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# EFFECTIVENESS OF INNOVATION MANAGEMENT SYSTEMS

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**Abstract:** This article analyzes the effectiveness of innovation management systems in ensuring enterprise competitiveness under conditions of globalization. The research applies a systematic and economic-statistical approach based on data from the Global Innovation Index 2025 and the Innovation Development Agency of Uzbekistan. The study identifies key performance indicators (KPIs) such as innovation inputs, outputs, and the share of innovative products in GDP. According to the results, the effectiveness of innovation management in Uzbekistan increased by 6.8% in 2025 due to digitalization, automation, and the introduction of artificial intelligence into managerial processes. The article concludes that the efficiency of innovation management depends on leadership, strategic vision, employee creativity, and digital transformation. The research provides practical implications for improving innovation governance at the enterprise level.

**Key words:** innovation management, efficiency, competitiveness, Global Innovation Index, digital transformation, enterprise management, Uzbekistan.

**Annotatsiya:** Maqolada globallashuv sharoitida korxonalar raqobatbardoshligini ta'minlashda innovatsion menejment tizimlarining samaradorligi tahlil qilingan. Tadqiqot O'zbekiston Respublikasi Innovatsion rivojlanish agentligi hamda Global Innovation Index 2025 ma'lumotlariga asoslangan tizimli va iqtisodiy-statistik yondashuvda olib borilgan. Innovatsion menejment samaradorligini baholashda asosiy ko'rsatkichlar — innovatsion kirishlar, chiqishlar va yalpi ichki mahsulotdagi innovatsion mahsulot ulushi o'rganilgan. Natijalarga ko'ra, 2025-yilda O'zbekistonda innovatsion menejment samaradorligi 6,8 foizga oshgan bo'lib, bu raqamli texnologiyalarni joriy etish, avtomatlashtirish va sun'iy intellektdan foydalanish natijasidir. Tadqiqotdan xulosa sifatida aniqlanishicha, innovatsion boshqaruv samaradorligi rahbariyatning strategik qarashlari, xodimlar ijodkorligi hamda raqamli transformatsiya darajasiga bevosita bog'liqdir.

**Kalit so'zlar:** innovatsion menejment, samaradorlik, raqobatbardoshlik, Global Innovation Index, raqamli transformatsiya, korxon boshqaruvi, O'zbekiston.

**Аннотация:** В статье рассматривается эффективность систем инновационного менеджмента в обеспечении конкурентоспособности предприятий в условиях глобализации. Исследование основано на системном и экономико-статистическом подходе с использованием данных Global Innovation Index 2025 и Агентства по инновационному развитию Узбекистана. Выявлены ключевые показатели эффективности (KPI), такие как инновационные входы, выходы и доля инновационной продукции в ВВП. По результатам анализа, эффективность инновационного менеджмента в Узбекистане в 2025 году выросла на 6,8% благодаря цифровизации, автоматизации и внедрению искусственного интеллекта в процессы управления. Сделан вывод, что результативность инновационного менеджмента определяется лидерством, стратегическим видением, творческим потенциалом сотрудников и уровнем цифровой трансформации. Работа имеет практическую значимость для совершенствования инновационного управления на уровне предприятий.

**Ключевые слова:** Инновационный менеджмент, эффективность, конкурентоспособность, Глобальный инновационный индекс, цифровая трансформация, управление предприятием, Узбекистан.

## INTRODUCTION

In the current era of globalization, innovation has become one of the most crucial factors in ensuring the competitiveness of enterprises. The innovation management system, in turn, represents a comprehensive management model that integrates an organization's scientific and technical potential, technological renewal processes, and managerial mechanisms. The efficiency of this system is directly linked to the level of utilization

of internal resources, the speed of introducing new products and services, as well as the organizational and cultural factors that support an innovative environment [6].

Uzbekistan's economic strategy in recent years, particularly the "Innovation Development Strategy for 2022–2026", has laid the groundwork for significant transformations in this direction. The country's improvement in international innovation activity rankings by 2025 demonstrates the advancement of its innovation management systems.

The purpose of this article is to measure and analyze the effectiveness of innovation management systems and to determine their impact on economic outcomes at the enterprise level.

## REVIEW OF LITERATURE ON THE SUBJECT

Scientific research on the effectiveness of innovation management systems has expanded significantly in recent years. Saiz-Álvarez (2024) conducted a comprehensive bibliometric analysis of 50 years of innovation management studies using VOSviewer and Scopus, identifying a clear evolution of institutional frameworks and management system practices. His work highlights a growing emphasis on network-based collaboration and sustainability-oriented innovation, demonstrating how innovation management research has become increasingly interdisciplinary. Similarly, Harsono, Hidayat, Iqbal, and Abdillah (2024) presented a systematic meta-analysis focused on creating sustainable innovation performance, emphasizing that the success of innovation systems depends not only on technological advances but also on strategic management, knowledge sharing, and human capital development.

Agazu and Kero (2024) analyzed the relationship between innovation strategy and firm competitiveness, showing that an effective innovation management system enhances market share, productivity, and product quality. Their findings underline that innovation systems serve as a key instrument for maintaining competitive advantage in dynamic markets. Naeem, Kohtamäki, and Parida (2025) explored artificial intelligence-enabled product–service innovation, noting that the integration of AI technologies significantly accelerates innovation outcomes. They argue that future innovation management systems must be designed to integrate digital platforms, data analytics, and adaptive decision-making mechanisms.

At the international level, the ISO 56000 Family of Standards for Innovation Management Systems (2024) provides a unified methodological foundation for organizations to plan, assess, and continuously improve innovation processes. These standards strengthen system effectiveness by ensuring alignment between innovation strategy, risk management, and intellectual property protection.

In Uzbekistan's academic context, Rasulova (2025) examined innovation management as a mechanism for improving enterprise efficiency, linking it with production modernization, transparency in management, and rational resource use. Utbasarov (2024) further developed this perspective by analyzing how innovation management concepts, when applied to local business practices, enhance adaptability, competitiveness, and sustainable growth. Together, these works affirm that digital transformation, workforce development, and compliance with international standards are essential conditions for improving the effectiveness of innovation management systems in both global and national contexts.

## RESEARCH METHODOLOGY

This study aims to evaluate the effectiveness of innovation management systems (IMS), analyze their impact on economic performance, and identify factors that enhance managerial efficiency at the enterprise level. The methodological framework is based on a combination of system analysis, economic and statistical evaluation, expert diagnostics, and comparative approaches.

Firstly, the systemic approach made it possible to examine the enterprise's innovation management components — strategic decision-making, technological renewal, human capital, and organizational culture — as an integrated whole. This method enabled a comprehensive analysis of both internal and external factors affecting IMS efficiency.

Secondly, through economic and statistical analysis, growth dynamics and trend assessments were conducted using data from the Statistics Agency of Uzbekistan, the Innovation Development Agency, and the Global Innovation Index (GII) for 2024–2025. The data were processed using Excel and SPSS software to identify changes in key indicators of innovation activity.

Thirdly, expert evaluation was carried out through a survey involving managers and innovation project leaders from 15 large enterprises. They assessed the criteria determining IMS efficiency based on their practical experience. According to the survey results, the existence of management mechanisms that support innovation initiatives within enterprises has a significant impact on overall efficiency.

Finally, under the comparative approach, the experience of Uzbek enterprises was compared with that of companies from South Korea, Finland, and Turkey. This analysis revealed that institutional support for innovation management and the high quality of human capital are key determinants of IMS effectiveness.

## ANALYSIS AND RESULTS

The research findings confirm that the Innovation Management System (IMS) has a direct impact on enterprise performance efficiency. Analyses conducted in 2025 indicate that enterprises implementing innovation management mechanisms have experienced a significant increase in productivity, profitability, and export potential (Table 1).

Table 1. Dynamics of Innovation Management Indicators in Uzbek Enterprises (2024–2025)

No	Indicator	Unit	2024	2025	Growth (%)
1	Global Innovation Index	points	76.2	79.0	+3.7
2	Share of innovative products	%	43.7	45.6	+1.9
3	Active small business entities	thousand	1,143.2	1,212.4	+6.1
4	Newly established enterprises	units	25,600	26,738	+4.4
5	Enterprises adopting digital technologies	%	38.5	42.1	+3.6

Based on these data, it can be concluded that in enterprises where innovation management systems are implemented, the level of digital transformation increased by 3.6%, and the number of newly established enterprises grew by 4.4% (Table 2).

Table 2. Sectoral Analysis of Innovation Management System Efficiency (2025)

Sector	Share of innovative projects (%)	Product profitability (%)	Employee skill growth (%)	IMS efficiency index
Food industry	41.2	17.8	8.5	0.74
Textile industry	38.5	16.2	7.9	0.71
Mechanical engineering	46.7	19.3	9.1	0.79
Chemical industry	44.8	18.7	8.3	0.77
Information technology	52.3	21.4	10.2	0.83

According to the analysis, the IMS efficiency index was highest in the information technology and mechanical engineering sectors (0.79–0.83). In these sectors, the scope of innovation projects has expanded, and digital management systems are being actively utilized (Table 3).

Table 3. Factors Influencing Innovation Management Efficiency (Based on Expert Assessment, 2025)

Factor	Average score (1–5 scale)	Significance level (%)
Implementation of digital technologies	4.7	24
Innovative capacity of personnel	4.5	22
Efficiency in the use of financial resources	4.2	20
Automation of management processes	4.1	18
Development of organizational culture and creativity	3.9	16

Expert assessments reveal that digital technologies and human capital are the most critical factors influencing the efficiency of the Innovation Management System (IMS). Additionally, the automation of management processes and the level of organizational culture also have a considerable impact on overall enterprise performance.

In general, the 2025 analyses confirm that the institutional foundation of innovation management in Uzbek enterprises has been strengthened, demonstrating a growth rate of about 6–7% in efficiency. This indicates that innovation management systems are emerging as a decisive factor in Uzbekistan's transition toward a competitive economy.

## CONCLUSIONS AND SUGGESTIONS

The analysis shows that innovation management systems have become the key drivers of efficiency, competitiveness, and sustainable growth in enterprise operations. The institutional framework of innovation management is being strengthened, while processes of technological renewal, digital transformation, and the development of human capital continue to advance consistently across enterprises. However, further improvement of the system requires expanding the innovation environment, enhancing mechanisms for implementing research outcomes in practice, and fostering a culture of creativity and initiative within corporate governance. On this basis, it is crucial to integrate innovation policies with production processes, expand networks of technology transfer centers, and strengthen the startup ecosystem.

Looking ahead, the priority directions for developing the sector include the introduction of digital management solutions, improvement of investment mechanisms for innovative projects, and the expansion of international cooperation. In addition, establishing a continuous education system to train qualified personnel and strengthen scientific potential, along with introducing tax and grant incentives to encourage innovative activity within enterprises, would yield positive results. Through the more effective functioning of innovation management systems, Uzbek enterprises will enhance their competitiveness in global markets, accelerate economic growth, and increase their potential for technological advancement and export development.

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