Berlin Government Technology Centre

In collaboration with Capgemini

WORLD ECONOMIC FORUM

The Global Public Impact of GovTech: A $9.8 Trillion Opportunity

INSIGHT REPORT

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Foreword

Børge Brende
President and CEO,
World Economic Forum

Markus Richter
State Secretary and Federal Commissioner, Information Technology, Federal Ministry of the Interior and Community, Germany

Aiman Ezzat
Chief Executive Officer,
Capgemini

In an era where citizens demand more from their governments – more transparency, more efficiency, more responsiveness – technology stands as both the challenge and the solution. GovTech (government technology) represents the next frontier in governance, where innovation meets accountability. As artificial intelligence (AI), data analytics and digital platforms become the backbone of public administration, the potential to redefine how governments operate is immense. GovTech doesn't just promise to streamline services; it has the power to rebuild trust and transform the role of government in shaping a more equitable, connected and resilient future.

This report explores the vast opportunities of GovTech, showing how digital tools – from AI-enhancing decision-making processes to platforms that promote citizen engagement – can be harnessed to modernize public sector operations. Yet, the potential of GovTech extends far beyond technological innovation; it lies in increasing agility, accountability and transparency across all levels of government. GovTech is a catalyst for unprecedented efficiencies, bridging societal divides and facilitating a new era of trust between governments and the people they serve.

The challenge for government leaders and policy-makers is clear: to realize this potential, there must be a commitment to embracing innovation, overcoming legacy barriers and promoting collaboration between the public and private sectors. This report highlights successful GovTech implementations from around the world, offering both inspiration and practical guidance on navigating the complexities of digital transformation. It underscores the importance of a well-executed GovTech strategy – one that is citizen-centric, data-driven and resilient, particularly in an age where digital trust and security are paramount.

As you explore the insights and recommendations presented in this report, we invite you to envision a future where GovTech is not just an enhancement to public service but a foundational pillar of governance. The path forward is not without its challenges, but the rewards for those who lead this transformation will be unparalleled – reshaping not only government efficiency but the very relationship between state and citizen. The journey of GovTech is about building smarter, more inclusive and more responsive governance for the future. Now is the time to seize this $9.8 trillion opportunity and chart a course towards a new era of digital governance.

Executive summary

The true potential of GovTech lies in its profound public impact.

As governments navigate the complexities of modernizing the public sector, GovTech (short for government technology) will be a central catalyst in transforming public service delivery. The main objective of this report is to measure the potential of GovTech, given its profound public impact (see A1). Furthermore, this report presents insights from seven country case studies, illustrating current GovTech initiatives, potential impact areas and the important role it already plays today.

1. GovTech is entering a new era

GovTech refers to the design and application of technological products and services in public institutions. While governments have consistently adopted technology to modernize operations, the scale, speed and scope of what is possible in the next decade is unprecedented. Many of the technologies now available for the public sector offer the ability to create comprehensive systems that streamline government functions and interactions with both citizens and businesses. These tools no longer operate in isolation but are part of interconnected frameworks capable of transforming public administration.

Simultaneously, governments worldwide face pressing challenges that will be difficult to address without the adoption of GovTech solutions. This convergence of technological capability and governmental needs presents a unique opportunity for GovTech. However, the transition into this new era will not be uniform, with certain countries advancing in some areas while others prioritize different facets of technological adoption. The evolution of GovTech will thus be both gradual and varied, reflecting diverse governmental contexts and priorities globally.

2. GovTech presents a $9.8 trillion opportunity for global public impact

The GovTech market is expected to expand from **$606 billion in 2024 to $1.4 trillion by 2034,** creating a **$9.8 trillion opportunity** to generate public value in 2034. This opportunity will be realized through the three key value drivers:

- **Efficiency gains:** Streamlining processes, reducing costs and improving service quality
- **Transparency gains:** Enhancing accountability in process, reducing corruption and building public trust
- **Sustainability gains:** Optimizing resources, cutting waste and supporting environmental sustainability

A true GovTech transformation promises far-reaching benefits, from more efficient resource allocation and data-driven decision-making to the creation of new value across public services. By streamlining processes and improving accountability, governments could deliver faster, more responsive services tailored to the needs of their populations. Beyond its immediate impact on governance, GovTech stands to spur innovation across sectors, job creation and global economic growth. In this sense, GovTech is not just a tool for modernizing bureaucracy; it emerges as a potent engine for global progress.

3. For GovTech to reach its full potential, decisive action is needed

Realizing the potential of GovTech requires strategic and decisive action, tailored to the regional, constitutional and political landscape of each country. This report explores how Azerbaijan, Bahrain, Brazil, Germany, Malaysia, Rwanda and Ukraine are modernizing their public sectors. Across these case studies, a theme emerges: to fully realize GovTech, governments must build robust IT infrastructure, futureproof public services, promote closer public-private collaboration and maintain a strong focus on citizen-centric solutions. This approach is not just about digitizing processes – it is about rethinking how governments can better serve their people.

1 Why GovTech? Why now?

GovTech is at a critical juncture as advancements in technology intersect with evolving public expectations.

GovTech ushers in a new era of public sector innovation, ready to address the complex, interrelated challenges of the 21st century and set a path towards more effective, equitable and sustainable governance for all.

GovTech (short for government technology) is the design and application of technological products and services in public institutions to improve public service delivery. As such, GovTech has enormous potential to create a more responsive, inclusive, transparent and better-performing public sector that better meets citizens' needs.

The evolution of GovTech: from isolated projects to digital public infrastructure

The use of technology in the public sector is not a recent phenomenon. Efforts to improve efficiency by applying the technological capabilities of the time have been under way since the 1970s and 1980s, typically focused on isolated functions. These early moves were fragmented and limited to individual projects. The arrival of the internet in the 1990s expanded the toolkit, allowing governments to offer basic information on static websites. By the early 2000s, the focus shifted to more complex, interactive systems, enabling citizens to access services such as filing taxes or school admission online.

The commercialization of key technologies, along with the scalability of cloud infrastructure, has greatly amplified the impact of what is now referred to as GovTech, far exceeding the potential seen in previous decades. New technologies like artificial intelligence (AI), virtual reality or the internet of things (IoT) can now be embedded within government workflows. For instance, AI-powered analytics can optimize resource allocation in healthcare, ensuring medical supplies and personnel are sent to areas of critical need. Geographic information systems (GIS) enhance urban planning by using real-time, location-specific data to improve zoning and infrastructure. Looking ahead, quantum computing could transform government operations even further, offering rapid data analysis to solve complex problems in areas such as healthcare, climate change and national security.[1]

These new technological opportunities are increasingly embraced by governments worldwide. Estonia, for instance, has digitized 99% of its public services, enabling citizens to access everything from voting to healthcare online through the e-Estonia programme. In the United Kingdom, digital transformation efforts are expected to save over $1.3 billion by 2025 as departments invest in cutting-edge technology, such as the National Digital Twin Programme to support climate change modelling and in blockchain technology to enhance supply chain efficiency.[2] Meanwhile, in Germany, immersive technologies are beginning to be used to improve law enforcement. Police in Lower Saxony and Aalen use virtual environments to enhance training simulations and crime scene analysis, improving both efficiency and community engagement.

This transition heralds a new era for GovTech, where value creation extends beyond merely digitizing processes or automating tasks. The focus now lies on building **digital public infrastructure** (DPI) and **digital public goods** (DPGs), creating safe and inclusive participation in markets and society. When GovTech solutions can build on foundational digital capabilities, such as digital identity systems and payment platforms, they enable individuals and organizations to create new cross-sectoral services that drive new value creation across the economy. India's Aadhaar system is one such illustration of this transformative potential. Next-generation GovTech solutions can be geared towards developing DPGs, sometimes including open-source tools and standards designed to promote sustainable development.

> The rapid pace of technological progress, coupled with the linear and slow adoption of technology within public administration, has led to missed opportunities and increased risks.

The promise of GovTech: empowering governments to lead in the intelligent age

GovTech's growing importance directly correlates with governments' need for innovative solutions to manage an increasingly complex set of challenges. Internally, many governments are grappling with talent shortages, constrained budgets and legacy systems, which undermine their ability to deliver. Externally, a cascade of global challenges – ranging from climate change-induced extreme weather and rising sea levels to resource scarcity and global health crises – demand unprecedented levels of government coordination and action within and across the borders of nation states. These issues are not only about addressing immediate threats but also about shaping a sustainable, equitable future.

Digital technologies profoundly changed the way societies communicate and interact, radically reshaping not only industries and markets but the very structure of society itself. They also fuelled the growing importance and influence of technology companies whose services and infrastructures have become indispensable for modern societies. As tech companies expand their influence, they often operate in domains that were once firmly in the public sector's grasp, leaving governments, traditionally slow-moving, struggling to keep pace.

The rapid pace of technological progress, coupled with the linear and slow adoption of technology within public administration, has led to missed opportunities and increased risks, creating a narrative of governmental inefficacy. In the wake of pressing challenges, from climate change to economic inequality and safeguarding public safety, states can appear ill-equipped and immobilized.

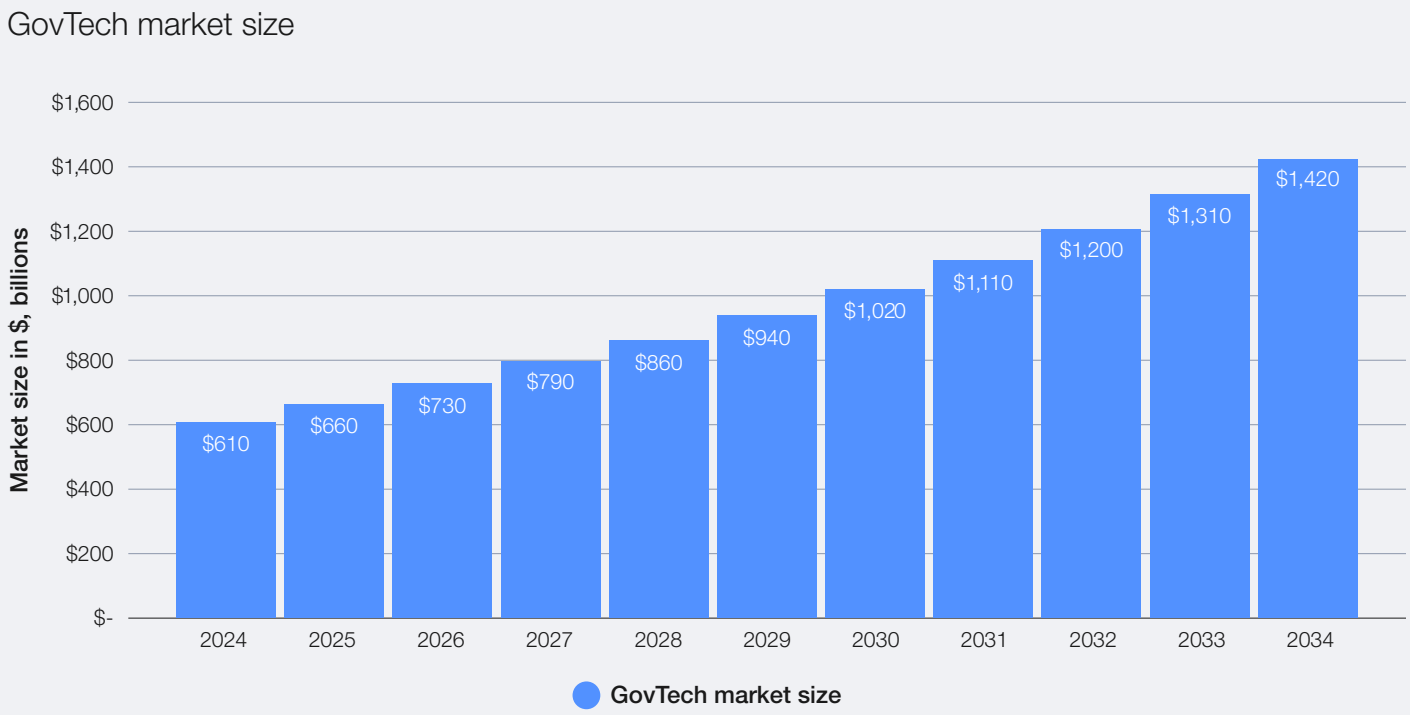
GovTech offers a transformative pathway forward. It is not merely about governments catching up with technology but about seizing the opportunity to modernize and re-create strength from within. By embracing a strategic digitization agenda, governments can reassert their capacity to deliver services effectively, form partnerships on equal footing with technology providers and create new infrastructure that benefits all stakeholders in society. Public institutions that are technologically adept will not only improve their operational effectiveness but also be better equipped to uphold ethical, human-centred standards for future technological developments. This approach holds the potential to ensure that technological advancements are applied in ways that are both inclusive and responsible, creating societal benefits that reach far beyond economic gains.

The digital transformation of economies and societies has left governments struggling to keep up. GovTech ushers in a new era of public-sector innovation, ready to address the complex, interrelated challenges of the 21st century and set a path towards more effective, equitable and sustainable governance for all.

2 The global GovTech market in numbers

The GovTech market is expected to more than double by 2034.

FIGURE 1 | **Expected GovTech market size from 2024-2034 with an estimate growth rate of 8% per annum**



The pressing need for governments to digitize is evident in the growing GovTech market, which is projected to more than double from $606 billion today,[3] to $1.42 trillion by 2034 (see Figure 1; see section A3 on page 29 for methodology behind the analysis).[4]

This projected expansion is fuelled by multiple factors. Advances in AI, data analytics and cloud computing have opened new pathways for optimizing public service delivery. For example, AI-powered platforms now streamline everything from tax processing to land registry, significantly reducing human error and operational costs. In the United States, the federal government has deployed AI to detect financial fraud and potential insider trading, resulting in savings of millions of dollars annually.[5]

Governments are also responding to rising public expectations for seamless, personalized and efficient services akin to what consumers experience in other sectors. The demand for government services to match the user-friendliness of widely available commercial technology, such as banking apps or online shopping platforms, is placing pressure on public institutions to innovate.

The legal and regulatory environment is another demand driver for GovTech solutions as governments are enacting frameworks that not only facilitate the adoption of emerging technologies but also ensure their responsible and secure use. As a result, public-private collaborations are increasingly playing a critical role in GovTech innovation.

> **GovTech plays a crucial role in modernizing public administration by using innovative technologies to enhance the efficiency, transparency, and citizen engagement of government services. The future of public administration will be shaped by digital transformation, requiring even greater integration of data, artificial intelligence, and automation to meet evolving demands.**
>
> Markus Richter, State Secretary and Federal Commissioner for Information Technology, Federal Ministry of the Interior and Community, Germany

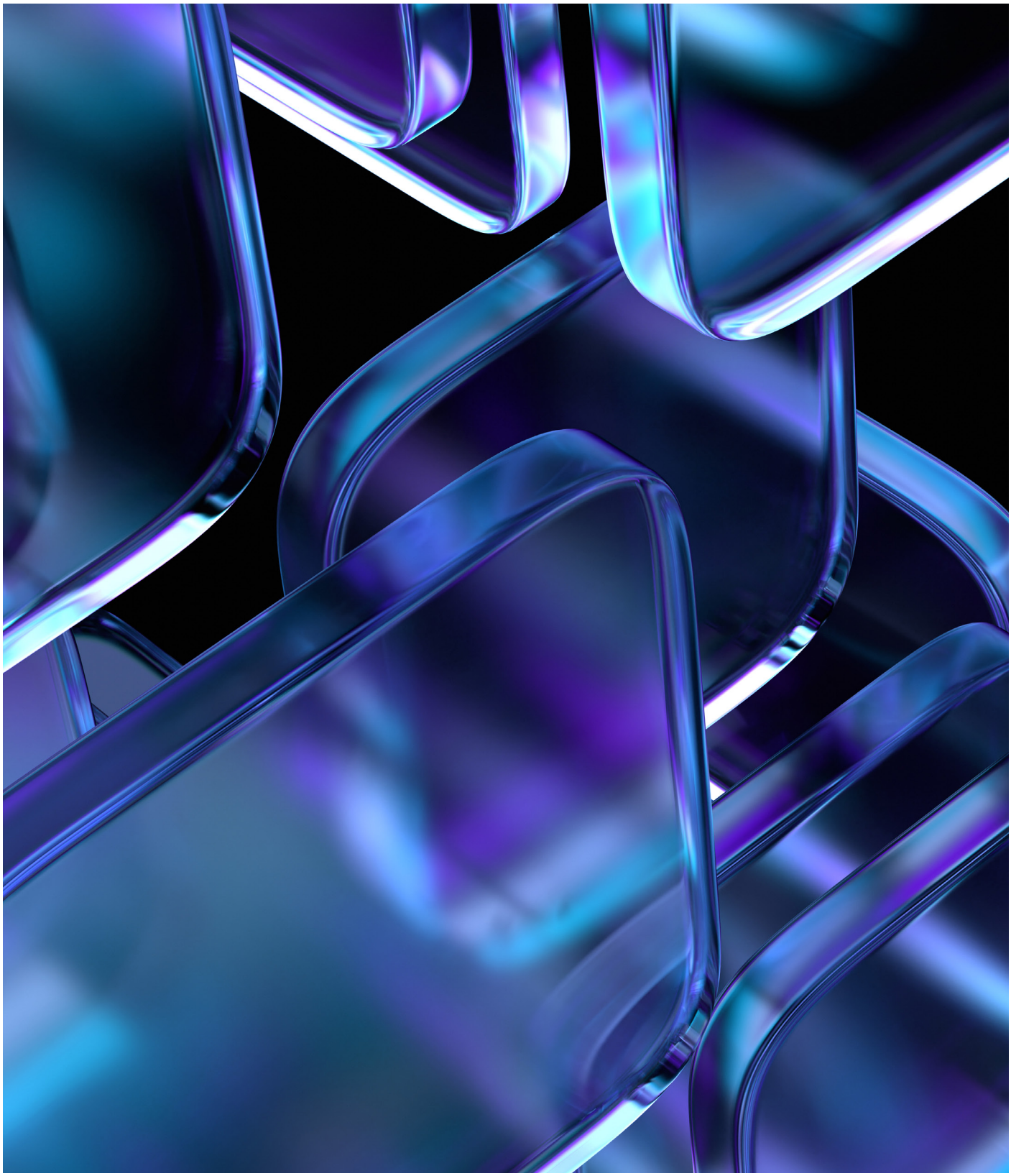
Amid this significant growth potential, it is crucial to recognize the expansive and multifaceted nature of the GovTech market, which extends far beyond traditional government functions. Although often associated with IT solutions, GovTech encompasses a much broader range of services across various governmental sectors. The market's horizontal structure spans the entire public sector, cutting across different departments rather than being confined to any single function. Mapping the precise landscape of the GovTech market, therefore, remains a complex challenge. However, based on the current solutions available, it can be generally categorized into the thematic areas outlined in Table 1.

TABLE 1 **Overview of GovTech thematic areas**

Thematic area	Includes GovTech solutions for
Agriculture	Assisting with precision farming, monitoring crop health and supporting rural development through technology
Citizen participation	Encouraging public involvement in governance through online platforms for feedback, voting and decision-making
Citizen services	Making it easier for citizens to access services online, such as applying for permits, paying taxes and renewing documents
Climate protection	Supporting environmental policies and sustainability efforts through data collection, emissions tracking and monitoring systems
Culture and tourism	Managing tourism and cultural heritage with smart guides, digital archives and interactive apps
Education	Supporting public education through e-learning, digital classrooms and better administrative tools
Energy and utilities	Enhancing the management of energy distribution, water and other utilities through smart grid systems
Public health and social programmes	Managing healthcare services, social programmes and public health data more efficiently
Infrastructure and urban development	Optimizing urban planning, building maintenance and public infrastructure through digital monitoring and planning tools
Internal productivity	Streamlining workflows, reducing bureaucracy and improving communication across departments
International development and diplomacy	Managing foreign aid, diplomatic relations and international cooperation using advanced communication and coordination systems
Justice	Accelerating legal processes through digital case management and virtual court systems
Legal processes and regulation	Simplifying regulatory compliance and legal procedures for businesses and individuals
Policing and security	Enhancing law enforcement and public safety through digital tools for crime prevention and emergency response
Tax and financial transfers	Improving tax collection, auditing and distributing benefits or financial aid efficiently
Trade	Facilitating international and domestic trade by simplifying customs, logistics and market access through digital platforms
Transport and mobility	Improving urban mobility, public transit and traffic management with smart transport systems
Workforce and recruitment	Enhancing recruitment, training and employee management, with better systems for remote work

3 The $9.8 trillion public value of GovTech

Unlocking public value through efficiency, transparency and sustainability.



GovTech is poised to deliver $9.8 trillion in public value by 2034, showcasing the transformative potential for public administration and the wider economy.

The potential of GovTech is often measured by market size and investment opportunities. Yet this report takes a deeper dive, spotlighting a dimension that's often overlooked: the social and economic returns on successful GovTech investments (see section A3 on page 29 for methodology behind the analysis).

The report identifies three main drivers of public value: **efficiency gains, transparency gains and sustainability gains**. Each plays a distinctive role in reshaping how governments interact with and serve their citizens:

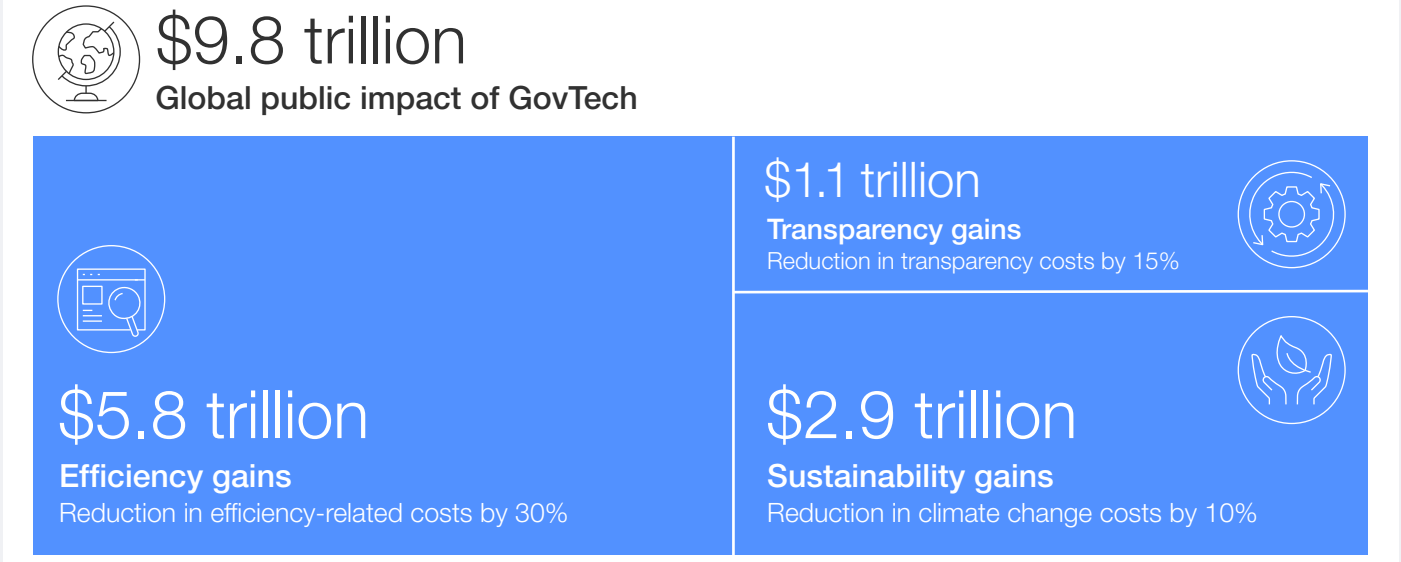
Efficiency gains: The application of technology to automate processes and optimize resource allocation can streamline government operations, reduce costs and accelerate service delivery. Engaging citizens via digital platforms can provide valuable feedback, leading to more user-friendly services and improving overall service quality and satisfaction.

Transparency gains: Adoption of digital tools such as e-procurement systems, e-invoices and digital IDs increases transparency within government operations. These technologies enable participation, promote competition and help mitigate corruption by making transactions and processes visible and traceable, reducing the risk of loopholes and ensuring compliance with legal frameworks.

Sustainability gains: Technological solutions can promote environmental sustainability by helping monitor and manage natural resources. Digitizing public services reduces reliance on resources, from paper to fuel, directly minimizing the environmental footprint of the public sector, which, across virtually all developed economies, continues to be the largest employer. This shift not only contributes to sustainability goals but also supports broader efforts towards responsible resource management and sustainable development.[6]

Considering the combined impact of these value drivers, GovTech is poised to deliver $9.8 trillion in public value by 2034, showcasing the transformative potential for public administration and the wider economy.

FIGURE 2 **Overview of GovTech value drivers and the total GovTech market opportunity in 2034 ($, trillions)**

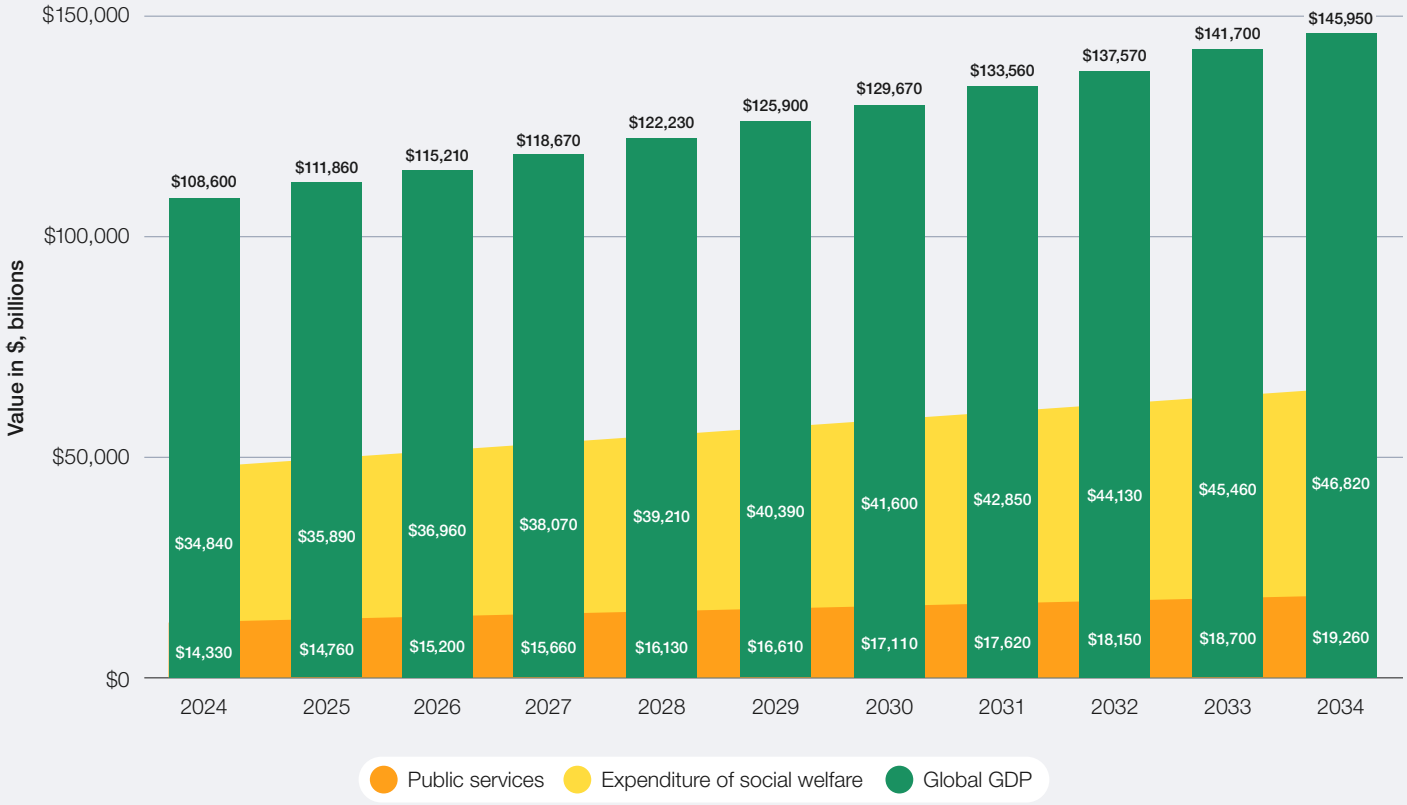


3.1 Efficiency gains

Efficiency gains from GovTech can be measured through time savings in administrative processes and financial savings in public service delivery (for the projected cost, see Figure 3). Scaling technological solutions can lead to substantial cost savings in the public sector. For instance, replacing paper-based systems with digital platforms can reduce processing time from months to hours. As processes are automated, public servants can shift from repetitive, low-value tasks to more strategic, high-value roles.

The research suggests that these improvements could lead to a reduction in efficiency-related costs by 30%, with global savings projected to reach $5.8 trillion by 2034 (see Figure 2; see section A3 on page 29 for methodology behind the analysis).

FIGURE 3 | **Public expenditure (public services and social welfare) in contrast to global gross domestic product (GDP) from 2024 till 2034 (billions, $)**



Source: International Monetary Fund (IMF). (2024). *Government Expenditure – Percent of GDP*. https://www.imf.org/external/datamapper/exp@FPP/USA/FRA/JPN/GBR/SWE/ESP/ITA/ZAF/IND?year=2022.

Malaysia's MyDigital Economy Blueprint exemplifies this shift, generating an estimated $900 million in savings over 10 years while enhancing operational efficiency through the digitization of public services. Similarly, Azerbaijan's e-visa system has reduced application processing times from several days to just three hours, while the introduction of digital contracts has cut administrative processes from 3-4 days to about 15 minutes. Rwanda's IremboGov offers a government-to-citizen platform that simplifies access to over 98 public services from various ministries, such as health insurance registration and national ID applications. By reducing paperwork and streamlining interactions, the platform has saved an estimated 50 million working hours for citizens who no longer need to visit government offices. In Bahrain, the Sijilat 3.0 platform provides an efficient, centralized solution for investors and businesses, enabling them to apply for, renew or modify commercial licences in one single system. By consolidating processes that once required visits to multiple entities and regulators, Sijilat 3.0 eliminates bureaucratic hurdles, making business registration more efficient and accessible.

These examples show how governments can redirect public spending to improve the quality, delivery and efficiency of services. This sets off a virtuous cycle: greater efficiency boosts citizen trust and satisfaction, which in turn strengthens public institutions.[7]

3.2 Transparency gains

By 2034, GovTech can help reduce transparency costs by 15% which could amount to savings of $1.1 trillion.

A lack of transparency and corruption costs the global economy an estimated 5% of GDP (gross domestic product) every year,[8] stunting economic growth and eroding trust in public institutions. The potential of GovTech in combating corruption is substantial. It is estimated that such solutions could reduce the financial toll of corruption by as much as 10%, potentially saving $1.1 trillion by 2034 (see Figure 2; see section A3 on page 29 for methodology behind the analysis).

In Ukraine, the Unified State Electronic System in the Construction Sector (USESCS) has brought transparency to the construction process, covering the entire project life cycle and reducing corruption risks. The system allows individuals, businesses and government bodies to interact electronically, verify real estate details and track public fund expenditures. Azerbaijan's e-Court System has transformed the judicial process by providing a digital platform where citizens can track court cases, submit documents electronically and participate in virtual hearings. This system enhances judicial transparency by reducing delays and limiting opportunities for manipulation or malpractice, reinforcing confidence in the legal process.

By adopting digital solutions like open data platforms, e-billing, e-procurement and secure digital records, governments can bring greater visibility and accountability to their operations. These technologies promote transparency, empower citizens with access to information and help rebuild trust in public services – an essential element for sustainable economic development. In Azerbaijan, the Azerbaijan Service and Assessment Network (ASAN) appeal information system exemplifies this potential by allowing citizens to report infrastructure and environmental issues directly to relevant authorities, enhancing participation in public administration and enabling faster responses to pressing concerns.

Bahrain's Open Data Portal reflects a commitment to transparency, offering free access to more than 390 datasets from various government sectors. By making non-sensitive data publicly available, the initiative encourages collaboration and innovation, giving citizens and businesses the tools to address societal challenges and contribute to public discourse.

3.3 Sustainability gains

Over the next decade, sustainability focused gains could amount to savings of $2.9 trillion.

GovTech is set to play a critical role in sustainability and climate change mitigation by encouraging responsible environmental stewardship. By digitizing public sector operations, reducing resource consumption and enhancing the effectiveness of government services, GovTech is advancing sustainability goals.

The stakes are high: without decisive action, the economic cost of climate inaction – including the direct costs of environmental damage, disaster response and the long-term impacts on productivity – could reach 20% of global annual GDP.[9] Studies suggest that digital solutions, if scaled across industries, could reduce global emissions by as much as 20%.[10] Equally, digital solutions offer governments a pathway to both reduce the environmental toll of their own operations and accelerate climate action across the economy.

While earlier digital efforts often focused on the reduction of paper use, other factors such as remote work, efficient building management and reduced vehicle emissions are crucial in making the public sector less resource-intensive. Over the next decade, such sustainability-focused efficiencies could amount to savings of $2.9 trillion (see Figure 2; see section A3 on page 29 for methodology behind the analysis).

In Berlin, the local government is harnessing data-driven visualizations and dashboards to guide decision-making on sustainability goals, enabling more effective resource management. Meanwhile, in Malaysia, the government is helping small- and medium-sized enterprises (SMEs) digitize their operations, providing tools that improve efficiency and reduce energy consumption. In Ukraine, the EcoSystem platform empowers citizens to report environmental hazards in real time, allowing authorities to quickly assess and respond to emerging threats. These examples illustrate how governments worldwide are embracing technology not just to improve governance but to drive tangible progress on sustainability – a critical imperative in the face of escalating environmental challenges.

4 GovTech in action: country cases for implementation

A deeper look at GovTech in action from seven country case studies from around the world.

The insights from seven country case studies – **Azerbaijan, Bahrain, Brazil, Germany, Malaysia, Rwanda and Ukraine** – highlight the economic and social benefits of GovTech initiatives. These countries were chosen based on a range of factors, including economic size, geographic diversity, existing GovTech efforts and future plans for digital government transformation.

Please note: All information processed in each country case study is based on expert interviews and a country survey conducted by the authors of this report.

4.1 Azerbaijan: entrepreneurial governance driving a GovTech transformation

GovTech is seen as a foundational element that will blend entrepreneurial governance with public-private collaboration.

The Azerbaijan government has been advancing GovTech solutions through collaborations with the private sector to transform public service delivery. This strategy aims to amplify both economic returns and societal benefits, ensuring that digital transformation reaches all citizens.

Azerbaijan's digital transformation is anchored in the *Azerbaijan 2030: National Priorities for Socio-economic Development* agenda, which highlights the digital economy as a pivotal force for national development. Key priorities of this agenda include cultivating a steadily growing, competitive economy, building a dynamic, inclusive society rooted in social justice and advancing modern innovations alongside competitive human capital. The GovTech agenda is a central feature, which the government perceives will not only enhance public services but also act as a strategic business opportunity with significant economic potential.

GovTech is seen as a foundational element that will blend entrepreneurial governance with public-private collaboration to position the government as both a catalyst and a leader in digital innovation.

Key initiatives

- **ASAN services**: Launched in 2012, ASAN (meaning "easy" in Azerbaijani) is a one-stop platform providing over 400 services from 15 public-sector and 30 private-sector organizations. Accessible via web, mobile and 27 processing centres, along with a mobile fleet of buses and a train, ASAN offers services ranging from passport issuance to social welfare applications. To date, it has processed more than 77 million applications. Additionally, ASAN's INNOLAND Incubation and Acceleration Center nurtures Azerbaijan's start-up ecosystem, cultivating innovation and boosting the country's digital economy.
- **E-agro platform**: Designed for farmers, this platform allows for online access to government subsidies, encouraging digital literacy in the agriculture sector. It also offers AI-powered tools that help diagnose plant diseases and provide tailored technical advice.
- **E-procurement system**: This platform streamlines procurement processes and encourages greater private-sector participation by enabling companies to submit bids for government tenders online.
- **Data exchange platform**: Facilitating the exchange of 350 million data points annually between government agencies, this platform ensures that data flows efficiently and securely across the public sector, enhancing coordination and service delivery.

> **Azerbaijan's government has been a pioneer in digitalization and service simplification for the past 13 years. Remarkably, even the private sector has been learning from the government's advancements.**
>
> Fariz Jafarov, Head, Centre for the Fourth Industrial Revolution Azerbaijan

4.2 Bahrain: collaborative citizen engagement for better quality of life

With a full internet coverage rate and 89% adoption of digital services, Bahrain's citizens and residents benefit from a wide range of tools designed to streamline service delivery.

Guided by its Economic Vision 2030, Bahrain is building a resilient, adaptable and secure digital ecosystem aimed at cultivating innovation and providing cost-effective public services. GovTech adoption has broadened access to these services nationwide. With the support of the Information & eGovernment Authority (iGA), Bahrain's digital transformation has made significant strides, encouraged international collaboration and integrated cutting-edge technology into public sector operations.

With a full internet coverage rate and 89% adoption of digital services, Bahrain's citizens and residents benefit from a wide range of tools designed to streamline service delivery. Over 700 e-services are currently available through the national portal "bahrain.bh", including mobile apps tailored for businesses, citizens and visitors and a network of digital kiosks. Bahrain has been a regional pioneer in establishing a centralized data centre and implementing a unified identification number for citizens and residents to access public services. By integrating governmental databases and moving its system to a cloud-based data centre, Bahrain ensures uninterrupted, around-the-clock access to essential services, making it easier and more convenient for citizens and residents to connect with government resources.

The country is committed to strengthening its IT infrastructure, building innovation in public services and promoting sustainable economic growth. The next phase of Bahrain's GovTech strategy focuses on building a resilient and comprehensive digital ecosystem to enhance innovation and service efficiency in all economic sectors.

Key initiatives

- **Bahrain Open Data Portal:** This is an online platform that offers citizens free access to over 390 datasets and more than 2 million records from more than 35 governmental entities. This platform covers sectors such as health, economy and education. The Open Data Portal drives greater transparency, innovation and collaboration, enabling citizens and businesses to harness data for research, analysis and decision-making.
- **Sijilat 3.0:** This digital platform allows investors in Bahrain to apply, renew and manage commercial registration and licenses electronically anytime and from anywhere. Sijilat 3.0 streamlines business processes, reducing the need for in-person visits and creating a more business-friendly environment.
- **Tawasul:** This is the national platform for direct engagement between citizens and government entities. The platform allows citizens to electronically submit suggestions, complaints and feedback, helping improve services and facilitating greater public engagement in shaping government policies.

> **Through a continuous refinement of strategies and collaborations, Bahrain has effectively harnessed the potential of advanced technologies. These initiatives reflect our dedication to creating an integrated digital ecosystem and ambition to cultivate a more interconnected society where citizens actively engage with the progress of the country**
>
> Mohamed Ali Al Qaed, Chief Executive Officer, Information & eGovernment Authority

4.3 Brazil: public-sector innovation across all levels of government

Brazil is increasingly embracing technology as a vital asset for government, a change marked by a notable shift in public procurement practices that supports the digital transformation agenda. As the demand for advanced solutions rises, Brazil has made meaningful progress in driving collaboration among public organizations, private companies and civil society. Brazil's success in this area is the result of a comprehensive strategy to integrate innovative digital solutions across all levels of government – federal, state and local – paving the way for a more connected, responsive public sector.

Central to this effort is the GovTech Map Brazil, which has identified 338 public-sector innovation initiatives. These range from open innovation programmes, regulatory sandboxes and technology parks to innovation hubs and labs designed for collaboration

The digital government law, with a citizen-centric approach, integrates over 4,000 digital services across states and municipalities, serving 140 million Brazilians.

and experimentation. These initiatives aim to convene government, private industry and academia to co-create digital solutions that can address pressing societal challenges, from streamlining bureaucracy to enhancing public health systems.

According to research, this shift is driving increased investments into the B2G (business-to-government) market, improving the quality and availability of GovTech solutions. Investments in GovTech have driven significant progress, particularly in Rio de Janeiro. The city has been pursuing digital transformation since 2013, with a goal to digitalize 95% of its government services by the end of 2024. This effort is part of a broader strategic plan that not only aims to enhance public service efficiency and accessibility but also supports urban planning through data-driven insights and improved resource management.

Key initiatives

- **Digital government law**: The digital government law has been a key driver of GovTech collaboration across Brazil, paving the way for the development of the country's comprehensive digital government strategy. This strategy, with a citizen-centric approach, integrates over 4,000 digital services across states and municipalities, serving 140 million Brazilians. Building on its success, a new strategy for 2024-2027 is currently in the works, promising further advancements in digital governance and public service delivery.
- **Governance Risk Assessment System (GRAS)**: GRAS is a tool designed to detect risks of fraud, corruption and bias in government contracting. The system harnesses advanced data analytics and can be easily deployed across local or cloud-based platforms, enhancing transparency and trust in public-sector procurement.
- **Rio de Janeiro early warning system (EWS)**: In the aftermath of a natural disaster in 2010, Rio de Janeiro implemented a data-driven EWS to improve disaster response and management. Overseen by the City Council and Civil Defence, the system has significantly enhanced disaster preparedness by improving monitoring capabilities, bolstering real-time communication and expanding disaster management expertise across the city. Rio's EWS now serves as a model for other cities aiming to strengthen disaster resilience and preparedness through advanced, data-based systems.

> **Innovation in GovTech requires a collaborative ecosystem where political support and citizen engagement coexist to drive meaningful change. By embracing agility and proactive strategies, we can transform technology into a tool that enhances public service and enriches the lives of citizens.**
>
> João Carabetta, Chief Data Officer, City of Rio de Janeiro

4.4 Germany: a GovTech ecosystem that strengthens public-private collaboration

Central to Germany's vision is the creation of a comprehensive and interoperable GovTech marketplace.

Germany has developed a strategic approach that harnesses its unique governance structure to build a robust GovTech partner ecosystem. The GovTech strategy in Germany operates across multiple levels – international, national and regional – each contributing to the broader vision of cohesive digital governance. Germany has been advancing global digital governance by participating in EU-wide initiatives and facilitating international collaborations that shape digital standards and policies. Efforts are also focused on harmonizing digital strategies across the country's 16 federal states, ensuring a unified framework that minimizes redundancies and guarantees equitable access to the benefits of digital transformation.

Central to Germany's vision is the creation of a comprehensive and interoperable GovTech marketplace. This marketplace is designed to facilitate competition among solutions, allowing various products to be developed and harnessed on a centralized platform. By ensuring that solutions are interoperable and can be exchanged or combined easily, the marketplace aims to dissolve vertical segregation between different government levels. This approach envisions a unified platform that supports seamless integration of technologies across federal, state and municipal layers, enhancing efficiency and reducing redundancy. The goal is to create an open and accessible marketplace where solutions are developed to common standards, enabling broad adoption and facilitating the export of GovTech innovations. Beyond process optimization, the most significant benefits are on the human side: easing the burden on public administrators, cultivating networks with continuous interaction and building a community that serves as an enabler for better products and services.

Key initiatives

- **GovTech Campus Deutschland**: Established in 2021, the GovTech Campus serves as a central hub for collaboration among governments, tech innovators and civil society. With over 80 members, it plays a crucial role in advancing Germany's digital transformation by boosting mutual learning and experimentation and scaling innovative solutions.
- **AI assistant F13 in Baden-Württemberg**: Launched in 2024, this initiative integrates AI tools into public administration, particularly for repetitive tasks, thereby significantly enhancing administrative processes. This encourages AI adoption in internal government processes and collaboration with academia, industry and the public sector to develop practical AI solutions.
- **GovTecHH in Hamburg**: A standout feature of this initiative is the experimentation clause, which simplifies the public procurement process by allowing Hamburg to invite a single company to submit an offer or negotiate contracts up to €100,000 for new technologies. This streamlined approach bypasses traditional bureaucratic delays, accelerates the adoption of innovative solutions and makes it easier for start-ups to engage with public administration.

> **Cooperation is essential for successful GovTech implementation. In Europe, we benefit from a vast and diverse ecosystem of GovTech startups and SMEs, with Berlin serving as a central hub. Integrating this GovTech innovation into the public sector is crucial for building a future-oriented, responsive public administration.**
>
> Kai Wegner, Governing Mayor of Berlin

4.5 Malaysia: pioneering GovTech with a data-driven focus

Malaysia has digitized 70% of the public services, reflecting a significant shift towards a more efficient, accessible governance.

For Malaysia, digital transformation is a central pillar of its goal to become a high-income, tech-powered economy by 2030. Spearheaded by the Ministry of Digital (MyDIGITAL), the initiative seeks to boost the digital economy's contribution to GDP from 23.5% to 25.5% by 2025 and further to 30-35% by 2030. By embracing data-driven strategies, Malaysia aims to enhance government efficiency, build public trust and fuel economic growth.

Malaysia's GovTech strategy is an integral part of this broader digital transformation. The unification of government services and the development of a streamlined digital framework are key to its implementation. This strategy is guided by the Malaysia Digital Economy Blueprint and executed by the newly formed Ministry of Digital, which plays a central role in coordinating digital efforts across the government. Public IT services have now been elevated to the National Digital Office, reflecting the country's focus on a more comprehensive digital governance system. This office not only serves government needs but also provides digital services to the entire nation.

A core element of this transformation is a unified GovTech framework designed to streamline decision-making and accelerate the adoption of cutting-edge technologies across the public sector. This open, collaborative approach is further embodied in the MyHackathon initiative, which encourages innovators – ranging from experts to school students – to develop solutions using open data. As of 2023, Malaysia had digitized 70% of its public services, reflecting a significant shift towards more efficient, accessible governance, and marking a new chapter in its digital evolution. The country is demonstrating how a data-driven and strategically unified approach can drive sustainable development and economic growth.

Key initiatives

- **MyDigital ID**: Malaysia is enhancing its national ID system to streamline public service access and improve data use. This initiative aims to build citizen trust and make interactions with government services more efficient through a unified identity system.
- **Public Sector Open Data Platform (DTSA)**: The Public Sector Open Data Platform, under the *Public Sector Digitalization Strategic Plan 2021-2025*, is cultivating a vibrant open data ecosystem, connecting data owners with data users and driving the development of innovative applications, data products and research. By promoting open data sharing and collaboration, the platform supports the development of new tech solutions and integrates the private sector into the digital landscape. As of 2024, the platform is regularly used by more than 8 million visitors.
- **SME digitalization**: Recognizing the vital role of SMEs, Malaysia is rolling out a comprehensive digital transformation roadmap aimed at supporting them. The plan focuses on helping businesses adopt technological solutions to boost their competitiveness and better integrate into the digital economy. By doing so, Malaysia hopes to position its SMEs as key drivers of growth in the evolving digital landscape.

> **GovTech represents a new era in digitalization, evolving from traditional government systems to fully digital governance.**
>
> Azlinda Jan, Director, Director, Strategic Development and Digital Architecture, National Digital Department, Malaysia

4.6  Rwanda: advancing to a knowledge economy with GovTech

The GovTech strategy in Rwanda is closely aligned with the national development goals, using technology as a key driver for socioeconomic progress.

Rwanda is experiencing a significant transformation as it shifts from a service-driven economy towards a knowledge-based economy. Central to this vision is the strategic adoption of GovTech, positioned as a key driver of the country's development agenda. Rwanda's commitment to harnessing technology is underscored by its National Information and Communication Infrastructure (NICI) plans, which have evolved from building foundational infrastructure to delivering innovative digital services.

Over the course of 20 years, the NICI liberalized the telecommunications sector, attracted investment through a robust legal framework and rapidly expanded IT infrastructure. The NICI plans (2000-2020) laid the groundwork; NICI I (2000-2005) created the legal framework; NICI II (2006-2010) expanded IT infrastructure; and NICI III (2011-2015) harnessed this infrastructure to improve public services and stimulate growth. These efforts have transformed public services, with a focus on skills development, cybersecurity, e-government and private sector growth. Building on the NICI plans, the *Smart Rwanda 2020 Master Plan* continues to drive the country forward with an ambitious agenda for its continued digital transformation. Rwanda's GovTech strategy is closely aligned with its national development goals, using technology as a key driver for socioeconomic progress.

Key initiatives

- **IremboGov**: This initiative, championed by the Ministry of Youth and the Ministry of ICT, is a government-to-citizen platform offering seamless access to public services from various ministries, including health insurance registration, driving test applications, visa processing and national ID applications, reducing paperwork and streamlining interactions with government. Built by a local team of engineers, Irembo now hosts 250 government services, and the government aims to expand this to 400 services in collaboration with the private sector.

> **By leveraging digital solutions, Rwanda has improved service delivery and enhanced trust between the government and citizens. The commitment to GovTech aligns with Rwanda's broader vision of harnessing technology to drive inclusive growth and economic resilience for all.**
>
> Crystal Rugege, Managing Director, Centre for the Fourth Industrial Revolution Rwanda

4.7 Ukraine: resilience and innovation with a "state in a smartphone" vision

> With over 20 million users accounting for over 70% of Ukraine's adult population, the Diia app has significantly streamlined interactions with the government.

Ukraine's GovTech strategy underscores the country's commitment to digital transformation, bolstered by strong political backing and a focus on resilience. Led by the Vice-Prime Minister and supported by chief digital transformation officers (CDTOs), this framework ensures that public services remain at the forefront, delivering more effective, citizen-centric solutions.

A robust governance structure has paved the way for the seamless integration of GovTech initiatives. The Ministry of Digital Transformation, alongside CDTOs deployed in 16 ministries, 26 central government agencies and 19 regional military administrations, has been instrumental in tailoring and implementing digital solutions based on local needs. Central to this effort is the "state in a smartphone" vision, a bold strategy aimed at transforming Ukraine into "the most convenient digital country in the world".[11] This innovation-friendly approach has been critical to Ukraine's resilience, allowing the government to rapidly roll out services like the e-aid platform and a vital air alarm app during times of crisis.

Looking ahead, Ukraine's Global Innovation Vision and Strategy 2030 (WinWin) aims to integrate various GovTech initiatives across sectors like DefenceTech, EdTech, eHealth, smart city governance and GreenTech into a unified framework. With around 30% of the country's 450 government services already fully digitized, Ukraine is poised to use these advancements not only for immediate crisis management but also for long-term growth and resilience. By using GovTech to reduce the human factor, enhance service quality, combat corruption and simplify processes, Ukraine is laying the groundwork for a resilient, digitally driven future. By integrating services and maintaining centralized strategic oversight with decentralized execution, Ukraine is shaping a more resilient and innovative digital landscape.

Key initiatives

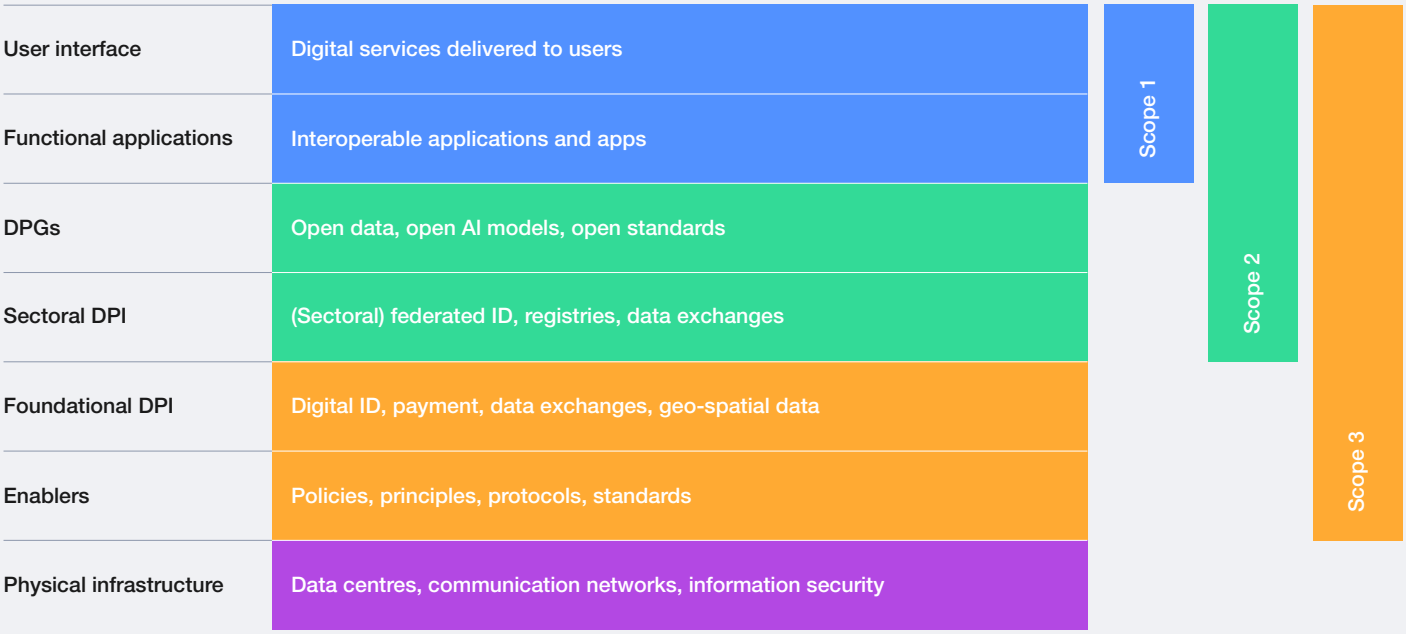
- **Diia app**: The Diia app serves as a "single communication window with the state",[12] consolidating over 30 government services and 18 digital documents into one platform. With over 20 million users accounting for over 70% of Ukraine's adult population, the app has significantly streamlined interactions with the government. It has saved nearly $500 million and reduced manual labour by 20,500 hours.
- **Diia.Education**: Diia.Education provides educational content, immersive simulators and job search features which supports reskilling and digital literacy. While it serves a broad audience of more than 2 million users, it currently provides significant support to internally displaced persons (IDPs) during the conflict.
- **Diia.Business**: This platform facilitates entrepreneurship by offering 24/7 access to business consultations, financial products, and global market analytics driving business growth and economic development.
- **Diia.City**: Diia.City provides a legal and tax framework that supports the IT industry, including intellectual property protections and tax incentives, attracting investment and encouraging innovation.
- **Diia.Engine**: This low-code, open-source platform accelerates the development of digital public services and the digitization of registries, improving government efficiency and responsiveness.
- **Diia.Digital Hromada**: Focused on regional and local digital transformation, Diia.Digital Hromada supports CDTOs and digital leaders with tools like a digital guide and references such as the regional Digital Transformation Index of Ukraine. Additionally, users can find metrics for measuring digitalization levels across regions and municipalities, along with step-by-step recommendations for creating effective digital development roadmaps.
- **Diia web portal**: Complementing the Diia app, the web portal offers over 100 services for citizens and businesses. With 4.9 million user accounts, it provides a centralized digital interface for accessing a wide range of government services.

> **For Ukraine, digital transformation also became not just a new brand, but a new perception of Ukraine. Digital transformation helped Ukraine gain a new perception in the world as a country that is digital, that is innovative, that has great human capital. We will try to maintain this pace. I believe that would be the biggest impact of GovTech.**
>
> Valeriya Ionan, Deputy Minister on European Integration, Ministry of Digital Transformation of Ukraine

4.8 Synthesis: expanding the scope for GovTech

The different country case studies clearly illustrate the expanding scope of today's understanding of GovTech, which is increasingly intertwined with digital public infrastructure (DPI) and digital public goods (DPG). DPI and DPG can be best understood by examining their core conceptual elements:

FIGURE 4 **Overview of conceptual elements of DPI and DPG**



Projecting GovTech on to these conceptual components reveals that GovTech is instrumental in enabling and expanding access to DPI and DPG.

Scope 1: Digital services: The scope for GovTech here lies within platforms and tools that can provide digital services to citizens and businesses, including portals for paying taxes, healthcare or education services.

Scope 2: Sectoral DPI: The scope for GovTech expands to open-source software, application programming interfaces (APIs), standards, federated ID for government services, central e-government portals, etc.

Scope 3: Foundational DPI: From digital services that are created and used in specific sectors, the scope for GovTech expands to critical government and society-based services that could also cover the private sector, including payment systems, digital banking networks or public data repositories.

To illustrate the GovTech transformation under way, the following table highlights a selection of GovTech solutions presented in this report by value driver and scope of DPI:

TABLE 2 **Summary of GovTech solutions**

GovTech Value Drivers	Scope 1 (digital service)	Scope 2 (sectoral DPI)	Scope 3 (foundational DPI)
Efficiency gains Transparency gains Sustainability gains	– Germany's AI Assistant F13 uses AI tools for repetitive tasks in public administration, enhancing administrative processes and encouraging overall AI adoption in government workflows. – Rio de Janeiro's EWS improves disaster response and management. – Rwanda's Irembo government-to-citizen platform offers seamless access to public services from various ministries, including health insurance registration, driving test applications, visa processing and national ID applications.	– Azerbaijan's e-procurement system enables organizations to submit online bids for government tenders, streamlines procurement processes. – Bahrain's Sijilat 3.0 platform allows businesses to apply, renew or modify licenses electronically, reducing in-person visits and waiting time. – Ukraine's Unified State Electronic System in the Construction Sector (USESCS) brings transparency to the construction process, covering the entire project life cycle and reducing corruption risks.	– Malaysia's National Digital Identity (NDI) allows users to authenticate themselves online for various services without relying on physical identification documents. – Ukraine's Diia app allows citizens to store online an ID card, driving license and passport; these digital versions are legally equivalent to physical documents in Ukraine.

In summary, the different country case studies illustrate how GovTech also encompasses the development, operation and maintenance of DPI. In turn, foundational DPI, sectoral DPI and DPGs are essential for delivering digital services by governments and other societal stakeholders, making them one of the key pillars of the GovTech ecosystem.

5 Turning plans into progress

GovTech implementation does not happen by chance, but through strong execution.

> Governments must rethink workflows, governance structures and service delivery models to realize the full potential of GovTech.

GovTech is not just about digitizing processes; it is also about reimagining the public sector as the operating system of society, where technology can unlock unprecedented value for all. The "why GovTech?" argument is compelling: governments worldwide are under increasing pressure to improve the efficiency, transparency and responsiveness of public services. GovTech offers a clear path to meeting these demands, with the potential to transform the way governments operate, deliver services and engage with their citizens. As GovTech evolves towards integrated systems, a whole-of-government approach will facilitate inter-agency collaboration, creating flexible and agile interoperable systems. While the projected GovTech opportunity ($9.8 trillion by 2034) is enormous, the "**what**" and "**how**" of implementing GovTech pose significant challenges for governments.

Navigating the "what" involves a complex decision-making process: the GovTech market is broad, covering everything from digital identity systems and AI-driven analytics to smart infrastructure and public health technologies. Governments must carefully assess their needs, priorities and capabilities before deciding which solutions best suit their challenges. Unlike the private sector, where digital transformation is often rapid, the public sector faces unique constraints related to policy, politics, public accountability and service inclusiveness. This makes the task of identifying appropriate technologies more nuanced, as governments must ensure that these solutions are aligned with a complex array of policy objectives and meet the diverse needs of their populations.

The real challenge lies in the "how" – integrating new GovTech solutions into existing government systems. Many public administrations still partially rely on outdated, fragmented legacy systems that are not easily compatible with modern digital solutions. Overhauling these systems is a complex, costly and time-consuming process, requiring technical upgrades and organizational change. Governments must rethink workflows, governance structures and service delivery models to realize the full potential of GovTech. This shift will require significant coordination across government departments and agencies, as well as strong leadership, to drive these changes.

In addition to the technical challenges, governments must address critical data security and privacy issues. As public services become increasingly digitized, protecting citizens' sensitive data is paramount. Regulatory compliance, cybersecurity and trust in government systems are critical issues that must be carefully managed to avoid breaches of public trust. In addition, governments need to build infrastructures that are not only secure but also resilient to the rapidly evolving landscape of cyber threats. Failure to do so could lead to costly security breaches and undermine public confidence in the very systems designed to better serve them.

GovTech implementation will also revolve around choosing the right delivery model. Building everything in-house can often be just as impractical as fully outsourcing, so finding the right balance will be a strategic priority for governments. Collaboration with the private sector will be crucial to the success of GovTech projects, as many of the most advanced solutions in AI, data analytics and cloud computing are being developed by private companies. Governments must collaborate with innovators to access cutting-edge technology while balancing innovation with public control. It is important to avoid overreliance on private technology providers and to ensure that key public interests, such as data sovereignty and equitable access to services, are protected.

> GovTech can deliver transformative and lasting benefits that reshape government for the better.

While the "what" and "how" of GovTech implementation are complex, many successful GovTech use cases worldwide, including those highlighted in this report, prove that these challenges can be overcome with strategic focus, determined leadership and strong collaboration. Governments that seize this opportunity now will not only navigate "what" and "how" effectively but can also position themselves as leaders in public sector innovation. The experiences of others provide clear inspiration and evidence that, with decisive action, GovTech can deliver transformative and lasting benefits that reshape government for the better. The authors of this report are committed to accompanying governments in solving the continuous challenges of a successful GovTech implementation. To do so, the following key areas have been identified for collaboration with governments worldwide, offering a flexible roadmap for future success:

- **Prioritize leadership in GovTech:** How can governments ensure that digital transformation is embedded as a core strategic priority at the highest levels of leadership? What governance models best support sustained focus and resources for GovTech initiatives?

- **Cultivate international knowledge sharing:** How can governments more effectively collaborate across borders to share lessons learned and best practices? What platforms or forums would best support the exchange of GovTech knowledge and innovation globally?

- **Invest in digital infrastructure:** What are the most critical infrastructure investments that governments must prioritize to support scalable and secure GovTech solutions? How can governments address the challenges of upgrading legacy systems without disrupting essential services?

- **Develop effective public-private collaborations:** What is the optimal balance between public sector oversight and private sector innovation in GovTech? How can governments structure collaborations that encourage innovation while ensuring public control over critical infrastructure and data?

- **Enhance digital literacy and inclusion:** What strategies have proven most effective in boosting digital literacy, particularly in underserved communities? How can governments ensure that GovTech initiatives are inclusive and accessible to all citizens, regardless of their digital skills?

- **Experiment with emerging technologies:** How can governments stay agile and open to adopting emerging technologies while avoiding the risks of adopting unproven solutions? What frameworks can governments use to pilot new technologies before scaling them across public services?

- **Ensure transparent governance:** What are the best practices for ensuring transparency and accountability in implementing GovTech initiatives? How can governments build robust data protection protocols that maintain public trust while embracing digital transformation?

- **Encourage citizen participation:** How can governments create effective platforms for gathering citizen feedback and ensure their input shapes GovTech solutions? What methods can be used to facilitate more meaningful citizen engagement in the digital governance process?

- **Monitor and evaluate impact:** What are the most effective ways to measure the impact of GovTech initiatives? How can governments establish metrics that not only track efficiency but also assess broader social and economic outcomes?

- **Streamline procurement processes**: How can governments reform procurement processes to reduce barriers for technology suppliers while maintaining transparency and accountability? What incentives can encourage more innovative, agile procurement for GovTech solutions?

Conclusion

As governments across the globe seek to harness the transformative potential of GovTech, this report underscores the extraordinary opportunity it presents: a chance to build a more efficient, transparent and sustainable public sector capable of meeting the complex challenges of the 21st century. While the path to comprehensive digital transformation is not without obstacles – from overcoming legacy systems to ensuring data security and public trust – the case studies highlighted here demonstrate that bold, strategic action can lead to remarkable outcomes.

By embracing GovTech, governments can bridge the gap between public services and the evolving needs of their citizens, facilitating a new era of trust and accountability. This moment calls for a whole-of-government approach, breaking down barriers and prioritizing flexibility and interagency collaboration. Ultimately, GovTech is more than a tool; it is a catalyst for reshaping governance to better serve and empower societies, guiding governments towards a resilient, inclusive future where technology is a foundation, not just a feature, of effective public administration.

GovTech's potential public impact – valued at up to $9.8 trillion by 2034 – is of a magnitude that governments worldwide can hardly afford to overlook. However, the vastness and diversity of the GovTech market, with its multitude of solutions across all areas of the public sector, can be overwhelming, making it challenging for governments to decide where to begin and what to prioritize. Navigating GovTech is far from straightforward, yet this complexity should not lead to inaction. This report provides a crucial foundation, positioning GovTech as a strategic priority for governments globally and serving as an initial step forward. Continued research will follow to support governments on this journey, helping them keep pace with rapid technological advances and adapt to the evolving needs of public administration.

Appendices

A1 Glossary

Term	Definition
Digital public goods (DPG)	DPGs are open-source software, open data, open AI models, open standards and open content that adhere to privacy and other applicable laws and best practices, do no harm and help attain the Sustainable Development Goals.
Digital public infrastructure (DPI)	DPI is an evolving concept that comprises shared digital systems built and used by both public and private sectors on secure and resilient foundations, often using open standards, specifications and open-source software to enable the delivery of services at a societal scale.
Ecosystem	In the GovTech context, an ecosystem refers to a collaborative network that includes various stakeholders such as government entities, start-ups, small- and medium-sized enterprises (SMEs), large companies, civil society and academic institutions. This ecosystem is designed to promote innovation and improve public services through the integration and application of technology.
Efficiency gains	Efficiency gains refer to improvements in performance that result in achieving more output with the same or fewer inputs or achieving the same output with fewer resources. These gains can be realized through time savings, increased productivity, resource optimization, and technological or process advancements. They also include better resource allocation, innovative practices and quality enhancements, such as adopting higher standards, improving employee training and implementing quality management systems.
Public services	Public services refer to the essential government activities and expenditures necessary for the overall functioning and administration of the state. This includes the operation of executive and legislative bodies, management of public finances, diplomatic and consular services, funding for basic research, administrative support services, costs associated with public debt management and financial transfers between different levels of government that support public functions. These services are fundamental to enabling a government to perform its duties and serve its citizens effectively.
Government spending	Total amount of money spent by governments around the world. This includes spending on ten different sections, including public services, defence, public order and safety, economic affairs, environmental protection, housing and community amenities, health, recreation, culture and religion, education and social protection. It encompasses all financial resources allocated by governments to fulfil their objectives and responsibilities.
GovTech	Enhances efficiency, effectiveness and accessibility in public institutions by applying tech-based products and services to develop and scale solutions, providing a modernization guideline for public sector ecosystems.
Innovation	The process of developing and implementing new ideas, methods, products or services that create value and improve government services and operations.
Public value	Public value describes the potential economic and social benefits of a comprehensive GovTech transformation. This encompasses not only the market size and direct financial gains but also the broader societal impacts in efficiency gains, transparency and sustainability.
Sustainability gains	A practice of operating in a manner that ensures long-term success by considering environmental, social and economic impacts. It involves creating strategies and operations that meet current needs without compromising the ability of future generations to meet their needs.
Transparency gains	Government transparency refers to the openness and accessibility of government actions, decisions and data to the public. This practice ensures that citizens have the necessary information to hold their government accountable, participate in decision-making processes and understand the workings of their government.
Value driver	In the GovTech context, a value driver is a quantitative and qualitative metric that can influence the public service delivery by governments through the application of technology.

A2 Additional information for the country cases

Azerbaijan: For more information, see: Centre for the Fourth Industrial Revolution Azerbaijan

Bahrain: For more information, see: Information & eGovernment Authority

Brazil: For more information, see: Ministry of Management and Innovation in Public Services

Germany: For more information, see: CIO Bund

Malaysia: For more information, see: MyDIGITAL

Rwanda: For more information, see: IremboGov

Ukraine: For more information, see: Ministry of Digital Transformation

A3 Methodology

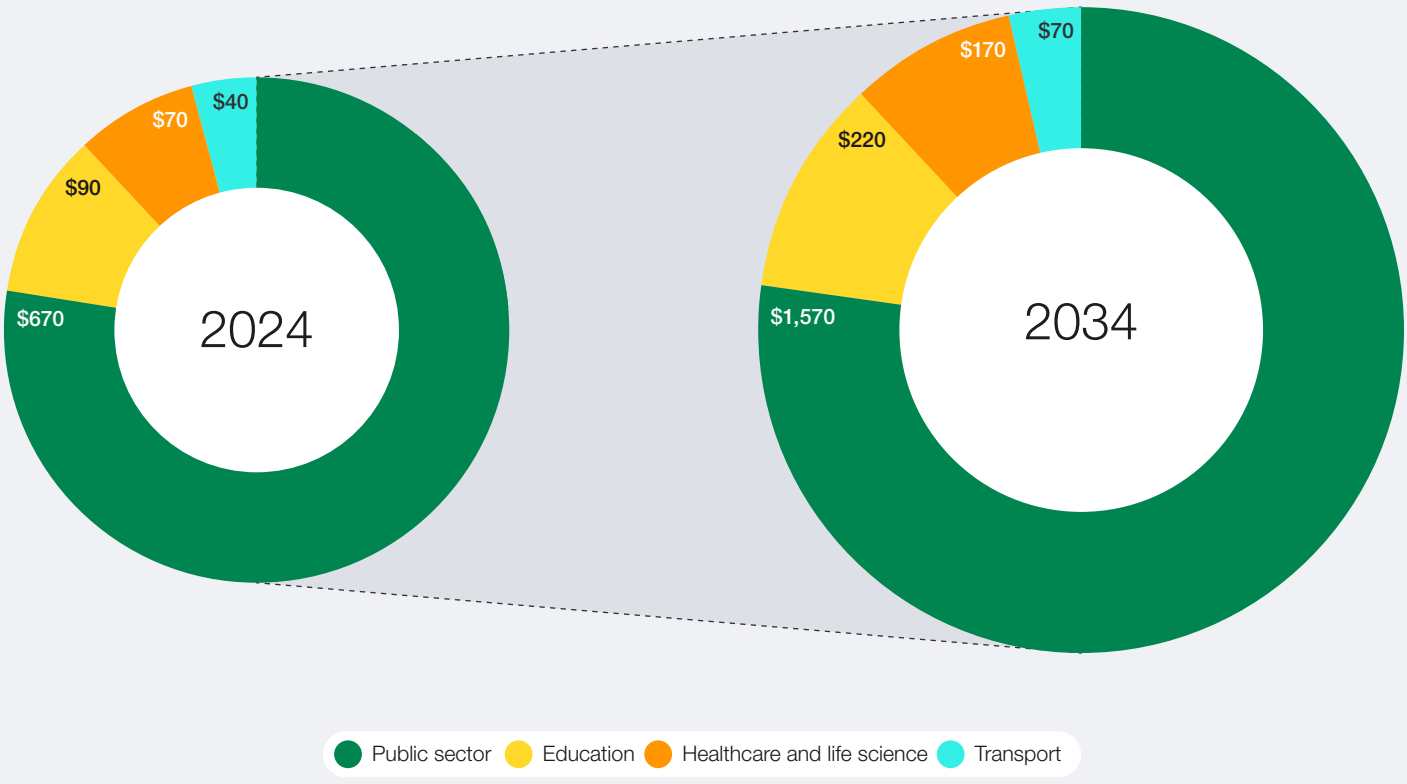
The study employs a structured approach to estimate the GovTech market size (1) and its GovTech opportunity for the public sector (2) by 2034. The methodology integrates an analysis of public sector IT spending, expert opinions and established models to produce reliable estimates of both market growth and societal impact.

1. Assessment of the GovTech market size

a. **Determination of sector focus**: Calculation of the market comprises four sectors: public services, education, healthcare/life sciences and transport.

b. **Projecting IT spending**: Growth projections extended to 2034 by applying the average annual growth rate of 8% (based on 2022-2028 data) (see Figure 5).[13,14]

FIGURE 5 **IT spending in various sectors (in $ billions in 2024 and 2034) with an estimate growth rate of 8% per annum**



c. **Estimating proportion of state-owned enterprises**: To calculate the share of state-owned enterprises in global IT spending, which is projected to be $864 billion in 2024 and $2 trillion in 2034 for the respective sectors (see Figure 1), the following assumptions are made: the public sector is at 100% ($670 billion in 2024; $1.567 billion in 2034), the education sector at 60% ($92 billion in 2024; $220 billion in 2034), the healthcare sector at 25% ($66 billion in 2024; $172 billion in 2034), and the transport sector at 30% ($36 billion in 2024; $70 billion in 2034).[15]

d. **Identifying GovTech-specific allocation**: Assumed 70% of public sector IT spending goes to GovTech solutions (based on IDC (International Data Corporation).

e. **Calculating market size in 2034**: Aggregation of GovTech-related IT spending reflects the projected GovTech market in 2024 and 2034 respectively, reaching $1.42 trillion by 2034.

2. Assessment of the global GovTech opportunity

a. **Identification of GovTech value drivers**: Expert interviews and literature review have resulted in three prevalent value drivers, highlighting where GovTech has the greatest impact – efficiency gains, transparency gains and sustainability gains – to assess the economic and societal impact of GovTech.

b. **Individual assessment and aggregation of value drivers**:

- **Calculating efficiency gains**: Focus on potential cost savings in public service delivery was estimated based on a 30% reduction referencing OECD data that indicates that public services account for 13.2% of global government expenditure.[16,17]
- **Calculating transparency gains**: Considering that corruption accounts for approximately 5% of global GDP (gross domestic product), a 10-20% reduction was applied to estimate the gains from increased transparency facilitated by GovTech.[18]
- **Calculating sustainability gains**: The impact of GovTech on reducing emissions was projected using data from the Stern Review with potential savings linked to mitigating the 20% of GDP at risk from climate change.

c. **Calculating the opportunity of GovTech:** Aggregation of all GovTech value drivers, resulting in a total projected opportunity of GovTech of $9.79 trillion by 2034.

Contributors

World Economic Forum

Sebastian Buckup
Head, Network and Partnerships;
Member of the Executive Committee

Stephan Mergenthaler
Head, Strategic Intelligence;
Member of the Executive Committee

Kelly Ommundsen
Head, Digital Inclusion;
Member of the Executive Committee

Shefali Rai
Content and Programming Specialist, GovTech,
Strategic Intelligence

Global Government Technology Centre Berlin

Manuel Kilian
Managing Director

Capgemini

Victoria Angel
Manager, Public Sector

Florentine Breteau
Consultant, Public Sector

Timo Graf von Koenigsmarck
Executive Vice-President and Chief Strategy Officer;
Head, Public Sector

Michael Greineder
Manager, Growth Strategy

Marc Reinhardt
Executive Vice-President,
Public Sector Global Industry Leader

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Soltan Bayramov
Deputy, Executive Director, Centre for Analysis and Coordination of the Fourth Industrial Revolution Azerbaijan

João Carabetta
Chief Data Officer, Rio de Janeiro City Hall

Ali Hasan Darwish
Chief, PR, Media and Customer Care, Information & eGovernment Authority, Kingdom of Bahrain

Michael Eßig
Chair, Purchasing and Supply Management, Bundeswehr University Munich

Kamila Gasinska
Strategic Partnerships Lead, GovTech Lab Lithuania

Gerhard Hammerschmid
Professor, Public Management, Centre for Digital Governance, Hertie School

Anna-Sophia Herkenhoff
Senior Officer, Digitalization Task Force,
Chief Digital Officer Berlin, City of Berlin

Valeriya Ionan
Deputy Minister, Ministry of Digital Transformation of Ukraine

Azlan Ismail
Director, Strategic Change Management,
MyDigital Corporation, Malaysia

Fariz Jafarov
Head, Centre for the Fourth Industrial Revolution Azerbaijan

Azlinda Jan
Director, Strategic Development and Digital Architecture, National Digital Department, Malaysia

Satyanarayana Jeedigunta
Chief Advisor, Centre for the Fourth Industrial Revolution India

Martina Klement
State Secretary, Digitization and Administrative Modernization; Chief Digital Officer, City of Berlin

Gulmine Malikzade
Head, Project Management Department, Centre for the Fourth Industrial Revolution Azerbaijan

Markus Richter
State Secretary and Federal Commissioner, Information Technology, Federal Ministry of the Interior and Community Germany

Alain Ndayishimiye
Project Lead, Artificial Intelligence & Machine Learning, Centre for the Fourth Industrial Revolution Rwanda

Daniel Ortega
Lead Governance Specialist, World Bank

Idoia Ortiz de Artiñano Goñi
Chief Executive Officer, Gobe Studio

Mohamed Hairul Bin Othman
Deputy Secretary of Digital Incubator Division, Ministry of Digital, Malaysia

Mohammed Ali Al Qaed
Chief Executive Officer, Information and eGovernment Authority (iGA), Information & eGovernment Authority, Kingdom of Bahrain

Crystal Rugege
Managing Director, Centre for the Fourth Industrial Revolution Rwanda

Orkhan Salahov
Director, International Cooperation, DOST Digital Innovations Center, Azerbaijan

Jeyhun Salmanov
Deputy Chairman, The State Agency for Public Service and Social Innovations under the President of the Republic of Azerbaijan

Hanna Wallin
Innovation Leader, Bron Innovation/GovTech Sweden

Kai Wegner
Governing Mayor, City of Berlin

Calvin Woo
Director, Digital Transformation, MYCentre4IR Malaysia

Lars Zimmermann
Co-Founder and Member of the Board, GovTech Campus Germany

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Production

Laurence Denmark
Creative Director, Studio Miko

Martha Howlett
Lead Editor, Studio Miko

Charlotte Ivany
Designer, Studio Miko

Endnotes

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World Economic Forum
91–93 route de la Capite
CH-1223 Cologny/Geneva
Switzerland

Tel.: +41 (0) 22 869 1212
Fax: +41 (0) 22 786 2744
contact@weforum.org
www.weforum.org