VIEWPOINT

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Agile City Governance in the Digital Age

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Digital technologies are transforming economies and societies at an unprecedented speed, but their most consequential effects may be more prevalent at the city level. As the primary sites of public service delivery, economic activity and social interaction, cities are increasingly becoming laboratories for digital governance. Municipal governments today face a dual challenge to use digital technologies to improve efficiency, transparency and responsiveness while managing the risks these technologies introduce, such as data insecurity and widening social inequality. How cities navigate this tension will shape not only urban governance, but also the broader trajectory of state capacity in the digital age.

Digital Transformation and Asian City Governance

Across Asia, digitalisation has become a central tool for strengthening policy coordination, improving administrative performance, and enabling data-driven decision-making. These developments are deeply shaped by institutional context. East Asian governance systems have long emphasised technocratic competence, long-term planning, and state-led development. Digital transformation in Asian cities therefore tends to build upon existing traditions of strategic coordination and public-private collaboration, rather than radically redefining the role of the state.

Singapore's Smart Nation initiative is an example of this model. It institutionalises digital transformation across the government through integrated data governance, with a strong emphasis on user-centric design and interoperable public services that allow for seamless information exchange to deliver better public services. South Korea's e-government system, supported by advanced technological infrastructure and high digital literacy, prioritises transparency, efficiency and seamless service delivery. Japan, while slower in implementation, has articulated a long-term vision through Society 5.0 for a super-smart society. Society 5.0 envisions a sustainable and inclusive socio-economic system, powered by digital technologies, such as big data analytics, artificial intelligence (AI), the Internet of Things and robotics.

China's digital transformation has taken a distinctive path that is making rapid headway in the country. Its digital governance model combines large-scale data integration and algorithmic coordination with active involvement by the state to drive its national development policies. Rather than relying primarily on decentralisation or market-driven innovation, China pursues digital transformation by pairing a clear central direction with local experimentation. Chinese cities have emerged as key sites where digital technologies are integrated in governance processes.

The Evolution of Digital Governance in Chinese Cities

China's digital transformation began in the 1980s as national leaders viewed informatisation as essential to economic modernisation. In 1984, the State Council approved key informatisation projects in finance, energy and transportation, signalling a strategic commitment to technology-enabled governance. The launch of the "Three Golden Projects" in 1993—Golden Bridge, Golden Card, and Golden Customs—marked a milestone by establishing national information networks in telecommunications, finance and customs administration.

In the late 1990s, China formally entered the e-government era. The 1999 E-Government Project promoted the use of internet technologies in public administration, while the 2002 Guidelines on the Construction of E-Government in China framed digital government as a means to transform administrative functions and improve service efficiency. By the mid-2000s, all levels of government had established official websites, enabling basic online access to information and services.

The 2010s marked a qualitative shift from digitisation to integrated digital governance. Advances in telecommunications—especially the rollout of 4G and later 5G—enabled mobile government services to scale rapidly. Citizens increasingly accessed public services through platforms such as WeChat mini-programmes, Alipay, and municipal apps. During this period, leading cities pioneered reforms that restructured administrative processes rather than simply moving them online.

For example, Shanghai's "One-Stop Online Government Services" reform consolidated fragmented services and enabled cross-departmental approvals through a single digital platform. Beijing built integrated government clouds and unified service portals to improve inter-agency coordination. Hangzhou's City Brain applied real-time data and AI to traffic management, emergency response, and energy efficiency. Shenzhen developed the "iShenzhen" platform to provide mobile-first, citizen-oriented services, while Guiyang leveraged its national big data pilot status to experiment with data-driven public management.

These initiatives shared a common logic: shifting governance from department-centred administration to citizen-oriented service delivery. By 2020, China ranked among the world's top performers in the United Nations E-Government Development Index, reflecting the cumulative impact of these reforms.[1]

From Digital Government to Intelligent Governance

In the 2020s, Chinese cities moved beyond digital integration toward AI-enabled governance. Municipal governments are increasingly deploying AI to support decision-making, automate routine administrative tasks, and optimise urban systems. Cities such as Shenzhen, Chongqing, Kunming and the Xiong'an New Area have taken the lead.

Shenzhen's Futian District has implemented a large government affairs model that deploys AI agents across hundreds of administrative

scenarios, reducing processing time and improving service consistency. Kunming's AI Empowerment Centre, developed in partnership with technology firms, integrates computer vision and multimodal learning to improve urban management. Xiong'an has experimented with causal models—analytical tools used to identify cause-and-effect relationships—to enhance infrastructure planning and resource utilisation.

Taken together, China's digital evolution reflects a distinctive governance logic characterised by three features: strong state-led strategic coordination, localised and incremental experimentation, and adaptive learning focused on problem-solving rather than ideological debates. This approach has enabled rapid scaling, but it also raises new governance challenges.

New Challenges in Digital City Governance

While digital technologies have expanded governance capacity, they have also introduced complex risks that must be addressed to ensure sustainability and legitimacy. Issues of data security, privacy protection and digital inequality have become increasingly salient. These challenges are global, but their implications are amplified in China by the scale, speed, and centralisation of digital deployment.

Data security and privacy concerns have moved to the centre of public debate. The Health Code system illustrates this tension. During the COVID-19 pandemic, the Health Code system significantly enhanced public health governance by enabling real-time risk assessment and mobility management. At the same time, it raised concerns about personal data collection, algorithmic transparency, and the duration of data retention. The system's eventual nationwide discontinuation and data deletion underscored the importance of institutional mechanisms to limit technological overreach.

Digital inequality presents a second major challenge. Despite high levels of adoption in urban areas, disparities persist across regions and social groups. Rural populations, elderly residents, migrant workers and low-income households often face barriers related to connectivity, digital literacy, and service usability. These gaps can translate into unequal access to public services and economic opportunities. Digital governance, therefore, is not merely a technical issue but a socio-technical one that requires complementary policy interventions.

To address these risks, China has strengthened its legal and regulatory framework. The Cybersecurity Law (2017), Data Security Law (2021), and Personal Information Protection Law (2021) together establish rules for data protection, risk management and personal privacy. These laws provide essential safeguards, but they also pose challenges of interpretation and enforcement across different administrative levels. Legal frameworks alone are insufficient without institutional capacity and public trust.

Towards Agile City Governance

The accelerating pace of technological change and the growing complexity of socio-technical systems call for new governance approaches. In this context, *agile governance* has emerged

China introduced legal and regulatory frameworks to address data security, privacy and digital literacy concerns. *Image: Pexels*

as a practical framework for governing under conditions of uncertainty.[2] Rather than relying on fixed rules and linear policy implementation, agile governance emphasises flexibility, responsiveness, iterative learning, and collaboration across sectors.

In practice, agile governance in Chinese cities manifests in several ways.

First, it entails rapid policy response and intervention to technological and social risks. The Health Code system during the COVID-19 pandemic is a prime example: authorities were able to design, deploy, and iteratively refine a nationwide digital health monitoring system within weeks, reflecting both organisational agility and technological adaptability. After the COVID-19 pandemic, the Chinese government took prompt action to discontinue the health code system nationwide, deleting relevant data in compliance with legal requirements to safeguard user privacy. Similarly, the deployment of AI-powered city management systems—such as Hangzhou's City Brain and Shenzhen's intelligent administrative assistants—demonstrate the capacity of local governments to implement adaptive solutions that respond to real-time data and citizen needs. These initiatives illustrate the principle that governance in the intelligence era is not a static process but an ongoing iterative engagement between technology, institutions and society.

Second, agile city governance relies on collaboration and interaction among multiple stakeholders. In China, this is evident in the partnerships between government agencies, technology firms, research institutions and civil society organisations. The AI Empowerment Centre in Kunming, for example, integrates expertise from public authorities and private technology developers to optimise municipal operations, reflecting a governance logic that values co-production, knowledge sharing, and joint problem-solving. Cross-departmental integration, as seen in China's "All-in-One Net" platforms (integrated online government service), further illustrates the necessity of institutional coordination to achieve coherent digital services that are both efficient and responsive to citizen needs. Agile governance thus emphasises horizontal collaboration as much as vertical authority, recognising that digital problems are rarely confined to a single organisational silo.

Third, agile city governance incorporates iterative feedback and learning mechanisms. Continuous monitoring, data analysis, and evaluation allow governments to detect emerging risks, measure performance and adapt policies in near real time. In smart city applications, AI-driven monitoring of traffic, public safety and environmental conditions generates large datasets that inform both operational decisions and strategic planning. This feedback loop transforms governance into a dynamic,

AI-driven monitoring of environmental and traffic conditions informs both operational decisions and strategic planning.
Image: Wikimedia Commons

learning-oriented system, enabling authorities to anticipate challenges and recalibrate interventions as conditions change. Iterative learning also facilitates public engagement, as citizens' experiences and responses to digital services provide valuable information for refining service design and delivery.

Fourth, agile city governance has implications for citizen-state relations. By embedding responsiveness, transparency and adaptability into digital services, governments can enhance public trust, accountability and participation. Citizen feedback becomes an integral part of the governance cycle, informing service design, monitoring and evaluation. In China, digital platforms such as municipal apps, online complaint systems and e-participation tools exemplify this interactive approach, allowing authorities to align governance processes with citizens' preferences and expectations. The emphasis on user-centric design reflects a normative model of agile governance—a framework that defines how decision-making should be carried out—which pairs technological efficiency with collaboration, inclusivity and public value.

Conclusion

Agile city governance offers a pathway for managing the dual imperatives of innovation and regulation in the digital age. China's experience shows that cities can develop adaptable governance systems through strategic coordination, experimentation and learning. While China's institutional context is unique, its practices highlight broader lessons for cities across Asia and beyond: digital transformation must be matched by institutional agility, legal safeguards and social inclusion.

As digital technologies continue to evolve, the central challenge for city governments is no longer a question of adopting such technologies, but rather how to manage them effectively. Ensuring agility, responsiveness and public value in digital governance will be essential to build high-trust cities that are not only smart, but also resilient and inclusive.

[1] United Nations, 2022 E-Government Survey 2022: The Future of Digital Government. New York: United Nations Department of Economic and Social Affairs

[2] World Economic Forum, 2018. Agile Governance: Reimagining Policy-Making in the Fourth Industrial Revolution. Geneva: WEF