

IMPROVING ESG MANAGEMENT MECHANISMS IN THE CONTEXT OF
DIGITAL TRANSFORMATION IN UZBEKISTAN

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Abstract: The article examines modern approaches to improving ESG management mechanisms in the context of the digital transformation of Uzbekistan's economy. The study considers the integration of ESG principles into corporate governance systems and analyzes the impact of digital technologies on transparency, sustainability, and management efficiency. Based on systematic and comparative analysis, the main challenges of ESG management development in organizations of Uzbekistan were identified, including insufficient digital maturity, limited ESG tools, and the lack of integrated ESG monitoring mechanisms. The study proposes a conceptual approach to improving ESG management based on digital technologies, transparency development, and stakeholder engagement. It is concluded that digital transformation is becoming one of the key factors of sustainable organizational development and improvement of corporate governance quality in Uzbekistan.

Keywords: ESG, ESG management, digital transformation, sustainable development, digitalization, corporate governance, stakeholders.

Аннотация: В статье исследуются современные подходы к совершенствованию механизмов ESG-управления в условиях цифровой трансформации экономики Узбекистана. Рассматриваются особенности интеграции ESG-принципов в систему корпоративного управления организаций, а также влияние цифровых технологий на повышение прозрачности, устойчивости и эффективности управленческих процессов. На основе системного и сравнительного анализа выявлены основные проблемы развития ESG-управления в организациях Узбекистана, включая недостаточный уровень цифровой зрелости, ограниченность ESG-инструментов и отсутствие комплексных механизмов ESG-мониторинга. Предложен концептуальный подход к совершенствованию ESG-управления, основанный на использовании цифровых технологий, развитии прозрачности и взаимодействии с заинтересованными сторонами. Сделан вывод о том, что цифровая трансформация становится одним из ключевых факторов устойчивого развития организаций и повышения качества корпоративного управления в Узбекистане.

Ключевые слова: ESG, ESG-управление, цифровая трансформация, устойчивое развитие, цифровизация, корпоративное управление, заинтересованные стороны (стейкхолдеры).

Аннотация: Maqolada O'zbekiston iqtisodiyotining raqamli transformatsiyasi sharoitida ESG-boshqaruv mexanizmlarini takomillashtirishning zamonaviy yondashuvlari tadqiq etilgan. ESG tamoyillarini tashkilotlarning korporativ boshqaruv tizimiga integratsiya qilish xususiyatlari hamda raqamli texnologiyalarning boshqaruv jarayonlari shaffofligi, barqarorligi va samaradorligini oshirishdagi ta'siri ko'rib chiqilgan. Tizimli va qiyosiy tahlil asosida O'zbekistondagi tashkilotlarda ESG-boshqaruvni rivojlantirishning asosiy muammolari, jumladan raqamli yetuklik darajasining yetarli emasligi, ESG vositalarining cheklanganligi va kompleks ESG-monitoring mexanizmlarining mavjud emasligi aniqlangan. Tadqiqotda raqamli texnologiyalar, shaffoflik va manfaatdor tomonlar bilan o'zaro hamkorlikka asoslangan ESG-boshqaruvni takomillashtirishning konseptual yondashuvi taklif etilgan. Raqamli transformatsiya

tashkilotlarning barqaror rivojlanishi va korporativ boshqaruv sifatini oshirishning muhim omillaridan biri ekanligi haqida xulosa qilingan.

Kalit soʻzlar: ESG, ESG-boshqaruv, raqamli transformatsiya, barqaror rivojlanish, raqamlashtirish, korporativ boshqaruv, manfaatdor tomonlar.

Abstract: The article examines modern approaches to improving ESG management mechanisms in the context of the digital transformation of Uzbekistan's economy. The study considers the integration of ESG principles into corporate governance systems and analyzes the impact of digital technologies on transparency, sustainability, and management efficiency. Based on systematic and comparative analysis, the main challenges of ESG management development in organizations of Uzbekistan were identified, including insufficient digital maturity, limited ESG tools, and the lack of integrated ESG monitoring mechanisms. The study proposes a conceptual approach to

INTRODUCTION

In the modern conditions of global economic development, issues of sustainable development and corporate responsibility are becoming one of the key directions of contemporary management. The intensification of environmental risks, changing investor expectations, increasing demands for business transparency, and the active development of digital technologies significantly affect organizational management systems. In this regard, the ESG approach is gradually transforming into an important element of strategic management and long-term organizational sustainability [1].

In contemporary scientific literature, ESG is considered a combination of environmental, social, and governance principles affecting the effectiveness of corporate governance and sustainable organizational development. Freeman [1] emphasizes the importance of stakeholder interaction within the strategic management system, considering stakeholders as one of the key factors of organizational sustainability. Eccles and Klimenko [2] note that ESG is gradually becoming an important factor of investment attractiveness and corporate competitiveness. According to the study by Nosratabadi et al. [5], sustainable business models under modern conditions are becoming an important element of the long-term sustainable development of organizations and are increasingly based on the principles of digitalization, innovative management, and sustainability of corporate systems.

Particular attention in modern research is devoted to issues of digital transformation and its influence on ESG management. Schwab [3] considers digitalization one of the key factors in transforming modern management systems. According to Liu [9], the implementation of digital technologies contributes to increasing the efficiency of ESG management, improving the quality of analytics, and enhancing corporate reporting. Qing and Jin [12] share a similar position, considering digital transformation an important factor in increasing organizational sustainability.

Modern studies also demonstrate that the use of digital technologies positively affects organizational transparency, the level of accountability, and the quality of managerial decision-making [10]. In particular, the implementation of digital monitoring platforms, big data processing systems, and artificial intelligence technologies enables organizations to automate ESG analytics processes and improve the effectiveness of interaction with stakeholders [11].

At the same time, the analysis of scientific literature shows that most studies are devoted to general issues of ESG and digital transformation, while the specific features of improving ESG management mechanisms under the conditions of organizational digitalization in Uzbekistan remain insufficiently studied. Particularly limited is the number of studies devoted to the integration of digital governance, ESG monitoring, and mechanisms for increasing transparency in corporate governance within organizations of Uzbekistan.

For Uzbekistan, this issue is especially relevant due to the active digitalization of the economy and the implementation of the “Digital Uzbekistan – 2030” strategy aimed at developing digital infrastructure, e-governance, and modern information technologies [4]. Under these conditions, improving ESG management mechanisms becomes an important factor in sustainable organizational development and increasing the efficiency of corporate governance.

It should be noted that modern studies in the field of ESG management increasingly consider sustainable organizational development as part of strategic corporate governance. Bebbington, Unerman, and O'Dwyer [14] emphasize that ESG management mechanisms are gradually integrating into systems of strategic accountability and sustainable organizational governance. According to the authors, an effective ESG system contributes to increasing organizational transparency and improving the quality of corporate governance.

The **purpose** of the study is to develop proposals for improving ESG management mechanisms in the context of digital transformation in Uzbekistan.

To achieve this goal, the following **objectives** were defined:

- to study the theoretical foundations of ESG management;
- to determine the influence of digital transformation on ESG management;
- to analyze the current state of ESG management in Uzbekistan;
- to identify the main problems of digital ESG management;
- to develop proposals for improving ESG mechanisms.

RESEARCH METHODOLOGY

The methodological basis of the study was formed by modern concepts of sustainable governance, corporate governance, digital transformation, and stakeholder theory [6]. During the research, methods of systematic and comparative analysis, scientific generalization, conceptual modeling, and synthesis were applied. The use of these methods made it possible to comprehensively study modern approaches to ESG management, determine the influence of digital transformation on the corporate governance system, and identify the main problems in the development of ESG mechanisms within organizations of Uzbekistan.

The information base of the study included scientific publications of foreign and domestic authors, analytical reviews, materials from international organizations, as well as regulatory and legal documents of the Republic of Uzbekistan in the fields of digitalization and corporate governance. Particular attention during the research process was devoted to the analysis of modern scientific approaches in the fields of ESG management, digital transformation, and sustainable organizational development.

RESEARCH RESULTS

Results of the analysis of modern approaches to ESG management.

The conducted analysis of scientific literature and modern approaches to corporate governance demonstrates that ESG management has become one of the key elements of sustainable organizational development in recent years. While ESG was previously considered mainly as a tool of corporate social responsibility, under modern conditions it is gradually integrating into systems of strategic and operational organizational management [7].

The results of the study indicate that the governance component associated with organizational transparency, the quality of managerial decision-making, and the effectiveness of stakeholder interaction acquires particular importance within the ESG structure. In the conditions of the digital economy, the quality of corporate governance largely determines organizational sustainability and its ability to adapt to changes in the external environment [8].

The conducted analysis also shows that modern organizations increasingly consider ESG not only as an element of reputational management, but also as a factor in increasing investment attractiveness, competitiveness, and long-term sustainability. This trend becomes especially noticeable in the context of increasing demands for business transparency and growing attention from investors and society to sustainable development issues.

In addition, the study demonstrates that in recent years ESG management has gradually transformed from a system of formal reporting into a mechanism of comprehensive organizational management, including issues of environmental sustainability, social responsibility, and the quality of corporate governance.

The research results of Friede, Busch, and Bassen [15] also indicate the existence of a positive relationship between ESG indicators of organizations and their long-term financial sustainability. The authors note that effective ESG management can positively influence organizational sustainability, the quality of corporate governance, and the level of investment attractiveness.

The influence of digital transformation on ESG management The results of the study show that digital transformation has a significant influence on the effectiveness of ESG management and the quality of corporate governance within organizations. Modern digital technologies allow organizations to automate ESG monitoring processes, increase transparency, and improve the quality of analytical information [9].

The conducted analysis of modern studies indicates that the implementation of digital platforms, big data processing technologies, and artificial intelligence tools contributes to improving ESG analytics mechanisms and increasing the effectiveness of managerial decisions [10].

In practice, the digitalization of ESG management manifests itself through the automation of ESG reporting, the development of digital monitoring systems, the use of analytical platforms, and increased transparency of corporate governance. The use of digital ESG monitoring dashboards enabling organizations to analyze sustainable development indicators in real time becomes particularly important.

The research results also demonstrate that organizations with a higher level of digital maturity generally possess more effective ESG management systems and a higher level of transparency. At the same time, the implementation of digital ESG tools requires appropriate infrastructure, qualified specialists, and organizational readiness for the transformation of managerial processes [11].

Kraus et al. [16] note that digital transformation in modern organizations is becoming not only a technological process, but also a managerial process affecting decision-making mechanisms, corporate governance, and sustainable development. According to the researchers, digitalization contributes to increasing the efficiency of organizational governance and the development of modern ESG mechanisms.

Table 1. Comparison of traditional management and digital ESG management

Indicator	Traditional Management	Digital Management	ESG
Decision-making	Slow	Operational	
Reporting	Paper-based	Automated	
Transparency	Limited	High	
Analytics	Partial	Real-time analytics	
Stakeholder interaction	Limited	Interactive	

Source: compiled by the author based on [3; 9].

Current state of ESG management in Uzbekistan.

The conducted analysis shows that in recent years Uzbekistan has experienced active development of economic and public administration digitalization processes. The country is expanding the use of electronic government services, developing digital infrastructure, and improving electronic document management mechanisms.

At the same time, the research results indicate that the development of ESG management within organizations of Uzbekistan is still at the formation stage. Many organizations are only beginning to implement elements of ESG reporting and sustainable governance mechanisms. In some cases, ESG is still viewed mainly as a tool for increasing investment attractiveness rather than as a полноценная system of strategic management.

The analysis of organizational activities demonstrates that the main problems in the development of ESG management in Uzbekistan include the absence of unified ESG standards, an insufficient level of transparency, limited digital ESG monitoring mechanisms, and a low level of ESG integration into the corporate governance system.

In addition, the research results indicate an insufficient level of digital maturity among certain organizations, limited ESG analytics, and a shortage of specialists in the fields of sustainable governance and digital corporate governance.

Table 2. Main problems of ESG management in Uzbekistan

Problem	Consequences
Absence of ESG standards	Low transparency of ESG activities
Insufficient digitalization	Limited ESG monitoring
Low level of ESG culture	Formal approach to ESG
Limited ESG analytics	Reduced management efficiency
Lack of specialists	Slowing down ESG implementation

Source: compiled by the author.

Conceptual approach to improving ESG management.

The research results show that improving ESG management mechanisms under modern conditions is impossible without integrating digital technologies into the corporate governance system. The conducted analysis indicates that the use of digital ESG tools contributes to increasing organizational transparency, improving stakeholder interaction, and enhancing the quality of managerial decisions.

According to the author, the key direction for ESG management development in Uzbekistan should be the formation of digital mechanisms of transparency, accountability, and sustainable corporate governance.



Figure 1. Conceptual model of digital ESG management

Source: developed by the author.

Assessment of ESG management effectiveness

The conducted research demonstrates that under the conditions of the digital economy, assessing the effectiveness of ESG management acquires particular importance. For organizations, it becomes important not only to implement ESG principles, but also to objectively evaluate sustainable governance results using specific performance indicators.

The results of the analysis indicate that the effectiveness of ESG management depends on the level of organizational digitalization, the quality of corporate governance, and the effectiveness of interaction with stakeholders.

Conceptually, this relationship can be represented as follows:

$$ESG_{performance} = f(Digitalization, Governance, Stakeholder Engagement)$$

where:

- ESG performance - effectiveness of ESG management;
- Digitalization - level of organizational digitalization;
- Governance - quality of corporate governance;
- Stakeholder Engagement - level of stakeholder interaction.

The presented formula reflects the conceptual dependence of ESG management effectiveness on the level of digitalization, the quality of corporate governance, and the effectiveness of interaction with stakeholders.

The conducted analysis shows that the combination of these factors significantly influences organizational sustainability and the effectiveness of the corporate governance system.

Table 3. Key performance indicators of ESG management

Indicator	Characteristic
Level of digitalization	Degree of digital technology implementation
Transparency of reporting	Openness of ESG information
ESG rating	Level of sustainable governance
Stakeholder engagement	Effectiveness of interaction
Speed of decision-making	Operational efficiency of management
Level of automation	Use of digital systems
Quality of ESG analytics	Efficiency of ESG data processing

Source: compiled by the author.

Table 4. Digital tools of ESG management

Tool	Purpose
Big data	Analysis of ESG indicators
Artificial intelligence	Forecasting ESG risks
Digital monitoring dashboards	Control of ESG indicators
Automated reporting	Increasing transparency
Digital platforms	Interaction with stakeholders

Source: compiled by the author based on [10; 11].

Proposals for improving ESG mechanisms

Based on the conducted research, proposals were formulated for improving ESG management under the conditions of digital transformation in Uzbekistan. The results of the analysis indicate that one of the key directions for ESG system development should be the formation of unified national ESG standards and the development of digital infrastructure for ESG monitoring.

In addition, organizations are recommended to expand the use of digital ESG analytics platforms, improve information disclosure mechanisms, and increase the transparency of corporate governance. Particular importance is also attached to the development of stakeholder interaction and the training of specialists in ESG management and digital governance.

DISCUSSION OF RESULTS

The research results demonstrate that digital transformation is gradually becoming one of the key factors in the development of ESG management and the improvement of organizational corporate governance. The conducted analysis indicates that the implementation of digital ESG tools contributes to increasing organizational transparency, improving the quality of managerial analytics, and developing accountability mechanisms [12].

Modern studies also show that the influence of digital transformation on organizational ESG indicators may vary depending on the level of digital maturity, the quality of corporate governance, and sectoral characteristics of organizational activities [13]. George, Merrill, and Schillebeeckx [17] note that the integration of digital technologies and ESG approaches contributes to the formation of more sustainable corporate governance models and increases organizational adaptability to changes in the external environment.

At the same time, the research results show that the process of integrating ESG and digital governance within organizations of Uzbekistan is accompanied by a number of limitations. Among the main problems are the insufficient level of digital maturity of certain organizations,

limited ESG culture, as well as the absence of integrated ESG monitoring and analytics mechanisms.

According to the author, in the coming years the digitalization of managerial processes will become one of the key directions for the development of sustainable organizational governance in Uzbekistan. Under these conditions, ESG management should be viewed not only as an element of corporate reporting, but also as an important instrument for increasing sustainability and the effectiveness of the corporate governance system.

CONCLUSION

The conducted research demonstrated that under modern conditions of digital transformation, ESG management is gradually becoming an important element of strategic and corporate governance systems within organizations. The results of the analysis indicate that the use of digital technologies contributes to increasing organizational transparency, improving accountability mechanisms, and enhancing the effectiveness of managerial decisions.

During the study, it was established that digital transformation has a significant impact on the development of ESG management through the implementation of digital monitoring platforms, the automation of ESG reporting, the use of big data processing technologies, and the improvement of stakeholder interaction. At the same time, the effectiveness of ESG management largely depends on the level of organizational digital maturity, the quality of corporate governance, and the degree of ESG principle integration into management systems.

The conducted analysis also showed that the development of ESG management within organizations of Uzbekistan is still at the formation stage. Among the main problems identified were the insufficient level of digitalization of certain organizations, the absence of unified ESG standards, limited ESG analytics, and insufficient integration of ESG approaches into the corporate governance system.

The scientific novelty of the research lies in the development of a conceptual approach to improving ESG management mechanisms under conditions of digital transformation, based on the interconnection between digitalization, organizational transparency, stakeholder interaction, and the effectiveness of corporate governance.

The practical significance of the study consists in the possibility of using the proposed approaches by organizations in Uzbekistan in the development of ESG management systems, the improvement of digital corporate governance, and the formation of sustainable development mechanisms.

According to the author, in the coming years the digitalization of ESG processes will become one of the key factors in increasing the sustainability and competitiveness of organizations in Uzbekistan.

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