

Preserving Hanoi's identity in building a smart city: current situation and solutions

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Abstract: *Hanoi, the thousand-year-old capital of Vietnam, is renowned for its rich cultural heritage, its dense network of rivers, lakes, and ponds, its mild climate, and courteous, elegant residents. However, during the process of becoming a smart city, Hanoi's identity has begun to fade. Water surfaces have been shrinking in size; environmental pollution is on the rise; and the communication and behavioral culture of a segment of the population appear to be deteriorating. Preserving Hanoi's culture and identity is not only the responsibility of the capital itself but also a shared mission of the entire country in the context of development and deep integration into the global community.*

Keywords: *Hanoi's identity; preservation; development; smart city; international integration.*

1. Introduction

In 2008, the concept of “smart city” was first introduced in academic work. Accordingly, the terms “smart city” and “digital city” have since been increasingly used in both scientific literature and technical reports. Politicians, municipal governments, and high-tech companies also utilize these concepts to describe an ideal city - one that is more suitable and responsive to the needs of its citizens (Hollands, 2008). Since then, many scholars have proposed various definitions of the term. “A smart city is a city that integrates science, technology, and policy to improve the quality of the community” (Dameri & Cocchia, 2013). According to the International

Institute for Management Development (IMD), a smart city is defined as “an urban environment that applies technology to enhance advantages and minimize the limitations of urbanization for its citizens” (Hung, 2024).

Based on a synthesis of multiple definitions, the author interprets this concept as follows: “A smart city ensures its sustainable development across economic, environmental, and social dimensions; it effectively applies science and technology in urban governance to build a civilized and modern living environment that fully meets human needs.” Due to their dependence on technological factors, implementation models, and available resources, most countries in

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the world are still developing their smart cities. It can be said that a smart city model is the target that many cities aim to reach in the future.

Over thousands of years of history, Thang Long - Hanoi has evolved into a vital cultural center in Vietnam, boasting rich traditions and customs, diverse architectures, exceptional cuisines, and a vibrant arts scene. More than a thousand years ago, the “Edict on the Transfer of the Capital” (Chiếu dời đô) issued by King Ly Cong Uan highlighted Hanoi’s natural advantages, including its landscape of rivers, lakes, and mountains (leaning against the mountains, facing the water), temperate climate, and fertile land. These natural conditions, combined with an enduring cultural heritage, have shaped the unique identity of the capital. However, in the process of building a modern urban area, Hanoi’s identity is showing signs of fading. The surface area of lakes and ponds has been shrinking; environmental pollution is on the rise; and, the civility in public behavior among a segment of the population is deteriorating. These issues have contributed to the decline of Hanoi’s image as a graceful, cultured capital with a millennium-long heritage.

Preserving Hanoi’s identity during modern urban development is an important issue not only for policymakers but also for intellectuals and the broader public. It is an essential part of safeguarding the national identity in an era of deep international integration. Without maintaining its identity, Hanoi risks becoming an incomplete replica of developed nations. A modern city cannot indeed be a smart city if its identity is erased. Every city - no matter how advanced it becomes - must retain its unique character and spirit in the broader picture of global development. Identity is one of the fundamental criteria for the sustainability of a smart city. This article focuses on analyzing the current situation and proposes several solutions to enhance the preservation of Hanoi’s identity during its development into a

smart city, thereby contributing to national development in the new era.

2. Current state of preserving Hanoi’s identity in the process of building a smart city

2.1. Achievements

First, preserving and promoting the value of historical monuments. Hanoi currently has 5,922 inventoried historical sites, including one UNESCO World Heritage site, 21 special national relic complexes, 1,160 national relics, and 1,456 city-level relics. In addition, over 1,700 intangible cultural heritages have been identified, documented, and included in protection lists (Minh, 2023). Closely associated with this network of historical sites are numerous traditional festivals of various scales and formats, which help to honor and celebrate the unique cultural values of the capital. Hanoi is also home to many forms of traditional performing arts and folk cultural practices, some of which have been recognized as World Intangible Cultural Heritage, such as ca trù (ceremonial singing), xẩm (blind buskers’ music), and hát văn (spiritual singing). These rich cultural assets contribute to Hanoi’s deep cultural foundation, providing significant comparative advantages over other cities.

Second, protecting and promoting the values of traditional festivals in Hanoi’s inner-city districts. The inner-city area of Hanoi comprises 12 districts with a total of 221 traditional festivals. In recent years, the Hanoi Department of Culture and Sports, in coordination with the district-level authorities, has undertaken research and restoration efforts to ensure these festivals retain their original authenticity. In 2023, the palanquin procession ritual at Lang Pagoda Festival was revived after a 70-year hiatus. With tens of thousands of participants, this festival became a powerful symbol of great unity among heritage-practicing communities and residents in the Dong Da, Thanh Xuân, and Cau Giay districts. It also helped revitalize the cultural practices of the communities living in the western region of

the ancient Thang Long Citadel. In addition, other festivals such as the Loyalty and Filial Piety Oath-taking ceremony at Dong Co Temple (Tay Ho district), the Thap Tam Trai Festival (Ba Dinh district), and the Five Moc Villages Festival (Thanh Xuan district) have also had their traditional rituals restored, ensuring the integrity and continuity of Hanoi's inner-city festival heritage (Ha, 2023).

Third, preserving and developing traditional craft villages. Hanoi currently has approximately 1,350 craft villages and villages with craft activities, representing the highest number in the country. Among them, 337 have been officially recognized by the Hanoi People's Committee as craft villages, traditional crafts, or traditional craft villages. In 2024 alone, the Hanoi People's Committee recognized 14 villages with the title of "Hanoi craft villages, Traditional crafts, and Traditional craft villages," including three villages recognized as "Hanoi craft villages," four recognized as "Hanoi traditional craft villages," and seven crafts recognized as "Traditional crafts" (An, 2025). The city also places special emphasis on the development of cultural industries, particularly by positioning handicrafts and traditional craft villages as a "creative industry," which plays a crucial role in Hanoi's socio-economic development. Traditional handicrafts are expected to become a key economic sector, serving as a driving force for the growth of other cultural industries. This is also a distinctive cultural feature of the Hanoi area, also known as Thang Long.

2.2. Challenges

First, environmental pollution is on the rise. Environmental pollution in Hanoi takes various forms, including increased household waste, untreated domestic wastewater discharged directly into rivers and lakes, noise pollution, and soil contamination. However, the most severe issue currently facing Hanoi is air pollution. Air quality has been deteriorating, posing a significant risk to public health and

affecting socio-economic development activities. To date, Hanoi has consistently ranked among the cities with the worst air pollution levels globally. The air quality in Hanoi "shows no signs of improvement" (Thuy, 2022). According to the National Environmental Status Report on air quality, air pollution in Hanoi and the other northern provinces is primarily due to PM2.5 fine dust pollution (Huong, 2025). PM2.5 particles are considered "silent killers" in the air because they can penetrate deep into the lungs, causing respiratory and cardiovascular diseases, especially among vulnerable groups such as the elderly and children. The primary sources of air pollution in Hanoi have been identified as emissions from transportation, construction activities, industrial production, agriculture, and living activities.

Second, the natural landscapes of rivers, lakes, and ponds are shrinking. According to statistics, Hanoi ranks first in the country in terms of the number of rivers and lakes, with approximately 122 inner-city lakes and 13 rivers running through the city. These rivers and lakes play a vital role in regulating rainwater, improving air quality, supporting the urban drainage system, and addressing localized flooding. However, in recent years, dozens of lakes and ponds in Hanoi have been filled in completely. Unfortunately, this situation continues with varying levels of severity.

During the 2010 - 2015 period alone, 17 lakes in Hanoi were filled in. Between 2015 and 2020, the total area of natural urban water surfaces decreased by more than 203 hectares, as up to 65% of ponds and lakes were filled or erased (An, 2025). At the end of 2021, nearly 100 households from groups 11 and 12 (Ngoc Thuy Ward, Long Bien District) submitted petitions and pleas to preserve the two natural lakes Xuan Que and Son Thuy (also known as Ba Do Lake), which spanned 12,000 square meters and were being filled for land parceling and real estate sales (Tung, 2023). As a result, although

Hanoi once led the country in the number of lakes and ponds, this figure has declined significantly in recent years.

Third, deviations in communication and behavior norms that are contrary to traditional Vietnamese customs and values are becoming increasingly common. In the past, the people of Hanoi were known for their elegance and sophistication, as famously reflected in the saying: “Chẳng thơm cũng thể hoa nhài - Dẫu không thanh lịch cũng người Tràng An” (Though not fragrant, still the jasmine flower - Even if not elegant, still a person of Trang An). However, with the increase in mechanical population growth, as people from all provinces across the country move to Hanoi (estimated at over 200,000 newcomers annually, equivalent to the population of an average district), coupled with the expansion of administrative boundaries, the elegance of Hanoi’s people is showing signs of fading (Thu, 2024). Nowadays, residents of Hanoi are more easily provoked, engaging in fights, using vulgar language, and showing a lack of civility in public spaces. There are also increasing instances of jostling and running red lights in traffic. In business, some individuals disregard the principle of trust and credibility; situations of coercive selling and price gouging still occur, especially targeting foreign tourists, leaving a negative impression of Hanoi’s culture and the character of its people.

3. Some proposals to preserve Hanoi’s identity developing a smart city

3.1. Solutions to limit environmental pollution in Hanoi

First, promoting the construction of green buildings. In the context of rapid population growth and urbanization, Hanoi is facing many environmental challenges, including pollution and climate change. To address this issue, the construction of green buildings has become urgent. A green building is a structure designed, constructed, and operated to meet criteria and standards for efficient energy use and resource

conservation, ensuring the quality and comfort of the indoor environment while also protecting the external environment (Government, 2021). The development of green buildings not only helps protect the environment but also improves the quality of life for residents. To implement this effectively, the Government needs to establish a favorable legal framework, enhance financial resources, promote training and raise awareness, encourage the adoption of green technologies, and foster community participation in the decision-making and monitoring processes of green building projects.

Second, considering relocating industrial parks and factories out of Hanoi. Such production facilities as Sai Dong B Industrial Park, Hanoi - Dai Tu Industrial Park in Gia Lam, Nam Thang Long Industrial Park in Bac Tu Liem, Hanoi Biotechnology High-Tech Park in Nam Tu Liem, along with other factories located in various districts of Hanoi should be considered for relocation. Moving industrial zones out of Hanoi could bring several positive impacts in mitigating environmental pollution. Below are some key impacts:

(1) Reduction in air pollution: Hanoi is currently facing severe air pollution issues. Moving industrial parks out of the city will reduce emissions from factories, thus improving air quality for residents.

(2) Reduction in noise pollution: Industrial parks typically generate significant noise from production activities. Their relocation will benefit the surrounding communities by providing a quieter living environment.

(3) Increase in green space: when industrial parks are relocated, the land they vacate in the city can be repurposed for parks, recreational areas, and green spaces, thereby enhancing the urban environment and improving residents' quality of life.

(4) Promotion of clean technology: construction of new industrial zones could come with a requirement to implement cleaner

production technologies, which will minimize waste and pollution.

(5) Improvement in waste management: new industrial parks are often designed with more modern waste treatment systems, helping to minimize their environmental impact.

(6) Encouragement of sustainable development: the relocation policy may be accompanied by requirements and incentives for businesses to implement sustainable and environmentally friendly production practices.

(7) Reduction in population density: relocating industrial parks outside the Hanoi metropolitan area can alleviate pressure on urban infrastructure and population density, potentially creating a more favorable living environment.

However, it should be noted that relocating industrial parks may face some challenges, such as high costs and the impact on workers' lives. A combination of management, technological investment, and government support policies will be key factors in reducing environmental pollution.

3.2. Solutions to protect the natural landscape of Hanoi

First, protecting and preserving water surface areas in the urban planning strategy of Hanoi. The exploitation of natural resources and prevention of river pollution present significant challenges for Hanoi. Under the pressure of population growth along with industrialization and urbanization over time, many of Hanoi's rivers have been "killed" in the literal sense. Therefore, creating landscapes, allocating green spaces, and maintaining natural areas, such as lakes and ponds, must be done to the utmost limit. The natural ponds and lakes in Hanoi should be preserved and restored to better serve the community. In cases of mandatory filling of lakes and ponds, the authorities must publicize information providing detailed planning and demonstrate the overall benefits to the community following

the work. To effectively implement infrastructure projects while minimizing environmental impacts, especially the problematic fillings that have occurred recently, local authorities must act with seriousness and responsibility. In the short term, it is essential to conduct a detailed investigation and update the current status of Hanoi's lakes and ponds, particularly the natural ones. This data should then be compared with the existing planning, and if necessary, adjustments to the planning should be proposed.

Second, creating more artificial lakes to increase water surface areas during urban development. The Hanoi capital master plan for the period 2021 - 2030, with a vision to 2050, outlines the goal of developing the capital into a "Civilized - Cultured - Modern" city that is green, smart, and on par with the capitals of developed countries in the region and the world (Prime Minister, 2024). Along with this vision is the establishment of a green corridor covering 70% of the natural area, including the ecological corridors of the Day, Nhue, Tich, Red, and Duong rivers. The master plan specifically stipulates that new urban areas must allocate more than 10% of their respective area to create new water surfaces. Construction of additional artificial lakes will contribute to creating a green, civilized, and modern city. The artificial lake system developed by Vingroup in certain urban regions can be considered an example of modern urban models that prioritize ecological landscape systems for the urban environment.

3.3. Solutions to build standardized behavioral culture in the 4.0 era

First, strengthening communication on civilized and courteous lifestyles.

Activities to promote civilized and courteous lifestyles include: (1) Organizing communication activities. Agencies and organizations can host workshops and discussions on civilized living to help raise

awareness among people about the importance of civilized behavior in daily life; (2) Utilizing mass media in communication efforts and leveraging the power of social media, newspapers, and television to disseminate messages about a civilized lifestyle. Short video clips and engaging articles can easily attract attention and leave a lasting impression on the public; (3) Building model examples. Applying model programs in neighborhoods, wards, and residential groups to encourage residents to participate and monitor each other's behavior actively. These models may include initiatives such as urban cleaning activities and proper behavior in public spaces; (4) Encouraging the participation of such social organizations as the Women's Union, Youth Union, and Veterans Association to engage in spreading the message of civilized behavior through sports and cultural activities; (5) Holding competitions to promote the message of a civilized and courteous lifestyle. Competitions on civilized behavior and creative video-making contests, among others, not only provide an enjoyable platform but also encourage the community's creativity.

Second, institutionalizing communication and behavioral standards in daily life and on social media.

Communication and behavioral standards include form rules and criteria for how individuals and organizations interact within society. These standards not only play a significant role in building positive relationships but also contribute to maintaining social order. The legal system needs to reflect and protect these values through legal documents. Vietnam has issued legal documents regulating online behavior standards, including the 2018 Cybersecurity Law, Decision No. 874/QĐ-BTTTT dated June 17, 2021, by the Ministry of Information and Communications on the issuance of the Code of Conduct on Social Media, and Decision No. 522/QĐ-UBND dated January 25, 2017, by the Hanoi People's Committee on the issuance of the code of

conduct for cadres, civil servants, public employees, and laborers in Hanoi's agencies. However, there is not yet any legal document specifically regulating communication and behavioral standards in daily life.

Institutionalizing these standards involves the following actions: (1) Conducting research and surveys to identify necessary communication and behavioral standards clearly. This can be achieved through consultation with experts, the community, and social organizations; (2) Drafting legal and normative documents based on the identified standards. The responsible authorities should ensure the documents are understandable and accessible to the general public; (3) Conducting public awareness campaigns to enhance the community's understanding of the importance of these standards and related legal regulations; and, (4) Establishing a monitoring mechanism to oversee the implementation of these standards in society and forms of sanction for violations to ensure the strict enforcement of the law.

Third, effectively implementing training and development of communication and behavioral skills. This should target a broad audience, ranging from students at all levels to cadres, civil servants, and public employees in Hanoi.

For students, it is necessary to develop and incorporate a subject on communication and behavioral skills toward nature and society into their official curricula. The natural environment has been increasingly destroyed due to excessive human intervention during industrialization and modernization in the modern world. Therefore, educating students on communication and behavioral skills towards nature and society has become significantly important. Such curricula should focus on issues related to behavior towards nature (animals and plants) and interpersonal behavior (with family members, teachers, and friends). Introducing the subject of

communication and behavioral skills towards nature and society into students' curricula at all levels is a necessary and crucial step in the comprehensive development of students. These skills will not only help them succeed academically but also instill in them a respect for the environment and courteous, civilized behavior toward family members and the community. As such, the education sector needs to pay more attention to implementing this subject practically and effectively.

Training and education on culture also play an important role in preserving identity. The city needs to focus on integrating local cultural education into the school curriculum, thereby raising the awareness of the younger generations about the cultural values of Hanoi. This not only fosters a connection between generations but also helps young people understand and appreciate the nation's beautiful traditional cultural traits.

For cadres, civil servants, and public employees, it is necessary to develop programs and organize training classes on civil service culture, communication, and behavioral skills. In reality, Vietnam has focused only on training civil servants with state management knowledge through programs for junior, senior, and high-ranking officials. Leadership and management training programs have focused primarily on leaders and managers at the department and division levels while little attention has been paid to training in civil service culture (including public service responsibility, public ethics, and public communication). Currently, there is no legal document requiring all civil servants and public employees to participate in training on civil service culture. This leads to a significant number of civil servants and public employees facing challenges and disadvantages in their work because they have not been systematically equipped or updated with knowledge of civil service culture, as mandated

by state regulations, which can result in improper behaviors in both professional and social contexts.

Fourth, building a “digital culture” in the 4.0 era. In the context of globalization and the rapid development of information technology, digital culture is becoming an increasingly important factor for the sustainable development of smart cities. Digital culture not only helps raise community awareness but also promotes creativity and innovation in urban management. To build a strong digital culture in the process of developing a smart city, several key solutions include: (1) Enhancing community awareness about the benefits of digital technology, organizing training programs, workshops, and conferences on digital technology; (2) Encouraging creativity and innovation, organizing startup competitions or hackathons to find technological solutions that meet the community's needs; (3) Strengthening connections and collaboration between the government, businesses, and the community to build a strong digital culture, creating forums and networks where stakeholders can share ideas, information, and resources; (4) Developing digital applications and services for the community, such as online public services, intelligent traffic management systems, and interactive platforms between citizens and local authorities. These services will help citizens feel more engaged and connected to the process of building a smart city; and (5) Designing appropriate policies and regulations on information security while educating citizens on how to protect their personal information.

Building a digital culture as part of creating a smart city is a challenging task, but it is entirely achievable with the coordinated efforts of all stakeholders. The solutions outlined above not only help raise awareness and responsibility within the community but also create a modern and sustainable living

environment, thereby fostering the comprehensive development of smart cities in the future.

4. Conclusion

The preservation and promotion of Hanoi's unique identity in the process of becoming a smart city is an urgent task that requires collective efforts by government agencies, communities, and citizens. Only by harmonizing economic development with environmental protection and cultural conservation can Hanoi maintain its unique character, thereby building and developing itself into a smart city that is both modern and traditional, with its own identity while profoundly integrating with the world.

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