Digitalization of Government Services for a Better Business Environment in China:
A Case Study on the Reform Experience of Zhejiang Province
Acknowledgements

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Executive Summary

China has made significant progress in digitalizing public service delivery. The UN E-Government Survey places China among the top 15 countries worldwide on the Online Service Index, which measures the scope and quality of online government services, including both citizen services and government-to-business (G2B) services such as business registration, land title registration, construction permitting, environmental permits, and business licenses.\(^1\) In addition, China is among the countries with the highest score worldwide on the Public Service Delivery Index in the World Bank's 2022 GovTech Maturity Index (GTMI), measuring the maturity of online public service portals, with a focus on citizen-centric design and universal accessibility.\(^2\) Chinese authorities report that, by the end of 2021, applicants could access and complete required application and approval processes fully online for over 90 percent of subnational administrative procedures.\(^3\)

By leveraging integrated online G2B services, China has advanced the business environment reform agenda. Online platforms set up by local governments provide individuals and businesses with integrated public services. These platforms, designed to operate as online single submission systems, enable businesses to complete administrative approval procedures at all stages of the business life cycle, from establishment through operation to eventual closure. Integrated digital service delivery is made possible by enhanced cross-agency data sharing and use of emerging technologies such as big data, cloud computing, and artificial intelligence (AI). Several empirical studies argue that online government services contribute to improving China's business environment, although they do not provide quantitative impact estimates.\(^4\)

This note explores China’s experience in implementing online government services at the subnational level, sharing lessons learned with other provinces in China as well as other economies. The online government service platform in one selected province (Zhejiang) provides a good example of how digital transformation can revolutionize regulatory processes and streamline government business interactions. The case study does not evaluate the impact or effectiveness of these reforms, as empirical evidence is lacking for such evaluations; rather, it examines key elements of Zhejiang’s reforms, including regulations on data integration, institutional set-ups, and use of advanced technologies.

Zhejiang Province is one of China’s leading subnational innovators in both business environment and e-government reforms. In a 2022 domestic business environment assessment carried out by National Development and Reform Commission, Zhejiang Province was cited for having implemented the highest number of exemplary business environment reforms. In addition, for three consecutive years the province has been in the leading position in the annual survey carried out by the All-China Federation of Industry and Commerce, which evaluates the business environment as perceived by enterprises themselves. Both Zhejiang Province and its capital city, Hangzhou, have also earned accolades in domestic annual evaluations for their outstanding local e-government performance.\(^5\)

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\(^1\) China’s overall global ranking in the UN E-Government Development Index (EGDI) in 2022 is 43 out of 193 economies, among the top counties with “very high EGDI”. The EGDI is consisted of three sub-indicators, Online Service Index, Human Capital Index and Telecommunication Infrastructure Index.
\(^4\) Relevant empirical studies include those carried out by Wang and Zhang (2022) and Fan, Wu, and He (2022). All empirical studies argue that online government services have contributed to improving China’s business environment.
\(^5\) Such domestic evaluations are conducted by a third-party organization commissioned by the State Council and cover subnational governments and important cities. The annual reports of domestic evaluations are available at https://zwpg.egovernment.gov.cn/col/col1331/index.html.
Zhejiang’s public services are gradually transitioning into a comprehensive and integrated online government service platform. Beginning in 2014, as part of a larger administrative simplification strategy, Zhejiang put in place a provincial online public services platform. In its initial stage, the platform primarily offered basic services such as online utility fee payments and information on regulatory procedures. It gradually evolved into an integrated service delivery platform for both individuals and firms, consolidating government services at the provincial, municipal, county, township, and village levels. Currently, more than 80 percent of provincial administrative procedures can be processed online using this platform. A mobile app interface offers the same functions.

The integrated online platform has made it easier for businesses to comply with regulatory requirements. For instance, while previously the business registration process required separate approvals from six different agencies, taking more than eight days to finalize, the integrated online platform makes it possible to complete the entire business registration process in a single day, without any associated costs. This automated approach aligns with global trends showing that, by transitioning to fully online registration processes, company registries drastically cut the time and expense needed to register new businesses.

Challenges remain, however, in making further progress in online government service delivery. First, reform progress varies among government agencies. For instance, as of June 2020, around half of the provincial government agencies in Zhejiang had yet to fully complete the essential standardization of business procedures and lacked clear digital business targets and accurate data requirements (Xu 2020). Second, cross-agency data sharing with national government agencies and among peer agencies within the province remains a challenge. Third, protecting data privacy is an emerging concern. Widening collection, storage, and exchange of personal, sensitive, and corporate data increase the likelihood of data breaches, unauthorized access, and other cybersecurity threats. Fourth, additional legal and institutional reforms are necessary to reinforce the ongoing reforms, particularly at the national level, to allow subnational governments to adopt more innovative reform practices. Finally, stakeholder involvement in the reform process could be strengthened, including by allowing the private sector to contribute more substantial inputs to policy making and the design of administrative procedures.

Zhejiang’s experience offers lessons for other regions in China as well as for other economies. Specific lessons include the following:

- A user-centric approach is key to enhancing the user’s experience, including accessibility, efficiency, and engagement. A fundamental principle of Zhejiang’s reforms requires a transition from a government-supply approach to one driven by user demand.
- Simplified administration and regulation are required for providing online government services. Zhejiang introduced programs to standardize and streamline administrative procedures across government agencies, building the foundation for integrating digital services and managing workflows efficiently.
- Strong leadership drives reforms. Zhejiang’s reforms have been spearheaded by top leaders at both the provincial and lower administrative levels. Strong political support was crucial for establishing the strategic vision behind the administrative reforms and the overall digital agenda.
- Robust evaluation and monitoring systems underpin successful implementation. Zhejiang introduced a comprehensive monitoring and assessment mechanism to ensure accountability, establish feedback mechanisms, and facilitate policy adjustments.
- When developing effective e-government platforms, collaboration with the private sector helps leverage advanced technologies. The Zhejiang provincial government’s partnership with the Alibaba Group played a pivotal role in driving the advancement of its digital government services.

Data are from the website of Zhejiang’s Judicial Department; see http://sft.zj.gov.cn/art/2021/12/2/art_1229449482_4815165.html.
1. Introduction

The Chinese government has a long-standing commitment to business environment and digital government reforms. In 2015, China launched the “Fang Guan Fu” reforms to empower local authorities, streamline administrative processes, and enhance government services. Chinese governments at various levels accelerated business environment reforms in recent years by reducing bureaucratic hurdles and simplifying administrative approvals for firms. Subsequently, China has also been actively promoting digital government development, particularly by introducing the “Internet + Government Services” initiative in 2016. It aims to enhance efficiency and transparency in government services by integrating online government-to-business (G2B) and other public services. In 2022, the State Council released a guideline emphasizing the need to promote online public service delivery across the country.

China’s online G2B services have advanced substantially in recent years. The initial effort to move simple G2B services online has evolved into a more streamlined and integrated approach requiring redesigned procedures, improved data sharing, and more efficient information systems. These improvements now enable online transactional services to cover almost all stages of the business life cycle, from registration to construction permitting, property registration, obtaining electricity connections, and tax payment to closure. By the end of 2021, more than 50 percent of subnational administrative procedures were processed online. G2B service platforms also provided an extra channel for responding to firms’ policy questions and for obtaining firms’ feedback on policy design and implementation. China leveraged big data technologies to reach out to businesses proactively to increase the firms’ policy awareness by, for instance, sending tax relief policy alerts to firms in need.

International surveys note China’s improvements in digital government services. China made substantial progress in the Online Service Index of the UN E-Government Survey, more than doubling its score from below 0.4 in 2010 to almost 0.9 in 2022 (Figure 1.1), catapulting it into the top 15 countries globally in this indicator (Figure 1.2). This reflects China’s progress in providing comprehensive, personalized government services to individuals and businesses at any time, from any location, using online platforms or mobile applications. In 2022, China was one of the countries to obtain the highest score on the Public Service Delivery pillar of the World Bank GovTech Maturity Index (GTMI), standing at 0.84, above both the regional average of 0.59 and the global average of 0.65 (Figure 1.3).

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7 Data are from the Digital China Development Report 2021, produced by Cyberspace Administration of China; see http://www.cac.gov.cn/2022-08/02/c_1661066515613920.htm.
8 The Online Service Index is a composite normalized score derived on the basis of an online service questionnaire. The index measures the scope and quality of online government services, including certain citizen services, as well as G2B services such as business registration, tax payment, land title registration, construction permits, environmental permits, and business licenses.
10 This index builds on UN Online Service Index and covers other business-related aspects such as online tax payment, e-filing for customs declarations, and the customs single window system. It measures the maturity of online public service portals, focusing on citizen centric design and universal accessibility.
Figure 1.1. China’s Performance in the Online Service Index (value) in the UN E-Government Surveys, 2010–2020


Figure 1.2. The E-Government Survey 2022 by the United Nations: Performance of Selected Economies in Online Service Index

China’s online G2B services have enhanced public service efficiency, accessibility, and transparency, creating a more favorable business environment. Several empirical studies show positive correlations between introducing online G2B services and improving business environments. For instance, based on data from 288 Chinese cities in 2017–2019, Wang and Zhang (2022) found that integrated online government services significantly improved local business environment, with the most pronounced impacts in the country’s least developed regions. Similarly, Fan, Wu, and He (2022), based on an empirical study of 241 Chinese cities in 2017–2020, found e-government platform interactions between governments and market entities to be key to improving business environment, including administrative efficiency and lower transaction costs. Quantitative measurements of such impacts are unavailable, however.

This note features a case study of the “all-in-one” online government service platform developed in Zhejiang Province, a subnational leader in promoting e-government and business environment reforms. Following general national guidelines, Zhejiang has been a leader in exploring innovations to promote digital government development and business environment reforms. Its reforms both demonstrate the effectiveness of a proactive approach to leveraging digital technologies for administrative efficiency and an improved user experience and highlight the positive impacts on the business environment.
2. Zhejiang’s G2B Digital Transformation Journey

2.1 Context

Zhejiang’s strong economic performance has largely been driven by the private sector. The province has a population of around 65 million and a total gross domestic product (GDP) of around RMB 7.8 trillion yuan (USD 1.1 trillion) in 2022—the fourth largest GDP in the country. The province’s GDP per capita in 2021 was more than 60 percent higher than the national average. Zhejiang also has one of the most robust private sectors, which contributed 66 percent of its GDP, 82 percent of its exports, and 73 percent of its tax revenues. In addition, 2021 marked the 23rd consecutive year in which Zhejiang contained the country’s largest number of top 500 private firms. In 2022, Zhejiang had more than three million registered private firms and six million individual businesses. The province’s capital city, Hangzhou, boasts a large digital economy, including Alibaba, China’s largest e-commerce company.

Zhejiang has consistently invested in business environment reforms. In the 2022 domestic business environment evaluation, Zhejiang had implemented the greatest number of exemplary business environment reforms. By 2022, the province had ranked number one for three consecutive years in the annual enterprise perception survey on the business environment, carried out by the All-China Federation of Industry and Commerce. In addition, the State Council of China selected Hangzhou as one of the first six national pilot cities to pioneer business environment reforms. Best practices of the pilot cities are expected to be replicated across the country.

The province has also been a front-runner in e-government performance. In recent years, both the province and its capital have consistently secured top positions in annual e-government performance evaluations conducted by third-party organizations commissioned by the State Council. In both 2020 and 2021, Zhejiang ranked first among the 31 provinces, municipalities, and autonomous regions in China in the overall online government service performance, along with Guangdong Province and Shanghai Municipality. Hangzhou also secured second position in overall performance in both years’ evaluations of more than 30 capital and major cities covered. Both Zhejiang and Hangzhou maintained their leading positions in the latest survey, taken in 2022.

2.2 Introduction of Reforms

Zhejiang Province has taken a phased approach to reforming online government services and administrative procedures. Its experimentation continues in alignment with the national “Fang Guan Fu” reforms and the “Internet + Government Services” reform initiative, with a key focus on creating a better business environment. Zhejiang's...
innovative practices have set precedents that many other regions in China follow. Table 2.1 shows the timeline of its major reforms.

Table 2.1  Timeline of Major Reforms in Zhejiang

<table>
<thead>
<tr>
<th>Year</th>
<th>Major Reform Initiatives</th>
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<tbody>
<tr>
<td>2014</td>
<td>Zhejiang developed a preliminary version of its provincial integrated online government service platform as part of reforms to improve administrative efficiency and transparency.</td>
</tr>
<tr>
<td>2017</td>
<td>Zhejiang initiated the “one visit maximum” reform to streamline administrative approvals to allow users to complete applications during, at most, a single online/offline visit.</td>
</tr>
<tr>
<td>2018</td>
<td>Zhejiang advanced its agenda of digitizing government services.</td>
</tr>
<tr>
<td>2021</td>
<td>Zhejiang launched a business service digitization agenda, including an online monitoring system to track administrative efficiency of G2B services.</td>
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Source: Compiled by the author.

In 2014, Zhejiang began its “four lists and one website” reforms to transform the government’s role and enlarge the role of the market. The “four lists” laid the institutional groundwork for the online government services platform. The five reform components were: (i) redefining the scope of government administrative power by reducing the number of permits and approvals required; (ii) redefining the scope of government responsibility by reviewing and clarifying each government agency’s role; (iii) revising the investment negative list, thus reducing the number of sectors that restrict private investments; (iv) developing a list of earmarked fiscal expenditures; and (v) establishing one (integrated) provincial website for government services.

In 2017, Zhejiang initiated the “one visit maximum” reforms, aiming to enable individuals and firms to apply for and obtain administrative approvals in a maximum of one (virtual) visit. Data and document requirements were streamlined, and application processing time was reduced. Supported by robust cross-agency data sharing, the government redesigned administrative procedures for greater coordination and integration. The “one visit maximum” reforms were widely recognized and replicated throughout China.17

The “one visit maximum” reform aligns with global client-centric services models emphasized in the integrated service delivery approach. Building on the concept of integrated public service delivery, client-centric services are tailored to users’ specific business life-cycle stages (Grava and Wille 2020). Rather than focus on the needs of individual regulators, services are organized following a business-oriented structure, and application processes address all necessary formalities for operating within a particular business sector. Box 2.1 describes the client-centric services approach used in Nova Scotia, Canada.

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17 The reform provides a good example of the “local experimentation and later scale up” model frequently used in China to pilot and implement reform policies. Specific regions or cities are selected or allowed to test and experiment with new policies, innovations, or reforms before the successful ones are implemented more widely.
Box 2.1. Client-Centric Services Model for Integrated Service Delivery

In Nova Scotia, Canada, online license “bundles” offered for restaurants, accommodations, and convenience stores offer an all-in-one service that assists clients in establishing their businesses. This service brings together municipal, provincial, and federal licenses and permits on a single platform and guides users through a streamlined application process. Behind the scenes, relevant information is shared with the individual regulators processing the necessary registrations, licenses, and permits. Users enjoy the advantages of clear instructions regarding required formalities and the ease of submitting information to the government just once, rather than having to fill out multiple overlapping application forms.

Source: Grava and Wille (2020).

The “one visit maximum” concept relies heavily on digital technology. Significant efforts have been made to develop provincial unified systems for online identity authentication and adoption of digital seals, records, and permits. This has strengthened cross-agency data-sharing capabilities. The provincial platform has been regularly upgraded and expanded, gradually moving toward a comprehensive, integrated government-service platform, also available as a mobile app, that consolidates government services for individuals and firms at all levels: provincial, municipal, county, township, and village. The platform currently has more than 82 million registered users and around 2.8 million active daily users, more than 80 percent of provincial administrative procedures can be processed online. Figure 2.1 outlines the platform workflow.

Figure 2.1. Workflow in Zhejiang’s Integrated Online Government Service Platform


A dedicated business environment sub-portal on the provincial e-government platform provides integrated G2B services. Firms can use it to submit online applications, access the latest regulatory policies, ask questions via chat box, and lodge complaints. Users can search for administrative services by business activity classifications,

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18 The platform has seen six versions since 2014, with more than 100 updates. It has been revised and upgraded about 20 times since 2021, according to the local official media outlet; see https://zjnews.zjol.com.cn/zjnews/2022072202220725_24568752.shtml.
19 The data are from the website of Zhejiang provincial government; see https://www.zj.gov.cn/art/2022/7/25/art_1554467_59731031.html.
20 Data are from the website of Zhejiang Judicial Department; see http://sft.zj.gov.cn/art/2021/12/2/art_1229449482_4815165.html.
business life cycle events, or processing departments. Organized around the business life cycle, the platform provides eight major categories of administrative services: business registration and changes to registration, selected operational licensing and approvals, employment and workforce services, tax services, safe manufacturing licensing and permitting, business innovation certification services, start-up investment and financing support, and firm deregistration (Table 2.2). Taking business registration as an example, the portal publicly lists application requirements and forms, promised processing time, procedures, legal basis, and cost standards. The system can automatically process certain online applications, such as changes to business registration, within seconds.

Table 2.2. The Current List of G2B Services Offered at Zhejiang Provincial Online Government Service Platform, Organized Around Business Life Cycle

<table>
<thead>
<tr>
<th>Title of G2B Services</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business registration and changes to business registration</td>
<td>Integrates services for establishing both domestic and foreign businesses.</td>
</tr>
<tr>
<td>Selected operational licensing and approvals</td>
<td>Covers operational licensing and approvals in around 200 industries and qualification accreditation for operation in around 40 industries.</td>
</tr>
<tr>
<td>Employment and workforce services</td>
<td>Covers administrative procedures and services for employee social security, medical insurance and housing fund applications, and talent certification services, as well as approvals for talent training and human resources services.</td>
</tr>
<tr>
<td>Tax services</td>
<td>Covers tax payment services, but also financial service licensing and approvals.</td>
</tr>
<tr>
<td>Safe manufacturing licensing and permitting</td>
<td>Covers licensing and permitting for operating in hazardous sectors and in transportation.</td>
</tr>
<tr>
<td>Innovation certification services</td>
<td>Mostly includes services for innovative institute certification.</td>
</tr>
<tr>
<td>Start-up investment and financing support</td>
<td>Includes public services to support start-ups in securing certain fiscal and loan support, but support is currently very limited, covering only about three types of tax and fiscal support applications.</td>
</tr>
<tr>
<td>Business deregistration</td>
<td>Includes services for deregistration of various market entities, whether domestic or foreign.</td>
</tr>
</tbody>
</table>

Source: Summarized by the author.

Zhejiang’s approach aligns with international good practices for one-stop-shop services to businesses. Its online portals organize procedures by business life-cycle events and economic activities. AI-augmented chatbots enhance user assistance capabilities through sophisticated mechanisms for regulatory risk management and compliance (Amor and Dimyadi 2021). In adopting these practices, the e-government service platform facilitates seamless interaction between businesses and government entities and improves efficiency and compliance in regulatory processes. Box 2.2 provides international examples of one-stop shop e-government platforms.

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21. The provincial e-government service platform does not yet include all business activities.

22. The activities are not fully organized by a typical business life cycle, but instead include licensing and permitting for operating businesses in various sectors.
Box 2.2. International Examples of One-Stop-Shop Online Platforms for Businesses

Singapore’s GoBusiness portal provides one-stop digital solutions that simplify starting and running a business in the country. The platform covers a range of business needs, from licenses to grants and loans, with guided services to assist business owners through application processes. The portal uses the latest technologies, such as AI, to personalize the user’s journey, ensuring they see only relevant information.

Mexico set up the Tu Empresa in 2009 to facilitate the processes for establishing and running businesses. Its primary objective is to offer guidance on the steps necessary for starting, operating, and terminating a business in Mexico. In 2015, as a component of the National Digital Strategy, the website became a part of the GoB.MX platform. Subsequently, in 2016, its responsibilities were broadened to encompass the approval of corporate names and company documents for specific types of businesses.

In 2013, Norway introduced Altinn, a digital platform designed to streamline data exchange and integrate public digital services. Using this one-stop-shop single portal, individuals and businesses can access necessary information and complete administrative procedures online. Altinn’s comprehensive guidance extends throughout the business life cycle, from establishment to closure, providing businesses with details on official requirements, funding, and government agency reporting obligations and allowing online submission of applications and reports.

Source: Compiled by the author, based on OECD (2020).

In 2021, Zhejiang was the first province in China to establish a real-time monitoring system to track the performance of online G2B services. The monitoring system comprised 18 indicators and 46 sub-indicators. Approximately 250 data monitoring points were identified to collect real-time online data, including number of procedures, processing time, cost, applicant feedback, and other relevant factors. Under the indicator “business registration”, for example, data on online processing time is collected for each procedure, such as registering a company, obtaining a business license, acquiring tax filing control equipment, opening a bank account, and obtaining a company seal. Building on this, Zhejiang is also exploring use of an online early warning system that would promptly alert the relevant agencies if their processing time exceeds predetermined thresholds, enabling them to proactively address delays and enhance efficiency.

Zhejiang’s integrated online platform has significantly improved businesses’ regulatory compliance experience. Formerly, for example, business registration required approvals from six agencies and took more than eight days to complete. Using the “all-in-one” online platform, the business registration can now be completed in a single day, for free. As a result, new business applications are increasingly completed online. The online platform has also revolutionized construction permitting by integrating approval systems previously dispersed across 123 government agencies, including three national and six provincial systems. Authorities report that streamlined processes have reduced application documents by 50 percent, procedures by 20 percent, and compliance costs by 30 percent.

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23 In addition to the ten indicators measured in Doing Business, the provincial business environment evaluation system includes eight local indicators: firm deregistration, market openness, government procurement, transaction of public resources, market supervision, corporate social credit supervision, public services, and intellectual property rights protection. The business indicators are still used in Zhejiang’s evaluation system despite its discontinuation.

24 The data here were provided by Zhejiang DRC in May 2023.

25 All the data here were provided by Zhejiang Provincial Development and Reform Commission (DRC) in May 2023.
Hangzhou is considered a leading example in China of how digital government services can support municipal level business regulatory delivery and connect with provincial level platforms. Municipal level government services, originally delivered through multiple online platforms and applications, are currently integrated into the Hangzhou channel of the provincial “all-in-one” platform. The municipal channel can be accessed from either the provincial platform or the Hangzhou municipal government service platform. It acts as sole provider of e-government services in Hangzhou and offers standardized procedures and services. The Hangzhou channel is in increasing use, and currently has an average of around 500,000 monthly active users.

Hangzhou has also developed a municipal platform called “Qinqing online” that can proactively reach out to firms. This innovative platform uses big data analysis to identify firms eligible for public support and send them alerts on matters such as tax reduction policies and reminders to apply. In some cases, firms applying for these policy treatments need no longer submit application documents manually—the system automatically captures required information from interconnected databases. This process seems to have increased policy awareness and improved implementation. The platform currently functions independently, but companies can access it using either their existing user accounts with the provincial e-government platform or their electronic business license or digital business identity. The platform is equipped with the same back-office data sharing infrastructure as the provincial e-government platform.

Hangzhou notably used this platform to proactively identify and support companies affected by COVID-19. Before 2020, to receive cash transfers of tax relief, firms had to submit applications and various supporting documents (e.g., tax payment records, social security payment records, and small and medium-sized enterprise (SME) certifications) to establish eligibility. If accepted, the disbursement could take months to complete. In 2020, this new online platform reduced the entire application and disbursement process to a matter of days. After eligible firms submitted their applications online, the system automatically retrieved and verified their data using interconnected government information systems. The platform automatically processed 360,000 applications and facilitated 146,000 online disbursements within a week after the subsidy policy was issued.

2.3 Implementation of Reforms

2.3.1 Legal and regulatory reforms

New regulations supported the “one visit maximum” reforms. Standardized administrative procedures are key to online workflow integration and data sharing. With this in mind, in 2017, Zhejiang released its Operational Manual on “One Visit Maximum” Reforms to present a unified standard for implementing “one visit maximum” reforms across various government agencies. The province also released regulations and guidelines to facilitate data sharing and digital services. For instance, Administrative Measures on Public Data and E-government Management in Zhejiang Province, released in 2017, provided a legal basis for using e-signatures, electronic seals, and electronic transactions and supported cross-agency data sharing. Building on the diverse regulations addressing different aspects of “one visit maximum” reforms, Zhejiang also issued a comprehensive provincial regulation in 2019 to institutionalize the best practices as the reforms progressed.

New policies facilitated comprehensive digital transformation. In 2021, the Overall Action Plan for Digitization Reforms in Zhejiang Province outlined key tasks for enhancing smart internal government operations, developing the digital government system, promoting digital economy growth, advancing the digital social system, and establishing an integrated data resource system. In 2022, the province issued detailed guidelines, aligned with the State Council’s
directives on digital government, specifying performance targets for 2025 and 2035 and providing a clear roadmap for Zhejiang’s digital transformation journey.

Table 2.3 lists selected regulations supporting the “one visit maximum” reforms and development of the integrated online government service platform.

<table>
<thead>
<tr>
<th>Name of Regulation</th>
<th>Main Content/Purpose</th>
</tr>
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<tbody>
<tr>
<td>Operational Manual on “One Visit Maximum” Reforms (2017)</td>
<td>Provides definitions, requirements, scope of relevant administrative procedures, institutional settings, quality of online and consultation services, complaint processing, and work performance evaluation systems necessary to implement “one visit maximum” reforms.</td>
</tr>
<tr>
<td>Regulation on Public Data and E-government Management in Zhejiang Province (2017)</td>
<td>Sets out the legal basis for the use of e-signatures, electronic seals, and electronic documents and to support cross-agency data sharing.</td>
</tr>
<tr>
<td>Schemes for the Development of Standards for Digital Transformation in Zhejiang for 2018–2020 and 2021–2025</td>
<td>Introduces two schemes setting the framework, phased targets, key tasks, and institutional settings for developing a standard system to facilitate cross-agency data sharing and integrated government services. Outlines phased tasks for developing a well-connected digital government system by 2020 and for complete availability of key government services online or through mobile apps by 2022.</td>
</tr>
</tbody>
</table>

Source: Compiled by the author.

National and subnational governments have prioritized use of digital G2B services to improve the business environment. In 2019, China issued a Decree on Optimizing the Business Environment, which included provisions on leveraging digital technologies to facilitate business environment reforms, such as promoting online government services for firms and developing a national e-government platform. At the provincial level, the recent Action Plan for Improving Business Environment in Zhejiang Province for 2022–2025 promotes online services as a standard means for processing firm applications, including business registration, property registration, utility connections, and tax payments.

2.3.2 Institutional arrangements

Top leadership of the provincial government championed the “one visit maximum” reforms. It included both the provincial party secretary and the governor. Top leaders at the municipal and lower levels followed. A cross-agency coordination leading group was set up at the provincial level, with the governor as team leader and chair of regular meetings on implementing the reforms. Working under this high-level leading group, a dedicated working team consists of officials from various agencies. Key government agencies include the General Office of the Provincial Government, the Provincial Development and Reform Commission, and the provincial legislative body.
The reforms took both top-down and bottom-up approaches between the provincial and local governments. Guidelines from the provincial government encouraged local governments to make innovative reforms that could be scaled up later on the provincial level. For example, reforms initiated by Hangzhou to integrate firm registration data, tax payment data, and corporate social credit data were later replicated across the province. The role of the provincial government included providing high-level guidelines and province-wide standards for administrative procedures, setting local targets and carrying out inspections of reform implementation, and providing necessary technical trainings to local governments (Yu and Gao 2018). Zhejiang continues to enhance mechanisms and foster a culture tolerating failures by local governments in pioneering reforms, while penalties can be imposed for lack of or slow action in implementing reforms.30

Dedicated data management agencies were set up to support the reforms. Zhejiang set up the Provincial Data Resource Management Center in 2015, which has played an important role in data standard setting and data sharing for the reforms. In 2018, the agency was restructured into the Provincial Big Data Development Administration and given a larger role in managing public data and promoting government digital transformation. By early 2019, data management agencies were set up at the provincial, municipal, and county levels to integrate public data management, e-government development, and digital government information system development, roles previously scattered among multiple agencies.

A performance monitoring and evaluation system, with detailed lists of work tasks, was set up to track compliance and performance. Detailed lists of key work tasks, key projects, procedures, and data demand were

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30 Most recently, Taizhou Municipality of Zhejiang Province released a regulation for trial implementation, specifying eight types of failures in piloting innovative business environment reforms that could be exempted from liabilities.
developed at the provincial level and then disaggregated at lower administrative levels and allocated to specific government agencies with a clear timeline. The system was used to check on reform progress and ensure accountability, with each agency’s reform progress linked to its performance evaluations. In addition, supported by Zhe Zheng Ding, the collaborative online work platform used by all government agencies in the province, the system publicizes, almost in real time, each agency’s progress in implementing reforms on the task list. Transparency on reform progress among government agencies helps create peer pressure, incentivizing effective implementation.

2.3.3 Leveraging digital solutions

Zhejiang adopted an Integrated (data) Resources System (IRS) to facilitate data sharing across the province. The IRS, released in 2021, serves as the operational system for the planned smart public data platform. As the digital government agenda moved forward, different agencies developed various data, digital applications, and smart modules. The IRS combines these digital resources. To do so, the Provincial Big Data Administration first conducted a detailed inventory of all existing public data, applications, network components, and cloud resources scattered among more than 10,000 digital systems. Unified data standards were established, resulting in consistently coded digital resources. By leveraging such standard data modules, each jurisdiction and agency can develop its own digital applications. The IRS is likened to a factory with standard data production lines to facilitate data generation and digital modules usable by thousands of the province’s government agencies. This approach addresses duplicated and scattered information systems, ensuring more efficient data sharing among agencies with the same data standards.

The provincial cloud infrastructure platform played a key role in data sharing. In 2014, along with the “four lists and one net” reforms, Zhejiang started developing a unified provincial cloud infrastructure platform to support various information systems of the province’s government agencies. The platform laid a foundation for the provincial online government service platform and for cross-agency sharing data. The cloud infrastructure framework is divided into provincial and municipal structures and is managed by hosting zones. This platform led various government agencies to close or suspend their own government services portals and move their data and online business processing systems to the cloud infrastructure (Gong, Xie, and Shi 2020).

The Zhejiang government partnered with private companies for digital solutions. The provincial government partnered with, among others, Alibaba Group, headquartered in Zhejiang and a top digital solution provider and China’s largest e-commerce group, to develop and operate the integrated online government service platform, as well as the collaborative government online working platform, Zhe Zheng Ding. Under a joint venture set up in 2019, the provincial government owns 51 percent of the company through three state-owned enterprises (SOEs) and Alibaba owns 49 percent. Since it was established, the joint venture has been granted contracts for developing, upgrading, and operating several key government digital platforms. Its role mainly involves providing technical support and developing cloud and other digital infrastructure, while the government maintains control of key business processes and data resources. International experience has also shown the effectiveness of partnering with the private sector to pilot and implement emerging technology solutions. Box 2.3 provides two examples.

32 Zhe Zheng Ding provides a platform for government agencies to work and communicate collaboratively. Currently covering all 11 cities, 90 counties, and 1,375 townships, it has around 1.2 million active users, more than 200,000 online work groups, and 988 mini-apps. Data are from the Zhejiang provincial government website; see http://www.hangzhou.gov.cn/art/2020/8/31/art_1229243368_55844929.html.
Box 2.3. Private Company Partnership for Digital Regulatory Delivery in Estonia and New Zealand

**Estonia**

Estonia has been a pioneer in integrating digital technologies into government and society. The country has embraced the latest advances in AI, with a strong focus on developing an AI strategy and establishing a legal framework to govern its use. Estonian Centre of Registers and Information Systems (RIK) took action on AI use in automating business registration-related processes.

Through a range of partnerships, RIK has been instrumental in fostering innovation. For example, they organize hackathons to brainstorm and develop software solutions, often focusing on AI. By collaborating with academia through joint projects and engaging consultants from both the academic and the private sector, RIK ensures robust development and testing of new solutions. This collaborative approach minimizes the risk of failure and fosters ongoing innovation.

RIK also places significant importance on partnering with the private sector in developing digital government solutions. It organized job descriptions and a recruitment process requesting knowledge of emerging technologies, such as experience with blockchain. Private companies actively engage in the hackathons and contribute to the development of pilot projects. The AI design for business name reservation was specifically coordinated through a public-private partnership, and government financing was used to implement the solution in a real-life production setting.

**New Zealand**

In 2012, New Zealand started a Better for Business (B4B) initiative that aimed to improve businesses’ experience with the government. B4B has expanded to include ten government agencies in New Zealand, representing approximately 83 percent of the typical interactions between businesses and the government. The primary goal of this program is to simplify and streamline the process for businesses engaging with government entities, making it more convenient and hassle-free.

As part of the B4B initiative, government agencies such as the Ministry of Primary Industries (MPI), the New Zealand Customs Service, the Inland Revenue Department, and the Ministry of Business, Innovation, and Employment (MBIE) formed a partnership with a private sector entity. This collaboration leveraged the expertise and resources of the private sector partner to facilitate experimentation, testing, and knowledge acquisition. A pre-existing Conversational AI tool set was chosen for a proof-of-concept study.

*Source: Mangalam and Vranic (2020).*
3. Remaining Challenges

Despite its progress thus far in building an integrated online public service platform, Zhejiang faces additional challenges.

First, government agencies have made uneven progress in implementing reforms. As of June 2020, around half of Zhejiang’s government agencies had yet to complete comprehensive reviews of their administrative responsibilities and consequently lacked clear digital business targets or detailed, accurate lists of data requirements. This made it difficult to design business processing procedures that integrated with those of other agencies (Xu 2020). Disparities also emerged in setting administrative procedure standards across various levels of government and different jurisdictions, limiting standard service integration in the province. A survey conducted in 2022 highlighted areas for improving users’ experience with the provincial government service platform, including improved accessibility and transparency of administrative information and making the online policy search feature more user-friendly. The platform’s quality of service fell short of user expectations, particularly for joint regulatory delivery (Liu and Qin 2023).

Second, cross-agency data sharing requires further improvement. China faces challenges of information silos and segmented information systems. In Zhejiang, some government agencies’ individual business systems have not been fully integrated into the provincial “all-in-one” online government service platform. A particular gap concerns data sharing with national government agencies. For instance, as of 2020, data for only one-fifth of the administrative items had been integrated with the ministries (Xu 2020). Data sharing among peer agencies remains an issue. Data formats often differ, limiting the system’s overall compatibility and making it difficult to share data effectively (Liu 2020). As the reforms move forward, more data sharing will be required between Zhejiang and peer jurisdictions, which will present further challenges.

Third, there are data privacy and cybersecurity concerns. As digital reforms move forward, data security issues regarding collection and use of firm and individual data could bring legal risks. No clear legal framework addresses these issues, however, beyond the 2021 Data Security Law. The gap in legal protection on key aspects of data privacy includes rules on reasonable use of data and data classification policies (Peng and Wang 2022). The traditional cyber security risk evaluation and supervision model focused on relatively static scenarios and may not be sufficient to address the cybersecurity risks associated with the free flow of administrative data among various agencies and scenarios (Teng and Wu 2023). Strengthening data privacy is essential. Robust, clear data privacy policies, regulations, and security measures may be needed to protect data from cyberthreats, hacking, or data breaches. Balancing data privacy and data sharing is also critical.

Fourth, additional deregulation and decentralization reforms will be needed at the national level to allow subnational governments to adopt more innovative reform practices. The current legal framework that defines each government agency’s administrative powers remains unchanged; rather, higher-level authorities have usually granted lower-level agencies certain powers on a case-by-case basis. This has created legal barriers to sustaining the ongoing reforms (Yu and Gao 2018). Furthermore, some innovative reform practices lack adequate legal support. For instance, clear legal grounds are lacking to send electronic notices to applicants using text messages or online platforms. Also missing is comprehensive national legislation on developing digital government and managing public data (Yu 2022).

Fifth, the stakeholder participation mechanism for reforms requires strengthening. The core principle of the
reforms is to enhance regulatory delivery and improve public services to meet the needs of the public and businesses. Therefore, it is crucial to establish a mechanism that enables their active participation throughout the reform process, from design to implementation. Currently, the government plays a leading role in this mechanism, allowing only limited stakeholder involvement. Although in recent years online interactions among the government, firms, and individuals have increased, they mostly involve queries to clarify policies and administrative procedures. Successfully engaging the private sector requires meeting several mutually self-reinforcing conditions. Primarily, governments must (i) ensure adequate private sector representation; (ii) provide platforms to collect candid feedback; and (iii) ensure continuous dialogue (Arlet, Eknath, and Popova 2022). Allowing firms and individuals to contribute substantial inputs to policy making and administrative procedure design would also be useful. Economies around the world have used various forms of private sector engagement, including public-private dialogues and collaboration, competitiveness partnerships, investors' advisory councils, business forums, and reform coalitions (Herzberg and Lilli 2016).
4. Conclusions and Lessons Learned

China has made significant progress in improving the business environment by leveraging digital technologies. In recent years, provincial governments across China have established online platforms providing integrated G2B services that improve the efficiency and transparency of government services. These platforms aim to constitute comprehensive online single submission systems allowing businesses, at any point in the business life cycle, to complete all administrative approval procedures. Digital services help reduce compliance costs and improve public administration and the business environment (Wang and Zhang 2022; Fan, Wu, and He 2022).

This study focused on Zhejiang Province’s use of digital solutions to streamline administrative processes and create a favorable business environment. A front-runner in China in implementing such reforms at the subnational level, Zhejiang Province has received wide recognition domestically for its exemplary reforms.

Zhejiang’s experience offers lessons for other provinces and economies. Its online government service platform helps to streamline regulatory processes and improve government-business interactions, demonstrating these specific lessons for others:

- **Adopt a user-centric approach.** By implementing the reforms, Zhejiang transitioned from a traditional mindset based on government-supplied administrative services to a more user-centric approach, a shift essential to integrating digital government services. A user-centric approach enhances the overall user experience and drives efficiency.

- **Standardize and simplify administrative procedures.** Regulatory reforms to establish clear, standardized frameworks pave the way for successfully adopting digital solutions in government operations. Zhejiang began streamlining its administrative procedures by clarifying the duties of each agency involved in the digitization process. Standardized administrative procedures were then created by establishing uniform practices, guidelines, and protocols across different government agencies, identifying redundancies, and optimizing workflow.

- **Cultivate strong political support to drive reforms.** Top leadership in Zhejiang’s provincial government championed the reforms, as did top leaders at lower administrative levels. This support provided the strategic vision for regulatory and digital reforms and encouraged others to work towards the vision.

- **Establish a monitoring and evaluation system.** An effective evaluation and monitoring system holds responsible parties accountable for achieving the desired results. Regular progress tracking helps authorities identify areas for improvement and make necessary adjustments.

- **Collaborate with the private sector to develop and use advanced digital solutions.** Zhejiang’s provincial government partnered with the private sector to drive the deployment of digital government services. Partnering with the Alibaba Group, in particular, allowed the government to quickly launch and expand the range of online services to both citizens and businesses. The partnership brought together the government’s extensive understanding of administrative processes with Alibaba’s technical proficiency in creating and managing online platforms.
References


