement, active listening, conflict management, sales presentations, product development, business communication.
- Marketing skills – marketing is a broad field that requires mastery of many skills: search engine optimization (SEO), copywriting, social media, social media marketing, content management systems.
- Technological skills – these require advanced knowledge and certifications. Examples include: machine learning, natural language processing, HTML, Javascript, CSS, blockchain.
- Computer skills – these refer to knowledge of working with computers and include: operating system optimization, word processing, creating presentations, reporting, communication across different platforms.
- Financial skills – areas affecting the development of financial expertise include: financial modeling, financial systems, data processing, cost analysis, cost reduction, forecasting, risk analysis.
- Project management skills – common project management skills: project planning, business analysis, scheduling, goal setting, delegating, project control.
- Language skills – proficiency in foreign languages.

In contrast to hard skills, soft skills are generally not acquired through formal education and training, and often require dedication, self-reflection, and self-improvement (Lamri, Lubart, 2023). These skills are less tangible and often harder to quantify compared to hard skills. Soft skills are affective abilities that a person possesses in addition to their ability to master formal intellectual and technical knowledge of a discipline, which helps them be accepted in social and work environments. Soft skills are often referred to as "core skills" in the literature. (Ibrahim et al., 2017)

Core soft skills include: (Craig, Stewart, 2024)

- Listening – receiving, retaining, and processing information or ideas.
- Speaking – verbal communication of information and ideas.
- Problem-solving – the ability to find solutions to situations or challenges.
- Creativity – using imagination and generating new ideas.
- Staying positive – the ability to use tactics and strategies to overcome failure and achieve goals.
- Setting high goals – the ability to set clear, tangible goals and create a robust path to achieve them.
- Leadership – supporting, motivating, and developing others to achieve a common goal.
- Teamwork – working collaboratively with others to achieve a common goal.

Soft skills are crucial for nurturing a positive work environment, building strong relationships, and increasing overall productivity and morale within an organization. They are often considered as important as hard skills, especially in leadership roles and positions that involve client interaction, where interpersonal skills play a significant role.

While hard skills demonstrate technical competence, soft skills complement them by enhancing interpersonal effectiveness and the overall workplace dynamic. However, competence should be viewed as a broader concept that encompasses abilities, knowledge, skills, attitudes, and experiences that a person must possess to successfully perform tasks or functions in a given context. Competence also represents the ability to apply relevant skills and knowledge in specific situations.

4. Knowledge and skills in Industry 4.0 and connection with competencies in the field of accounting

Industry 4.0 refers to a smart factory where cyber-physical systems monitor physical processes and create a virtual model of the physical world that aids in decentralized decision-making.

The term Industry 4.0 originated from a German government project for a high-tech strategy aimed at promoting the computerization of factories. Industry 4.0 is synonymous with the Fourth Industrial Revolution.

Industry 4.0 covers three main aspects (Petrillo et al., 2018):

1. Digitization and increased integration of vertical and horizontal value chains: development of customized products, digital customer orders, automatic data transfer, and integrated systems for customer support.
2. Digitization of product and service offerings: complete descriptions of products and related services through intelligent networks.
3. Introduction of innovative digital business models: a high level of interaction between systems and technological capabilities leads to the development of new and integrated digital solutions. The foundation of the Industrial Internet is integrated system accessibility and control across the enterprise in real-time.

The defining characteristic of the Fourth Industrial Revolution is the blurring, and in some cases almost complete elimination, of boundaries between the physical, digital, and biological worlds (Dašić, Anufrijev, 2022).

Above all, Industry 4.0 represents the integration of intelligent digital technologies into manufacturing and industrial processes. It encompasses a set of technologies based on digitization, including the Internet of Things, artificial intelligence, big data, nanotechnology, and robotics. Industry 4.0 in manufacturing processes employs new forms of interaction between machines and humans using a combination of old and new technologies categorized into three groups (Javeed, 2023):

- Hardware: robotics, cobots (collaborative robots), 3D printers;
- Software: big data, artificial intelligence; and
- Connectivity: Internet of Things, actuators, and sensors.

The transition to Industry 4.0 provides numerous opportunities but also highlights the knowledge and skill gaps that must be overcome. In the White Paper, Roland Berger (2016) states that qualifications and skills are divided into "high focus" and "low focus" categories. The segment of important qualifications and skills for Industry 4.0 is further divided into sub-segments (Table 1.).

Table 1: Knowledge and Skills for Industry 4.0

Knowledge of ICT	Ability to work with data
– Basic knowledge of information technologies. – Ability to use and interact with computers and smart machines such as robots, tablets, etc. – Understanding of communication between machines, IT security, and data protection.	– Ability to process and analyze data and information obtained from machines. – Understanding of visual output data and decision-making. – Basic statistical knowledge.
Technical konowledge	**Personal skills**
– Interdisciplinary and general knowledge of technology. – Specialized knowledge of manufacturing activities and processes on-site. – Technical knowledge of machinery for performing activities related to maintenance.	– Adaptability and ability to change. – Decision-making. – Teamwork. – Communication skills. – Changing mindset for lifelong learning.
More focus	Less focus

Source: (Aulbur et al., 2016)

A detailed overview of the competencies is provided in Table 2.

Table 2: Example of a skill set for Industry 4.0 in relevant academic and research studies

References	Skills/Competencies/Capabilities	
Klement, Strambach, 2019	– Learning to think with the help of software – Able to understand network structures – Learn how to master big data technology – Learn how to work with different data formulas – Understands and masters the process or implementation of work activities – Learn to take on more responsibility in any job – Learn to be communicative and cooperative workers – Learn how to have high innovation and initiative – Focus on developing sensitivity to the environment and social life through technological development and innovations	
Rozmirez-Montoya et al, 2022	– Knowledge of information and production technology – Knowledge of software structures – Understanding the function of hybrid exercises – Experience in mechatronics – Sharpening skills in the social domain of coworker relations – Sharpening abilities in software usage – Ability to change programs – Capable of performing tasks in a measurable way – Able to make decisions – Expert in their field for at least 2 years – Ability to use the internet both manually and with data – Broad and focused knowledge – Expert in processes and technology usage – Have an optimistic spirit – Able to read and assess the use of data on a device or machine in use	
Passig, Cohen, 2013 Sloane, 2011	– Digital skills in the areas of: Industry 4.0 programming and software engineering, data science, data analysis and big data, visualization, Internet of Things, IT architecture, security – Project coordination skills: product management, multi-project management, supply chain and support services, logistics – Soft skills: creativity, design, innovation, leadership, teamwork	
Xiaoguang, 2022	Employees: – Technical skills – Problem-solving ability – Ability to use IT systems – Analytical capacity – Communication – Lifelong learning – Technical and managerial skills – Ability to work in a team – Openness to change – Openness to digitalization – Openness to automation	Managerial staff: – Lifelong learning – Social media skills – Technical and managerial skills connection – Ability to work in a team – Openness to change – Openness to digitalization – Striving for continuous improvement – Participation – Openness to automation – Creativity – Creative thinking – Self-discipline – Self-management

Source: (Adapted fromGajdzik, Wolniak, 2022)

In the environment characteristic of Industry 4.0, the synergy between knowledge and skills is essential for career success and advancement. Employers often look favorably upon individuals who possess a balance between these two components, as they can effectively contribute to both individual tasks and collective team efforts. Although the connection between the Fourth Industrial Revolution and accounting may not be immediately obvious, it is constantly influencing the field of accounting. The characteristics of Industry 4.0 directly impact accounting in several ways:

1. Automation of processes
2. Analytical skills
3. Blockchain technology
4. Artificial intelligence
5. Risk management

The principles of work that were applied in the past have largely remained unchanged, but the work of accountants has significantly transformed with the development of information technology, making it necessary to continuously monitor and adapt to ongoing changes. The use of accounting software has greatly facilitated and advanced the work of accountants (Šarić and Banda, 2023). Today, electronic documents are in use, accounting is performed through accounting programs, and tax and contribution payments are processed electronically. Accounting is increasingly being automated with the help of software that can independently perform routine tasks such as posting transactions, preparing reports, or calculating salaries. This frees accountants to focus on analytical and strategic activities.

Big data enables accounting to analyze vast amounts of information to identify patterns and trends that could impact the financial operations of an organization. From the perspective of forensic accounting, for example, Anufrijev (2024) points out that forensic accountants are increasingly expected to possess analytical skills, but also specialized and expert knowledge in areas such as the fundamentals of accounting, management accounting, economics, banking, law and legal regulations, taxation, criminology, and certain investigative actions. The goal is to provide quality and undisputed information and/or valid material evidence through forensic tools and techniques, which would be crucial for objective conclusions and judicial verdicts in court proceedings. Forensic accountants are often registered as permanent court experts in this important field.

When it comes to blockchain, it has the potential to revolutionize the way financial transactions are recorded and verified, reducing the need for intermediaries and increasing transparency. According to Horvatić and Tafra (2022), the possibilities for applying blockchain technology are numerous: from protocols for recording and storing data on business events to the digitization of key business operations (e.g., supply chain management). Artificial intelligence can help predict future financial outcomes, optimize tax strategies, or even detect fraud. By using AI to analyze processes and controls in organizations, various tools can identify weaknesses that might lead to potential fraud (Anufrijev and Marjanović, 2024). Given the sophisticated information technologies used in Industry 4.0 organizations, this interconnectedness is crucial, as the development of AI increases the number, volume, and technological complexity of fraudulent activities, which are susceptible to rapid transformation and change.

Accounting can leverage the technologies of the Fourth Industrial Revolution to better manage risks, providing real-time information and analysis to aid in decision-making. According to Anufrijev (2023), a key component of risk management is assessing the impact of external elements affecting the business environment, such as new market competition and the total number of competitors in a given industry. Risk indicators might include the number of failed transactions, turnover rates per employee, and the frequency and/or severity of errors and omissions (Živković, 2019). All these changes require accountants and financial experts to be ready to adopt new technologies and adjust to new ways of working.

Thus, the Fourth Industrial Revolution directly impacts the development and transformation of accounting, making it more efficient, accurate, and capable of providing additional value to businesses. Competencies and knowledge in the context of the accounting profession refer to key traits, abilities, or characteristics required to perform accounting tasks.

Knowledge here implies an understanding of theoretical principles and practical skills that accountants must possess to carry out their duties efficiently. In the accounting profession, this includes:

1. Technical knowledge – A deep understanding of accounting standards, laws, regulations, and methods, such as double-entry bookkeeping, balance sheet analysis, and understanding financial statements.
2. Financial analytics – Skills in analyzing and interpreting financial data to make correct business decisions. Additionally, there is growing demand for predictive analytics, which requires competencies in using predictive models and analysis to forecast financial outcomes, cash flows, and other key business parameters.
3. Accounting software and technology – Mastery of accounting programs and tools, as well as tools for automating and robotizing accounting processes.
4. Regulatory compliance – Understanding and applying local and international accounting standards and related laws.
5. Ethics and professionalism – Upholding high ethical standards, integrity, and trust, which are crucial to the accounting profession.
6. Communication and collaboration – Skills in communicating with clients, management, and other stakeholders to ensure clarity in financial information and recommendations.

Furthermore, given the rapid pace of technological development, accountants must also possess the ability to manage organizational changes and effectively implement new technologies. Therefore, the era of the Fourth Industrial Revolution has presented accounting with the need for diverse knowledge and skills to effectively respond to the changes brought by advanced technologies. Today, the accounting profession is expected to demonstrate high levels of technological literacy, analytical skills, data management capabilities, software proficiency, an understanding of business models, strong communication and collaboration skills, and a high standard of ethical and moral conduct.

The foundation for possessing these skills necessary for the modern accountant is knowledge, but it also includes a permanent readiness to upgrade that knowledge, enabling accountants to adapt more quickly to new requirements and harness the benefits of technological innovations of the Fourth Industrial Revolution in accounting practice.

5. Results and Discussion

Discussing the findings, accounting not only adapts to the changes brought about by the Fourth Industrial Revolution but actively leverages these changes as an opportunity for improvement and growth. The key challenge remains balancing traditional accounting principles with new technological possibilities. It is important for educational institutions and professional organizations to adjust their curricula and training programs to equip future generations of accountants to manage effectively in the digital age.

Furthermore, the ethical aspects of using technology, such as data privacy and security issues, require careful consideration and regulation to ensure the integrity of financial information and public trust.

6. Conclusion

In the era of Industry 4.0, rapid technological advancements are setting new demands for the knowledge and skills that are crucial for success in various professions and sectors. Artificial intelligence, automation, the internet, and big data analytics are transforming the way we do business and interact with technology.

Key knowledge in this era encompasses an understanding of advanced technological systems and their application in everyday business processes. This includes the ability to analyze and interpret large volumes of data in order to make informed decisions. It is also important to develop skills in using specialized software solutions to effectively perform business functions.

The Fourth Industrial Revolution represents an inevitable transformation for the accounting profession as well, requiring the adaptation of knowledge and skills to take advantage of advanced technologies.

The key challenge for the future of accounting lies in the ability to integrate traditional principles with new technological capabilities, enabling accountants to become not only a reliable source of financial information but also strategic partners in making critical business decisions. Ongoing education and the adjustment of professional practices are essential for success in the dynamic business environment of Industry 4.0, ensuring that accounting plays a central role in supporting organizational growth and innovation in the digital era. Continuous professional development should be an integral part of every accountant's career, ensuring competitiveness and the ability to make strategic business decisions. The accounting profession in the future will require permanent adaptation and integration of new knowledge and skills, which will ensure its survival and growth in a globalized business world.

Literature

1. Abdel-Wahab, M.S., Dainty, A.R.J., Ison, S.G., Bryer, L. and G. Hazlehurst (2005). Productivity, skills, and training: a problem of definition?, Proceedings of the Second Scottish Conference for Postgraduate Researchers of the Built and Natural Environment (PRoBE), pp. 207-215
2. Aedo, C., Hentschel, J., Luque H., Moreno, M. (2013). From Occupations to Embedded Skills - A Cross-Country Comparison - Background Paper to the 2013 World Development Report, The World Bank, Development Economics Office of the Senior Vice President and Chief Economist August
3. Anufrijev, A. (2023). Overview of strategic management accounting methods in the function of strategic financial planning. *REVIZOR*, *26*(104), 73-84.
4. Anufrijev, A.(2024) Potrebe za jačanjem uloge forenzičkog računovodstva u savremenim poslovnim sistemima u cilju brzog otkrivanja prevara *Naučni skup*, 205-217
5. Anufrijev, A., & Marjanović, N. (2024) Aspects of foransic accounting for detecting financial fraud .2nd Link IT and ED Tech
6. Aulbur, W.; Arvind, C.J.; Bigghe, R. (20216). Skill Development for Industry 4.0. WHITEPAPER-BRICS Skill Development Working Group—FICCI, Roland Berger GMBH.
7. Breivik, G. (2016). The role of skill in sport. *Sport, Ethics and Philosophy*, 10, 222-236.
8. Craig, R., Stewart, G. (2024). *Essential Skills Tracker 2024*, Skills Builder Parnership
9. Dašić, G., Anufrijev, A. (2022). Zelena ekonomija kroz prizmu digitalne transformacije, Ecologica, Vol. 29 (2022) No. 107, p. 331–336. https://doi.org/10.18485/ecologica.2022.29.107.5
10. Gajdzik, B., Wolniak, R. (2022). Smart Production Workers in Terms of Creativity and Innovation: The Implication for Open Innovation, *Journal of Open Innovation: Technology, Market, and Complexity* 8, no. 2: 68. https://doi.org/10.3390/joitmc8020068
11. Horvatić, H., & Tafra, V. (2022). Identifikacija komercijalne blockchain tehnologije te izazovi i opasnosti primjene kroz konkretne primjere. *Obrazovanje za poduzetništvo-E4E: znanstveno stručni časopis o obrazovanju za poduzetništvo*, *12*(2), 105-120.
12. Ibrahim, R., Boerhannoeddin, A. and Bakare, K.K. (2017), "The effect of soft skills and training methodology on employee performance", *European Journal of Training and Development*, Vol. 41 No. 4, pp. 388-406. https://doi.org/10.1108/EJTD-08-2016-0066
13. Inkpen, A.C. and Tsang, E.W.K. (2005) Social Capital, Networks and Knowledge Transfer. *Academy of Management Review*, 30, 146-165. https://doi.org/10.5465/amr.2005.15281445
14. Islam, M.A. (2022). Industry 4.0: Skill set for employability, *Social Sciences & Humanities Open*, Volume 6, Issue 1, 2022, 100280
15. Javeed, I. (2023). The Impact of Industry 4.0 on Employability and the Skills Required in India, *Global Economics Science*, Special Issue "Industry 4.0, Skills Gaps and Labor Market" DOI: https://doi.org/10.37256/ges.4320231593
16. Johansson, LG. (2016). Knowledge. In: Philosophy of Science for Scientists. Springer Undergraduate Texts in Philosophy. Springer, Cham. https://doi.org/10.1007/978-3-319-26551-3_2
17. Kakabadse, N.K., Kakabadse, A. and Kouzmin, A. (2003) Reviewing the Knowledge Management Literature: Towards Taxonomy. Journal of Knowledge Management, 7, 75-91.https://doi.org/10.1108/13673270310492967
18. Knapp, B. (1963). Skill in sport: the attainment of proficiency. Routledge.
19. Kešeljević A. (2013). Understanding of Knowledge from Economist's Perspective, *Journal of Knowledge Management, Economics and Information Technology*, Vol. III, Issue 3, June

20. Lamri J, Lubart T. (2023).Reconciling Hard Skills and Soft Skills in a Common Framework: The Generic Skills Component Approach. *Journal of Intelligence*. 11(6):107. https://doi.org/10.3390/jintelligence11060107
21. May, R.C., Puffer, S.M. and McCarthy, D.J. (2005) Transferring Management Knowledge to Russia: A Culturally Based Approach. *Academy of Management Executive*, 19, 24-35.
22. Merriam Webster dictionary (2024). opširnije na: https://www.merriam-webster.com/dictionary/knowledge
23. Noe, R.A., Hollenbeck, J.R., & Gerhart, B. (2015). *Fundamental of Human Resource Management*. New York: McGraw-Hill.
24. Oxford Advanced Learner's Dictionary (2024) opširnije na: https://www.oxfordlearnersdictionaries.com/definition/english/knowledge?q=knowled
25. Payne, J. (1999) All things to all people: Changing perception of 'Skill' among Britain's policy makers since the 1950s and their implications. SKOPE Research Paper No.1, Warwick University
26. Šarić, D., & Banda, I. (2022) Uticaj digitalizacije poslovanja na računovodstvene procese, *Evropska revija* 67-78.
27. Vega-Encabo, J. (2016). The Concept of Knowledge: What is It For?, Disputatio, Vol. VIII, No. 43
28. Whelan, M. (2024). The 7 Types of Knowledge: Definitions, Examples & More, opširnije na: https://www.getguru.com/reference/types-of-knowledge, posećeno 28.05.2024. godine.
29. Živković, A. (2019). Kvalitet upravljanja operativnim rizicima u finansijskim institucijama. *Akcionarstvo*, *25*(1), 5-32.