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## CONCEPTUALIZING AN INTEGRATED MANAGEMENT AND INNOVATION MODEL FOR ARCHITECTURAL AND CONSTRUCTION SECTOR DEVELOPMENT WITHIN THE INNOVATIVE, ORGANIZATIONAL, COMMUNICATIVE AND ECONOMIC MANAGEMENT PARADIGM

*The article substantiates and conceptualizes an integrated management and innovation model for the development of an architectural and construction company in the context of digital transformation, socio-economic challenges, and spatial renewal. The proposed approach is based on the application of the innovative, organizational, communicative and economic management paradigms, which makes it possible to develop a holistic strategy for the company's adaptation to market demands, stakeholders, and global sustainable development trends. The model comprises four interrelated blocks: target, content-organizational, technological, and control-diagnostic. Its structure involves the implementation of seven key components: innovation (BIM, Lean, Smart technologies), organizational flexibility, communication strategy, value-based management, corporate social responsibility (CSR), economic efficiency, and managerial professional competence. Each of these elements is presented with regard to current technological, managerial, and social trends. To assess the level of implementation of the model's components, the article proposes a methodology for constructing the Integrated Implementation Metric (IIM). IIM is calculated based on expert-defined weighting coefficients and quantitative evaluations of each element of the model. This approach enables a comprehensive multifactor diagnosis of the company's management system, identification of strategic development reserves, and the formation of adaptation mechanisms to a dynamic environment. The model has been partially tested using the example of the company "UVT GROUP", which demonstrates an advanced level of implementation of managerial and innovation strategies (IIM = 0.752). The study proves that the integration of digital technologies, value-based management practices, and social responsibility strengthens competitive positions, builds social capital, and promotes the sustainable development of the architectural and construction business.*

*Keywords: integrated management and innovation development model, architectural and construction company, innovative, organizational, communicative and economic management paradigm, innovation, digital transformation, IIM (Integrated Implementation Metric), BIM, social responsibility, communication strategy, value-based management, sustainable spatial development.*

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## ФОРМУВАННЯ ІНТЕГРОВАНОЇ УПРАВЛІНСЬКО-ІННОВАЦІЙНОЇ МОДЕЛІ РОЗВИТКУ АРХІТЕКТУРНО-БУДІВЕЛЬНОЇ КОМПАНІЇ НА ЗАСАДАХ ІННОВАЦІЙНО-ОРГАНІЗАЦІЙНОЇ ТА КОМУНІКАТИВНО-ЕКОНОМІЧНОЇ ПАРАДИГМИ УПРАВЛІННЯ

*У статті обґрунтовано й концептуалізовано інтегровану управлінсько-інноваційну модель розвитку архітектурно-будівельної компанії в умовах цифрової трансформації, соціально-економічних викликів і просторового оновлення. Запропонований підхід базується на використанні інноваційно-організаційної та комунікативно-економічної парадигми управління, що дає змогу сформувати цілісну стратегію адаптації підприємства до вимог ринку, стейкхолдерів та глобальних тенденцій у сфері сталого розвитку. Модель включає чотири взаємопов'язані блоки: цільовий, змістово-організаційний, технологічний та контрольно-діагностичний. Її структура передбачає реалізацію семи ключових компонентів: інноваційної складової (BIM, Lean, Smart-технологій), організаційної гнучкості, комунікативної стратегії, ціннісно-орієнтованого управління, соціальної відповідальності (КСВ), економічної ефективності та професійної компетентності менеджменту. Кожен з цих елементів розкрито з урахуванням сучасних технологічних, управлінських і соціальних тенденцій. З метою оцінювання рівня впровадження компонентів моделі у статті запропоновано методику побудови інтегрального показника ІІМ (Integrated Implementation Metric). ІІМ розраховується на основі експертного визначення вагових коефіцієнтів та кількісних оцінок кожного елементу моделі. Такий підхід дозволяє здійснювати комплексну багатофакторну діагностику управлінської системи*

компанії, виявляти стратегічні резерви розвитку та формувати механізми адаптації до умов динамічного середовища. Модель пройшла часткову апробацію на прикладі компанії «UVT GROUP», яка демонструє просунутий рівень реалізації управлінських та інноваційних стратегій ( $IIM = 0.752$ ). Проведене дослідження доводить, що інтеграція цифрових технологій, ціннісних практик управління та соціальної відповідальності сприяє зміцненню конкурентних позицій, формуванню соціального капіталу та стійкому розвитку архітектурно-будівельного бізнесу.

**Ключові слова:** інтегрована управлінсько-інноваційна модель розвитку, архітектурно-будівельна компанія, інноваційно-організаційна та комунікативно-економічна парадигма управління, інновації, цифрова трансформація, IIM (Integrated Implementation Metric), BIM, соціальна відповідальність, комунікативна стратегія, ціннісно-орієнтоване управління, сталий просторовий розвиток.

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## INTRODUCTION

In the current context of globalization, rapid digitalization, and increasing environmental and social demands on the architectural and construction sector, traditional management models are losing their effectiveness, creating an urgent need for the development of innovative approaches to organizing company operations. An integrated management and innovation model for the development of an architectural and construction company, based on the innovative, organizational, communicative and economic management paradigms, is critically relevant in addressing today's challenges. It aims to harmoniously combine advanced technologies such as BIM (Building Information Modeling), artificial intelligence, the Internet of Things (IoT), and green technologies with flexible organizational structures, efficient resource management, and strategic communication, thereby ensuring companies' competitiveness and sustainability in the market.

The relevance of this research is driven by several global and local factors. Firstly, the rapid transformation of the construction industry in the context of the Fourth Industrial Revolution requires the implementation of innovative management models capable of integrating digital tools and optimizing the processes of design, construction, and operation of facilities. Secondly, increasing requirements for energy efficiency, environmental safety, and social responsibility compel companies to rethink their development strategies in line with the principles of sustainable construction and circular economy. Thirdly, intensified competition in both domestic and international markets, along with growing client expectations regarding quality, speed, and cost of services, demands that companies adopt flexibility, adaptability, and effective communication with all stakeholders.

The proposed model is designed to address key industry problems, including low productivity, fragmented management processes, inefficient use of resources, and insufficient integration of innovative technologies into everyday operations. The study aims not only to develop the theoretical foundations of the integrated model but also to create practical tools for its implementation, which will enhance economic efficiency, optimize costs, reduce environmental impact, and strengthen companies' market positions. Moreover, the model accounts for the need to adapt to global trends such as urbanization, climate change, demographic shifts, and the growing demand for smart infrastructure.

Thus, the development of an integrated management and innovation model is strategically important for ensuring the long-term development of architectural and construction companies. It not only responds to contemporary challenges but also lays the foundation for forming new management standards, enabling the industry to lead in the implementation of innovation, sustainable development, and client-oriented approaches in a dynamic market environment. The relevance of this research is further reinforced by its potential to influence the transformation not only of individual companies but of the entire construction ecosystem, facilitating its adaptation to global economic, technological, and social changes.

## ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

Scientific research in recent years confirms the growing need to transform management models in the architectural and construction sector under conditions of digitalization, environmental challenges, and social reorientation. Particular attention has been paid to the study of digital transformation as a driver of organizational evolution. D. Agostino, M. Arnaboldi, and M. Diaz Lema [5] emphasize the role of the COVID-19 pandemic as a catalyst for digital change, which has altered the paradigm of stakeholder engagement. B. K. AlNuaimi, S. K. Singh, S. Ren, P. Budhwar, and D. Vorobyev [6] explore the interconnection between leadership, strategic flexibility, and digital strategy as key factors in successful transformation.

The content-organizational aspects of the paradigm are reflected in the work of S.M.E. Sepasgozar, F.K.P. Hui, S. Shirowzhan, M. Foroozanfar, L. Yang, and L. Aye [7], which substantiates the synergy of BIM, Lean, and digital twins as the foundation for the development of sustainable construction. The study by D. Pop et al. [9] deepens this idea by presenting the integration of BIM and Lean as a prerequisite for building an adaptive, innovative, and at the same time efficient organizational architecture.

As for the technological provision of transformations, the works of A. A. Galagali et al. [12] are relevant, demonstrating the importance of integrating ERP and BIM within the Construction 4.0 context, as well as the research of D. Dunne [11], which investigates the mechanisms of implementing design thinking in corporate governance as a tool for facilitating innovation and team development.

The evaluation of the effectiveness of innovation implementation is based on principles of multifactor diagnostics. In particular, N. Holionko and K. Kondratieva [3] propose a comparative analysis of digital maturity models, among which the Digital Maturity Index serves as a key indicator for the construction industry. In the field of non-financial metrics, the study by M. Kirzhetska [4] is relevant, revealing the integration of ESG criteria into the system of strategic controlling and their impact on long-term business performance.

Thus, the literature review confirms the relevance and necessity of an integrated approach that combines strategic vision, technological maturity, social responsibility, and value-based interaction – precisely the components that form the core of the proposed model. The present study synthesizes leading ideas from the cited publications while introducing a novel scientific contribution in the form of the IIM as an analytical tool for the systemic verification of a management paradigm.

**The study's methodological basis** is interdisciplinary synthesis, which combines elements of strategic management, architectural engineering, sustainable development economics, and social communication. At the core of the research approach is the construction and partial testing of an integrated management-innovation model grounded in the innovation-organizational and communicative-economic paradigms of management within the context of architectural and construction activity.

To achieve the stated objectives, a combination of qualitative and quantitative methods has been applied. In particular, systems analysis was used to define the structural components of the model and their interrelations; the structural-functional approach helped to establish the hierarchy of the model's blocks; the axiological approach guided the formation of a value-oriented framework for managerial interaction. Theoretical modelling was employed to construct the conceptual foundations for integrating digital technologies, social indicators, and service-oriented practices into a unified management structure.

The study actively utilized expert evaluation methods, SWOT analysis, and the Analytic Hierarchy Process (AHP) to determine the significance of individual components of the model. The construction of the integrated performance indicator IIM (Integrated Implementation Metric) was carried out using weighted linear aggregation, which enables assessment of the implementation level of each model component and their cumulative effect on the company's strategic transformation.

Partial testing of the model was conducted using the real-world case of the architectural and construction company "UVT GROUP." Empirical data collection methods included semi-structured interviews with managers, analysis of internal documentation, audits of digital processes, ESG indicators, and customer experience metrics. The gathered information allowed for a comprehensive diagnosis of the company's management system against the established criteria of the model.

The selected methodological approach not only facilitated the creation of a coherent paradigmatic management framework but also led to the development of practical tools capable of transforming architectural and construction activities towards innovation, responsibility, and adaptive growth.

**The purpose of the study is** to develop and test an integrated management-innovation model that combines the key elements of the innovation-organizational and communicative-economic paradigms of management, with further application in strategic management practices, digital transformation, and implementation effectiveness assessment using the Integrated Implementation Metric (IIM).

The scientific novelty of the study lies in the following elements:

An integrated management-innovation model has been developed, synthesizing the components of the innovation-organizational and communicative-economic paradigms of management in the architectural and construction sector, with a clear structure comprising four blocks: target, content-organizational, technological, and control-diagnostic, each with substantive components.

A novel authorial interpretation of management in the context of an architectural and construction company has been proposed, conceptualized as a holistic socio-technological process in which digitalization, adaptability, and value-based stakeholder interaction are integrated into a unified institutional framework of spatial development.

For the first time, a method has been developed for assessing the implementation effectiveness of the model based on the Integrated Implementation Metric (IIM), which enables comprehensive multifactor diagnostics of key transformation areas: innovation maturity, value-based management, social responsibility, and economic performance.

Practical recommendations have been formulated for implementing the model in the operations of architectural and construction companies, including the case of "UVT GROUP" as an example of partial piloting, with the development of diagnostic tools, monitoring mechanisms, and strategies for strengthening model components.

The conceptual framework of management-innovation transformation in the sector has been refined, introducing the interpretation of "managerial competence" not merely as technical expertise but as the ability to facilitate change, operate in complex environments, and generate social value within the architectural domain.

## THE MAIN MATERIAL STATEMENT

The innovation-organizational and communicative-economic paradigm of architectural and construction company development represents a holistic managerial model that integrates technological innovations, flexible

organizational structures, digital transformation, and socially oriented communication in order to enhance competitiveness, promote sustainable development, and ensure corporate social responsibility in a dynamic market environment. The paradigm is grounded in endogenous innovation generation, human capital development, multistakeholder engagement, and value-based management aimed at creating efficient, inclusive, and adaptive architectural and construction solutions.

Within the framework of the innovation-organizational and communicative-economic paradigm, seven interrelated components are distinguished, forming its strategic backbone. First, the innovation component encompasses the implementation of advanced technologies (BIM, IoT, Lean), digital design tools, and adaptive architecture focused on the changing life scenarios of users. Second, organizational flexibility is realized through multidisciplinary teams, visual management, idea factories, and a shift away from excessive centralization toward horizontal connections. Third, the communication strategy involves fostering a culture of empathy, implementing NLP techniques, adopting a personalized approach to stakeholders, and using non-violent communication as a standard of managerial ethics. The fourth pillar is value-based management, founded on the principles of customer-centricity, social dialogue, and service loyalty. Implementing it requires high-quality monitoring using NPS, SERVQUAL and other user experience metrics. Fifth, corporate social responsibility (CSR) forms the company's long-term social capital by promoting environmental sustainability, ethical practices, and participatory design principles. Sixth, economic efficiency is achieved through digital transformation of the business model, the introduction of ERP/CRM systems, and resource-saving strategies. Finally, the seventh and foundational component – managerial competence – encompasses not only technical knowledge but also soft skills such as emotional intelligence, strategic vision, the ability to facilitate change, and overcome communication barriers.

To optimize and technologize the economic activities of an architectural and construction company, the use of an integrated management-innovation model is advisable. This model combines features of several approaches – functional, technological, systemic, and value-oriented. Such a model not only structures complex transformation processes but also ensures managerial coherence amid high environmental turbulence and internal multidimensional challenges.

In particular, the integrated management-innovation model is a systemic concept for transforming the operations of an architectural and construction company. It integrates strategic management, technological innovation, socially responsible practices, and value-driven communication within the context of sustainable spatial development. The model is based on the principles of multi-component structure, adaptability, interdisciplinary integration, and soft leadership, ensuring interconnectedness between strategic goals, organizational content, digital technologies, and performance monitoring mechanisms. Its application is aimed at increasing innovation capacity, competitiveness, and social legitimacy in a dynamic landscape of spatial and market transformations.

The functional dimension of the model defines the logic of interconnected managerial actions – from strategic planning to result evaluation – with a focus on achieving sustainable and socially significant outcomes. The technological dimension ensures the instrumental support of the implementation process: digital solutions (BIM, ERP, Smart systems), innovative teamwork methodologies, and adaptive platforms for monitoring and data processing [13]. Meanwhile, the systemic approach guarantees coherence of structures, processes, and objectives, while value orientation emphasizes humanistic principles of interaction, inclusivity, and environmental responsibility.

The systematic application of such a model enables the company to move from isolated innovations to sustainable managerial renewal, in which digital tools, social innovations, and strategic vision are combined into a unified mechanism of value-oriented transformation. This, in turn, ensures not only increased efficiency but also stronger stakeholder trust, enhanced reputational capital, and the company's transition to a trajectory of long-term competitiveness.

A key advantage of the integrated model is its ability to adapt to external dynamics through flexible knowledge management, open innovation practices, and a multistakeholder approach (Table 1). This allows the company not only to respond quickly to market challenges but also to set its own rules of the game, acting as a driver of change in the industry. Such an approach fosters the development of an innovation ecosystem in which internal resources interact with external sources of knowledge, technology, and social capital.

The descriptive part of the integrated management-innovation model for implementing the innovative, organizational, communicative and economic management paradigms in the activities of an architectural and construction company can be presented as a holistic conceptual framework encompassing four interrelated blocks: target, content-organizational, technological, and control-diagnostic.

The target block defines the strategic orientation of the model: the formation of an innovative, adaptive, socially responsible, and competitive company capable of effective functioning under conditions of sustainable spatial renewal. The main tasks of this block are digital transformation of management, implementation of value-oriented communication, development of an innovation culture, and enhancement of managerial competence [5; 6; 17; 18].

The content-organizational block structures the key components of the paradigm: from technological innovations (BIM, Lean, Smart solutions) to organizational flexibility, communication strategy, value-based management, social responsibility, economic efficiency, and soft skills development in management. This block also involves the creation of multidisciplinary teams, implementation of visual management, and development of a corporate culture oriented towards innovation [7; 8; 9; 19; 20; 21].

Table 1

**An integrated managerial and innovative model for implementing an organisational, communicative and economic management paradigm in the activities of an architectural and construction company**

| Model block                            | Content                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Target Block</b>                 | <p><b>Goal:</b> to establish an innovative, adaptive and socially responsible architectural and construction company that can compete in the context of sustainable spatial renewal.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- ensure the digital transformation of management;</li> <li>- implement value-based communication with stakeholders;</li> <li>- create a culture of innovation and social responsibility;</li> <li>- increase the professional competence of the management team.</li> </ul>                                                                                                                                                                                                                                                                                                                                      |
| <b>2. Content-organizational block</b> | <p><b>Paradigm components:</b></p> <ul style="list-style-type: none"> <li>- innovation component (BIM, Lean, Smart solutions);</li> <li>- organizational flexibility (network structures, “Idea Factory”);</li> <li>- communicative strategy (NLP, NVC, value-oriented interaction);</li> <li>- value-oriented management (NPS, SERVQUAL, stakeholder mapping);</li> <li>- social responsibility (ESG, ethical standards, public engagement);</li> <li>- economic efficiency (resource-saving, ERP/CRM systems);</li> <li>- professional competence of the manager (soft skills, facilitation, strategic thinking).</li> </ul> <p><b>Organizational conditions:</b></p> <ul style="list-style-type: none"> <li>- creation of interdisciplinary project teams;</li> <li>- implementation of visual modelling tools;</li> <li>- digitalization of project culture.</li> </ul> |
| <b>3. Technological block</b>          | <p><b>Tools and implementation methods:</b></p> <ul style="list-style-type: none"> <li>- digital platforms (BIM, ERP, CRM, IoT);</li> <li>- facilitation techniques (“Six Thinking Hats,” design thinking);</li> <li>- “Idea Factory” as a solution generation tool;</li> <li>- feedback methods (NPS, SERVQUAL, employee feedback);</li> <li>- visual management tools (Kanban boards, infographics, dashboards);</li> <li>- training programs for soft skills and leadership development.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                      |
| <b>4. Control-diagnostic block</b>     | <p><b>Criteria for evaluating implementation effectiveness:</b></p> <ul style="list-style-type: none"> <li>- company’s digital maturity level (Digital Maturity Index);</li> <li>- dynamics of ESG indicators;</li> <li>- customer and employee satisfaction indexes (NPS, eNPS);</li> <li>- level of innovation activity (number of initiatives implemented through the “Idea Factory”);</li> <li>- economic performance indicators (ROI, cost reduction, decision-making speed);</li> <li>- quality of internal communication (surveys, feedback analysis);</li> <li>- use of IIM (integral implementation model index).</li> </ul>                                                                                                                                                                                                                                       |

The technological block of the model covers tools and methods of implementation: digital platforms (BIM, ERP, CRM, IoT), facilitation techniques (“Six Thinking Hats,” design thinking), the “Idea Factory” as a decision-generation mechanism, feedback systems (NPS, SERVQUAL), visual management tools, and training programs for developing leadership and communication skills [10; 11; 12; 22; 23].

The control-diagnostic block provides evaluation of the model implementation effectiveness. The key criteria include company digital maturity level, ESG indicator dynamics, customer and employee satisfaction indexes, level of innovation activity, economic performance (ROI, cost optimization), and quality of internal communication [2; 3; 4]. This block enables monitoring, adjustment, and strategic management of transformational processes.

The diagnostic, unified evaluation basis is built on the use of the IIM (Integrated Implementation Metric) – an integral indicator of model implementation. The methodology was developed considering modern research [14; 15; 16], but the concept is predominantly innovative. It should be emphasized that the integral evaluation formula (IIM) can be positioned both as the analytical core of the technological block of the model and as the foundation of the control-diagnostic element of the model concept.

Let us justify the position:

Firstly, the technological block encompasses implementation tools – and the formula, as a system for diagnosing effectiveness, serves as a management monitoring tool that enables informed decision-making.

Secondly, it is based on real data from digital platforms (ERP, BIM, CRM), service metrics (NPS, SERVQUAL), ESG indicators, and internal HR metrics – thus directly integrated into the technological environment.

Thirdly, it functions as a feedback mechanism, reinforcing the principles of adaptability, transparency, and evidence-based management – both as the technological and value-based foundation of the paradigm.

Therefore, the integral formula IIM is not merely a mathematical expression but a mechanism of managerial verification of model implementation, logically embedded in the dual structure of the technological and control-diagnostic blocks of the model (Table 2).

Integral evaluation formula:

$$IIM = \sum_{i=1}^7 W_i \cdot Q_i$$

IIM (Integrated Implementation Metric) is an integral indicator of model implementation;

$Q_i$  is a quantitative effectiveness indicator of the  $i$ -th model component (e.g.,  $Q_1$  – digital maturity,  $Q_2$  – level of customer loyalty, etc.);

$w_i$  is a weight coefficient of significance of the  $i$ -th component (based on expert surveys, SWOT analysis, strategic priorities);

$n$  is a number of model components, mainly from the content-organizational block of the integrated management-innovation model (reflecting the content of the innovative, organizational, communicative and economic management paradigms), in this case – 7: from innovation to CSR.

IIM is an integral index of implementation effectiveness (ranging from 0 to 1).

Table 2

**Diagnostic concept of IIM: assessment of the integrated management and innovation model for implementing an innovative, organisational, communicative and economic management paradigm in the activities of an architectural and construction company**

| № | Paradigm component                 | Evaluation indicator ( $Q_i$ )                             | Weight coefficient ( $w_i$ ), % | Data source and diagnostics comment                             |
|---|------------------------------------|------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------|
| 1 | Innovation component               | Level of digital integration (BIM, IoT, AI)                | 20%                             | Assessed by Digital Maturity Index, internal IT solutions audit |
| 2 | Organizational flexibility         | Flexibility of organizational structures, team functioning | 15%                             | Manager surveys, analysis of horizontal connections             |
| 3 | Communication strategy             | Quality of client interaction, communication culture       | 10%                             | NVC, NLP methods, feedback, satisfaction rate                   |
| 4 | Value-oriented management          | Loyalty indicators (NPS, SERVQUAL)                         | 15%                             | Regular client surveys, stakeholder mapping                     |
| 5 | Social responsibility (CSR)        | ESG indicators, community involvement                      | 10%                             | ESG reporting, monitoring of social initiatives                 |
| 6 | Economic efficiency                | ROI, resource saving, automation                           | 15%                             | ERP/CRM analytics, financial and operational reports            |
| 7 | Managerial professional competence | Soft skills, leadership, strategic vision                  | 15%                             | HR assessments, coaching, internal development programs         |

Its implementation level can be interpreted as follows:

- 0.00–0.49 – critical level (requires deep transformation)
- 0.50–0.69 – basic level (partial implementation, needs strengthening)
- 0.70–0.89 – advanced level (high alignment with the paradigm)
- 0.90–1.00 – strategic leadership (benchmark paradigm implementation)

Let us consider the application of IIM by example. The company “UVT GROUP” is a market leader in Ukraine in implementing digital technologies in designing modern real estate projects. The company has repeatedly been recognized in international architectural competitions and is an active market participant. It mainly specializes in projects of the highest complexity category in architecture, engineering, and interior design. A general comparison of the company’s practices, paradigm components, and the integrated model is presented in Table 3.

Table 3

**Comparison of paradigm components, integrated model, and practices of UVT GROUP**

| Paradigm component                        | Integrated model (theoretical)                                                 | UVT GROUP (practical implementation)                                                                  |
|-------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Innovation component</b>               | BIM, Lean, Smart technologies, adaptive architecture, Smart City               | BIM for over 10 years, 3D visualization, digital twins, Revit, Navisworks, Smart Design               |
| <b>Organizational flexibility</b>         | Network structures, multidisciplinary teams, “Idea Factory,” visual management | Teams of architects, engineers, designers; project roadmaps, process visualization                    |
| <b>Communication strategy</b>             | NLP, nonviolent communication, client-orientation, personalized interaction    | Transparent client interaction, investment support, CRM for international communication               |
| <b>Value-oriented management</b>          | NPS, SERVQUAL, stakeholder mapping, customer loyalty                           | Financial transparency, objective project evaluation, focus on long-term value                        |
| <b>Social responsibility (CSR)</b>        | ESG reporting, community involvement, ethical standards, green building        | Energy-efficient projects (EN, LEED, BREEAM), functionality, ecology, inclusivity                     |
| <b>Economic efficiency</b>                | ERP/CRM, resource saving, ROI, digital transformation                          | ERP, CRM, financial analytics, risk management, investment feasibility assessment                     |
| <b>Managerial professional competence</b> | Soft skills, facilitation, strategic thinking, emotional intelligence          | Team of 50+ specialists, continuous training, participation in international projects, BIM leadership |

The analysis of the integrated management-innovation model and the practices of UVT GROUP reveals which elements of the model are already implemented in the company’s activities and which still require adoption.

The implemented model elements in the company’s activities:

1. Target block:
  - Goal: establishment of an innovative, adaptive, socially responsible and competitive company.
  - Objectives:
  - Digital transformation of management (use of BIM, 3D visualization, digital twins).

- Implementation of value-oriented communication (transparent client interaction, CRM).
- Formation of a culture of innovation and social responsibility (energy-efficient projects).
- Enhancement of professional competence of the management team (team of 50+ specialists).
- 2. Content-organizational block:
  - Innovation component: use of BIM, 3D visualization, digital twins.
  - Organizational flexibility: teams of architects, engineers, designers; project roadmaps.
  - Communication strategy: transparent client interaction, CRM for international communication.
  - Value-oriented management: financial transparency, objective project evaluation.
  - Social responsibility: energy-efficient projects, environmental friendliness, inclusiveness.
  - Economic efficiency: use of ERP, CRM, financial analytics.
  - Managerial professional competence: continuous training, participation in international projects,

BIM leadership.

3. Technological block:

- Tools and implementation methods: use of digital platforms (BIM, ERP, CRM), facilitation techniques, visual management tools.

The elements requiring implementation or development within UVT GROUP activities:

1. Target block:

- Objective: greater emphasis needed on the culture of innovation and social responsibility.

2. Content-organizational block:

- Communication strategy: needs integration of new methods such as NLP (neuro-linguistic programming) and nonviolent communication (NVC).

- Value-oriented management: more active adoption of stakeholder mapping methods is required.

3. Technological block:

- Tools and implementation methods: expansion of facilitation techniques use, such as design thinking, and integration of new visual management tools.

4. Control-diagnostic block:

- Evaluation criteria: clear indices for customer and employee satisfaction, as well as levels of innovation activity, need to be defined.

Thus, UVT GROUP implements many components of the integrated model, yet there are opportunities for further development in certain aspects that will enhance the overall company effectiveness.

Overall, UVT GROUP demonstrates a high level of theoretical concept integration into practice, contributing to increased competitiveness and efficiency. The comparison shows that the company not only implements innovative solutions but also actively applies modern management strategies that meet market demands.

Next, the evaluation based on expert assessments and hierarchical weighted comparisons to determine the significance of individual model components is presented. The construction of the integral effectiveness indicator IIM is performed using weighted linear aggregation, which allows assessing the implementation level of each paradigm component and their combined impact on the company's strategic transformation.

The application of the integral effectiveness indicator IIM for diagnosing UVT GROUP (Table 4) enables a comprehensive evaluation of the integrated management-innovation model implementation effectiveness. This indicator considers key aspects such as the level of digital transformation, organizational flexibility, communication strategy effectiveness, and social responsibility. Using IIM makes it possible to identify strengths and weaknesses in management, evaluate the dynamics of innovation implementation, and support the formation of well-founded decisions for the company's further development. This, in turn, ensures increased competitiveness and adaptability of UVT GROUP in the rapidly changing architectural and construction environment.

Table 4

**UVT GROUP's application of the IIM integral formula for diagnostics**

| № | Paradigm component                 | Symbol | Score $Q_i$ (0–1) | Weight $w_i$ | Calculation $w$ |
|---|------------------------------------|--------|-------------------|--------------|-----------------|
| 1 | Innovation component (BIM, Smart)  | $Q_1$  | 0.78              | 0.20         | 0.1560          |
| 2 | Organizational flexibility         | $Q_2$  | 0.72              | 0.15         | 0.1080          |
| 3 | Communication strategy             | $Q_3$  | 0.70              | 0.10         | 0.0700          |
| 4 | Value-oriented management          | $Q_4$  | 0.75              | 0.15         | 0.1125          |
| 5 | Social responsibility (ESG)        | $Q_5$  | 0.70              | 0.10         | 0.0700          |
| 6 | Economic efficiency                | $Q_6$  | 0.77              | 0.15         | 0.1155          |
| 7 | Managerial competence              | $Q_7$  | 0.80              | 0.15         | 0.1200          |
|   | <b>Total (<math>\Sigma</math>)</b> |        |                   | 1.00         | <b>0.7520</b>   |

The diagnostic process is visually presented in Fig. 1.

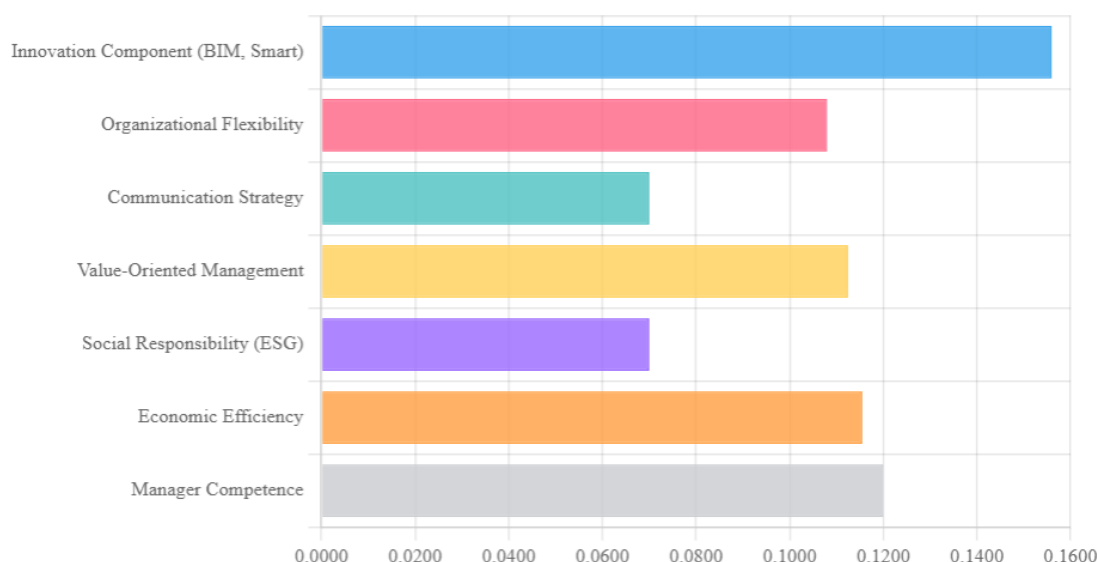


Fig. 1. Diagnosis of UVT GROUP based on key elements of the integrated model

The calculation uses the weighted sum of the scores for each component.

Calculation formula:

$$IIM = \sum_{i=1}^7 W_i \cdot Q_i = 0,752.$$

Therefore, UVT GROUP is one of the leading architectural and construction companies in Ukraine, demonstrating an IIM implementation level of  $0.752 \approx 0.75$ . Specifically, this corresponds to an advanced level characteristic of enterprises with moderate innovation and management activity, which have established a foundation for strategic growth.

More detailed analysis of the integral model implementation for UVT GROUP confirms a high level of strategic maturity across key transformation directions. Particularly notable are the innovation component and managerial competence, indicating systematic efforts in BIM adoption, digital tool integration, and leadership potential development. These areas serve as catalysts for sustainable organizational growth and strengthening market positions.

The blocks of economic efficiency, value-oriented management, and organizational flexibility show a good level of implementation with prospects for further enhancement. They form the basis for the company's adaptability to a changing market environment, customer-centric policies, and stronger partnership ecosystems. Recommended actions in these areas will not only improve internal efficiency but also deepen brand differentiation.

The communication strategy and social responsibility sectors display stable dynamics but possess high potential for development through deeper ethical communication, active stakeholder involvement, and enhanced ESG presence in the public domain. This will contribute to building resilient social capital and public loyalty, which is critically important for long-term positioning of the company as a responsible industry player.

Overall, strategic strengthening of each paradigm component (methodological part) and the integrated management-innovation model (theoretical part), detailed in Table 5, will enable UVT GROUP to move from the "advanced level" of implementation to the "benchmark management model," combining innovativeness, responsibility, and flexibility. The company has all prerequisites for leadership in sustainable spatial development in Ukraine and can become a reference point for forming next-generation industry standards.

General recommendation: to enhance effectiveness and technologize the development process, it is advised to use the integrated management-innovation model for implementing the innovative, organizational, communicative and economic management paradigm in the activities of the architectural and construction company "UVT GROUP", with detailed specification of the core block instruments applied practically within the company's operations.

## CONCLUSIONS

The conducted study substantiated and structurally formulated the integrated management-innovation model, which serves as the methodological framework for the innovative, organizational, communicative and economic paradigm of development for an architectural and construction company. This model ensures comprehensive enterprise transformation by combining strategic management, digital solutions, social responsibility, and value-oriented stakeholder interaction.

The proposed model is implemented through four interrelated blocks: target, content-organizational, technological, and control-diagnostic. Its advantage lies in flexible adaptation to the dynamics of spatial and market environments through the use of multidisciplinary approaches, digital platforms, facilitation methods, and feedback

systems. A key role in the model is played by the integral indicator IIM, which allows an objective assessment of the implementation level of each paradigm component.

Table 5

**Recommendations and expected effects from the implementation of the paradigm components  
(methodological part) and the integrated management and innovation model (theoretical part) by UVT  
GROUP**

| Paradigm component          | Score $Q_i$ | Implementation level | Recommended actions for enhancement                                                     | Expected effects                                                                           |
|-----------------------------|-------------|----------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Innovation component        | 0.78        | Excellent            | Expand Smart technologies to operations; BIM strategy; integrate AR/VR                  | Increased competitiveness; reduced planning-to-implementation cycle; enhanced client trust |
| Organizational flexibility  | 0.72        | Good                 | Implement "Idea Factory"; develop self-managed teams; strengthen horizontal connections | Growth of initiative; reduced decision-making lag; improved team dynamics                  |
| Communication strategy      | 0.70        | Good                 | Train in NVC/NLP; regular stakeholder feedback                                          | Improved customer experience (CX); reduced conflicts; increased client retention           |
| Value-oriented management   | 0.75        | Good → High          | Measure NPS/SERVQUAL; implement loyalty and transparency policies                       | Strengthened reputational resilience; higher service trust; increased repeat orders        |
| Social responsibility (CSR) | 0.70        | Good                 | ESG reporting; community engagement; participatory design approach                      | Expanded social capital; better public perception; support in tenders                      |
| Economic efficiency         | 0.77        | Good → High          | Integrate ERP/CRM; implement AI for forecasting and resource saving                     | Increased ROI; cost reduction; optimization of production and logistics processes          |
| Managerial competence       | 0.80        | Excellent            | Individual development tracks; change facilitation; knowledge sharing                   | Strengthened leadership potential; readiness for transformation; cohesive management team  |

The partial testing of the model was carried out on the example of UVT GROUP, which demonstrates an advanced level of implementation – IIM = 0.752. The company showed high results in innovation development and managerial competence components, as well as good levels in organizational flexibility, economic efficiency, and value-oriented management. The company has formed a systematic foundation for progressing to a benchmark management level based on principles of openness, technological maturity, and strategic flexibility.

The recommendations provided following the diagnostic allow strengthening each model component – notably through AR/VR integration in Smart design, development of NVC communications, ESG reporting, the "Idea Factory," and intelligent data analysis. The expected effects include enhanced competitiveness, reputational resilience, customer loyalty, and social capital of the company.

Thus, the application of the integrated management-innovation model enables not only modernization of management practices in the architectural and construction sector but also the formation of a new quality of spatial development at the intersection of technological innovation, value leadership, and social responsibility.

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