Investigation and Analysis of Attitudes Towards the Implementation of Artificial Intelligence in Internal Business Processes

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Abstract. **The research focuses on the attitudes and readiness of organizations to integrate Artificial Intelligence (AI) technology into their internal business processes. The present study aims to determine how organizations perceive technological innovations related to AI. Specific goals include measuring the degree of readiness and acceptance of technological innovations by organizations, as well as identifying factors influencing the success or failure of this process. The main object is AI technology and its potential for enhancing the efficiency of internal business process management. The significance of this analysis is threefold, providing valuable information on current trends and challenges in internal business processes and their transformation under the influence of AI. In the course of the study shall be justified the thesis that AI technology holds significant potential for optimizing internal business processes, that is not yet fully realized and utilized due to various obstacles. Overcoming these obstacles is possible through individualized strategies, the establishment of ethical standards, active training, and other measures that contribute to the successful integration of artificial intelligence into organizational dynamics. The methodology includes a comprehensive literature review combined with the use of questionnaire surveys, Gap analysis and SWOT analysis. The main conclusions are related to the diversity in motivations among surveyed companies, necessitating differentiated strategies. Improving operational efficiency and customer service, and enhancing competitiveness, transpire as driving power for AI implementation. Evaluating attitudes reveals differences in readiness among business organizations, resp. some of them actively taking steps to implement AI, while others are still exploring possibilities or are uncertain about the overall approach to adopt. The recommendations for organizations are multifaceted. Constantly exploring new technologies and updating approaches are necessary for a sustainable transition to more intelligent business process management.**

Keywords: Artificial Intelligence (AI), internal business processes, operational efficiency, technological innovations

I. Introduction

Artificial Intelligence (AI) is a field in computer science focused on creating systems and programs that exhibit intelligent behavior similar to humans. AI utilizes methods and algorithms from various branches of computer science, including machine learning, natural language processing, computer vision, and robotics, to enable systems to perform tasks that typically require human intelligence. Simultaneously, the technical perspective involves researching methods to improve the efficiency, speed and accuracy of AI systems, as well as their adaptability to different scenarios and conditions.

In the modern business world, the rise of AI represents a significant milestone in technological evolution, reshaping the dynamics and efficiency of internal business processes. This transition towards digital transformation requires organizations to rethink their strategies and explore the opportunities that AI offers for optimizing activities.

The implementation of AI holds the promise of substantial advantages, such as increased efficiency, reduced decision-making time and enhancement of overall operational productivity. The combination of machine learning algorithms, big data processing and automation opens new horizons for companies, directing them towards more intelligent and dynamic business models.

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The interest in implementing AI in internal business processes originates not only from the potential for operational optimization but also from improved adaptability to changing market conditions and competition. However, this process requires not only technical but also organizational transformations, taking into account its impact on workplace culture, human resources and ethical aspects.

The research focuses on the trends and challenges associated with the implementation of AI in internal business processes, the attitudes of participants in this process and the factors influencing the acceptance and successful integration of AI. For the purposes of analysis, a detailed review of the current literature is conducted and data collection methods are systematically employed.

The recommendations for organizations are multifaceted. Strategic planning is crucial, requiring the development of specific strategies in compliance with the goals and needs of the company. Ensuring the necessary infrastructure and smooth integration with existing systems are of critical importance. Additionally, companies should pay serious attention to ethical and legal issues related to AI use and develop compliance strategies. Communication and employee participation are key to reducing resistance and ensuring successful adaptation.

II. THEORETICAL FRAMEWORK OF THE RESEARCH

Artificial Intelligence offers a brief overview of the significance of the field, yet it falls short in exploring its nuances comprehensively. While it acknowledges machine learning and deep learning, pivotal components of AI, it could enhance its coverage by delving into additional critical areas such as natural language processing, computer vision and robotics. Expanding on these aspects would provide readers with a more comprehensive understanding of the diverse domains within AI [1].

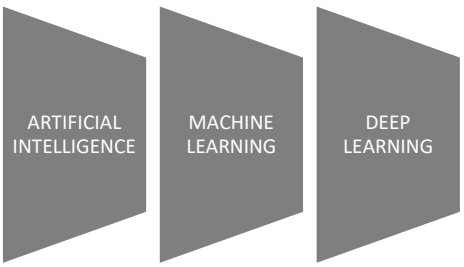

Fig. 1. The concept of Artificial Intelligence.

The literature about the integration of Artificial Intelligence (AI) into internal business processes abounds with insightful analyses and research findings. However, while acknowledging the escalating technological capabilities and the expanding role of AI within enterprise operations, it's imperative to critically assess the challenges and limitations surrounding its successful implementation. Despite the abundance of research, there remains a gap in understanding the nuanced complexities and practical barriers encountered during AI adoption. The academic and business communities should investigate deeper into not just the potentials, but also the risks of integrating AI, considering factors such as organizational readiness, data privacy concerns, ethical implications and the need for human-AI collaboration [2]. Only through such critical examination can a deeper understanding of AI implementation challenges emerge, promoting more informed decision-making and effective strategies for leveraging AI in organizational contexts.

The literature review emphasizes the potential benefits of automation and process optimization in enhancing operational efficiency and reducing task execution time [3] – [9]. However, while these sources provide valuable insights, a critical analysis reveals a tendency to focus predominantly on the advantages of AI implementation, potentially overlooking associated challenges. For instance, there may be limited exploration of the potential disruptions to existing workflows or the need for significant organizational restructuring to accommodate AI technologies.

Furthermore, while addressing change management and organizational adaptation to innovations including AI [10], there's a notable absence of in-depth discussions on specific strategies or frameworks for effectively managing these transitions. The literature may lack practical guidance on navigating the socio-organizational complexities inherent in adopting AI, potentially leaving organizations unprepared to address these challenges.

Regarding ethical considerations about AI in business [11] – [12], the literature provides valuable insights into security concerns, data protection and trust-related issues. However, a critical analysis reveals a need for more comprehensive discussions on dealing with these ethical risks in practice. This could involve exploring regulatory frameworks, industry standards or ethical guidelines that can help organizations navigate the ethical dimensions of AI implementation more effectively.

Overall, while the reviewed literature offers valuable contributions to understanding the opportunities and challenges of AI adoption in business settings, there is a need for deeper critical analysis and practical guidance to support organizations in navigating these complexities successfully.

The literature review highlights advancements in machine learning for business process management but may overlook practical implementation challenges and prejudices [13] – [15]. While discussing methodologies for big data processing, it may lack depth in addressing limitations and ethical considerations. Additionally, there's limited examination of human-centric aspects, such as user experience and socio-cultural impacts. A more critical analysis is needed to understand the full scope of opportunities and risks associated with leveraging machine learning in organizational settings.

The implementation of AI [16] – [20], especially in internal business processes, represents a key stage in the technological transformation of companies. The analysis of this process reveals a series of crucial aspects and challenges that are of critical importance for the successful integration and adoption of the technology by organizations, as outlined in Table 1.

1) Automation of routine and resource-intensive tasks, the ability for faster decision-making, and processing large volumes of data are considered key

technological advantages, creating opportunities for optimizing work processes and improving operational efficiency. *2)* Remarkable a balance between AI and human capacity, i.e. integrating automation while preserving human skills and a creative approach. Challenges include optimal role distribution, staff training, and creating an organizational culture that supports collaboration between technology and people. *3)* The implementation of AI necessitates an urgent focus on enhancing security and data protection, including developing effective cybersecurity measuresto prevent misuse and ensure compliance with regulatory requirements. *4)* The research emphasizes the importance of ethical aspects related to the use of AI in internal business processes. Questions of transparency, fairness and accountability must be precisely addressed to avoid potential ethical issues.

Scientific research in the field of AI focuses on a broad spectrum of ethical issues arising from the rapid development and widespread application of the technology. One key aspect explored in the literature is the transparency of AI algorithms and decisions, as they are often complex and challenging to explain. Particularly within the domain of machine learning (ML), studies underscore the need to understand causal relationships in algorithms to ensure fairness and avoid discrimination.

TABLE 1 THE LEADING CHALLENGES IN IMPLEMENTING AI IN COMPANIES

Guidelines	
1) Technological advantages and opportunities [18];	*2) Integration of human capacity and AI* [16], [17];
3) Security and Data protection [20];	*4) Ethical considerations and responsibility* [19], [20];
5) Training and Overcoming Resistance [16].	

Another crucial aspect is the ethical responsibility in implementing autonomous systems and robots. Research concentrates on how technologies can be programmed and managed ethically to minimize potential risks and losses. In the field of personal data, scientific studies pay attention to the challenges of balancing the benefits of AI with the rights to personal privacy. Developing mechanisms for protecting privacy and aligning with regulatory frameworks are identified as key factors.

The ethics of technologies emphasize the need for an ethically oriented approach in the design and implementation of AI, one that combines technological progress with respect for the rights and values of society.

5) The integration of new technologies often faces resistance from personnel. Therefore, the analysis focuses on the importance of staff training and building strategies to overcome resistance, promoting participation and collaboration.

This systematic analysis establishes the foundation for a more detailed examination and the formulation of strategies for successful technological transformation.

III. RESEARCH METHODOLOGY

The research is conducted among 237 small, medium and large business organizations (categories of business) from Central and Eastern Europe to obtain a broad and representative understanding of their perceptions and attitudes towards the implementation of AI in internal business processes. The choice of the survey method is justified by the need to gather a large volume of data while simultaneously preserving the possibility of individual and contextualized responses. The survey questionnaire is diverse, comprising 18 questions that combine open-ended and closed-ended formats. Closed-ended questions provide quantitative data and easy standardization during analysis, while open-ended questions contribute detailed context and allow participants to express their individual opinions. Themes include technological advantages and challenges, social and organizational aspects, data security, ethical issues and opportunities for staff training. Surveys are distributed via email to the pre-selected companies from the sample.

In addition to the survey methodology, we chose to apply Gap Analysis within the AI research. It is a comprehensive and strategically justified approach. Gap Analysis is a powerful tool that reveals the differences between the current state and the desired future in the context of implementing technological innovations. SWOT Analysis was also conducted to identify the distinguishing characteristics of the future-ready company to the highest possible extent.

IV. RESULTS AND DISCUSSION

a. Establishing strategic motives of a company to undertake actions (activities) in implementing AI in business process management

AI is regarded as a business improvement tool to identify specific advantages of using AI and assess their significance. The results have found expression in (Fig. 2).

The data gathered from authors' own research reveal: √ **Enhancement of operational efficiency** (EOE). This may involve optimizing production processes, increasing productivity and reducing task execution time. √ **Improvement of predictions and decision-making** (IPD-M). The potential for more accurate predictions and intelligent decision-making using AI ignites significant interest. This aspect can contribute to the strategic direction of the business. √ **Increasing competitiveness** (IC). This approach may involve innovations in products, a better understanding of the market and quick adaptation to changing conditions. √ **Improvement of customer service** (ICS). The focus on enhancing customer service through AI reflects the endeavor for more personalized and efficient customer interactions. √ **Does not intend to use** (DNIU). Reasons for not using Artificial Intelligence include a lack of financial resources, insufficient knowledge and training, doubts about the benefits and effectiveness and dependence on traditional methods. This segment can provide valuable insights into barriers to AI implementation and direct attention to areas for improvement.

The data provide a foundation for developing strategies and approaches for the successful implementation of AI in business.

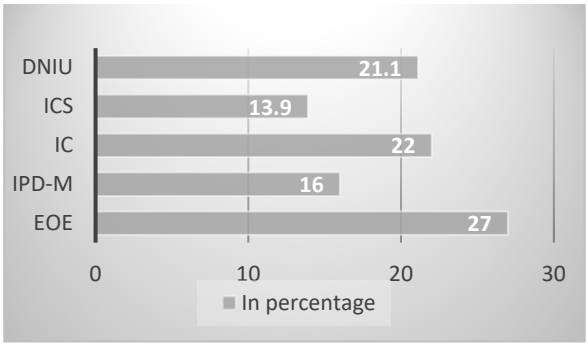

Fig. 2. Assessments of the leading arguments for AI deployment.

b. Identifying potential factors that could obstruct or delay the successful implementation of AI in company's internal business processes

Respondents identified potential obstacles such as a lack of resources, resistance from personnel, legal limitations or other factors that could pose challenges in integrating AI technologies into the company's internal processes.The results have found expression in (Fig. 2).

Based on the above results, the following key aspects can be highlighted: √ **Lack of necessary infrastructure** (LNI) – 13.9% of respondents believe that the need for suitable infrastructure to support AI is evident and creating the necessary technological foundation can become a challenge for companies. This may involve establishing cloud platforms, network integration, etc. √ **Insufficient preparation and training of personnel** (IPTP) – 24.9% of respondents believe that successful AI implementation requires a well-prepared and trained workforce. The need for training and development efforts is critical, focusing on acquiring new skills and adapting to new technologies. √ **Complexities in integration with existing systems** (CIES) – 11.8% of respondents believe that coordination and compatibility between different technologies are required; planning and effective communication are crucial to ensure a smooth integration process. √ **Ethical and legal issues** (ELI) – 10.1% of respondents believe that building compliance and ethical standards are necessary to avoid potential risks and conflicts. √ **Concerns regarding data security** (CRDS) – 13.1% of respondents believe that information protection is essential, especially for sensitive data processed by AI systems. √ **Financial limitations** (FL) – 13.9% of respondents believe that financial limitations can be a real challenge, requiring businesses to balance investments in technology with ensuring financial sustainability.

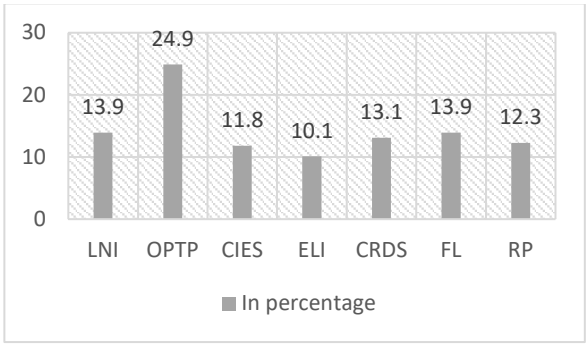

Fig. 3. Assessments of the barriers and nature of potential difficulties to AI implementation.

√ **Resistance from personnel** (RP) – 12,3% of respondents believe that addressing skepticism from personnel requires engagement and communication strategies to reduce resistance and encourage adaptation to new technologies.

Overcoming these obstacles successfully requires a comprehensive and well-planned approach that encompasses technological, educational, ethical and social aspects.

To deepen the analysis through a cross-table (Table 2), we will present the data from the two-dimensional distributions. The percentages are interpreted as a percentage of the *Categories of business* indicator.

TABLE 2 RATINGS OF BARRIERS TO AI IMPLEMENTATION BASED ON CATEGORIES OF BUSINESS

			Categories of business			
			Small	Medium	Large	Total
Barriers to the Implementation of AI	LNI	Number	8	25	0	33
		In %	25.8	14.4	0.0	13.9
	IPTP	Number	4	53	2	59
		In %	12.9	30.5	6.2	24.9
	CIES	Number	3	14	11	28
		In %	9.7	8.0	34.4	11.8
	ELI	Number	2	12	10	24
		In %	6.4	6.9	31.3	10.1
	CRDS	Number	0	24	7	31
		In %	0,0	13.8	21.9	13.1
	FL	Number	4	29	0	33
		In %	12.9	16.7	0.0	13.9
	RP	Number	10	17	2	29
		In %	32.3	9.7	6.2	12.3
Total		Number	31	174	32	237
		In %	100.0	100.0	100.0	100.0

(Source: authors' own research)

The two-dimensional distributions of the data reveal significant differences faced by different categories of business. Regarding small and medium-sized companies (31 and 174 respectively): 1) The main barrier is the lack of infrastructure and qualified personnel with specific competencies in AI. This emphasizes the need for the development of IT infrastructure and intensive training and education in the field of AI. 2) Limited financial resources can slow down the implementation of AI. This requires investments in technology and personnel. 3) Some small

and medium-sized companies express a fundamental resistance to the possibilities of artificial intelligence. This may result from a lack of clear understanding of the benefits or resistance to change.

Regarding large companies (32 in total): 1) The main barrier is associated with the complexity of integrating AI into large corporate structures. This aspect emphasizes the need for strategic planning and coordination to ensure consistency throughout the organization. 2) For large companies, ethical issues related to the protection of personal data, the responsibility of AI systems and the ethical use of technologies are also barriers.

The conducted analysis highlights the need for flexible and individual (customized) strategies for implementing AI depending on the categories of business.

c. Identifying the specific business processes for which participants believe AI be faced with the greatest economic potential

The utilization of AI in specific business processes, such as automating routine tasks, predicting trends and personalizing services, can contribute significantly to improving efficiency, reducing costs and increasing revenue. The results have found expression in (Fig. 4).

The analysis of the gathered data reveals the following: √ **Manufacturing** (M) – 18.1% of respondents believe that the use of AI in production processes can improve automation, quality control, and optimize the entire production cycle, leading to increased efficiency by reducing costs. √ **Marketing and Advertising** (MA) – 24.1% of respondents believe that Artificial Intelligence can contribute to personalizing campaigns, analyzing consumer behavior and optimizing marketing strategies, thereby enhancing efficiency by increasing revenues. √ **Customer Relationship Management** (CRM) – 22.8% of respondents believe that AI could provide intelligent solutions for personalizing service, analyzing customer needs and improving customer relationships, consequently increasing customer loyalty and sales revenue. √ **Finance and Accounting** (FA) – 16.0% of respondents believe that AI can be used for automating financial processes, predicting financial trends, and reducing risks, thus improving the efficiency of financial management. √ **Human Resources** (HR) – 11.8% of respondents believe that AI supports the recruitment process, human resources management and talent development. √ **Other functional areas** (OFA) – for 7.2% other potential areas for process optimization and efficiency improvement include logistics, IT infrastructure, etc.

The integration of AI in the researched areas can contribute to achieving greater efficiency, resource optimization and enhancing the competitiveness of the company.

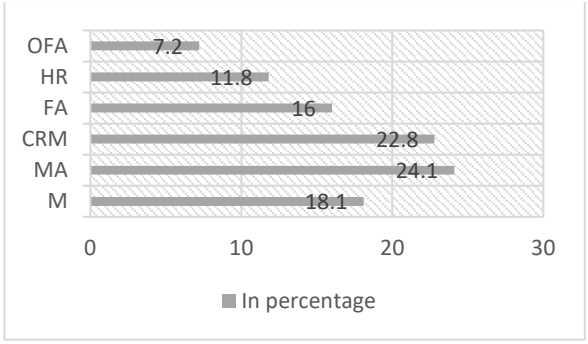

Fig. 4. Assessments of functional areas with the highest potential for AI implementation.

d. Identification of company overall readiness for the implementation of AI in business processes

An assessment is made of factors such as the availability of necessary technological resources, the level of staff competence, the presence of strategic plans for AI implementation, as well as support from the leadership. This information can help determine the company's current knowledge and resources in the field of AI and identify potential areas that may require further development. The analysis of the data shows:

• **We are ready and actively implementing** (24.1%) – indicates the business's innovative orientation and commitment to change. These companies likely already have the necessary resources and expertise for the successful implementation of AI technologies. • **We are considering possibilities** (27.8%). This can be interpreted as a manifestation of heightened interest and awareness of the importance of AI in business. • **We are not** sure (16.9%). This might result from a lack of clear understanding of the potential benefits and impact of AI in their specific areas of operation. • **We do not consider it as an option** (11.8%). Some companies still do not consider AI implementation as an option. This response could arise from a lack of information or understanding of the technology's potential in business. • **I don't know/I can't answer** (19.4%). Uncertainty may be an expression of a lack of a clear vision or circumstances limiting companies' ability to assess the current situation. For successful implementation, companies must continue to explore, train their staff and develop strategies for integrating AI technologies into their internal processes.

e. Summaries and Recommendations

The study provided important information and insights regarding company attitudes and readiness for implementing artificial intelligence in their internal business processes.

Fragmentary SWOT analysis of a company randomly selected from the sample, that has successful implementation of AI in internal business processes, indicate an objective picture of its implementation. The results have found expression in assessment of the perspectives of the future-ready company by performing a fragmentary SWOT analysis (Table 3).

Formulating recommendations for organizations aiming at the successful integration of AI into internal

business processes was achieved through a comprehensive approach, combining the analysis of primary data from the authors' empirical research and a Gap analysis of the current and expected developments. Key aspects for the successful implementation of AI include management teams of organizations should develop strategic plans for AI implementation, considering the specific goals and needs of the company. Providing the necessary infrastructure and effortless integration with existing systems are critical for the successful deployment of AI.

TABLE 3 FRAGMENTARY SWOT ANALYSIS

External Factors	
OPPORTUNITIES	THREATS
▪ potential for increased efficiency and optimization of internal processes through AI; ▪ development of new products and services based on AI technologies; ▪ potential for improving the quality and accuracy of internal processes through automation and AI; ▪ better decision-making, both strategically and operationally, through data analysis and trend forecasting.	▪ risk of cyber-attacks and security breaches during the implementation of digital technologies; ▪ risk of of strict regulatory requirements and non-compliance during the implementation of new technologies; ▪ risk of of rapidly developing competitors who have already integrated AI into their business processes; ▪ risk of a lack of training systems for employees to work with new Technologies.
Internal Factors	
STRENGTHS	WEAKNESSES
√ experts in the field of AI who can guide and manage the implementation of the technology in internal processes; √ existing stable IT infrastructure that supports the successful implementation of digital technologies and AI; √ flexible internal business processes that can be easily adapted to new technologies and innovations; √ committed management supporting the implementation of AI and digitization across all business spheres.	√ limited financial resources that may constrain the scope and speed of implementing new technologies; √ shortage of qualified specialists in the field of AI; √ resistance from the personnel to changes in the workflow associated with the implementation of new technologies

(Source: authors' own research)

Companies need to pay serious attention to ethical and legal issues related to AI usage and build appropriate compliance strategies. Emphasizing the need for open communication and employee involvement throughout the AI implementation process is crucial to reduce resistance and facilitate successful adaptation. Organizations should maintain current exploration into new technologies and update their approaches to AI, as the field continues to evolve.

V. CONCLUSION

Based on the research on the implementation of AI in internal business processes, several key insights can be summarized: *First*, the diversity of motivations behind AI implementation highlights the need for differentiated strategies that align with the specific needs and goals of each organization. *Second*, the challenges and barriers identified in the empirical study require a systematic approach and strategic planning on the part of companies. *Third*, the variation in the readiness of organizations underscores the need for an individualized approach and personalized training for companies, while emphasizing the importance of continuously monitoring trends in the field of AI. With the perception of AI as a strategic tool for improving business processes, there is a need to expand the knowledge and skills of those working in the field, along with active investments in technologies and resources. Simultaneously, companies must commit to continuous exploration and innovation to remain competitive in a rapidly changing market. To achieve successful implementation of AI in internal business process management, the following guidelines are proposed for future research and development: *1) Deep analyses of specific sectors* are essential to determine the optimal approach for implementing AI in particular business processes. *2) Innovations in employee training* – innovative methods for training and developing personnel adapted to the specific requirements of artificial intelligence. *3) Strategies to overcome ethical and legal challenges* related to data protection and risk management. *4) Exploring new technologies and trends* to ensure the competitiveness of organizations. *5) Integration with the strategic goals of organizations.* Confirming AI as an integral part of the strategic goals of organizations, emphasizing not only the technological but also the business aspect of its implementation.

Through the examined guidelines and strategic approaches, organizations can establish a sustainable and successful path for integrating AI into their internal business processes, creating technological development, resilience and innovations in accordance with their specific needs and goals

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