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FRAMEWORK MODEL OF SYNCRETIC MANAGEMENT OF INNOVATIVE PROJECTS

Abstract. *The contemporary business landscape demands agility, innovation, and the seamless integration of diverse approaches. Traditional project management methods often struggle to adapt to this dynamic environment. This abstract introduces the framework model of syncretic management for innovative projects. Syncretic management emphasizes the unification of various elements to achieve a cohesive whole. In this context, it signifies a framework that blends methodologies and tools to optimize project outcomes. Key components include – Interdisciplinary Collaboration, Agile Methodologies, AI Integration. The syncretic management model offers several advantages – Enhanced Innovation, Improved Efficiency, Increased Adaptability. Reduced Risks: data-driven insights from AI facilitate proactive risk identification and mitigation strategies. Paper provides a concise overview of the syncretic management model for innovative projects. Subsequent sections will explore the core components of this framework in greater detail, delve into its practical applications, and discuss potential challenges and considerations for successful implementation.*

Keywords: *Syncretic Management, Innovative Projects, Framework Model, Agile methodology.*

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Introduction

Syncretic Management is an integrative approach to project management that blends elements from various management methodologies, disciplines, and technologies to create a cohesive and adaptive framework. This approach is particularly relevant to innovative projects, which are characterized by high levels of complexity, uncertainty, and the need for rapid adaptability.

The current business landscape is characterized by rapid change, intense competition, and a growing emphasis on innovation. Traditional project management approaches often struggle to keep pace with this dynamic environment. To address these challenges, a new framework is emerging: the syncretic management model for innovative projects.

Syncretic management refers to a philosophy that integrates diverse elements to achieve a unified whole. In the context of innovative projects, this translates to a framework that seamlessly blends various approaches and tools to optimize project outcomes.

The contemporary business landscape demands agility, innovation, and the ability to navigate constant change. Traditional project management approaches, often rigid and siloed, struggle to keep pace with this dynamic environment. To address these challenges, a novel framework is emerging – the framework model of syncretic management for innovative projects.

Syncretic management emphasizes the unification of diverse elements to achieve a cohesive whole. In the context of innovative projects, this translates to a framework that seamlessly blends methodologies and tools to optimize project outcomes. This model fosters a culture of creativity and adaptability, crucial for success in today's ever-evolving marketplace.

Syncretic management represents a forward-thinking approach to project management, particularly suited for innovative projects in today's fast-paced, technology-driven environment. By blending diverse methodologies and leveraging advanced technologies, it offers a robust framework that is both adaptable and resilient, capable of navigating the complexities and uncertainties inherent in innovative endeavors.

The core components of the syncretic management model provide a comprehensive framework that combines traditional project management practices with the latest advancements in AI technology. This integrative approach enables organizations to effectively manage innovative projects, ensuring they are adaptable, efficient, and ethically sound.

The goal of the research to introduce and define the framework model of syncretic management for innovative projects. This involves explaining the core principles behind syncretic management and how it integrates various approaches (interdisciplinary collaboration, agile methodologies, AI integration) to optimize the success of innovative projects. To explore the benefits and potential applications of the syncretic management model. This could involve discussing how the model fosters innovation, improves efficiency, increases adaptability, and reduces risks in innovative project management. The paper might also showcase real-world examples or case studies demonstrating how organizations have successfully implemented this framework.

1. Literature review

The seventh version of the PMI PMBOK knowledge system [1] formed the prerequisites for the implementation of syncretic management. At the same time, the integration of project management methodologies with artificial intelligence systems is not foreseen. This is due to the release date of the knowledge system long before the appearance of industrial versions of artificial intelligence systems.

The system of knowledge on the management of innovative projects and programs P2M [2] also provides for the integration of essentially different methodologies, including Agile, but the use of artificial intelligence in the processes of managing innovative projects is not discussed.

The paper [3] claims that artificial intelligence can replace people in innovation management, requiring companies to rethink their innovation processes and consider the possibilities of digital transformation. This confidence is based on the expectation that versions of "general artificial intelligence" will be released in the near future.

In [4], it is emphasized that artificial intelligence can improve project management by managing stakeholders' expectations, resolving conflicts, and ensuring flawless project support and execution, but there are no examples or ideas about integration with artificial intelligence.

Technological progress in the field of artificial intelligence is leading to the development of human-like machines capable of operating autonomously and imitating cognitive behaviour. The progress and interest among managers, academics, and the public has created excitement in many industries, and many firms are investing heavily to capitalize on the technology through business model innovation [5]. However, managers are left without support from academia when they seek to introduce AI into their firm's operations, leading to an increased risk of project failure and undesirable outcomes.

In the study [6], it is determined that AI has the potential to revolutionize the economy and society, but to ensure its successful implementation and future impact, it is necessary to solve industry problems and develop research programs for the effective application of artificial intelligence.

In [7] aspects of smartization of artificial intelligence models are considered. An integrated model of the competencies of artificial intelligence application specialists is proposed. The model is a dynamic and multidimensional system of competencies. This study was built within this model.

Convergence of knowledge, rapid progress in the application of artificial intelligence and the need for adapted project management to stimulate innovation and effective communications create fertile ground for research in certain fields of knowledge [8]. Although the specific field of "syncretic management" for AI-driven projects is still emerging, there is a need to find relevant application ideas scattered across several fields of activity in the digitalization and development management of complex systems.

The work [9] is devoted to the application of the entropy approach in managing the dynamics of the development of organizations. At the same time, information entropy is considered as an element of resistance to the development of organizations. These studies are fundamental to understanding the impact of uncertainty when applying artificial intelligence in organizational development projects.

The work [10] examines the problems of the interaction of interested parties in the processes of sustainable development. At the same time, artificial intelligence is not a driver of interaction and decision-making. This significantly reduces the effectiveness of the actions of project managers. The work [11] is devoted to the study of the model of syncretic management, competition and cooperation in the field of economic development. The models and methods considered in this study do not take into account the development of artificial intelligence, which reduces the effectiveness of applications of syncretic management of innovative projects. Interesting results were obtained in [12], where a syncretic control model based on the "win-win" model was used. This allowed stakeholders to engage in sustainable development processes without the use of artificial intelligence technologies.

The work [13] examines the problems of strategic management based on sustainable development in the Industry 4.0 model based on social responsibility. At the same time, the transition to Knowledge Industry 5.0 opens up fundamentally new opportunities in managing sustainable development.

Problems of value creation based on cross-sector cooperation are studied in [14]. A value approach is key from the point of view of sustainable development management. At the same time, an important role is played by the processes of digitization and the use of artificial intelligence, which is not taken into account in the research.

The paper [15] examines the issues of sustainable development of social organizations based on the hybridization of management of public organizations. This is an important direction of application of syncretic management. But the transition to the Industry 5.0 economy significantly reduces the practical application of the authors' proposals.

The model of sustainable development based on innovations within the framework of collaboration of cross-sector business models to create a multi-level, dynamic organizational environment is considered in work [16]. This is an important step in the development of syncretic management.

2. The Principle of Augmented Competency in Managing innovation Projects in an Artificial Intelligence Environment

Artificial intelligence (AI) is becoming an integral part of modern innovation projects, transforming approaches to management, planning and execution of tasks. The principle of augmented competence is the use of AI to increase the efficiency and effectiveness of human activity in innovation project management.

In the modern world, where artificial intelligence (AI) is rapidly developing, its influence on various spheres of activity is becoming more and more noticeable. Innovation project management is no exception. Augmented Competency Principles offer a new approach to innovation project management that uses AI to strengthen and expand the capabilities of management teams.

The essence of the principle of augmented competence is that AI does not replace human project managers, but complements their knowledge, skills and experience. AI can automate routine tasks, analyze large amounts of data, provide recommendations and predictions, freeing up time for human team members to focus on more complex and creative tasks.

Let's consider the advantages of using the principle of enhanced competence. This is improved efficiency and productivity based on the automation of tasks and the provision of new knowledge, which leads to a significant improvement in the efficiency and productivity of the project team. Data-driven AI recommendations and predictions help teams make more informed and effective decisions. Access to new knowledge and insights drives innovation and leads to new ideas and solutions. At the same time, AI de-risking helps identify and mitigate potential risks, which can lead to more successful projects.

Examples of the use of the principle of augmented competence in innovation project management are related to the use of AI to automate software testing, customer data analysis can help companies better understand their customers and their needs, which can lead to improved marketing campaigns and products, demand forecasting can help companies better manage your inventory, which can lead to lower costs and better customer service.

The principles of augmented competence do not mean that AI should replace human project managers. Instead, AI should be used as a tool to empower human teams and help them achieve better results.

As AI technologies continue to evolve, the principle of augmented competence is likely to become even more important for innovation project management. AI can help teams overcome complex challenges, make better decisions, and succeed in a more changing and competitive environment.

This is just the beginning of research in the field of augmented competence. Let's take a closer look at its concepts, advantages, examples of use and mathematical modelling.

The purpose of the article is to research the principles of enhanced competence, conduct a SWOT analysis of applications, and build a mathematical model of the implementation of enhanced competence within the Agile methodology.

3. SWOT analysis of enhanced competence in innovation project management

A SWOT analysis of enhanced competence in innovation project management shows that the use of AI can significantly increase the company's efficiency, productivity and competitiveness (Table 1). However, the high cost of implementation, technical limitations, and potential ethical and regulatory challenges must be taken into account in order to succeed. By leveraging strengths and opportunities, companies can successfully integrate AI into their processes, minimizing risks and maximizing benefits.

The SWOT analysis showed that the added competence that uses the capabilities of artificial intelligence (AI) in the management of innovation projects has significant advantages. Key strengths include increased efficiency, more informed decisions, resource optimization, improved communications and reduced risk. The integration of AI allows project managers to focus on strategic aspects of management, improving overall productivity and quality of project execution.

At the same time, the SWOT analysis revealed weaknesses in the use of additional competence. These include high initial implementation costs, dependence on data quality, complexity of integration, technical limitations, and the need for changes in organizational culture. The implementation of AI requires significant financial and human resources, as well as the company's readiness to adapt new approaches and technologies.

Analysis of opportunities shows that the use of additional competence opens wide prospects for companies. The implementation of AI can contribute to the development of innovative products and services, the expansion of markets, improved customer satisfaction and increased competitiveness. In addition, AI helps manage complex projects more efficiently by providing better coordination and control.

However, there are also threats that can affect the success of AI implementation. These are high competition, regulatory changes, technological risks, ethical issues and economic instability. Companies need to be prepared to meet these challenges by implementing appropriate strategies to minimize risks and protect their investments in new technologies.

A SWOT analysis of enhanced competence in innovation project management shows that the use of AI has significant potential to improve the efficiency and competitiveness of companies. Key benefits include improved decision-making, resource optimization, increased productivity and reduced risk. However, high initial costs, complexity of integration, and potential ethical and regulatory challenges must be considered for successful implementation. Companies that are ready to invest in AI and adapt new approaches will be able to make the most of its opportunities and gain competitive advantages in the market.

Table 1. SWOT analysis of enhanced competence in IT project management

Strengths	**Weaknesses**
1. Increased efficiency Using AI to analyze and automate routine tasks allows managers to focus on strategic aspects of project management. 2. More reasonable decisions AI's analytical capabilities provide deep data analysis and forecasting that helps make more informed decisions. 3. Optimization of resources AI helps to optimally allocate resources, reducing costs and increasing team productivity. 4. Improvement of communications Intelligent communication systems facilitate better interaction between team members and stakeholders, increasing overall coordination. 5. Reduction of risks Through forecasting and data analysis, AI allows better identification and minimization of risks, which increases the overall safety of the project.	1. High initial costs Implementation of AI technologies requires significant financial investment in development, implementation and training of personnel. 2. Dependence on data quality The effectiveness of AI strongly depends on the quality and volume of available data. Insufficient or unreliable data can lead to incorrect predictions and decisions. 3. Complexity of integration Integrating AI into existing processes can be complex and require significant effort from the IT department and management. 4. Technical limitations AI technologies still have limitations that can affect the accuracy and reliability of the results obtained. 5. Change of organizational culture Implementation of AI requires changes in the organization's culture and ways of working, which may be met with resistance from the staff.
Opportunities	**Threats**
1. Innovative products and services Using AI opens up new opportunities for creating innovative products and services, which can become a competitive advantage in the market. 2. Expansion of markets Thanks to optimization and increased efficiency, the company can expand its activities to new markets and segments. 3. Improvement of customer satisfaction More accurate forecasting of customer needs and adaptation of services to these needs increase the level of customer satisfaction. 4. Increasing competitiveness Using advanced management technologies allows the company to stay ahead of competitors by offering better and more efficient solutions. 5. Management of complex projects AI helps manage complex projects more effectively, providing better coordination and control over all aspects of the project.	1. Competition Competitors may also introduce advanced technologies, which reduces uniqueness and competitive advantage. 2. Regulatory changes Implementation of new technologies may face regulatory restrictions and data security and privacy requirements. 3. Technological risks Technological failures and cyberattacks can significantly affect the operation of AI systems and the overall security of the project. 4. Ethical issues The use of AI raises ethical questions about privacy, transparency and fairness of decision-making. 5. Economic instability Economic fluctuations and volatility may affect investments in new technologies and a company's ability to innovate.

4. Method of Syncretic Management of Innovative Projects

The syncretic management model for innovative projects proposes a framework that integrates various approaches and tools to optimize project outcomes. This section dives deeper into the core methods that make up this framework. Key elements of Syncretic management of innovative projects presented on fig. 1.

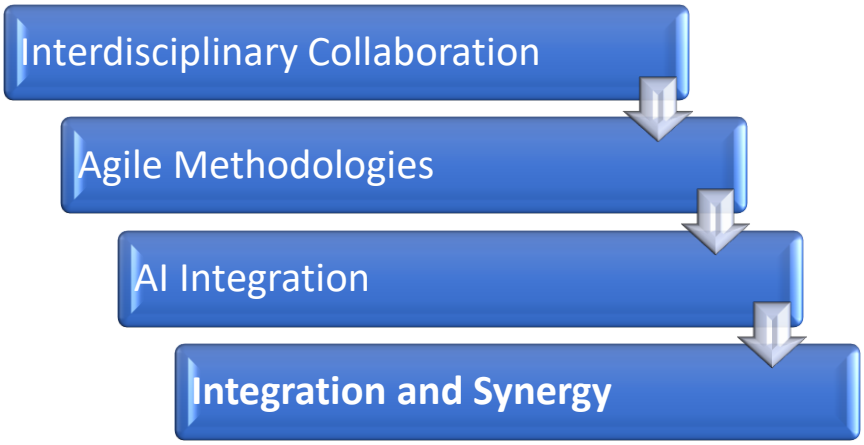

Fig. 1. Key elements of Syncretic Management of Innovative Projects

Let's define each element.

4.1. Interdisciplinary Collaboration:

- **Rationale:** Innovation often thrives at the intersection of diverse expertise. Bringing together individuals from various backgrounds, such as engineering, design, marketing, and data science, fosters creative problem-solving and the generation of novel ideas.
- **Methods:**
  - Forming cross-functional teams with members from different disciplines.
  - Implementing brainstorming sessions that encourage diverse perspectives.
  - Utilizing knowledge-sharing platforms to facilitate collaboration and communication between team members.

4.2. Agile Methodologies:

- **Rationale:** Traditional project management approaches can be rigid and struggle to adapt to the inherent uncertainties of innovative projects. Agile methodologies offer a more flexible and iterative approach.
- **Methods:**
  - Adopting frameworks like Scrum or Kanban, which emphasize short development cycles, continuous feedback loops, and a focus on delivering value iteratively.
  - Embracing rapid prototyping to test and refine ideas quickly.
  - Encouraging open communication and adapting project plans based on feedback and emerging requirements.

4.3. AI Integration:

- **Rationale:** Artificial intelligence (AI) can offer valuable tools for data analysis, risk prediction, and automation of routine tasks. This frees up human resources to focus on more strategic endeavors and creative problem-solving.
- **Methods:**
    - Utilizing AI for tasks like data analysis, identifying trends and patterns in complex datasets.
    - Implementing AI-powered risk prediction models to proactively identify and mitigate potential challenges.
    - Automating routine administrative tasks and data entry processes, allowing team members to focus on higher-value activities.

4.4. Integration and Synergy:

- The success of the syncretic management model hinges on the seamless integration of these core methods.
- Interdisciplinary collaboration fosters a culture of innovation, which is then supported by the iterative nature of agile methodologies. AI tools further empower this process by providing data-driven insights and streamlining workflows.

5. Mathematical Syncretic Management Models of Innovative Projects

In the ever-evolving landscape of innovative project management, the integration of mathematical models provides a robust framework for optimizing processes, predicting outcomes, and mitigating risks. Syncretic management models, which combine multiple methodologies and leverage advanced technologies such as Artificial Intelligence (AI), offer a holistic approach to managing complex projects. This introduction outlines the fundamental aspects of mathematical models within the syncretic management framework and their significance in innovative project management.

Mathematical models serve as the backbone of the syncretic management approach, enabling precise planning, execution, and monitoring of projects. These models provide a quantitative basis for decision-making, allowing project managers to optimize resource allocation, forecast potential issues, and measure project performance accurately. By incorporating AI and machine learning techniques, these models can adapt to changing conditions and provide real-time insights, making them indispensable tools for managing innovative projects.

To formalize the syncretic management process of innovative projects using AI, the following mathematical approaches can be used.

Let’s look on the Core Components of Mathematical Syncretic Management Models

Optimization Model.

The optimization goal is to maximize the efficiency indicator E, which can be expressed through various project parameters:

$$Max\ E = f(X, R, T, C),$$

where X – completed tasks, R – resources, T – time, C – costs.

Risk Management Model.

The model can use probabilistic analysis methods to assess risks:

$$P(R_i) = \frac{N_{R_i}}{N},$$

where *P(Ri)* – the probability of risk *Ri*, N_{Ri} – number of risk *Ri* occurrences, *N* – total number of analysed cases.

Prediction Model Using AI.

Using machine learning to predict key project indicators.

$$Y = W \cdot X + b,$$

where *Y* – predicted performance indicators, *X* – input data (influencing factors), W – model weights, *b* – bias.

The integration of mathematical models in syncretic management provides a powerful framework for managing innovative projects. These models enable precise planning, efficient resource allocation, effective risk management, and real-time performance monitoring, ensuring that projects are executed successfully in a dynamic and complex environment. As the field of AI continues to evolve, the role of mathematical models in project management will become increasingly significant, offering new opportunities for innovation and excellence.

Conclusion

The framework model of syncretic management of innovative projects, incorporating AI technologies, offers a holistic and dynamic approach to project management. By integrating clear goal-setting, adaptive lifecycle management, and robust risk and resource optimization, this model ensures a comprehensive strategy for addressing the complexities of modern projects.

Key to this framework is the seamless integration of AI technologies at various project stages, enhancing automation, predictive analytics, and decision-making capabilities. This not only optimizes resource allocation but also significantly improves risk management through advanced predictive models.

Ethical and legal considerations are embedded within the framework, ensuring that AI applications are transparent, accountable, and compliant with evolving standards. This focus on ethical AI use underscores the importance of responsible innovation, fostering trust and sustainability in AI-driven projects.

Effective communication and collaboration tools are emphasized to engage all stakeholders, ensuring a cohesive and cooperative project environment. This collaborative approach leverages interdisciplinary expertise, enhancing the innovative capacity of project teams.

Mathematical models support the framework by providing formalized methods for optimization, risk management, and performance prediction. These models facilitate data-driven decision-making, further enhancing the effectiveness of project management practices.

The framework model of syncretic management of innovative projects with AI integration represents a forward-thinking, adaptable, and ethically responsible approach. It equips organizations to navigate the rapid advancements in AI, ensuring project success and sustainability in an era of unprecedented technological growth.

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РАМКОВА МОДЕЛЬ СИНКРЕТИЧНОГО МЕНЕДЖМЕНТУ ІННОВАЦІЙНИХ ПРОЄКТІВ

Анотація. Сучасний бізнес-ландшафт вимагає гнучкості, інновацій та бездоганної інтеграції різноманітних підходів. Традиційним методам управління проєктами часто важко адаптуватися до цього динамічного середовища. Ця стаття представляє рамкову модель синкретичного менеджменту для інноваційних проєктів. Синкретичне управління наголошує на об'єднанні різних елементів для досягнення згуртованого цілого. У цьому контексті це означає структуру, яка поєднує методології та інструменти для оптимізації результатів проєкту. Ключові компоненти включають: міждисциплінарну співпрацю, гнучкі методології, інтеграцію ШІ. Синкретична модель управління пропонує кілька переваг: розширені інновації, підвищена ефективність, підвищена адаптивність. Зменшені ризики: аналіз даних від штучного інтелекту сприяє проактивному виявленню ризиків і стратегіям пом'якшення. Стаття містить стислий огляд синкретичної моделі управління інноваційними проєктами. У наступних розділах більш детально розглядатимуться основні компоненти цієї структури, розглядатимуться її практичні застосування та обговорюватимуться потенційні проблеми та міркування щодо успішного впровадження.

Ключові слова: синкретичне управління, інноваційні проєкти, рамкова модель, гнучка методологія.

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