



DOI:10.29013/EJEMS-26-2-6-11



## APPLICATION AND PERSPECTIVES OF “SMART MANAGEMENT” METHODS IN KARABAKH

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**Cite:** Hajiyeva Z. (2026). *Application and Perspectives of “Smart Management” Methods in Karabakh. European Journal of Economics and Management Sciences 2026, No 2.* <https://doi.org/10.29013/EJEMS-26-2-6-11>

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### Abstract

One of the five national priorities for the socio-economic development of the Republic of Azerbaijan up to 2030 is defined as a “*Country of Clean Environment and Green Growth.*” This priority includes environmental improvement, afforestation, rehabilitation of degraded lands, preservation of green spaces, efficient water resource management, and the promotion of sustainable energy sources. In the post-war period, special attention has been paid to the implementation of **smart city** and **smart village** initiatives in the territories liberated from Armenian occupation. These projects stand out due to their high level of coordination and integration of modern technologies.

**Keywords:** *Post-conflict, smart city, e-government, great return, communication, social development, paradigm, green energy*

### 1. Introduction

The new development model of Karabakh is characterized by a transitional phase in which the economy is being transformed, innovative management and organizational methods are being applied, and key challenges such as strengthening state sovereignty, fostering cultural dialogue, and establishing a green energy system are being addressed. These efforts also ensure that Azerbaijan will host the **COP-29** event. By the Decree of President Ilham Aliyev dated December 25, 2023, the year 2024 was proclaimed the

“*Year of Solidarity for the Green World*” in Azerbaijan.

It should be recalled that during the occupation, the city of Agdam was completely destroyed and became known as the “*Hiroshima of the East.*” Today, in the restored territories, high-speed internet is being introduced in smart villages, an e-health system capable of delivering results for 36 types of medical analyses within just 10 minutes is being established, and electronic services, e-classrooms, and other digital solutions are being provided to citizens. All of this fully

meets the demands of contemporary society (<https://fed.az/az/ikt/azerbaycanda-agillikend-nece-olacag-detallar-ekskluziv-40730>).

## **2. Smart Housing and E-Government as a Strategy for Sustainable Development**

The concepts of **smart city** and **smart village** are central to the sustainable and efficient development of the **Great Return** strategy. Smart cities and villages use various electronic methods, voice-activated technologies, and sensors to collect data. To effectively manage resources, information assets, and services derived from databases, it is essential to improve operational efficiency within the city. This includes the management of transport and traffic systems, power generation facilities, water supply networks, utilities, information technology systems, educational institutions, libraries, hospitals, and other public services, as well as data received from citizens, devices, buildings, and other assets.

The application of advanced technological systems in Azerbaijan facilitates the monitoring, analysis, planning, and management of urban development, which directly contributes to an elevated quality of life. However, defining smart cities precisely can be challenging. According to Deakin and Al Waer, a smart city is characterized by four main factors:

1. The deployment of a diverse array of electronic and digital technologies within communities and urban settings.
2. The utilization of information and communication technologies (ICT) to enhance living and working environments.
3. The incorporation of ICT into government management systems.
4. The adoption of proposed innovations through ICT tools and the broadening of experiences that foster community engagement.

Initially, in Azerbaijan, the scarcity of specialists capable of implementing “smart” urban and rural initiatives hindered progress in this area. However, the forward-thinking policies of the national leadership have successfully overcome this challenge. Companies from Israel, a strategic partner of Azerbaijan, have excelled in this domain, having imple-

mented similar projects globally. It is noteworthy that Tel Aviv was awarded the title of “*World’s Smartest City*” in 2014. Thus, the strategic partnership between Azerbaijan and Israel ensures that the insights and experience of specialists from that country play a crucial role in developing smart cities and villages in the areas reclaimed from occupation.

## **3. International Experience in Smart City and Village Development**

A brief overview of international experience is useful for understanding the global context. In Germany, the “*Smart Village*” initiative is being implemented in four locations, the most extensive being in Eisenberg. This region widely incorporates smart trade, logistics, and innovative energy solutions. In Finland and Lapland, significant advancements have been made in e-education, e-healthcare, alternative energy, e-commerce, and transport. For example, in Lapland, individuals wishing to travel to the city can use their mobile devices to access a specific program that shows the availability of empty seats in vehicles. The European Union actively supports efforts to expand smart cities and villages across its member states.

The Association of Southeast Asian Nations (ASEAN), comprising ten member nations and led by Singapore, shows substantial interest in the concept of smart cities, often surpassing several Western nations in this field. China and India, despite their high population densities, focus on developing smart cities managed by modern technology. The smart city concept has also been successfully implemented in the USA, Canada, and Australia. Thus, Azerbaijan is not following a unique path but is integrating into a global trend, while also adapting international experience to local conditions and needs.

## **4. The Political Strategy of Azerbaijan: From Liberation to Digital Transformation**

From the very beginning of his presidency, Mr. Ilham Aliyev emphasized two key elements in Azerbaijan’s political strategy: the liberation of Karabakh from occupation and the increasing significance of information and communication technologies. A review of the socio-economic and cultural policies of the

last two decades reveals a clear correlation with the principles outlined by the national leader in his electoral agenda. One of the crucial tenets of legitimacy in a democracy is enacting changes through reforms and fulfilling the promises laid out in the election platform.

The reform principles in Azerbaijan have been driven by the needs of the public. These reforms have elevated the country to a position among the world's influential nations and safeguarded the interests of Azerbaijanis living abroad during this modern, turbulent era. Today, we observe a rising trend in the application of information technology, improved interaction between citizens and the state, and an increase in both the quality and quantity of electronic government services. The progress we are witnessing is indicative of reduced costs in Karabakh's economic sector, enhanced productivity, and greater competitiveness in the region. It also leads to an improved standard of living nationwide and establishes a strong link between service quality and citizen satisfaction. Organizations that deliver high-quality services ensure satisfaction for citizens participating in the implementation of the Great Return program.

### **5. The Great Return: Main Aspects and Principles**

The **Great Return** strategy primarily encompasses the following aspects:

- The signing of a peace agreement between Azerbaijan and Armenia;
- The repatriation of internally displaced persons to their ancestral lands;
- The development of smart housing, eco-friendly cities, and urban expansion;
- The return to historical regions in Western Zangezur;
- The drawing and marking of borders following the restoration of sovereignty, along with ongoing bilateral talks with Armenia;
- Upholding a unified stance among all Azerbaijanis around the world in a coordinated manner;
- Enhancing new proposals based on ideological foundations.

These seven principles form the basis of the Great Return initiative. Over the past twenty years, advancements in informa-

tion and communication technology, along with the effects of globalization and the emergence of a "*network economy*" arising from these two factors, have brought about essential changes in social life. The evolution of the industrial system, the shift to an information-based society, and the transformation of socio-economic, cultural, and political frameworks have elevated the operational processes within government bodies and organizations to a new level.

In the 2000s, numerous nations, particularly within regional groups like the European Union, adopted strategies to transition from industrial to information societies and implemented various activities to achieve their objectives. These strategies have transformed public administration systems. The advancements in ICT have enhanced the quality of services delivered by government institutions to citizens. Unfortunately, it must be noted that in many instances, these countries have chosen to channel innovations not towards global peace and solidarity, but rather into exacerbating the conflicting realities of today's world. In contrast, in Azerbaijan, the communication capabilities of smart construction are specifically designed with a **social-intelligent application strategy** in mind. The equitable policies of the Azerbaijani state are founded on this strategy.

### **6. The Role of Communication in Intelligent Management Systems**

The term *communication* is derived from the Latin words "*com*" (together, with) and "*unio*" (union). When combined, they convey the concept of "*together, to unite, to be together,*" thus connecting closely with meanings like "*sharing*" and "*common.*" In this sense, communication is intricately tied to concepts of community, society, and social interactions. The foundation of this communication perspective is based on Weber's (1978) theory of social actions, which posits that social actions rely on the intentional behaviors of individuals and occur through information systems as well as in direct, face-to-face interactions.

The **intelligent management system** encompasses telecommunications, communication, information, broadcasting, and various other technologies (*Strategic Roadmap*

*for the development of telecommunications and information technologies in the Republic of Azerbaijan*). Data gathered within the communication system, along with news and information flow, is conveyed through both oral and written media, ranging from print to telecommunications and satellite broadcasting. Throughout this process, a new system is created and widely shared, while the old system remains intact. In this context, radio and television organizations significantly impact people's everyday lives.

The advancement of communication technologies and the establishment of global communication networks influence the concept of competition (Yasin Tashpınar, 2021). The rapid pace of global changes, market differentiation, alignment with international standards, and the evolution of information as a key resource enhance the interest and necessity for nations to invest in the information sector (Mahir Abbaszade 2019, 12). This development highlights the target audiences of various organizations on a global scale and underscores the importance of leveraging communication technologies. Consequently, the enhancement of e-government in our country accelerates smart construction initiatives in Karabakh.

### **7. E-Government: Concept, Significance, and Service Areas**

There are numerous definitions of e-government. At its core, e-government means that the government delivers services and executes tasks for its citizens safely, efficiently, and continuously through electronic means. However, it is misleading to confine the idea of e-government solely to the application of information technologies. Electronic government also involves the active engagement of citizens in the distribution of updated services, as well as oversight and management processes within internal and external relations systems.

The significance of electronic government lies in enhancing the efficiency of public administration services provided to citizens. The swift advancement of information technology in a globalized society is leading to improved services from governments to their citizens, which in turn assures higher quality in the services that individuals ex-

pect from their governments. To address increasing demands, governments must deliver high-quality services and explore various methods to boost citizen satisfaction. In today's information-driven era, a key strategy employed by governments is the integration of information technology into their service offerings. **E-government** influences the efficiency, speed, effectiveness, convenience, and accessibility of the various services delivered by the government to its citizens, while also impacting overall service costs (Hakan Kahraman, 2014).

Through the **e-government system** of the Great Return platform, services offered to citizens can be categorized into four main areas:

- **Information services** – providing citizens with access to official information, laws, regulations, and public data;
- **Payment transactions** – enabling online payment of taxes, utility bills, fines, and other fees;
- **Integrated e-services** – comprehensive services that combine multiple functions (e.g., registering a business, applying for benefits, obtaining permits);
- **Communication and feedback** – mechanisms for citizens to communicate with government agencies, submit complaints, and provide suggestions.

The development of new settlements in Karabakh creates a favorable basis for e-government to explore more advantageous opportunities in these fields. The advancement of electronic government services in Karabakh aims not only to meet citizens' needs but also to foster competition with other rapidly progressing nations. The government of Azerbaijan guarantees the successful implementation of future investments in this sector.

### **8. Conclusion**

The article provides an in-depth analysis of the **Great Return strategy** within the contemporary development framework of Azerbaijan, as well as the electronic government's perspective on this initiative. It demonstrates that the Azerbaijani state places significant emphasis on the effectiveness of electronic governance and the use of

modern communication technologies in the post-conflict reconstruction of Karabakh. Key paradigms that contribute to the rapid positive changes during this era are explored scientifically and methodologically.

The Great Return process is examined from a categorical standpoint, revealing its multi-dimensional nature: it includes not only the physical return of internally displaced persons to their ancestral lands but also the cre-

ation of a modern, technologically advanced, and environmentally sustainable living environment. The integration of smart management methods, e-government services, and green energy solutions ensures that the restored territories of Karabakh will become a model for the entire region. Thus, Azerbaijan is not merely rebuilding destroyed cities but is creating a new reality based on intelligence, communication, and sustainability.

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submitted 03.04.2026;

accepted for publication 17.04.2026;

published 30.04.2026

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