

DOI: <https://doi.org/10.5281/zenodo.17719362>

PROJECT MANAGEMENT AS A FRAMEWORK FOR THE IMPLEMENTATION OF SAFE CITY SYSTEMS

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Abstract - *This article examines the role of digitalization in enhancing public safety, focusing on the implementation of the “Safe City” project in Uzbekistan. The study highlights the integration of modern management methods and human resource policy as key drivers for successful project realization. The methodological basis includes an analysis of national strategies, legislative frameworks, and international best practices in smart city initiatives. The results demonstrate the importance of interdepartmental cooperation, the role of young specialists in the ICT sector, and the organizational challenges associated with centralization. The discussion emphasizes the strategic significance of human resource management, modern governance, and legal reforms in ensuring the efficiency and sustainability of the project.*

Generally, article covers three following key ideas, as Safe City Project (as a national strategic and technological initiative), Digital project management (as the methodological and managerial framework), and Human resources and institutional capacity (as key success factors).

Keywords: *Safe City, digitalization, management, human resources, ICT, strategy, legislation, public safety, characteristics, mobile terminals, implementation, emergency, calls, components, information communication technologies, effectiveness, investment, economics.*

INTRODUCTION

The implementation of the “Safe City” project is considered a strategic priority in many countries, including Uzbekistan. Its main purpose is to digitalize public safety processes by introducing ICT-based monitoring, prevention, and response tools that strengthen citizen security and improve the efficiency of public institutions. Globally, Safe City initiatives have become an essential part of smart city strategies, integrating technologies such as video analytics, artificial intelligence (AI), and big data to enhance urban safety and operational coordination among state institutions.

Uzbekistan’s national development agenda — particularly the “Uzbekistan–2030” Strategy — places strong emphasis on improving public order, preventive systems, emergency response mechanisms, interethnic harmony, and international security. A key component of this strategy is the accelerated development of ICT infrastructure and the modernization of public administration through digital transformation. In this regard, the Safe City project serves as a cornerstone for implementing innovative governance and management models, ensuring effective

interaction between technological, organizational, and human factors.

At the same time, the project represents not only a technological innovation but also a managerial and institutional challenge. The integration of multiple stakeholders — including law enforcement agencies, emergency services, and municipal administrations — requires effective digital project management tools and methodologies. Furthermore, the success of such large-scale projects depends heavily on human capital: the professional competence of public servants, the active participation of youth in the ICT sector, and the establishment of continuous training and motivation systems.

International experience shows that effective project management in the digital age relies on adaptive planning, interdepartmental collaboration, and data-driven decision-making. Therefore, the development of methodological approaches to digital project management within the Safe City framework can significantly increase efficiency, reduce duplication of functions, and improve the responsiveness of public institutions.

The aim of this article is to analyze the methodological, managerial, and human resource-related aspects of the Safe City project in Uzbekistan and to identify ways to enhance its implementation through modern digital project management practices.

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Uzbekistan’s development strategy, including the “Uzbekistan – 2030” Strategy, emphasizes issues such as public order, preventive systems, emergency response, interethnic harmony, and international security. A key component of this strategy is the accelerated development of ICT solutions and the improvement of human resource (HR) policy to ensure the effective application of modern management methods in public administration.

The project represents not only a technological innovation but also a managerial and institutional challenge. The crucial role of youth in the ICT sector, the growing importance of human resource management, and the need for interdepartmental cooperation make the Safe City project a significant case study for examining the interaction between technology, governance, and society.

The aim of this article is to analyze the methodological, managerial, and HR-related aspects of the Safe City project in Uzbekistan and to identify ways to improve its implementation through modern management practices.

METHODS

Methodologically, this study applies a qualitative and analytical approach, combining document analysis, comparative review of international Safe City models, and an assessment of Uzbekistan’s project implementation framework. The research also uses elements of project management theory, stakeholder analysis, and human resource management evaluation to identify factors influencing the success and

sustainability of the Safe City initiative.

The research is based on the following methodological approaches:

Document and policy analysis – review of Uzbekistan’s legislative framework, including the “Uzbekistan – 2030” Strategy, the Law “On Normative Legal Acts,” and government resolutions regulating ICT and public safety.

Comparative analysis – study of international best practices in implementing Safe City and Smart City projects worldwide, with emphasis on ICT integration and HR policy.

Management analysis – comparison of classical and modern management approaches, their application in public safety projects, and implications for HR management.

Case study – examination of the institutional development of the Safe City Center in Uzbekistan, including its transfer under the Ministry of Internal Affairs and its role in cybersecurity.

This mixed-method approach allows for an integrated understanding of both technological and managerial dimensions of the project.

RESULTS

The findings of the research can be summarized as follows:

Technological foundation: The Safe City project is an integrated ICT system designed to enhance public safety through real-time monitoring, data analysis, and preventive measures.

The Situation Center, a core component, is responsible for collecting and processing emergency signals, CCTV data, and communication with relevant ministries.

Human resource dimension: The project relies heavily on young ICT professionals, highlighting the importance of youth involvement in digital transformation. Modern HR policy shifts from traditional “personnel management” to strategic HRM, emphasizing staff development, training, and motivation.

Institutional challenges: Initially managed by the Safe City Center under the Ministry of Digital Technologies, the project was transferred to the Ministry of Internal Affairs, integrating cybersecurity and public safety functions.

Centralized management ensures coordination but creates bottlenecks in decision-making, limiting interdepartmental interaction.

Management practices:

Classical management approaches (administrative, bureaucratic) are still relevant but insufficient for modern ICT projects.

Modern management methods, emphasizing flexibility, decentralization, and interdepartmental cooperation, are critical for project success.

DISCUSSION

Considering the best-practices in the sphere of Safe city project implementation, it is necessary to pay more attention to number and the quality of cameras (CCTV). For

example, China has established the world’s largest CCTV network, with approximately 200 million cameras. The system integrates AI-powered video analytics, facial recognition, and real-time data processing.

This vast infrastructure demonstrates a high level of centralization and data integration, characteristic of China’s digital governance model.

The “Safe City” concept here is directly linked with the “Smart City” and “Digital China” initiatives, showing how large-scale digital project management can be aligned with state governance and urban planning.

China’s approach highlights the potential of AI-driven decision-making systems for preventive safety and crime prediction.

Table 1.

Number of CCTV by countries

Country	Approximate Number of Cameras / Road Cameras	Notes / Source
China	~200 million CCTV cameras nationwide	Includes both public and private cameras; considered the largest surveillance network globally
United States	~50 million CCTV cameras	Estimate includes road, private, and commercial surveillance systems
Russia	>23 million total surveillance cameras and about 28,000 traffic enforcement cameras	Data includes both general surveillance and specialized road monitoring systems.
Uzbekistan	Around 1,800 road enforcement camera locations + 3,356 “smart video cameras” + 763 stationary radars (as of 2021–2022)	Includes smart cameras and radar systems installed under the Safe City project. Official nationwide totals not fully published.

United States with its Decentralized and Market-driven model follows a decentralized surveillance structure with around 50 million cameras, many of which are privately owned. The system is not centrally managed, instead, it depends on local governments, private companies, and citizens. This demonstrates a bottom-up management approach, where digital project management emphasizes interoperability, data privacy, and cybersecurity rather than large-scale state control. The U.S. model reflects how digital management efficiency can coexist with strong privacy and ethical standards, which is a crucial balance for developing countries to study.

Russia a hybrid public-sector model operates more than 23 million cameras, including about 28,000 specialized traffic cameras for law enforcement and road safety. The system integrates federal and regional programs, representing a hybrid management model — combining centralized oversight with local implementation. Russian Safe City programs often include AI-based recognition systems and integrated control centers, emphasizing coordination between ministries (Interior, Emergency, and Transportation). This model may serve as a transitional example for countries modernizing their surveillance systems while maintaining administrative control.

As for the Uzbekistan with its developing and rapidly expanding system actively

working on implementation of Safe City project’s components. Uzbekistan’s Safe City project includes around 1,800 road enforcement camera locations, 3,356 smart cameras, and 763 stationary radars. Though smaller in scale compared to global leaders, it demonstrates rapid progress in digital public safety infrastructure. The focus on “smart” technologies shows a move toward intelligent data processing and automation of enforcement. However, integration and coordination remain challenges — highlighting the need for robust digital project management frameworks and capacity-building in public institutions.

Table 2.

Comparative Summary

Aspect	China	USA	Russia	Uzbekistan
Scale	Very large	Large	Medium-large	Small but growing
Governance Model	Centralized	Decentralized	Hybrid	Developing
Technology Focus	AI, data integration	Privacy, interoperability	Facial recognition, analytics	Smart cameras, automation
Project Management Type	State-led digital program	Market-driven local initiatives	Mixed public programs	Government modernization project

From a project management perspective, Uzbekistan’s case illustrates the transition from pilot-based projects to a unified national system, where success depends on methodological planning, interdepartmental cooperation, and HR development.

The analysis shows that while Uzbekistan has made significant progress in implementing the Safe City project, several challenges remain:

Centralization vs. decentralization: Centralized control ensures strategic alignment but reduces operational efficiency, suppresses initiative, and delays decision-making. Best practices suggest adopting a hybrid model, where strategic oversight remains centralized, but operational decisions are decentralized. This type of control also can be analyzed in the following table, which shows the main advantages and disadvantages by comparison.

Table 3.

Centralization vs. decentralization methods of project management

Aspect	Centralized management	Decentralized / Horizontal management
Decision-making speed	slower	faster
Employee initiative	low	high
Flexibility	low	high
Interdepartmental coordination	may be complicated	easier with horizontal links
Control and supervision	strong centralized control	distributed control and responsibility

Basically, management structure plays a decisive role in the implementation of large-scale projects such as the Safe City. The choice between centralized and decentralized management models significantly influences the efficiency, flexibility, and long-term sustainability of the project.

For example, the centralized management refers to the concentration of decision-making authority at the highest hierarchical level. In the context of the Safe City project, this model allows for unified strategic direction, consistent policy application, and strong supervision over resources and processes. Centralized management ensures that all participating institutions operate under a single strategic vision and follow clearly defined regulations. However, such an approach has notable drawbacks: operational decisions may be delayed, creative initiative from specialists may be suppressed, and interdepartmental communication can become bureaucratic and time-consuming. These limitations are especially problematic in ICT-based projects, where timely responses and innovative solutions are crucial.

On the other hand, the decentralized/horizontal management, distributes decision-making power among different levels and units of the organization. Applied to the Safe City project, decentralization allows operational units – such as Situation Centers, law enforcement bodies, or ICT divisions—to make rapid and independent decisions in emergency situations. This model enhances flexibility, fosters innovation, and motivates employees by granting them a higher level of autonomy. At the same time, decentralization requires strong coordination mechanisms to avoid duplication of efforts and to ensure that local decisions remain consistent with national strategic goals.

In order to more deeply identify the advantages of each of the management methods, one needs to make a conclusion on a comparative perspective, in which one can see, that, centralized management guarantees strategic control, uniform standards, and efficient allocation of state resources, but risks slowing down project implementation in dynamic environments.

As for the decentralized management empowers agencies to act quickly, adapt to local conditions, and respond more effectively to emergencies, yet it requires a clear legal framework and reliable interdepartmental cooperation to prevent fragmentation of authority.

In order to identify which model centralized or decentralized is more suitable for successful implementation of Safe City project in Uzbekistan, it is necessary to clarify the main purposes and the tasks of the project as a whole.

The main objectives of the project are:

- To enhance the preparedness of government agencies, forces, and resources for the prevention and mitigation of emergencies and incidents;
- To improve the effectiveness of monitoring situations at potentially hazardous and critically important facilities, life-supporting infrastructure, educational and healthcare institutions, transportation infrastructure facilities, markets, large shopping centers, sports, cultural, and recreational establishments, and other places of mass gatherings;
- To automate the collection, analysis, and accumulation of reliable information

in the field of population protection and the safeguarding of essential facilities;

- To provide informational support for monitoring, forecasting, risk reduction, incident response, and data provision during investigations;
- To ensure informational support for interagency cooperation in the field of life safety;
- To organize effective interaction between citizens and the state on issues related to life safety;
- To increase the throughput capacity of the urban road network and reduce the number and severity of road traffic accidents.

The tasks of the “Safe City” complex as system are:

- To form a unified information space to improve information exchange in the areas of monitoring, forecasting, prevention, and elimination of threats to life safety;
- To create tools for control, management, and decision-making support, including the development of coordination and resource management systems, as well as systems for situational analysis and forecasting;
- To develop and implement automated systems for monitoring life safety threats;
- To provide centralized monitoring of public safety threats, law and order, and environmental security;
- To inform and alert the population about threats to public safety, law and order, and environmental security;
- To ensure the protection of information processed within the “Safe City” system;
- To establish, maintain, and develop a unified information and communication platform for interaction between the population and agencies responsible for life safety.

Considering its common objectives one can make a conclusion, that in practice, most successful Safe City or Smart City initiatives adopt a hybrid model. Strategic planning, legal regulation, and resource allocation remain centralized, while operational decisions, daily monitoring, and technical responses are decentralized. For Uzbekistan, adopting such a hybrid system could ensure that the Safe City project achieves both efficiency in everyday operations and alignment with national security strategies.

Interdepartmental cooperation: The project’s success depends on effective interaction between ministries and agencies. However, the current legal status of the Safe City Center restricts its ability to engage in horizontal collaboration. Transforming its legal status into an agency or independent body could enhance its effectiveness.

Human resources: The demand for highly skilled ICT professionals continues to grow. Strengthening HR policy, introducing continuous professional development, and adopting modern motivational tools are necessary to sustain the project.

Legal reforms: Adoption of the Law on Civil Service, introduction of a Code of Ethics, and improved dispute resolution mechanisms are essential for institutionalizing effective governance in Safe City implementation.

Investment and governance: Attracting foreign direct investment through joint

ventures offers opportunities for financing and technology transfer. Decentralized management structures may accelerate project completion and improve financial efficiency.

As for the main objective of the present research work, that is an enhance of the role of digital solutions is reflecting in the Digital radio communication service. This service provides radio communication for employees who require mobility. To ensure reliability and enhance communication security, a digital radio communication format is used.

The main advantages of this service include:

- High-quality voice transmission through digital signal processing, enabling operation in environments with high acoustic noise;
 - Rapid call setup (up to 300 ms);
 - Capability for individual calls (radio-to-radio);
 - Multi-level priorities, duplex and semi-duplex call modes;
 - Telephone calls (radio-to-external telephone networks);
 - Group connections (radio-to-group of radios), including group calls (subscriber-to-group of subscribers), broadcast calls (subscriber-to-all subscribers), group scanning, dynamic regrouping (combining subscribers into groups without reprogramming subscriber terminals), call zone management (initiating group calls only within specific zones), late entry (allowing a subscriber to join an ongoing group call);
 - Emergency calls (maximum priority calls);
 - Direct Mode Operation (DMO).
- The service includes the following components:
- Base stations and switches deployed throughout the city of Tashkent;
 - Mobile terminals (handheld radios) for 5,000 personnel of emergency and operational services;
 - Vehicle-mounted terminals for 1,000 vehicles;
 - Server computing infrastructure.

CONCLUSION

The implementation of these technological solutions plays a critical role in ensuring the effectiveness of the Safe City project. Reliable digital communication, comprehensive monitoring systems, and secure information exchange form the backbone of a modern urban safety infrastructure. These tools enable faster response to emergencies, more efficient coordination among various government and emergency services, and enhanced public safety across all sectors of city life. By integrating advanced digital radio communication and unified data management platforms, the Safe City project not only improves operational readiness and situational awareness but also contributes to building a safer, more resilient, and better-managed urban environment for citizens.

Besides, the Safe City project is a strategic ICT-based initiative for ensuring public safety in Uzbekistan, but its effectiveness depends on the integration of modern

management methods and HR policy. Decentralization of decision-making and horizontal management models are required to improve interdepartmental interaction and operational efficiency. Human resources, particularly young ICT professionals, play a critical role in sustaining the project, making HR policy reform a priority. Legal reforms, including the adoption of the Law on Civil Service, will strengthen institutional frameworks for effective governance.

The comparison highlights by the number of CCTVs that digital project management maturity correlates strongly with the scale and effectiveness of Safe City initiatives. China demonstrates the benefits of centralized digital governance, the U.S. illustrates ethical and decentralized innovation, Russia shows a balanced coordination model, and Uzbekistan reflects the emerging stage of digital transformation in public safety.

For Uzbekistan, adopting adaptive project management methods, investing in human resources, and aligning ICT development with institutional reforms are key steps to achieving sustainable outcomes in the Safe City project.

Attracting foreign investment and creating joint ventures can accelerate implementation and ensure long-term sustainability of the project.

The analysis of management models in the implementation of the Safe City project demonstrates that neither a fully centralized nor a fully decentralized approach can guarantee sustainable success on its own. A centralized system ensures strategic integrity, unified legal frameworks, and effective allocation of national resources. At the same time, decentralization promotes adaptability, operational efficiency, and a higher level of responsiveness to rapidly changing conditions, especially in the context of emergencies and technological innovations.

The findings suggest that for Uzbekistan, a hybrid management model is the most effective option, where strategic planning, standard-setting, and resource distribution remain centralized, while operational units are granted the autonomy to respond quickly and innovatively at the local level. Such a model reduces risks of bureaucratic delays while preserving national coordination and accountability.

Furthermore, the Safe City project requires not only structural reforms but also continuous investment in human resources, digital infrastructure, and interdepartmental cooperation mechanisms. Long-term success depends on the ability of institutions to maintain a balance between control and flexibility, while also ensuring transparency and public trust.

In conclusion, adopting a hybrid system of governance provides a strong foundation for achieving the project's objectives—enhancing public safety, supporting smart city initiatives, and aligning with Uzbekistan's broader digital transformation strategy. Future research should focus on evaluating the efficiency of hybrid models in practice, comparing international case studies, and developing measurable indicators to assess the socio-economic impact of Safe City projects in the region.

REFERENCES

1. Decree of the President of the Republic of Uzbekistan “On the Strategy

- Uzbekistan — 2030” No. DP-158, September 11, 2023. Available at: <https://lex.uz/uz/docs/6991208>
2. Thomas S. Bateman, Scott A. Snell, Managing – Creating Competitive Advantage, 3rd edition, IRWIN, USA, 1996.
 3. Law of the Republic of Uzbekistan “On Normative Legal Acts” (new edition), December 14, 2000 No. 160-II. Available at: <http://www.lex.uz/acts/2105726>
 4. Altamimi, H. (2023). Centralization, Decentralization, and Organizational Change. Journal of Public Administration Research and Theory.
 5. Khalilov, E. (2023). To Understand the Complexities of Centralized and Decentralized Approaches in Managing Organizational Change and Innovation.
 6. AlixPartners. Centralization versus decentralization: what’s right for you? (2016).
 7. TASS. (25 December 2023). Russia ranks third in the world by number of CCTV cameras. TASS. Retrieved from <https://tass.com/economy/1239903>
 8. Expert Market Research. (2024). United States CCTV Camera Market Size, Share, Trends 2034. ExpertMarketResearch. Retrieved from <https://www.expertmarketresearch.com/reports/united-states-cctv-camera-market>
 9. Meduza. (24 November 2023). *Russian ministry proposes five-million-camera unified surveillance system*. Meduza. Retrieved from <https://meduza.io/en/news/2023/11/24/russian-ministry-proposes-five-million-camera-unified-surveillance-system>
 10. Tashkent Times. (14 July 2025). *Smart AI-powered cameras start to detect traffic violation in Tashkent*. Tashkent Times. Retrieved from <https://www.tashkenttimes.uz/national/15614-smart-ai-powered-cameras-start-to-detect-traffic-violation-in-tashkent>
 11. Kun.uz. (27 March 2024). *Cameras recording traffic violations to be installed near schools and pedestrian crossings from July 1*. Kun.uz. Retrieved from <https://www.kun.uz/en/news/2024/03/27/cameras-recording-traffic-violations-to-be-installed-near-schools-and-pedestrian-crossings-from-july-1>
 12. Government of Uzbekistan. (2024). *Over 3,000 violations recorded by surveillance cameras in three regions of Uzbekistan in 2024*. Gov.uz. Retrieved from <https://gov.uz/en/eco/news/view/37725>