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Digital smart: Accelerating digital government
for citizens in the Asia-Pacific

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Foreword

Sylvain Cazard
Senior Vice President and
General Manager, APJ

VMware

VMware is pleased to launch the research report Digital smart: Accelerating digital government for citizens in the Asia-Pacific in partnership with Deloitte. We commissioned this research to provide insights into how governments across the region are creating a digital experience for citizen services and how can they shape digital transformation to meet changing citizen expectations.

The last few years have brought governments to the forefront of technology adoption to drive a positive impact on public services. The pivot to digital delivery of essential services was the starting point of scaling-out digital services widely, in every sphere of public service, from healthcare to taxation, from immigration to public transport safety. As a result, over two-thirds of citizens now expect the quality of government services to be at par with the private sector. Moreover, government IT spending in the region is set to increase with the growing demand for digital services. The research shows spending forecast to grow 8% annually to reach US $151 billion by 2025. [I]

While governments have progressed in making services more accessible digitally, the report finds that 41% of Asia-Pacific citizens still need someone's help to access digital services – emphasising the imperative for design of services with the citizen at the centre. By 2025 there will be an additional 900 million people joining the Asia-Pacific online community. While this may seem challenging, it is a huge demographic opportunity that can be harnessed if governments are able to shift from designing services based on government requirements to having the citizen experience as the focal point.

While digitising public services is important for overall efficiency and experience, research also indicates that enhanced digital services can improve the general perception and trust in governments. It can also influence equality and inclusivity while supporting operational sustainability goals. In a time when we see 'trust' to be a critical factor in government stability, it is important that digital services be seen as foundational to every government's charter.

While some countries have secure digital foundations, some have leapfrogged in the last two years to build their digital backbones. This research provides trends across the Asia-Pacific, with a specific focus on Singapore, Australia, Indonesia, India, Vietnam, South Korea and Japan.

Countries must take actions that create a fundamental shift in government-citizen engagement to drive digital inclusion and accelerate the pace of delivery of digital citizen services. This report will help you understand how different regional markets are progressing and how governments can adapt their strategies to respond to new expectations and opportunities.

[I] Calculation performed by Deloitte using Gartner data.

Citizens are more **digitally-engaged** than ever, and are becoming a diverse and complex customer for governments to serve. There will be an additional **900 million internet users by 2025**, and governments' IT spending is forecast to grow to US$151 billion by 2025. [II]

Overall, governments have a challenging task ahead to **meet high expectations of citizens** around the digital delivery of public services, and maximise the associated benefits.

Government services are...

Growing
46% of Asia-Pacific citizens expect to access government services more frequently in the future.

Becoming more important
68% of Asia-Pacific citizens agree government services are more important.

Delivered digitally
73% of Asia-Pacific citizens believe that government services have become more digital since the onset of the pandemic.

Most common ways to access government services:

Government websites (31%)

Mobile apps (20%)

Over the phone (20%)
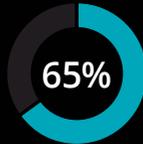
[II] Calculation performed by Deloitte using Gartner data.

Asia-Pacific citizens have high expectations

65% expect the quality of government services to be on par with the private sector.
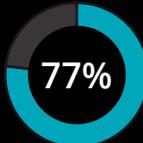
77% think the government needs to invest more in technology to prepare for a digital future.

And governments have much to gain from getting it right

financial benefits

trust and perception of government

policy agility

equality and inclusion

sustainability

But there's still work to be done
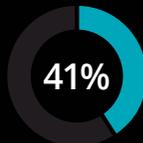
41% always or sometimes rely on someone else's help when accessing digital government services.

Priorities for government investment

There are many actions governments can take to improve service delivery, however, governments do not have unlimited budgets or resources. This report identifies six actions governments can take to position themselves as best-in-class.

1 **Embed a citizen-customer first mindset**

2 **Plan for digital inclusion for all**

3 **Drive integration across government**

4 **Pilot and test initiatives iteratively**

5 **Build up the right internal capacity**

6 **Get the fundamentals in place**

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Executive summary

Citizens are more digitally-engaged than ever, and are becoming a diverse and complex customer for governments to serve.

There will be an additional 900 million internet users by 2025, a 36% increase from 2021.

Governments' IT spending is forecast to grow 8% each year to US$151 billion by 2025[1], outpacing the average annual growth of 6% in overall government spending in Asia-Pacific.

A positive online experience with government services can improve citizens' perceptions and trust in government. Enhanced digitisation of government services can promote equality and inclusivity in society, deliver financial benefits for governments and support sustainability efforts.

Overall, governments have a challenging task ahead to meet high expectations of citizens around the digital delivery of public services.

Citizens are interacting more with government and also more frequently

Digital technologies are becoming faster, more powerful and cheaper and their impacts are increasingly felt in all parts of society. COVID-19 has proved the importance of being digital and made digital imperative to the delivery of many services. Governments had to quickly scale-up and pivot to a digital delivery of essential services. Nearly half (46%) of Asia-Pacific citizens expect to access government services more frequently over the next five years.

The shift away from in-person services is here to stay

There has been a substantial increase in the use of digital mediums to access government services. Over three quarters (77%) of citizens now primarily use a digital platform to access government services. The use of in-person government services has halved over the past two years. Almost 80% of Asia-Pacific citizens are expecting to access government services digitally in five years' time.

A large number of citizens need assistance to access digital government services

There is still improvement needed to make digital government services easier to access and use. There is a significant portion of citizens struggle to access digital government services on their own. In fact, more than two in five (41%) of Asia-Pacific citizens always or occasionally rely on someone else's help when accessing digital government services. This can be due to a lack of basic digital skills or shortfall in digital infrastructure. In some cases where the services involved are more complex, further assistance beyond what's possible online is required.

Citizens have high expectations of government services

Over two-thirds of citizens expect the quality of government services to be on par with those offered by the private sector (67%). Citizens see a digital future, and expect technology to change government services more significantly in the future compared to other facets of their lives. To prepare for this digital future, 77% of citizens believe that governments will need to invest more in technology.

Further, citizens rate ease and convenience and data security as highly important when accessing government services digitally. Given this, they have high expectations of these features of government services.

Governments have a lot to gain from investing in digital government services.

More than two-thirds of citizens surveyed said that a positive experience of using government services online would improve their overall perception (68%) of and trust (66%) in government. Six out of ten citizens also believe the use of technology in government services will improve equality and inclusivity in society generally.

Further, enhanced digital delivery of government services could bring financial benefits to governments through improved efficiency and cost savings in areas such as time savings, sharing of digital resources with other agencies, and reduction in storage costs through cloud technology.

That said, governments could take some time to fully unlock these financial benefits, given existing fixed infrastructure costs that will need to remain in place to cater for non-digital service delivery platforms.

Increased digitisation of government services would support sustainability efforts, in a variety of ways, from the use of energy-efficient cloud technologies to cutting back commuting time required for in-person services.

Another benefit of digital service delivery is increased policy agility. By leveraging data and adopting a modular approach, governments can use digitisation to increase the speed and effectiveness of their policy response.

Overall, there are ongoing challenges for government ahead
With the need to respond quickly to new demands and potential unexpected threats, governments need to proactively invest in digital in order to become future-ready.

There will be many ways which governments can improve the delivery of digital services. Importantly, governments should aim to:

- **Embed a citizen-customer mindset:** Shift from designing services based on government requirements to having the citizen experience as the focal point.

- **Plan for digital inclusion for all:** Strengthened access of services for citizens of all ages, abilities and economic backgrounds.

- **Drive integration across government agencies:** To achieve a seamless 'one-stop shop' customer experience for citizens.

- **Pilot and test initiatives iteratively:** To identify and address risks early.

- **Build up the right internal capability:** Ensure the right skillsets are available in the public sector workforce to meet future digital services demand.

- **Get the fundamentals in place:** Aim to achieve ease of access and use of digital government services for citizens, and have the right cloud strategy to enable teams to have the agility, scalability and speed to deliver services for citizens.

1 The digital age

Digitisation in the age of COVID-19

The advancement of digital technologies has driven massive changes in societies and people's daily lives. Digitisation has radically shifted the way we engage with essential services including government services. The impact that digital technologies have had on day to day lives is undeniable.

The rate of digital technology innovation and adoption shows no signs of slowing down. Digital technologies are becoming faster, more powerful and cheaper and their impacts are increasingly felt in all parts of society. The growing expectations around the efficient delivery of public services have influenced how governments are leveraging digital technologies to provide greater value to citizens.

COVID-19 proved the importance of being digital and made digital imperative to the delivery of many services. When lockdowns, border closures and other social distancing measures confined us to our homes, we were forced to operate digitally.

What's more, governments had to quickly scale-up and pivot to a digital delivery of essential services. This led to a rapid expansion in everything digital, including health services, online learning and remote working. For example, India's first telemedicine provider treated over three million patients in just seven months.[1] In Vietnam, over 22 million school students in Vietnam transitioned to online learning.[2]

Throughout the pandemic, digital tools enabled governments to better deliver services. Not surprisingly, governments who had invested to develop their digital infrastructure prior to the pandemic were better able to roll out critical pandemic services in a timely manner. These governments could integrate COVID-19 services into existing digital systems, encouraging greater uptake, trust and confidence from citizens. Further, countries with a more digitalised population pre-COVID were better able to receive public health alerts, contact health officials and transition to working from home.

Further digitisation presents an enormous opportunity for government

Digitisation will play a key role in shaping the future of Asia-Pacific. As the region recovers from COVID-19 and engages in further digital innovations, individuals and businesses alike will connect, invest and operate digitally.

Further digitisation presents an enormous opportunity for Asia-Pacific governments. Not only has the pandemic created an insatiable appetite for digital government services among its citizens, digitisation also enables governments to increase productivity and efficiency. The digital economy will accelerate, with over 65% of Asia-Pacific GDP expected to be digitalized by 2023.[3] All seven Asia-Pacific countries (Australia, Singapore, Indonesia, Vietnam, India, Japan, South Korea) covered in this study have an active e-government strategy (see page 29).

However, governments' readiness to embrace digital opportunities varies across Asia-Pacific. While Singapore's first e-government action plan was introduced in 2000, Vietnam's plan was launched in mid-2021. As such, Singapore has become a global leader in this digital transition, with almost 95 per cent of government services able to be completed digitally from beginning-to-end.[4]

Many of the digital initiatives undertaken by governments over the past two years have been in reaction to the external circumstances of the pandemic. Moving forward, governments should proactively invest in digital in order to become future-ready.

Citizens' expectations for digital government services will continue to increase. The need for governments to develop and evolve digitally to stay at the forefront of citizen service delivery has never been more important.

Governments have a challenging task ahead

The digital opportunity is huge and cannot be ignored. According to the World Bank, a 10 percentage point increase in fixed broadband penetration can increase GDP growth by 1.2% in developed economies and 1.4% in developing ones.[5] Across the seven markets covered in this study, around 55% of citizens are now online.[6,7] This is expected to keep growing in the next three years as digital awareness grows, infrastructure improves and technologies become more accessible.

There will be an **additional 900 million internet users** across the seven markets by 2025 which governments have to serve, a 36% increase from 2021.[8,9] As an increasing number of people across Asia-Pacific turn to the internet to meet their everyday needs, this will open up new exciting opportunities for governments, unlocking benefits in digital government services.

Internet and the enabled technologies have played a critical role in helping communities in Asia-Pacific deal with the pandemic. Yet, the past two years have also highlighted the digital divides that have surfaced. This can take many forms, from infrastructure, reliability of connectivity, reach and accessibility of content and services.

This growing appetite for digitally-enabled services means governments have to invest to meet the expectations of citizens, ensuring that digital public services cater to all demographics with emphasis on accessibility and inclusivity. **Government IT spending is forecast to grow an average 8% each year to US$151 billion by 2025,[10] outpacing the average growth rate of 6% in overall government spending in Asia-Pacific.**[11] This places the public sector in the top five industries in IT spending terms and second after the energy and utilities sector in average annual growth in IT spend across Asia-Pacific in 2025.

About this report

This report brings together the latest trends of digital government services across Asia-Pacific, including citizen experiences in digital government and their expectations of how government should deliver their digital services in the future. To develop this report, Deloitte Access Economics surveyed over 3,800 citizens across seven markets in Asia-Pacific in March and April 2022.

The survey was fielded by Ipsos and distribution to citizens in Australia, Singapore, Indonesia, Vietnam, India, Japan, and South Korea. The survey was administered across a representative sample in terms of age, sex and locality in each market.

What is digital government?

Digital government (also called e-government) refers to the process of delivering open and efficient services to the public through digital technology. Interactions may occur between or within a government agency, between government and citizens, or between government and businesses.

Digital government includes a range of services such as enabling citizens to seek information, conduct transactions, and make applications in areas such as transport, health, education, tax, community and housing services, and business.

2 New citizen expectations

A fresh survey of citizens across the Asia-Pacific region finds that use of digital government services soared during COVID-19 and is unlikely to go back to pre-COVID levels. Citizens have high expectations of a seamless and integrated experience.

Citizens are rapidly increasing their use of government services

The amount citizens use government services is growing fast. **Nearly four in ten (38%) Asia-Pacific citizens have increased their use of government services over the past two years** (see Chart 2.1). Much of this increase was a by-product of the COVID-19 pandemic. During the pandemic, citizens increasingly relied on the services of government to provide public health information, income support, tests and vaccinations.[1] As such, citizens begun to interact with government more and more regularly.

In the future, citizens expect to use government services more than ever before. **Nearly half (46%) of Asia-Pacific citizens expect to access government services more frequently over the next five years (see Chart 2.1).**

There are many factors that may explain why rapid growth in the public's use of government services is expected. In the future, governments will be expected to embrace new technologies including artificial intelligence, face new challenges (such as climate change and inequality), and deliver an expanding list of social services to an aging population.[2,3] Collectively, these factors are likely to increase the number and efficiency of the public's interactions with government.

Chart 2.1: Use of government services over the past two years and moving forward

Less frequent   No change   More frequent

Today compared to two years ago: Less frequent 20%, No change 42%, More frequent 38%

Five years from now compared to today: Less frequent 17%, No change 38%, More frequent 46%
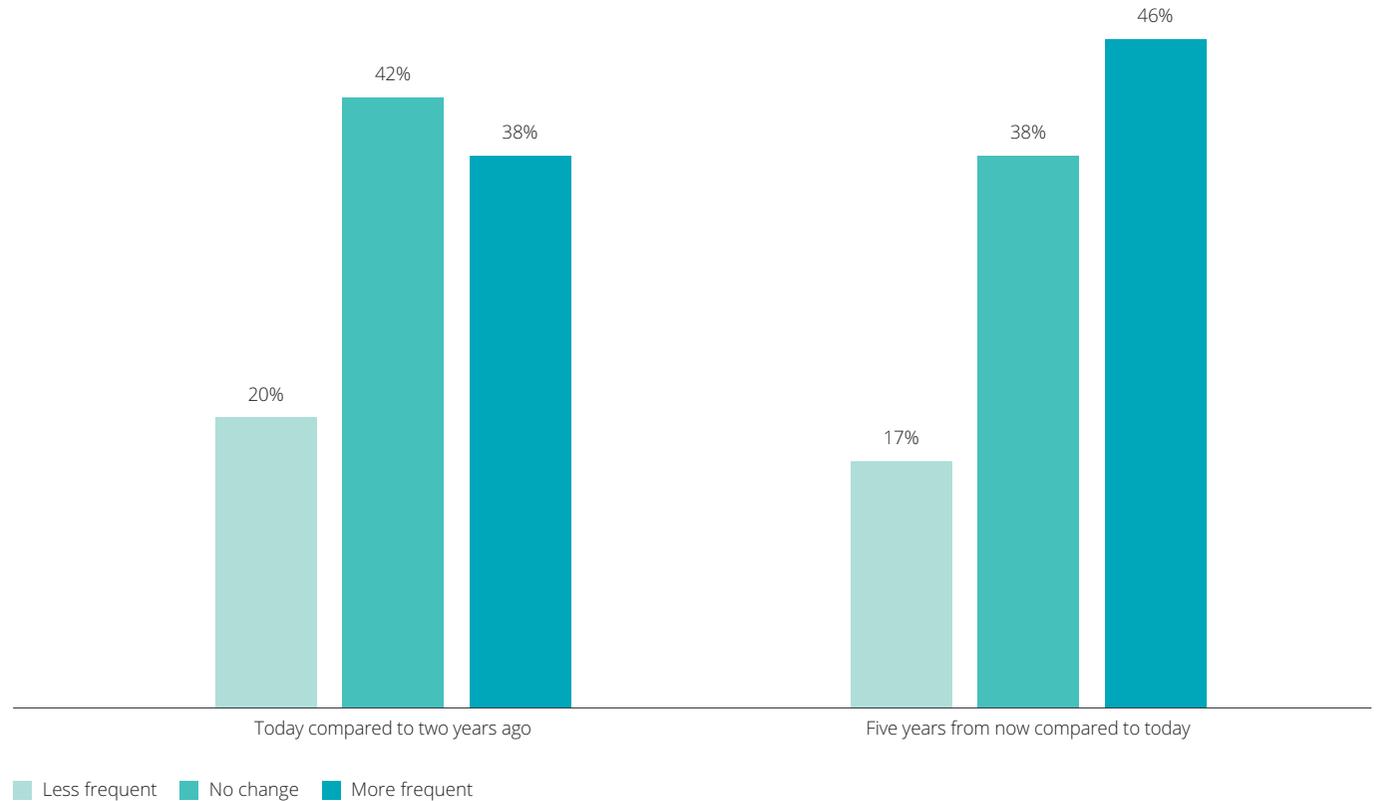
The digitisation of government services during COVID-19

Government services have changed significantly over the past two years (see Figure 2.1). Public health orders relating to the COVID-19 pandemic limited the ability of governments to deliver services in-person, spurring governments to innovate.[1] Furthermore, the pandemic made the tasks of government more important than ever – governments were required to introduce public health messaging, dictate social distancing restrictions, track the virus and distribute vaccines.[2]

This led to a number of changes relating to government services, with **73% of respondents agreeing government services have become more digitized** since the start of the pandemic. Citizens were also likely to say government services improved in quality, have become easier to use, and are more important today (see Figure 2.1).

Interestingly, citizens of emerging Asia-Pacific countries (India, Indonesia and India) were 53% more likely to say government services have become easier to use and 51% more likely to say they had improved, relative to those in developed nations (Australia, Japan, South Korea and Singapore).

Figure 2.1: Perceptions of government services today compared to two years ago

73%
Think government services have become more digitized since the start of the pandemic.

68%
Said that government services are more important today.

60%
Agreed government services have become easier to use (60%) and improved in quality (56%).

63%
Think government services have adapted well to public health orders relating to the COVID-19 pandemic.
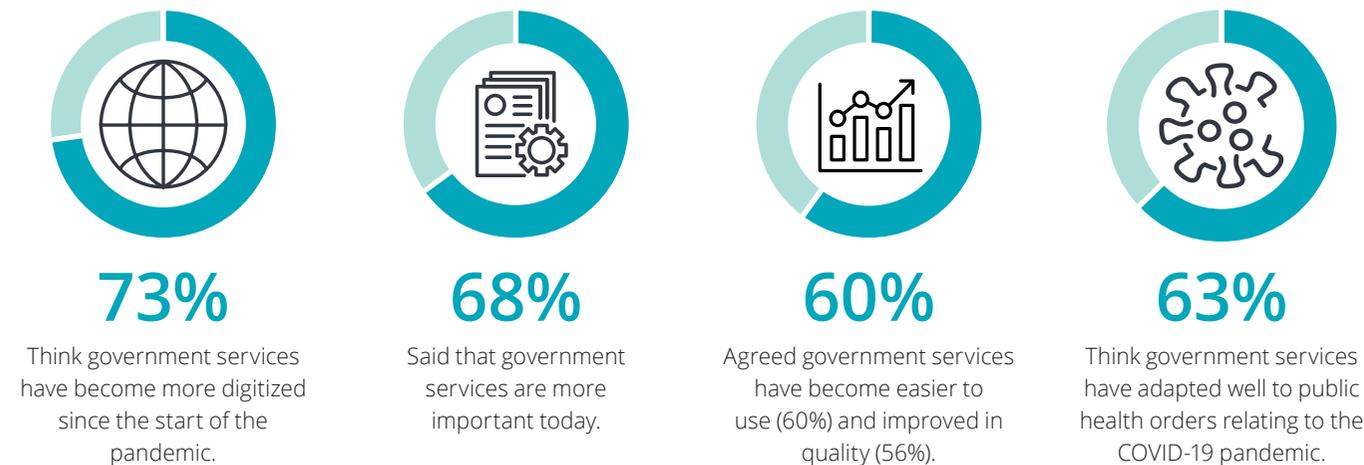
Citizens are upskilling in digital

During the COVID-19 pandemic, Asia-Pacific citizens became more digital (see Chart 2.2). Compared to before COVID-19, 64% of Asia-Pacific citizens said they increased their social media use and 45% worked remotely more. Furthermore, the majority of respondents said they were more comfortable engaging with digital technologies (71%) and more willing to learn a new digital skill (70%).

The younger cohort has seen the biggest growth in how often they use digital technologies. Those aged 18-35 are more likely to have increased their use of social media (79%) and the amount they work from home (56%), than those aged 55+ (43% and 24% respectively).

Chart 2.2: Proportion of respondents that agree with the following statements relating to their use of digital technologies today compared to two years ago.

I work remotely more	45%
I use social media more	64%
I am more willing to learn a new digital skill or use a new platform	70%
I generally feel more comfortable engaging with digital technologies	71%

■ Agree/Strongly agree
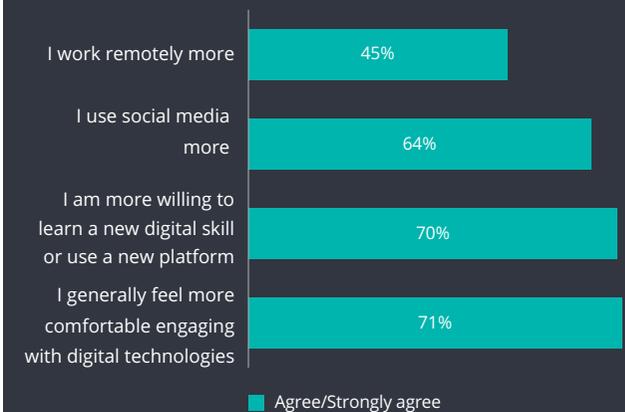
Citizens access government services through a wide range of different mediums

Asia-Pacific citizens access government services through a wide range of different mediums (see Chart 2.3). Citizens use a combination of digital tools such as government websites and mobile apps, as well as non-digital methods like in-person visits.

The most popular medium through which to access government services is government websites, selected by 31% of Asia-Pacific citizens as their primary medium. This was followed closely by mobile apps (20%) and over the phone (12%). Newer digital tools, including live chats (5%) and chatbots (2%) have significantly less uptake. Citizens in various Asia-Pacific countries have different methods for accessing government services. For example, Australians are twice as likely as Japanese citizens to use a website to interact with government (45% in Australia compared to 21% in Japan). In general, citizens in developed nations are 39% more likely to use government websites as their preferred medium than citizens in emerging nations.

Ultimately, citizens tend to access government services in a range of different ways and have different preferences. As such, to improve how citizens interact with government services, governments should invest in diversifying the mediums available.

Chart 2.3: Which of the following mediums would you typically use to access government services today (rank 1)

	Using a government website	Mobile apps	Over the phone	In-person	By email	Via social media	Live chat	Chatbot
	31%	20%	12%	11%	10%	9%	5%	2%
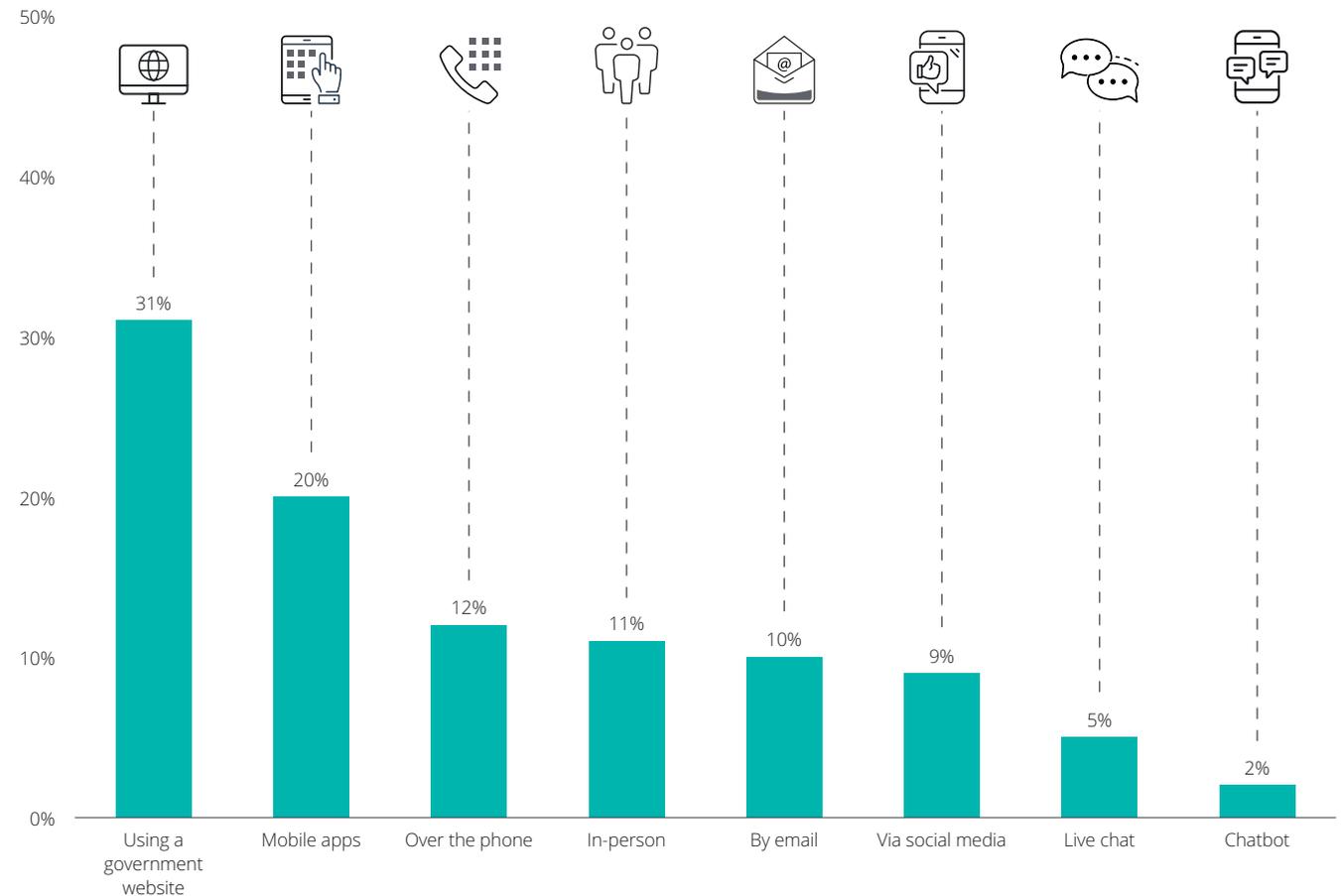
The digitisation of government services during COVID-19

The way Asia-Pacific citizens access government services is changing. Previously, citizens relied more on non-digital mediums to access government services such as in-person visits and phone calls.

Yet, in the past two years, there has been substantial increase in the use of digital mediums to access government services. **In fact, more than three quarters (77%) of citizens now primarily use a digital platform to access government services.** This is an increase of 18% compared to two years' ago (before COVID-19).

The COVID-19 pandemic has accelerated this digital transition.[1] The pandemic caused Asia-Pacific governments to introduce widespread lockdowns and social distancing restrictions.[2] This prevented many Asia-Pacific citizens from accessing government services in-person, causing in-person services to halve in two years.

The shift away from in-person services is here to stay, with almost 80% of Asia-Pacific citizens expecting to access government services primarily through a digital medium in five years' time.

Looking to the future, the most utilised mediums will continue to be:

Government websites (ranked first by 28% of people)

Mobile apps (ranked first by 25% of people)

Over the phone (ranked first by 11% of people)

Chart 2.4: Which of the following mediums would you typically use to access government services? (rank 1)
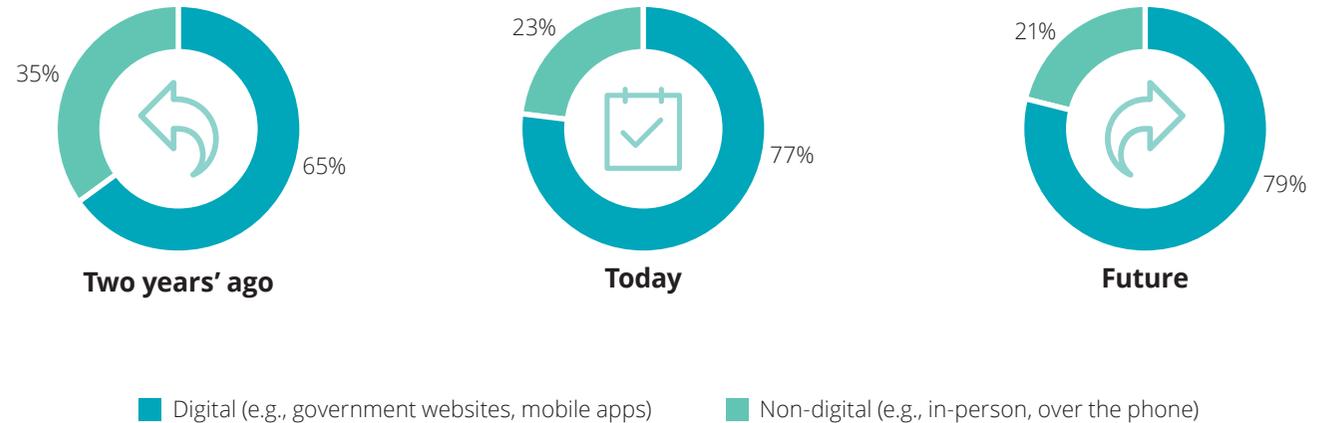
35%   65%

Two years' ago

23%   77%

Today

21%   79%

Future

■ Digital (e.g., government websites, mobile apps)   ■ Non-digital (e.g., in-person, over the phone)

Over 40% of Asia-Pacific citizens need help when accessing digital government services

Asia-Pacific citizens use government services to conduct many essential tasks such as lodging tax returns, applying for visas, paying parking tickets and updating vaccination records. Yet, a large number of citizens struggle to access digital government services on their own. **In fact, more than two in five (41%) Asia-Pacific citizens always or occasionally rely on someone else's help when accessing digital government services.**

There are a number of reasons citizens may need help when accessing government services, including:

- **Lack of digital skills:**[2] Citizens with less digital understanding often lack the skills required to independently interact with government services online.

- **Underdeveloped digital infrastructure (including e-government):**[3] Weak digital infrastructure can prevent individuals from easily interacting with government services online, forcing them to access additional help.

- **Desire for a human touch:**[4] For complex or emotional matters, many citizens prefer to interact directly with another person. Humans can offer personalised solutions and empathy.

Chart 2.5: When accessing digital government services, do you rely on someone else's help? For example, because the process is too complicated

11%	30%	31%	28%
Yes, always	Yes, occasionally	Rarely	Never
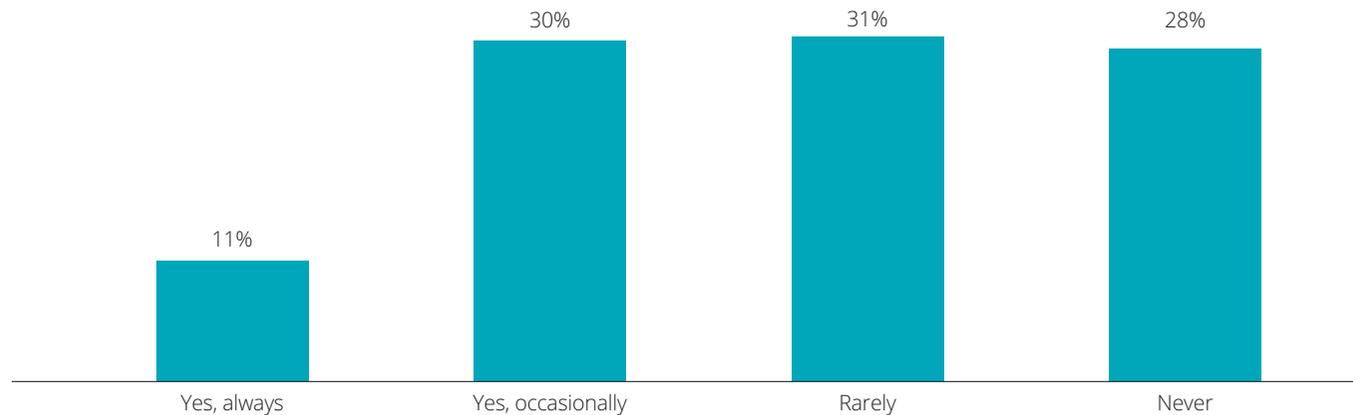
Citizens in emerging nations more likely to need help

Citizens of emerging countries are much more likely to need help when accessing digital government services (57%) than citizens of developed countries (30%). This represents an enormous digital divide across Asia-Pacific.

Dependence on assistance was highest in India, with 66% of Indian citizens requiring assistance when accessing digital government services compared to only 28% of South Koreans.

There are various reasons citizens from emerging economies may require more assistance; for example due to a lack of digital skills, underdeveloped digital infrastructure and less experience interacting with e-government.[5] In fact, the average UN e-Government Development Index ranking for emerging Asia-Pacific countries was 86th, compared to an average ranking of 8th for developed countries.[6]

Chart 2.6: Needing help, developed compared to emerging economies

30% — **Developed economies**
Percent of citizens that always or occasionally need help when accessing digital government services

Australia, Japan, South Korea and Singapore

57% — **Emerging economies**
Percent of citizens that always or occasionally need help when accessing digital government services

India, Indonesia and Vietnam

Convenience and data security are some of the most important features of digital government services

There are many features of digital government services that are important to Asia-Pacific citizens. **When accessing digital government services, Asia-Pacific citizens selected ease of access (ranked first by 21% of people) and data security (16%) as the most important factors today.** In contrast, far fewer citizens selected familiarity (3%) and personalisation (4%) as being the most important. However, of the people who didn't rank data security first, many also excluded it from their top three factors – prioritising ease of access, speed and reliability instead. This suggests that while some Asia-Pacific citizens view data security as their top priority, the rest have several other features that matter to them.

Furthermore, when asked which features would have the biggest impact on government services in the future, data security and integrated services came out on top. 17% ranked data security as the top feature and 16% ranked integrated services first. Integrated digital platforms enable data sharing between different government systems, so that citizens only have to share personal data once.

Asia-Pacific citizens' concern with data security is well-supported by previous research. In fact, a recent survey found that Asia-Pacific residents are the most likely globally to stop using a service due to data privacy breaches – with half of Asia-Pacific respondents indicating they would stop using a company's services following a serious data breach.[1] Research has also found that less than half (44%) of Asia-Pacific citizens trust government organisations with their data, suggesting that government could be doing to assure citizens that their data is secure.[2]

Chart 2.7: When accessing digital government services, how would you rate the following factors in terms of importance?
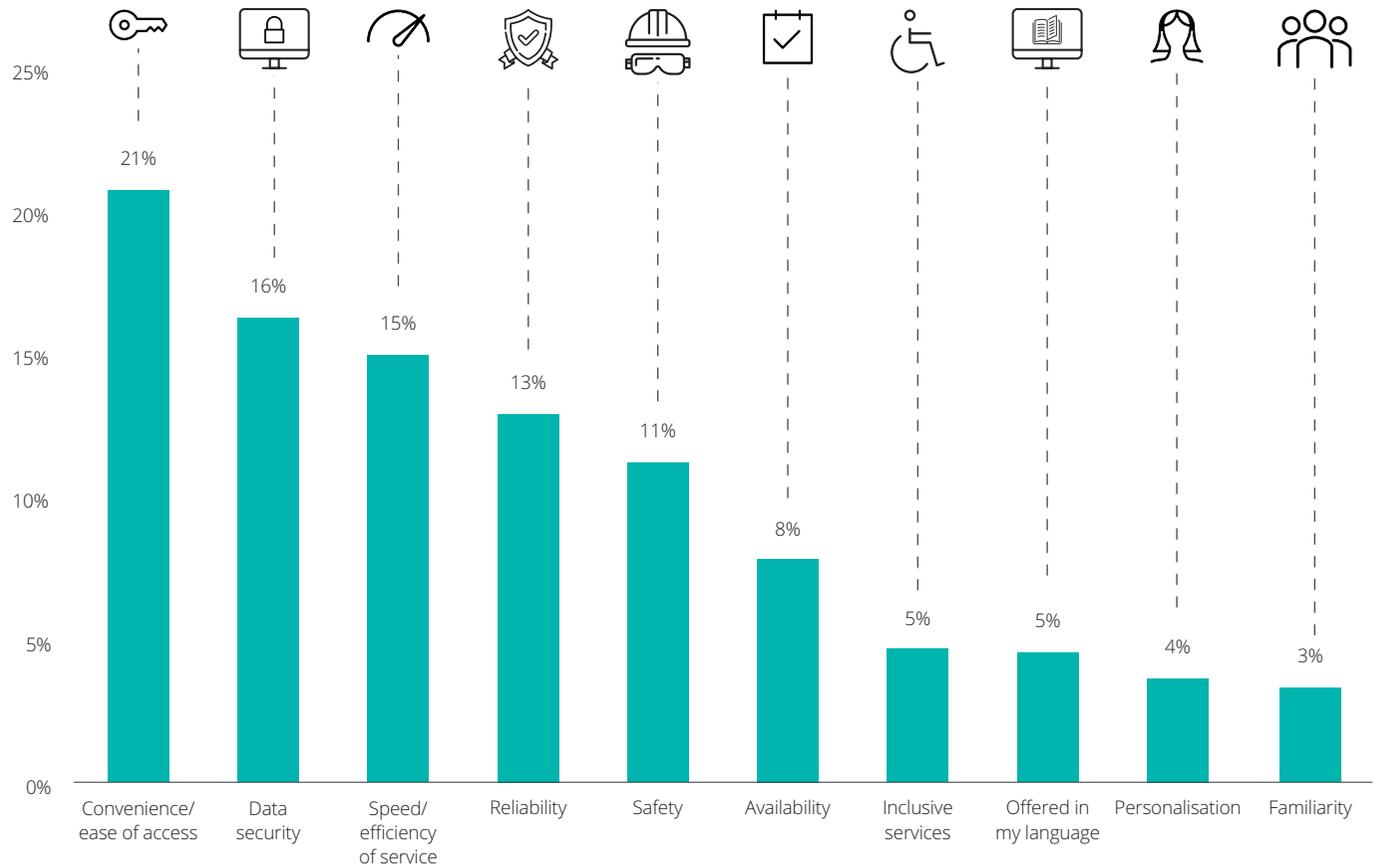
Many citizens expect government services to be on par with the private sector

Asia-Pacific citizens have high expectations of government services. **More than two thirds of citizens expect the quality of government services to be on par with those offered by the private sector (67%) and by other countries in the region (65%).**

Citizens of emerging Asia-Pacific countries expect more from government services than citizens in developed Asia-Pacific countries. Such citizens are 35% more likely to expect government services to be on par with the private sector.

For example, citizens in Indonesia (84%) and India (75%) are much more likely than those in Australia (47%), South Korea

(39%) and Japan (38%) to say they have 'confidence in national government.'[1] Further, according to the OECD, citizens in emerging Asia-Pacific economies also report higher satisfaction with their education and healthcare systems than those in developed Asia-Pacific economies.[2]

Looking forward, citizens see a digital future. Three quarters (75%) of Asia-Pacific citizens believe that most government services will be online over the next five years. To prepare for this digital future, 77% of citizens believe that governments will need to invest more in technology.

Figure 2.2: Citizen expectations of government services

65% agree that the quality of government services should be on par with those offered by other countries in the region.

67% expect the quality of government services to be on par with those offered by the private sector.

75% expect most government services to be available online in the next five years.

77% think government needs to invest more in technology to better prepare for the future.
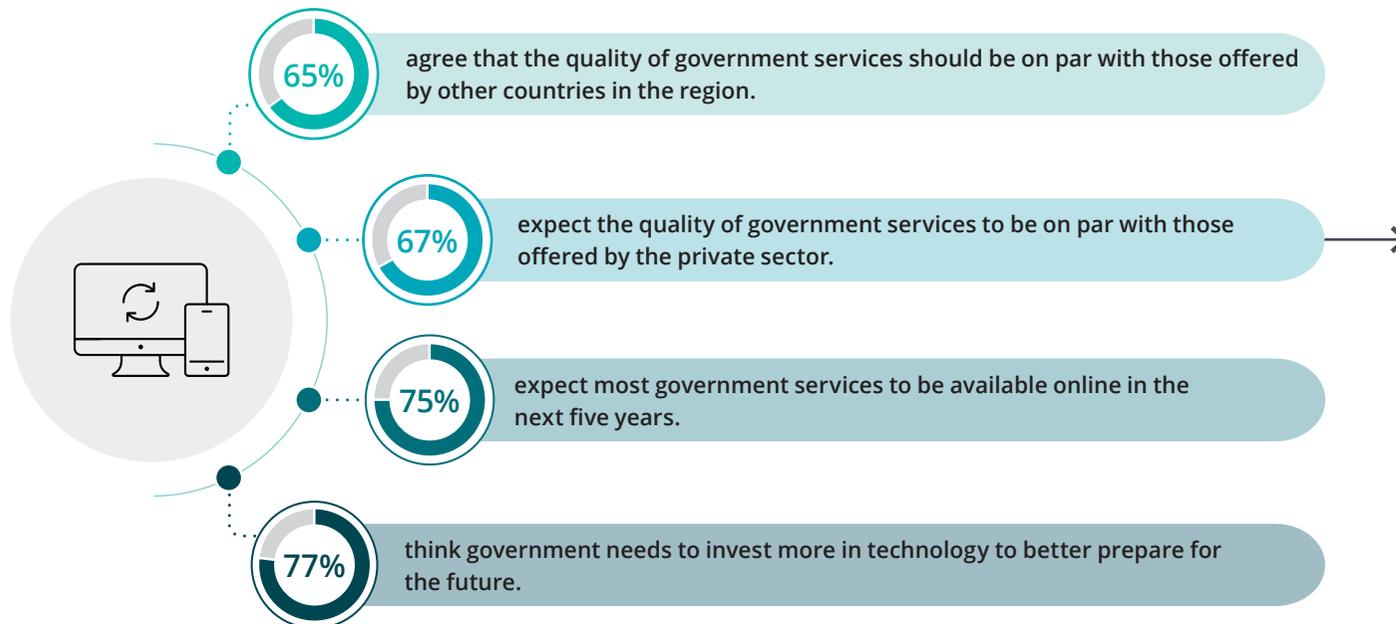
Expectations of government services by feature

When asked how the features of digital services provided by government should compare to the private sector, Asia-Pacific citizens had the highest expectations in relation to data security and ease of access. **Half (51%) of Asia-Pacific citizens expect digital government services to be more data secure and easier to access** than those offered by the private sector.

While 51% expect government's data security to be better than the private sector, 90% expected it to be at least as good. Due to the deeply personal nature of the information shared with government, concerns around privacy remain one of the biggest barriers to citizen uptake of digital government services.[3]

Chart 2.8: How would you expect digital services provided by government to compare to the private sector for each of the following features

	Better	On par	Worse
Personalisation	43%	43%	14%
Inclusivity	48%	42%	10%
Speed/efficiency of services	49%	33%	18%
Convenience/ease of access	51%	35%	14%
Privacy/data security	51%	39%	9%

Benefits of offering effective digital government services

The digital transformation of public services has had a profound impact on citizens' lives, especially so since 2020, when governments have to quickly redesign the delivery of public services to ensure the continuity of economies. Governments cannot return to previous ways of doing things, and investing in effective digital services for citizens is a public sector imperative.

There are several long-term outcomes to investing in effective digital government services besides providing citizens the convenience they have come to expect. While some of these outcomes might take time to be realised, the benefits extend further to benefit society generally and enhance government processes.

Perception and trust
Governments have a lot to gain from improving citizen experience of digital government services. There is an established association between citizens' experiences of digital government services and their views of government.[1] Across Asia-Pacific, over two thirds of citizens surveyed indicated that a positive experience of using government services online would improve their overall perception (68%) of and trust (66%) in government.

More broadly, research suggests that citizens are nine times more likely to trust a government agency if they are satisfied with its service,[2] and twice as likely to admit to publicly expressing their unhappiness through social media or calls to their public representative if they are dissatisfied.[3]

Equality and inclusivity
Governments can use technology to promote inclusivity and equality in the community. A majority of citizens surveyed (61%) believe that the use of technology in government services will improve equality in society. Technology can be also be used to support the inclusion of culturally and linguistically diverse communities (CALD), as well as people with a disability to access high quality government services.[4]

For example, digital government services allow people in regional areas and those with a mobility-related disability to access top-notch services without having to travel long distances. Similarly, translated web-pages and mobile-enabled capabilities can empower CALD communities to utilise government services independently without the need for a translator.

That said, as more government services become digitised, governments have to be mindful of exacerbating existing inequalities represented by the digital divide. Currently, 52% of households in the Asia-Pacific region are offline (lack broadband access).[5] While this number is in rapid decline, with approximately 900 million new internet users expected to go online by 2025, governments should take active steps to lessen this divide. To do so, it should invest in regional and remote digital infrastructure and nurture digital literacy among disadvantaged populations.[6]

Figure 2.3: Benefits of effective digital government services

Greater equality in society
61% of people believe the use of technology in government services will **improve equality** in society.

Increase trust in government
66% of people believe that a positive experience of using government services online would **improve their trust** in government.

Improve overall perception of government
68% of people believe that a positive experience of using government services online would **improve their overall perception** of government.

Benefits of offering effective digital government services

Financial benefits

Aside from improving citizen experiences, digital service delivery also brings financial benefits to governments through improved efficiency and cost savings:

- **Reduced labour time:** Digitisation brings productivity and efficiency benefits by reducing staff time on some of the traditionally repetitive activities (e.g. data entry, shop front customer service, mail sorting). A previous Deloitte study estimated in Australia, the combined time savings related to these job duties could lead to $2.4 billion in cost savings per year.[1]

- **Shared digital infrastructure:** Digital infrastructure and tools can also be leveraged by multiple agencies which can significantly reduce software spending and IT maintenance costs.[2]

- **Reduced storage costs:** Technology like cloud storage replaces physical storage units and the pay-on-demand model for cloud services shifts capital costs to maintenance costs, giving government agencies greater flexibility with their IT budgets.[3]

It is likely that governments could see benefits from individual initiatives implemented in the short term. While governments grow their suite of digital services, there remains certain fixed cost from existing infrastructure such as phone, mail and in-person. These non-digital platforms will have to remain in place to cater to segments of the community who will still require them. Given this, governments could take some time to fully unlock the financial benefits from increased digitisation, and for a period could struggle to realise the full benefits of digitisation.[4]

Sustainability

Increased digitisation in government services can help governments support sustainability. The shift to having more government services delivered online would directly reduce the need for citizens to commute, cutting back carbon emissions.

There is already evidence that governments are starting to seize the environmental opportunities offered by digitisation. For example, the South Korean government has transitioned on-premise data centres to cloud, which is five times more energy-efficient.[3]

As governments expand the digital capability of their workforce and partner with the private sector to deliver the intended outcomes of digital services, the result will be the development of more sustainable delivery platforms for digital government services. For example, investing in the right technology to enable public sector employees to work remotely (and service citizen requests) can cut back on staff having to commute and potentially cut back on on-premise computing infrastructure.[5]

Policy agility

Another benefit of digital service delivery is increased policy agility. Governments, like the private sector, are under enormous pressure to deliver high-quality and personalised services to citizens in a rapidly changing world.[6] This can pose a significant challenge to government agencies, who would typically have to navigate around complex legacy policies and processes. By effectively digitising services, governments can leverage data to increase the agility of their policy response.[7] For example, governments could share and use house fire risk data to improve bushfire response and prevention.

Further, governments can make it easier to implement policy changes by adopting a modular approach to the digitisation of government processes.[8] For example, governments can structure components of welfare test processes (e.g., rate tables or tests on income and assets) as building blocks, which, when combined, arrive at an entitlement value. Then, when faced with a policy change, they can alter one building block and not the full system, drastically increasing policy agility.
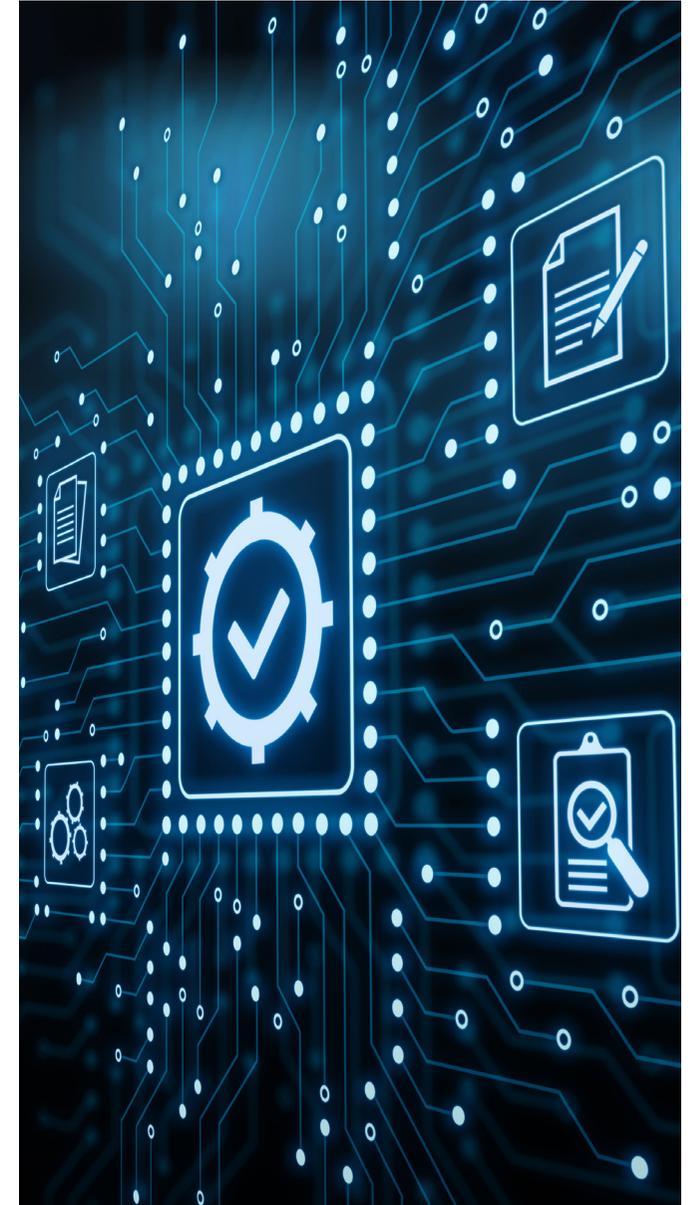
Technology more likely to impact government services than other parts of citizens' lives

Asia-Pacific citizens expect technology to change government services dramatically. In fact, citizens believe that technology is more likely to change the way they access government services (38%) than almost any other facet of their lives including the way they work (36%), shop (33%), or socialize (26%). In other words, **nearly 40% of people believe that government services will be in the top three activities changed by technology over the next five years** – more than for any other activity.

There are many factors that may contribute to the growing impact of technological change in government services relative to other services.

- Asia-Pacific citizens continue to demand greater digitisation of government services. While citizen desire for remote work and online shopping has begun to plateau, calls for the expansion of online government services are getting louder – in Australia, 92% of people want more government services.[1]

- Governments have substantive plans to digitise. All seven Asia-Pacific countries examined in this report have released an extensive plan for digital government. In 2021 alone, the Singaporean government planned to spend S$3.8 billion on information and communications technology procurement.[2]

- Citizens access government services throughout their lives. Unlike for work or school, adult citizens in all life stages are affected by technological changes in government services.

Chart 2.9: Looking forward, how likely is technology to change the way you undertake each of the following activities in the next five years? (ranked top 3)

|	
The way I access government services	38%
The way I bank	37%
The way I work	36%
The way I shop	33%
The type of work I do	28%
The way children are educated	26%
The way I socialize	26%

Perceptions vary by age

In general, older generations are more likely to say technology will impact government services over other parts of their lives (see Chart 2.10). People aged 65+ are 27% more likely to rank government services in their top three activities most likely to change due to technology, compared to those aged between 18-24 years.

Three key factors explain why older citizens expect technology to transform their use government services relative to other activities. First, older generations are more likely to use several key government services (e.g., allied health services, pension support).[3,4] Second, as citizens age, they are less likely to work or receive education (and, as a result, are less likely to be affected by technological changes to education or work). Third, older generations are more likely to expect to continue choosing in-person options for recreational activities and shopping.

Chart 2.10: Looking forward, how likely is technology to change the way you access government services in the next five years? (ranked top 3)

18-24	33%
25-34	36%
35-44	39%
45-54	39%
55-64	39%
65+	42%
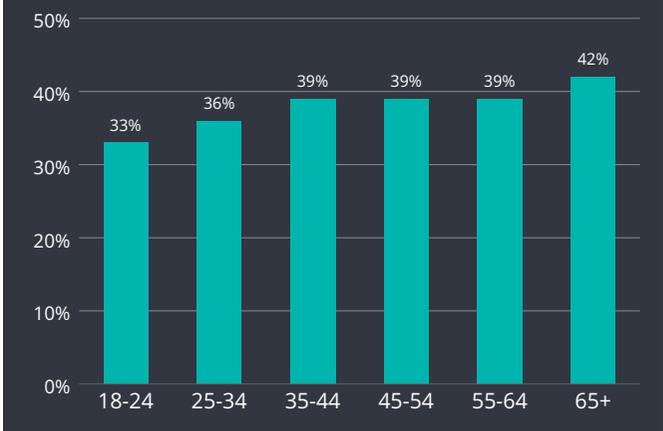
Country insights | Australia

Population: 25.7 million[4]

GDP per capita: $51,700 USD[5]

5.0 Digital competency score (2019)[1]
The World Economic Forum digital competency score (2020): scale 1 (not at all) to 7 (to a great extent). Median score across Asia-Pacific: 4.7.

90 World Bank GovTech Maturity Index (2020)[2]
Australia is classified as a GovTech leader by the World Bank GTMI with a score of 90 out of 100 – ranked 8th globally.

Australians are...

Most likely to say:
"I expect most government services to be available online over the next five years."

Least likely to agree:
"I use social media more today than they did two years' ago."

Government strategy
Australian Government's **Digital Government Strategy 2021** highlights Australia's vision to be **one of the top three digital governments in the world by 2025** with **all government services available digitally** by this milestone.[3] Australian Government is committed to provide a stable, secure, reliable and personalized experience that anticipates citizen needs.

Use of government services and impacts of COVID-19

Increasing digital competency among citizens since the onset the pandemic...

More wiling to learn new digital skills or use a new platform — 61%

More comfortable engaging with digital technologies — 58%

Work remotely more — 33%
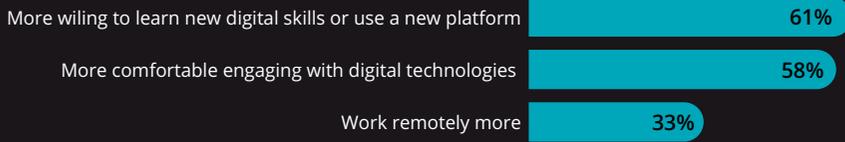
While 77% Australians agree or strongly agree government services have become more digitised, only...

56% Agree or strongly agree services have **adapted well during COVID**

64% Agree or strongly agree services have become **more important**

How do Australians access government services?

Two years ago

Today

In the future (expected)

Government websites are the most common medium when accessing government services.

About surveyed Australians (N=546)
Gender: 46% female vs 54% male*

Median age range: 35-44 years

Median household annual income range: US$57,500-64,700

Employment status: 62% employed, 35% unemployed/not in the labour force, 3% student

Education level: 47% tertiary vs 53% non-tertiary

* When asked about gender in the survey, the following categories were included: female, male, other, and prefer not to say.

Citizen expectations

82% of Australians expect most government services to be **available online** over the next five years.

75% of Australians agree or strongly agree government should **invest more in technology** to better prepare for the future.

55% of Australians are willing to **provide personal data** if it makes accessing services easier.

Looking ahead, what do Australian citizens most look forward to when accessing government services?

Easy access from any devices

Integrated services (one-stop for multiple government services)

Data security

Key actions for government
- Design with accessibility in mind as new services are funded and existing ones are updated to ensure that digital services can be can be accessed by everyone.
- Improve the integration of digital government services by investing in underlying digital infrastructure and building collaboration across government departments.
- Consistently incorporate internal capability building funding as part of business cases and digital investment funds including how private sector partners will upskill public servants.

Country insights | India

Population: 1.4 billion[4]

GDP per capita: $1,900 USD[5]

Digital competency score (2019)[1]
4.4

The World Economic Forum digital competency score (2020): scale 1 (not at all) to 7 (to a great extent). Median score across Asia-Pacific: 4.7.

World Bank GovTech Maturity Index (2020)[2]
82

India is classified as a GovTech leader by the World Bank GTMI with a score of 82 out of 100.

Indians are...

Most likely to say:
"A positive experience from using government online services is likely to improve my trust in government."

Least likely to agree:
"their access of government would become more frequent over the next five years."

Government strategy
Indian Government's *Digital India* presents a vision to transform India into a **digitally empowered society** and **knowledge economy**, with a focus on providing seamless and integrated services as well as ease of access.[3]

Use of government services and impacts of COVID-19

Increasing digital competency among citizens since the onset the pandemic...

More wiling to learn new digital skills or use a new platform — **89%**

More comfortable engaging with digital technologies — **85%**

Work remotely more — **63%**
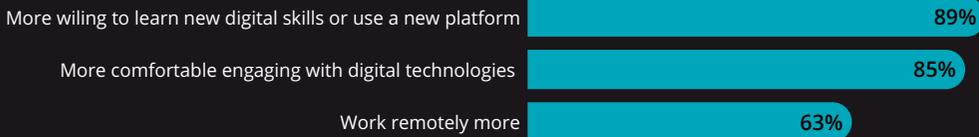
Most Indians (83%) agree or strongly agree government services have become more digitised and...

78% Agree or strongly agree services have become **easier to use**

81% Agree or strongly agree services have **adapted well during COVID**

How do Indians access government services?

Two years ago | Today | In the future (expected)

Today, **mobile apps** are the most common medium for accessing government services.

About surveyed Indians (N=549)

Gender: 52% female vs 48% male*

Median age range: 35-44 years

Median household annual income range: US$7,700-15,500

Employment status: 77% employed, 13% unemployed/not in the labour force, 9% student

Education level: 84% tertiary vs 16% non-tertiary

* When asked about gender in the survey, the following categories were included: female, male, other, and prefer not to say.

Citizen expectations

86% of Indians expect most government services to be **available online** over the next five years.

86% of Indians agree or strongly agree that government **needs to invest more in technology** to better prepare for the future.

80% of Indians agree or strongly agree that the use of technology in government services will **improve equality** in the society.

Looking ahead, what do Indian citizens most look forward to when accessing government services?

Easy access from any devices | Better transparency (e.g. I would want to know how my personal data is stored safely) | Data security

Key actions for government

- Increase digital skills across the population through reskilling and upskilling initiatives that can be scaled across the population.
- Invest in secure data storage solutions and be transparent in communicating how citizens' data will be used, to help build trust.
- Build on the success of India's Co-Win initiative to drive transformations across other service areas such as in transport and education.

Country insights | Indonesia

Population: 273.5 million[4]

GDP per capita: $3,870 USD[5]

Digital competency score (2019)[1]

4.5

The World Economic Forum digital competency score (2020): scale 1 (not at all) to 7 (to a great extent). Median score across Asia-Pacific: 4.7.

World Bank GovTech Maturity Index (2020)[2]

70

Indonesia is recognized for its significant focus on GovTech by the World Bank GTMI with a score of 70 out of 100.

Indonesians are...

Most likely to say:
"My use of government services would be more frequent five years from now."

Least likely to agree:
"I am more willing to learn a new digital skill or use a new platform."

Government strategy

Indonesian government's *Digital Indonesia Roadmap 2021-2024* focuses on four strategic areas to help implement approximately **100 key initiatives,** including digital infrastructure, digital economy and digital society, over the next four years in collaboration with ministries, the general public and various central and regional institutions.[3]

Use of government services and impacts of COVID-19

Increasing digital competency among citizens since the onset the pandemic...

More comfortable engaging with digital technologies	84%
More willing to learn new digital skills or a new platform	81%
Work remotely more	44%

Most Indonesians (78%) agree or strongly agree government services have become more digitised, and...

63% Agree or strongly agree **quality has improved**

70% Agree or strongly agree services have become **easier to use**

How do Indonesians access government services?
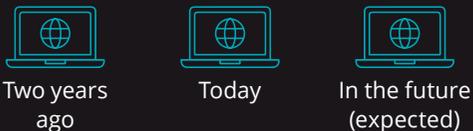
Two years ago

Today

In the future (expected)

Government websites are the most common medium when accessing government services.

About surveyed Indonesians (N=549)

Gender: 51% female vs 49% male*

Median age range: 35-44 years

Median household annual income range: US$4,900-$5,800

Employment status: 81% employed, 15% unemployed/not in the labour force, 1% student

Education level: 53% tertiary vs 47% non-tertiary

* When asked about gender in the survey, the following categories were included: female, male, other, and prefer not to say.

Citizen expectations

83% of Indonesians expect their access of government services would **remain the same or become more frequent** over the next five years.

81% of Indonesians agree or strongly agree that government **needs to invest more in technology** to better prepare for the future

74% of Indonesians agree or strongly agree that the use of government services **will improve equality in the society**.
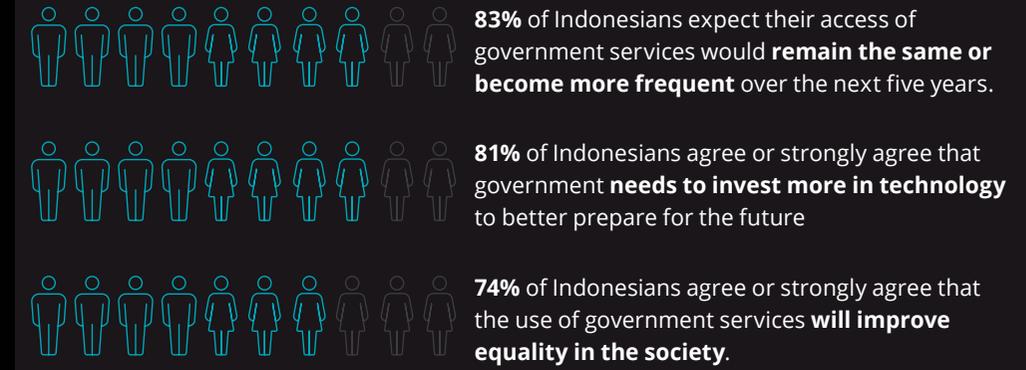
Looking ahead, what do Indonesian citizens most look forward to when accessing government services?

Easy access from any devices

Integrated services (one-stop for multiple government services)

Data security

Key actions for government

- Take advantage of high mobile penetration by developing mobile solutions to cater to increasing demand for digital government services.
- Increase the interoperability of government services through technological integration and collaboration between government departments.
- Support small to medium enterprises through the provision of technology support and assistance, and by promoting upskilling in digital technologies.

Country insights | Japan

Population: 125.8 million[4]

GDP per capita: $40,100 USD[5]

4.4 — Digital competency score (2019)[1]
The World Economic Forum digital competency score (2020): scale 1 (not at all) to 7 (to a great extent). Median score across Asia-Pacific: 4.7.

84 — World Bank GovTech Maturity Index (2020)[2]
Japan is recognized a GovTech leader by the World Bank GTMI with a score of 84 out of 100.

Japanese are...

Most likely to say:
"I would normally access government services in-person."

Least likely to agree:
"The quality of government services have improved."

Government strategy
The Japanese Government established the *Digital Agency* in September 2021 with the mission to deliver **"human-friendly digitisation"** where no one is left behind. Over the next five years, the Government will promote the unification and standardization of the local government systems to improve services for residents. In addition, the Government will undertake regulatory reform to promote economic growth through digitisation.[6]

Use of government services and impacts of COVID-19

Increasing digital competency among citizens since the onset the pandemic...

- More comfortable engaging with digital technologies — 48%
- More willing to learn new digital skills or a new platform — 35%
- Work remotely more — 25%
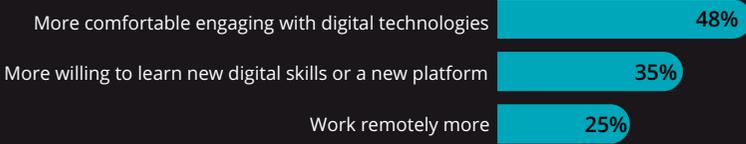
Fewer than half Japanese (43%) agree or strongly agree government services have become more digitised, and...

- **26%** Agree or strongly agree **quality has improved**
- **31%** Agree or strongly agree services have become **easier to use**
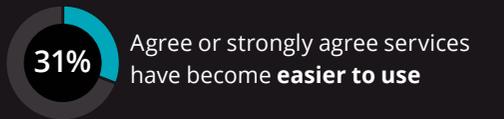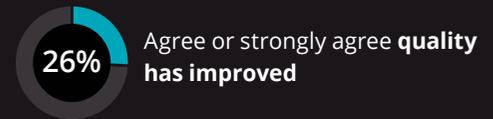
How do Japanese access government services?

Two years ago

Today

In the future (expected)

In-person services remain to be the most common medium when accessing government services today.

About surveyed Japanese (N=547)
Gender: 51% female vs 49% male

Median age range: 45-54 years

Median household annual income range: US$39,000-47,000

Employment status: 57% employed, 41% unemployed/not in the labour force, 2% student

Education level: 50% tertiary vs 50% non-tertiary

* When asked about gender in the survey, the following categories were included: female, male, other, and prefer not to say.

Citizen expectations

90% of Japanese expect their access of government services would **remain the same or become more frequent** over the next five years.

44% of Japanese expect most government services to be **available online** over the next five years.

27% of Japanese expect the quality of government services to be on par with those offered by **private sector**.

Looking ahead, what do Japanese citizens most look forward to when accessing government services?

- Easy access from any devices
- Integrated services (one-stop for multiple government services)
- Data security

Key actions for government
- Prioritise the digitisation of government services by investing in enabling infrastructure and promoting digital government uses among the population.
- Increase trust by clearly identifying targets and goals for digital transformation and communicating progress over time.
- Regularly implement and run initiatives to improve the digital confidence of citizens and increase their willingness to engage with a new platform.

Country insights | Singapore

Population: 5.7 million[4]

GDP per capita: $59,800 USD[5]

5.6 Digital competency score (2019)[1]
The World Economic Forum digital competency score (2020): scale 1 (not at all) to 7 (to a great extent). Median score across Asia-Pacific: 4.7.

89 World Bank GovTech Maturity Index (2020)[2]
Singapore is classified as a GovTech leader by the World Bank GTMI with a score of 89 out of 100.

Singaporeans are...

Most likely to say:
"Government services have become more digitised compared to two years ago."

Least likely to agree:
"I'm accessing government services in-person."

Government strategy
Digital Government Blueprint sets out Singapore's ambition to build a government that is **'digital to the core and serves with heart'.[3]** The strategy supports building a strong digital economy and digital society in support of *Smart Nation* mainly **through improved and increased leverage of data** and **new technologies**.

Use of government services and impacts of COVID-19

Increasing digital competency among citizens since the onset the pandemic...

More wiling to learn new digital skills or use a new platform	77%
More comfortable engaging with digital technologies	70%
Work remotely more	51%
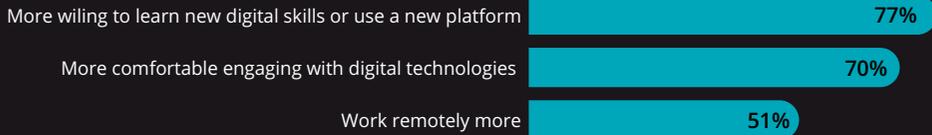
Most Singaporeans (80%) agree or strongly agree government services have become more digitised and...

61% Agree or strongly agree **quality has improved**

67% Agree or strongly agree services have become **easier to use**

How do Singaporeans access government services?

Two years ago

Today

In the future (expected)

Government websites are the most common medium when accessing government services.

About surveyed Singaporeans (N=549)
Gender: 51% female vs 49% male*

Median age range: 45-54 years

Median household annual income range: US$61,300-70,000

Employment status: 78% employed, 19% unemployed/not in the labour force, 3% student

Education level: 55% tertiary vs 45% non-tertiary

* When asked about gender in the survey, the following categories were included: female, male, other, and prefer not to say.

Citizen expectations

84% of Singaporeans expect their access of government services would **remain the same or become more frequent** over the next five years.

77% of Singaporeans expect the quality of government services to be **on par with those offered by private sector**.

76% of Singaporeans agree or strongly agree that government **needs to invest more in technology** to better prepare for the future.
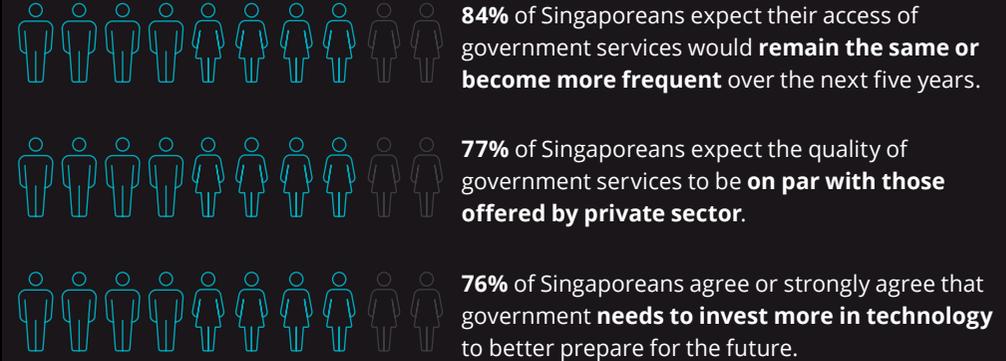
Looking ahead, what do Singaporean citizens most look forward to when accessing government services?

Easy access from any devices

Integrated services (one-stop for multiple government services)

Data security

Key actions for government
- Benchmark progress against the private sector and leaders across the region to ensure service delivery is best-in-class and customer-centric.
- Continue to invest to integrate government services across different services as citizens expect this.
- Continue to innovate and leverage emerging technologies to find new ways to improve the customer experience.

Country insights | South Korea

Population: 51.3 million[4]

GDP per capita: $31,600 USD[5]

Digital competency score (2019)[1]
The World Economic Forum digital competency score (2020): scale 1 (not at all) to 7 (to a great extent). Median score across Asia-Pacific: 4.7.

5.0

World Bank GovTech Maturity Index (2020)[2]
South Korea is classified as GovTech leader by the World Bank GTMI with a score of 98 out of 100 – ranked 1st globally.

98

South Koreans are...

Most likely to say:
"Use of technology in government services will improve equality in the society."

Least likely to agree:
"My use of government services will be less frequent five years from now."

Government strategy
South Korea's *Digital Government Masterplan 2021-2025* has a mission **to implement intelligent public services, facilitate data-based government and strengthen the foundation of digital transformation.**[3] The government is committed to create integrated and personalized experience through collaboration between the public and private sector.

Use of government services and impacts of COVID-19

Increasing digital competency among citizens since the onset the pandemic...

More comfortable engaging with digital technologies	64%
More willing to learn new digital skills or use a new platform	63%
Work remotely more	28%
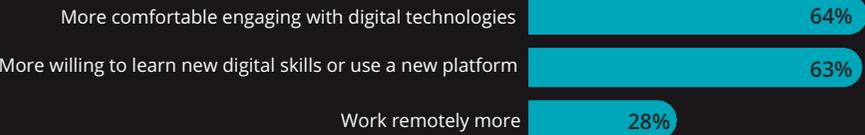
While seven in ten South Koreans (72%) agree or strongly agree government services have become more digitised...

52% Agree or strongly agree **quality has improved**

55% Agree or strongly agree services have become **easier to use**

How do South Koreans access government services?
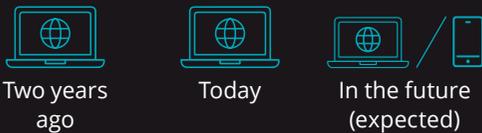
Two years ago

Today

In the future (expected)

Government websites are the most common medium when accessing government services.

About surveyed South Koreans (N=549)
Gender: 55% female vs 45% male*
Median age range: 45-54 years
Median household annual income range: US$40,400-48,500
Employment status: 70% employed, 24% unemployed/not in the labour force, 4% student
Education level: 78% tertiary vs 22% non-tertiary
* When asked about gender in the survey, the following categories were included: female, male, other, and prefer not to say.

Citizen expectations

90% of South Koreans expect their access of government services would **remain the same or become more frequent** over the next five years.

74% of South Koreans agree or strongly agree that government **needs to invest more in technology** to better prepare for the future.

53% of South Koreans expect the quality of government services to be **on par with those offered by private sector**.

Looking ahead, what do South Korean citizens most look forward to when accessing government services?

Easy access from any devices

Integrated services (one-stop for multiple government services)

Data security

Key actions for government
- Continue to find new and innovative solutions to deliver greater value to citizens.
- Leverage its world-class infrastructure to fully realise the potential of digital transformation in the public sector.
- Continue to engage with external SMEs who can provide advice to improve service delivery.

Country insights | Vietnam

Population: 97.3 million[4]

GDP per capita: $2,785 USD[5]

Digital competency score (2019)[1]
The World Economic Forum digital competency score (2020): scale 1 (not at all) to 7 (to a great extent). Median score across Asia-Pacific: 4.7.

3.8

World Bank GovTech Maturity Index (2020)[2]
Vietnam is recognized for its significant focus on GovTech by the World Bank GTMI with a score of 69 out of 100.

69

Vietnamese are...

Most likely to say:
"Use of technology in government will improve equality in the society."

Least likely to agree:
"I am prepared to provide the government with personal data if it makes accessing services easier."

Government strategy
Vietnamese government's *National Transformation Plan 2021-2025* highlights the ambition to be **ranked among the top 30 countries in the world** by 2030.[3] The plan sets out actions to ensure the **provision of high-quality services to society** and **increased public engagement** by improving their e-government and data capability.

Use of government services and impacts of COVID-19

Increasing digital competency among citizens since the onset the pandemic...

More wiling to learn new digital skills or use a new platform	85%
More comfortable engaging with digital technologies	84%
Work remotely more	67%

Most Vietnamese (82%) agree or strongly agree government services have become more digitised, and...

76% Agree or strongly agree **quality has improved**

77% Agree or strongly agree services have become **easier to use**

How do Singaporeans access government services?

Two years ago

Today

In the future (expected)

Government websites have replaced over the phone services as the most common medium when accessing government services today.

About surveyed Vietnamese (N=550)
Gender: 56% female vs 44% male*
Median age range: 35-44 years
Median household annual income range: US$9,300-9,700
Employment status: 70% employed, 24% unemployed/not in the labour force, 4% student
Education level: 71% tertiary vs 29% non-tertiary
* When asked about gender in the survey, the following categories were included: female, male, other, and prefer not to say.

Citizen expectations

87% of Vietnamese agree or strongly agree that government **needs to invest more in technology** to better prepare for the future.

86% of Vietnamese expect most government services to be **available online** over the next five years.

80% of Vietnamese expect their access of government services would **remain the same or become more frequent** over the next five years.

Looking ahead, what do Vietnamese citizens most look forward to when accessing government services?

Easy access from any devices

Better transparency (e.g. I would want to know how my personal data is stored safely)

Data security
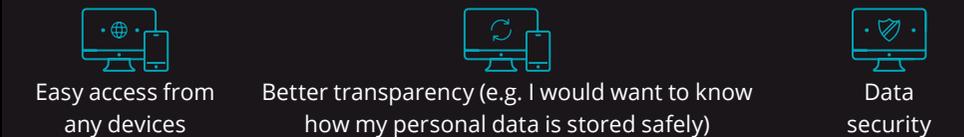
Key actions for government
- Invest in building foundational digital skills across the population and look to best practice examples overseas for examples of how to scale these initiatives.
- Invest in digital infrastructure (e.g., 5G technologies) to enable digital transformation in the delivery of government services. Draw on external expertise where appropriate to support smart government transformation and monitor progress over time.
- Review supporting regulation (e.g., related to purchasing regulations, cyber security, data security and more) to align with international best practice.

3 Leading practice digital government

COVID-19 sparked a new digital government 'race' to lead the world in terms of digital government capability. Most countries introduced new digital strategies or new initiatives to existing strategy since the onset of the pandemic. The Chapter provides selected case studies to illustrate best practice digital government projects in the region.

Leading practice examples

Governments in Asia-Pacific are already making significant progress in their digital transformation journeys, with the provision of high-quality citizen-centric digital government services at the core of many digital strategies. Asia-Pacific is a diverse and digitally divided region. While it is home to some of the world's pioneers in digitalising government services, the region also has some of the least digitally connected nations, grappling with uneven digital infrastructure in the country and high internet costs.

The case studies selected for this report feature leading examples of how governments in the region are actively engaging with digital technologies to promote the delivery and use of government services. At the same time, these initiatives highlight the important role of government in driving and leveraging innovation through partnerships to deliver solutions swiftly to create value for individuals and for society.

The following case studies demonstrate how digital technologies have enabled the transformational work by governments across industries such as health, education and finance with the ambition to drive sustainable outcomes that improve citizens' lives.

- ServiceNSW (Australia): Built internal agile working and development capability to effectively deliver product and service updates quickly to meet changing citizen needs and expectations.

- Co-WIN (India): Invested in digital technologies to help ensure all citizens regardless of socioeconomic status and geographical location could easily access key health services.

- Laku Pandai (Indonesia): Provided financial equality for informal businesses and access to reliable and safe financial services for vulnerable households during the pandemic.

- Gunma University Hospital (Japan): Utilised virtualisation technology to create a patient-oriented system that provides service continuity safely.

- National University of Singapore (Singapore): Partnered with a technology company to enable increased accessibility to learning for students as well as empower more data-led decision making for facilities management.

- Electronic Medical Record (South Korea): Deployed a safe and reliable platform to enable access to integrated health records, empowering citizens and allowing clinicians to focus on higher value activities.

- E-invoicing (Vietnam): Enabled improved effectiveness and transparency of the tax system for citizens whilst bringing cost savings to government.

Digital government strategies in the region

What do digital government strategies aspire to achieve?

Citizen-centric	Designing government processes and services around citizens and their key life events to ensure they reflect and meet citizen needs and expectations.
Seamlessness and personalisation	Integration of government services and re-designing government administration processes to enable more seamless experiences for citizens, as they need to only provide information once, and services are personalised to proactively meet citizen needs.
Easy, anywhere, anytime access	Simple digital access to government services anywhere and anytime to facilitate fairer and more accessible services that meet citizen expectations for paperless, convenient and on-demand availability of services.

What are some of the directions digital government strategy has headed?

Data-driven	Fostering a data and insights-driven culture by consolidating data from government silos thus making quality, open data more accessible to drive and support government decisions and build digital economies, and in the process, strengthening data sovereignty.
Collaboration and partnerships	Partnering with industry, the social sector and academia to improve collaboration in the development of government policies and innovation, as well as improving government productivity through reduced duplication of investment.
Internal upskilling	Working to build internal government capability and empowering the government workforce with digital skills and capabilities to enable future-readiness. Governments are encouraging upskilling whilst recognising missing digital talent and identifying ways to fill these gaps.
Harnessing new technologies	Utilising and investing in new and emerging technologies such as artificial intelligence, automation, cloud and predictive analytics as well as digital infrastructure to improve government decision making, service design and delivery.
Cyber security focus	Increasing focus and investment in cyber security to ensure safe and secure systems and citizen interactions with government, aiming to instil confidence in citizens over their data privacy and security.
New funding arrangements	Allocating resources and budget to digital transformation strategies and initiatives as well as measuring progress against initiatives and defining key performance indicators to measure progress and achievement of digital projects.

COVID-19 sparked a new digital government 'race' to lead the world in terms of their digital government capability. Governments of most countries have either introduced new digital strategies or new initiatives to existing strategy since the onset of the pandemic. For instance, India has rolled out specific initiatives in response to the pandemic situation over the last two years.

Now with increased digital literacy and understanding of what is possible digitally, citizens have heightened expectations on the way they interact with government services. This realisation has removed the question of "if" the government should transform and shifted the conversation to "in what ways" and "how" a government can transform.

Broadly, governments are refreshing their digital strategies to be **more citizen-focused and seamless** to provide **accessible services** to meet these changing needs and expectations.

As a result, digital government strategy is headed towards more **data-driven, cyber-safe** and adopting more **collaborative methods** that utilise new technologies to ensure digital success.

Governments across Asia-Pacific have committed to delivering new digital government transformation strategies and updated priorities around digital investment, many as a result of changed expectations that arose from the COVID-19 pandemic. These strategies as aforementioned have broadly similar aspirations around the citizen experience.

These strategies have been summarised highlighting key aspirations, objectives and initiatives.

However, it must be noted that digital success is achieved in different ways across countries in the region, largely depending on their digitisation progress (e.g. available infrastructure and number of internet/mobile users) as well as the structure of government (i.e. Federal vs unitary). For instance, there are additional complexities in implementing a national digital strategy when state and local governments have their own digital strategies in place.

Vietnam

Approved in June 2020, the National Transformation Plan 2021-2025 highlights Vietnam's ambition to be ranked among the top 30 countries in the world according to the UN by 2030 in terms of e-government and digital government.[1] Five target groups were identified in the plan to ensure the provision of high-quality services to society and increased public engagement by improving their e-government and data capability. Since committing to this plan, the number of online public services has increased from 169 to over 1,900 services between March and October 2020.

India

Digital India presents a vision to transform India into a digitally empowered society and knowledge economy through three key pillars.[2] These include; digital infrastructure as a core utility to every citizen, governance & services on demand, and digital empowerment of citizens. The desired outcomes focused on providing seamless and integrated services as well as ease of access.

Singapore

Digital Government Blueprint sets out Singapore's ambition to build a government that is 'Digital to the core and serves with heart'.[3] The strategy supports building a strong digital economy and digital society in support of Smart Nation mainly through improved and increased leverage of data and new technologies. The strategy details the importance on driving services around citizen and business needs, ensuring integration between policy and technology, ensuring the government ICT infrastructure as well as systems are supportive, reliable and resilient, with an emphasis on creating opportunities for collaboration and capacity building.

Indonesia

Digital Indonesia Roadmap 2021-2024 focuses on four strategic areas to help implement approximately 100 key initiatives over the next four years in collaboration with ministries, the general public and various central and regional institutions.[4] These areas include: digital infrastructure to advance the provision of an e-government system, digital economy – pursuing an existing project and digital society – to develop digital talent and capabilities within and outside government.

South Korea

Over the last decade, ranking first consecutively five times, South Korea stands out as a leader in the UN's e-Government survey. South Korea's Digital Government Masterplan 2021-2025 has a mission to implement intelligent public services, facilitate data-based government and strengthen the foundation of digital transformation.[6] The mission will be brought to life through key commitments to create seamless and secure citizen service experience that is integrated and delivered in a personalised manner. The South Korean government aims to implement a more data-driven approach to government administration to help facilitate a stronger and more responsive digital infrastructure. Further, to strengthen the South Korean digital ecosystem, there is an emphasis to build a culture of collaboration and inclusion between the public and private sector.

Japan

The Government of Japan over the last year has passed several reforms to deliver their top priority of digitising Japan in a citizen-driven manner. In September 2021, the "Basic Act on Forming a Digital Society" was enacted of which the first action was establishing the Digital Agency. The Digital Agency has a mission to deliver "human-friendly digitalisation" and uniquely includes 1/3 of their officials from the private sector.[7] Under the current administration, "digital" is positioned as one of the four important policies, and 472 billion yen was allocated to the Digital Agency in the 2022 budget.[8] The agency is tasked to promote a total design approach for government services, the use of My Number (ID), consolidate government data, and ensure interoperability of ministry digital systems.

Australia

Digital Government Strategy 2021 highlights federal government's vision to be one of the top three digital governments in the world by 2025 with all government services available digitally by this milestone.[9] The focus is beyond just providing simple online services but rather directed towards investing strongly in technology that will be able to provide a stable, secure, reliable and personalised experience that not only meets, but anticipates citizen needs. The strategy outlines a key commitment to tracking and measuring progress biennially to set OECD Digital Government benchmarks, publishing yearly progress reports, key measures of success by 2025 as well as recent dedicated budget to achieving a Digital Economy by 2030.
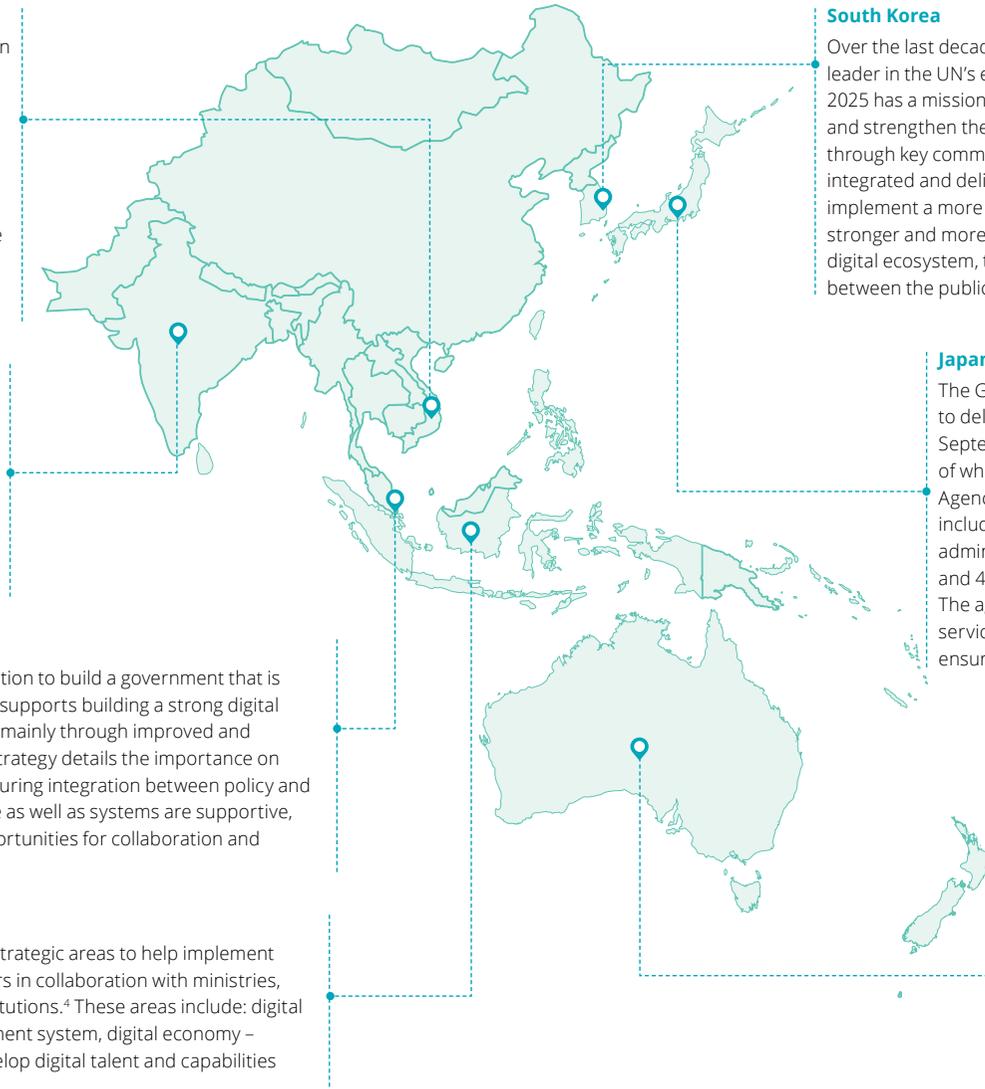
Case study: Service NSW app
Building capability for long-term change

Service New South Wales (SNSW) is a government agency in Australia within the Department of Customer Service. SNSW provides a one-stop-shop for government services for over eight million NSW citizens, businesses and partner agencies in Australia. The agency aims to bring together access to a range of government services and be a key provider of trust, care and connection within the NSW community.[1]

SNSW's ambition is to be a world leading provider of customer-centric experiences and services. To achieve this ambition, SNSW recognised a need to build internal skills and capability as well as shift their ways of working from being largely product and vendor dependent to be more self-sufficient, agile and customer-centric in their delivery.

With this in mind, SNSW partnered with VMware Tanzu Labs (formerly known as Pivotal) in 2019,[2] to both design and deliver a technology and regulatory solution, starting with the Easy to do Business program and the Digital Driver Licence, and in parallel build lasting internal capability.

VMware adopted an approach which focused on developing the necessary apps while simultaneously building internal SNSW capability by pairing VMware Tanzu Labs engineers with SNSW engineers. Through this partnership, VMware Tanzu Labs and SNSW were able to achieve the following:

- built a verified digital driver licence in a blended model that helped to incentivise citizens to download the SNSW app

- trained and upskilled SNSW employees and helped grow the SNSW development team substantially

- rapidly built multiple apps for the SNSW app (this was particularly important in the early days of COVID-19)

- transitioned SNSW teams to agile product teams

- ran multiple agile workshops to build agile capability

- significantly reduced app development times.

This helped SNSW create a 'Swiss Army Knife of Apps'[3] that was able to become one-stop-shop for the digital citizen, meeting the NSW challenge on simplifying access to government transactions and making it 'easy to do business'.

The onset of COVID-19 in 2020 created an imperative for government to rapidly develop new digital services and capabilities to meet the changing needs of NSW citizens and businesses at scale. Due to the built and lasting internal capability and IP that SNSW were now equipped with, they were able to quickly and sustainably implement continuous updates and iterations to the app throughout the pandemic to areas where citizens needed the most support. This included health alerts and pathology results and improving the overall digital experience in SNSW channels.[4]

The impact of their new internal capability is exemplified in the over 336 million check-ins using the Covid Safe check-in functionality, over 5 million digital driver's licence downloads and an overwhelming 96% customer satisfaction score for the SNSW app the financial year of 2020-21.[5]

Equipped with the appropriate skills and expertise in-house, SNSW was able to scale efforts beyond the project delivery and increased their ability to deliver with ongoing pace and agility, to cement their status as a provider of world-class customer experiences.

Case study: Co-WIN portal by the Indian Ministry of Health and Family Welfare

Leveraging technology to effectively scale and increase access

The Indian Ministry of Health and Family Welfare (MoHFW) is the government agency of India responsible for providing advice on medical and public health matters and is involved in the implementation of various health services in India.

The vision of the MoHFW is to pursue preventative and promotive health care and provide universal access to good quality health services regardless of financial status. MoHFW's ambition is to achieve the highest possible level of health and wellbeing for all ~1.4 billion Indian citizens.[1]

COVID-19 presented a challenge for the Indian government to develop a method and solution to support and protect their citizens. However, the main challenge for India's vaccination drive was the need to scale the program to their entire diverse population and large geographical size while also addressing vaccine hesitancy.

As a result, the MoHFW partnered with a number of agencies including the United Nations Development Program, to build and implement the "Co-WIN" portal. This portal has proved critical in rapidly scaling India's digital health ecosystem.

Co-WIN is a cloud-based portal that was designed with the citizen at the centre ensuring increased accessibility, choice, and ease. Through the portal Indian citizens can easily, with no registration fees:

- access and share health records, receive prescriptions and telehealth from verified healthcare professionals

- search for the nearest vaccination centres by district, pin or map and book, reschedule, or cancel vaccination services (up to six people are able to register using the same phone number)

- receive assisted service for on-the-spot or walk-in centres

- receive a verified, digitally available vaccination certificate (by QR code or printed onsite at the vaccination facility) and view updates in a citizen Co-WIN dashboard.

Co-WIN has been and continues to be a critical enabler of India's progress through COVID-19 and the vaccination response. The portal has helped to:

- ensure fair and equitable distribution of vaccines including to rural and hard to reach areas through vaccination centres and regardless of financial status or access to digital devices

- provide real-time online dashboards to vaccination program managers to increase visibility on vaccination coverage, reduce vaccine wastage, and track adverse events

- scale and effectively manage their vaccination program from administering around 100 million doses to 1 billion doses from April to November 2021, with an average 3.7 million daily doses[2]

- administer approximately 1.8 billion doses which has resulted in 72% of the Indian population receiving at least one dose of the COVID-19 vaccine and 60% fully vaccinated[3]

- provide the Indian government access to aggregated data to drive policies

- inspire and drive innovation within MoFHW seen through platform feature updates

- enable the integration with additional vaccination related services through APIs

- prevent "rent-seeking, black marketing and other malpractices".[4]

Co-WIN has transitioned to be the single-source of truth for all vaccinations. India has been recognised as a leader in its COVID-19 response creating a "blueprint for the world" in how to use technology to deal with future public health crises.[5] So much so, India is in communications with the World Health Organisation to share the solution globally through their C-TAP (COVID Technology Access Pool) as an open-source, digital public good.[6]

Case study: Laku Pandai program aims to improve financial inclusion through digital banking

Using digital solutions to address social issues

In its national development strategy, the Indonesian Government committed to ending extreme poverty by 2030, in line with the United Nations' Sustainable Development Goal.

As part of this aim, the Indonesian Government introduced a scheme known as Laku Pandai; branchless financial services for financial inclusion. The program aims to reduce poverty by improving financial inclusion through digital banking, taking advantage of Indonesia's high smartphone penetration.

Many households in Indonesia don't use, or don't have access to banks or other financial services because they live far from bank offices or due to prohibitive setup costs. Furthermore, many households with income below extreme poverty level depend largely on the informal sector for income and are often at higher risk of financial mismanagement or borrowing money from unlicensed moneylenders, who can charge very high interest rates. In addition, because they can be off the grid, these households may have previously missed out on receiving targeted stimulus or efforts to integrate them into mainstream banking.

Laku Pandai provides financial products (such as a basic savings accounts) to citizens that are simple, easy to understand and able to be accessed from anywhere. Customers, after saving their money periodically, can also apply for loans or microfinancing and microinsurance through the program, thereby undercutting unethical lenders.

These financial products are distributed through existing Indonesian banks and other financial institutions who apply to be part of the program. In this way, Laku Pandai mobilises the entire banking system to support financial inclusion across the country. Many participating banks, in conjunction with Indonesia's Financial Services Authority, also offer educational programs to improve financial literacy in local communities.

Not only has the program provided access to reliable and safe financial services to vulnerable households, it also played a significant role during the COVID-19 pandemic. By enabling transactions to go cashless, it dampened the impact of social distancing restrictions on the informal sector. It also provided a reliable channel for direct stimulus payments to reach vulnerable households, acting as safe channel for welfare payments.

One particular success story associated with Laku Pandia is with PNM, a participating non-bank financial institution. As at 2021, PNM was coaching 10 million female entrepreneurs from households with income below the extreme poverty level, up from 5.8 million before the pandemic in 2019. In 2022, PNM expects to finance IDR 55 trillion (USD $3.8 billion) to facilitate business expansion, with the benefits largely accruing to lower socio-economic households and enabling women to contribute to household income (often for the first time), contributing to longer-term economic resilience.

Laku Pandai has demonstrated how government leadership and digital solutions can mobilize an entire industry to address major social issues such as eradicating extreme poverty. It also demonstrates how digital development may vary across regions and countries depending on the underlying skills of citizens, their access to existing resources and other considerations, and that successful programs are those that are tailored to the context in which they are being implemented.

Case study: Gunma University Hospital to build a system that provides service continuity safely

Utilising virtualisation technology to create a patient-oriented system

Gunma University Hospital was establish in 1943 as an affiliated clinic of Maebashi Medical College. As at April 2021, the hospital was operating with 731 beds and serviced an average of over 1,700 outpatient visits each day.

The hospital's mission is to be a university hospital to protect the health and livelihoods of the people. It is one of the leading core hospitals in the northern Kanto region in Japan, and has been designated as a disaster base hospital. The hospital has been at the forefront of technology adoption to ensure it continues to respond swiftly to diversifying medical needs while leading medical cooperation in the region.

Being a disaster base hospital means that continuity in the provision of medical care is critical. Gunma University Hospital needs to be supported by a system that is flexible, stable and robust enough to function safely in the event of a failure or cyber attack. The hospital needs to design a system that 'does not stop' medical care.

The hospital has more than 2,000 terminals and 50 departmental systems. Some medical devices such as endoscopes have been used for over a decade which raised concerns about the long-term reliability of the system operations and the vulnerability of the systems in the unlikely event of cyber threats. The hospital was faced with other issues including fragmentation of its IT systems supported by varying suboptimal and proliferating subsystems and inconsistent service level agreements across its network that made the provision of continuous medical care challenging.

The hospital decided to build a virtualisation infrastructure using VMware Cloud Foundation. Virtualisation will enable medical services to be provided safely and continuously without the dependence on hardware and physical server. Further, the hospital is planning to switch to a flexible service level agreement to optimise operational continuity to meet demand, reduce redundancy, recovery speed, and cost in the event of a failure. The aim is to build an infrastructure that will enable service continuity in all circumstances.

The investment to virtualise the hospital's systems would provide opportunities for energy saving, space saving and continuous operations while ensuring medical safety, which is key to earn the trust of patients. In addition, the hospital is looking to improve the accuracy of treatment and collaborate with local medical institutions, and to provide standardise medical care so all patients can receive the same medical services anywhere.

Case study: National University of Singapore

Technology enabled change to create a smart, safe and sustainable learning environment

The National University of Singapore (NUS) is Singapore's oldest and most prestigious university that aspires to be a leading global university that shapes the future of Singapore. At over 116 years old, the University has a mission to educate, inspire and transform their approximate 32,000 undergraduate and 12,000 graduate students.[1]

Singapore government has a strong commitment and vision to create a "digital-first" Singapore through the Smart Nation initiative.[2] As a result, the Singapore digital government has been investing in infrastructure and technology to seamlessly improve the lives of citizens and create shared open platforms to encourage learning and development.

COVID-19 had transformative impacts on higher education institutions world-wide and forced leaders to reconsider education delivery including both physical and digital infrastructure of educational campuses. As a result, NUS increased investment in innovative solutions that both meet changed student and faculty needs and align to Singapore's vision of Smart Nation.

Most recently, NUS have partnered with StarHub in an effort to improve and innovate their campus facilities management as well as create an improved learning experience for students during the pandemic. This collaboration leverages 5G and the Internet of Things (IoT), enhancing NUS's smart campus innovation. StarHub and NUS commenced their collaboration through the deployment of StarHub's 5G standalone services to create Singapore's first 100% solar-powered campus WiFi.[3] This is the first initiative to kick off a live two year trial, where NUS will explore use cases around outdoor campus facilities management including building façade repair, housekeeping and landscaping, campus security as well as education delivery using new and emerging technologies such as augmented reality (AR) and virtual reality (VR).

This collaboration has the potential to create an immensely positive impact across not only the University's ecosystem, but Singapore more broadly, setting the tone of what is possible in contributing to Smart Nation. Identified future benefits to be shown in this two year trial through the 5G sensor connectivity for both students, faculty, and staff include:

- an improved campus learning experience through reliable and high-speed internet connectivity and bandwidths supporting dependable video streaming from anywhere across NUS campus locations enabled through 5G

- increased opportunity for innovative learning methods including immersive classrooms with AR and VR technology

- ability to access learning materials on any device across the NUS campus

- improved and more agile decision making from increased availability of data and insights from the smart sensor network

- real-time data and communications in a user-friendly dashboard to improve workforce productivity and flows around facilities management

- more tailored and targeted responses to facilities management issues

- reduced climate impact from 100% solar-powered 5G WiFi connectivity.

The projected knowledge exchange and future opportunities that will be explored through this partnership will position NUS to meet new demands for efficiency, safety and sustainability in urban spaces. Additionally, NUS will be brought closer to their goal of creating a "smart, safe and sustainable" learning environment, overall contributing to creating Singapore's digital society.[4]

Case study: South Korea's electronic medical record systems
Government-led integration of health records across public and private sectors

Over the past decade, the South Korean Ministry of Health and Welfare has been strongly promoting strategies for digital transformation in the healthcare sector.

South Korea has a high electronic medical record (EMR) system adoption rate, with over 90% of medical institutions using digitised systems to record their patients information.[1] These EMR systems store all medical records in an electronic form and allows access to patients records by internal users at the medical institution (e.g. doctors, nurses and hospital administrators).

Digitising systems of medical records has brought significant benefits to both medical institutions and patients, including:

- minimised manual work and cost savings in document management

- greater efficiency and shortened patient waiting time

- improved diagnostics and treatment support by providing real-time patient information and easy access to patient's past medical examination and prescription records.

Despite a high EMR system adoption rate at the hospital level, the system only allows access among workers in the hospitals, and there was limited data sharing between institutions. Further, accessing personal health records (PHRs) remained a pain point for citizens – South Korean citizens had to physically visit hospitals to get medical documents or have the records couriered to them.

The Ministry of Health and Welfare had a vision to improve national health through the use of individual-oriented medical data. In line with this vision, the Ministry announced the Strategy for Activating the Use of Individual-Led Medical Data at the end of 2019, jointly with related departments (Ministry of Science and ICT and Ministry of Industry). This strategy is led by a Digital Healthcare Special Committee. The following three strategies were set by the Ministry[2]:

1. escalate medical data provision items sequentially and step by step

2. build a safe and reliable platform that people can use

3. divide roles where the government lays the legal and institutional foundation and the private sector provides innovative services.

This led to the development of My HealthWay app, which was launched in February 2021. The app provides citizens with easy access and integrated management of health examination records, prescription data and vaccination history. By collecting scattered health information across various medical institutions, the app allows users to share medical data with healthcare institutions (e.g. hospitals and insurance companies).

The target is for all medical records and health records including data from personal medical devices to be integrated into this app by 2023. This platform is expected to bring the following benefits to the various stakeholders within the healthcare industry.

- Citizens: improve access and management of their own health records.

- Medical institutions: support treatment through utilisation of integrated medical data from various sources.

- Industrial ecosystem: create ecosystem for the utilisation of digital health record data.

- Government and public institutions: prepare the foundation for personalised health policy and reduce financial burden over the long-term.

Case study: Vietnam: E-Invoicing
Commitment to reform to achieve long-term benefits

The government of Vietnam has adopted a national digital transformation program to 2025. Its purpose is to develop Vietnam's digital economy across society and government, as well as establishing global digital capacity within local businesses. As part of this program, the government is implementing wide-reaching Industry 4.0 policies to jump start the modernisation of Vietnam's major industries and grow newer industries.[1]

Multiple government agencies are charged with supporting and regulating different aspects of the digital economy in Vietnam. The Ministry of Finance is one of the pioneering agencies, actively implementing digital transformation, which has which has delivered positive effects positive effects in reforming and modernizing public sector financial management systems.

Among the most important initiatives of public sector digital transformation is the electronic invoice (e-invoice) transformation program, which will see all businesses implement e-invoices from July 2022. This is a significant step forward in the Ministry of Finance's effort to save costs, create an open and transparent business environment, and accelerate the national digital transformation process.[2]

This move to e-invoicing has played a key part in Vietnam's financial sector digitization effort. This transformation program is a big step in building the country's digital tax database and improving accuracy, security, and conformity in tax management nationwide. This has potential to significantly impact citizens through improving the speed, effectiveness and transparency of the country's tax system.

Along with the strong adoption of information technology and electronic transactions, the implementation of e-invoices brings many benefits to businesses and tax authorities.

E-invoices have substantially streamlined the issuance process, resulted in reduction of up to 70% of invoice issuance steps, 90% of invoice-related disputes, shortened payment time and reduced compliance costs, overall saving around 80% of the cost of each invoice.[3] The e-invoicing system can currently process around 1.7 million transactions per minute according to the General Department of Taxation, illustrating a clear time saving benefit.[4] There is a projected 2.5 billion invoices expected to be impacted through invoicing and if successful, the Vietnam government expects to save around US$43.9 million.[5]

Deploying e-invoices has not only created a cost saving opportunity for government and businesses but it has encouraged participation and investment from businesses to contribute to the country's digital economy. The Vietnamese government has urged all local government offices to implement the e-invoice system as a top priority and work closely with the finance ministry to ensure a smooth transition to e-invoicing.

Additionally, the digital transformation of the finance and the tax sectors in particular affects many economic and societal activities. Importantly, this helped set the fundamental digital foundation as Vietnam worked towards implementing digital trade agreements (DTA) with partners in the region. In June 2021, Vietnam and Singapore agreed to set up a joint technical working group on Digital Partnership, examining the potential for developing a bilateral digital economy agreement.[6] DTAs facilitate cooperation on developing ethical principles and standard for emerging technologies, and support SMEs' participation in digital trade by promoting inter-operability of e-transactions, overall, driving more trade across the region.

The e-invoicing initiative has successfully illustrated benefits not only to citizens, helping their tax requests be actioned faster, but also provided benefits to businesses and the Vietnam government as a whole. This has helped to accelerate Vietnam's national digital transformation plan and brought the country in line with international practices.

"Contributing to the vision that by the end of 2022, 100% of administrative procedures under the tax administration should be conducted online and incorporated into the national public services portal", Prime Minister of Vietnam

Platform-as-a-Product approach

Setting up to deliver high-quality digital government services

The case studies included in this report shine a spotlight on best-practice digital government initiatives being implemented in Asia-Pacific. With the proliferation of digital services in almost all facets of day-to-day living, citizens are expecting more from governments and to deliver high quality digital services quickly. The core of delivering high quality products to customers lie in the ability of an organisation's internal teams to be able to respond to the needs of customers, and to do so quicker than their competitors.

In the case of delivering digital services, it is important for internal product engineering and developer teams to be able to get to work efficiently while not disrupting other service features that need to continue to function. Given this, governments should look at building the most compelling infrastructure platform with the capabilities for internal teams to develop and deliver digital services to citizens effectively and at pace.

Like a physical product, digital government services can evolve over time. Applications providing the services will almost definitely need to undergo updates, at times major ones to provide enhanced service features. In doing so, the existing applications will need to be able to continue to function securely with minimal service disruption. The digital platform within governments need to be able to support the different levels of development requirements of the product team. With this in mind, the digital platform needs to be treated as a product and be built from the onset with a user (engineers and app developers) needs in mind to create valuable products for the end-users.

Adopting a platform-as-a-product approach enables governments to differentiate between the varying needs and requirements of different parts of the systems and to decouple elements that need to change quickly and often from those that need to provide stability and reliability and change less often.[1] This approach recognises that, like a product, a platform's capabilities must change in response to the needs of its users (engineers and app developers) to enable them to deliver the digital services to end users (citizens) faster.

By treating platforms likes products, governments can maximize the value of the platforms, scale delivery and minimise delivery time, risk, and waste. At the same time, they can retain the ability to detect and remediate security issues early in the development lifecycle.

To adopt a product mindset, several prerequisites need to be in place within governments. These include strong motivation to build a platform product, reliable local infrastructure (e.g., production platform capability in the same location as existing applications), shared goals among key stakeholders for alignment, and a dedicated platform team with adequate level of authority and autonomy to make changes swiftly. In addition, it is key to have a platform champion at the CxO level, with the motivation, trust and influence across teams to steer and protect the platform development.
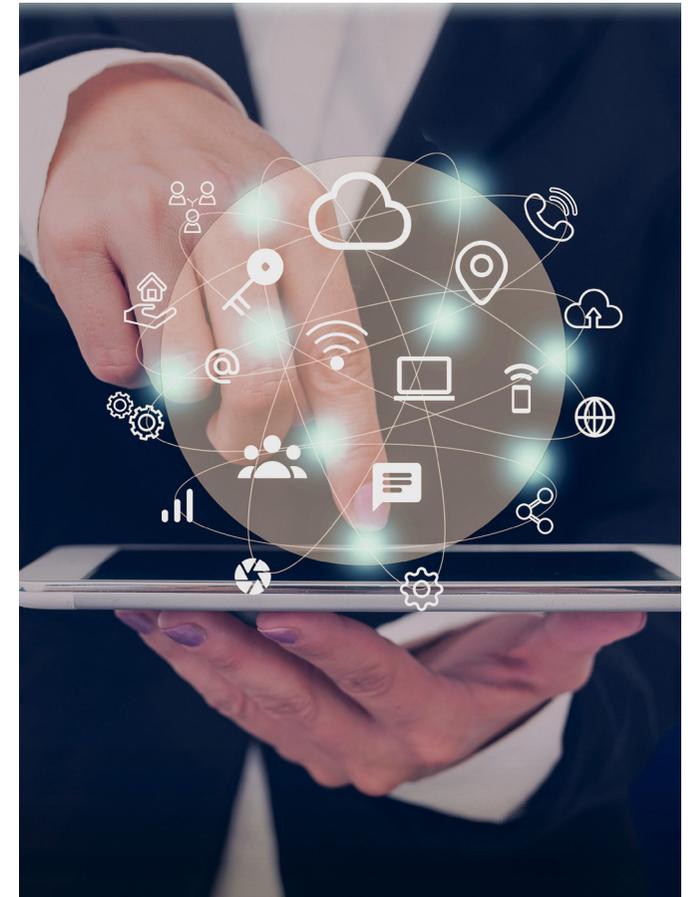
Priorities for government investment

This Chapter outlines how governments across Asia-Pacific can improve their delivery of digital services to be future digital ready. The proposed recommendations consider the critical areas governments should look to, including having the fundamentals in place, embedding a citizen-customer mindset in service design, integrating digital services across agencies, and ultimately providing a seamless service experience for citizens. Overall, the task ahead is huge and governments need to seek strategic partners to develop and complement the capabilities they will need.

Priorities for government investment

It is clear that citizens have high expectations of their governments. And while there are many actions governments can take to improve service delivery, governments do not have unlimited budgets or resources. Further, governments are faced with the complexity of having to serve the whole population, from all societal backgrounds, abilities and geographies. This challenge is further heightened with the health crisis alongside the massive economic disruption and unprecedented demands for social support.

This study identifies six actions governments can take to position themselves as best-in-class. These have been informed by the citizen survey, analysis of digital government strategies across the region and real life examples of how governments are using digital technology to improve citizen experience. These recommendations have been tested with subject matter experts across Asia-Pacific. However, in adopting these recommendations, governments should consider contextual factors such as access to digital technologies, baseline levels of digital skills and expectations of citizens in the region.

The six recommendations consider the critical levers governments should look to, internally, across agencies and with strategic partners, to design and implement digital government projects that can deliver high quality services for citizens.

Embed a citizen-customer first mindset	Plan for digital inclusion for all	Drive integration across government	Pilot and test initiatives iteratively	Build up the right internal capability	Get the fundamentals in place
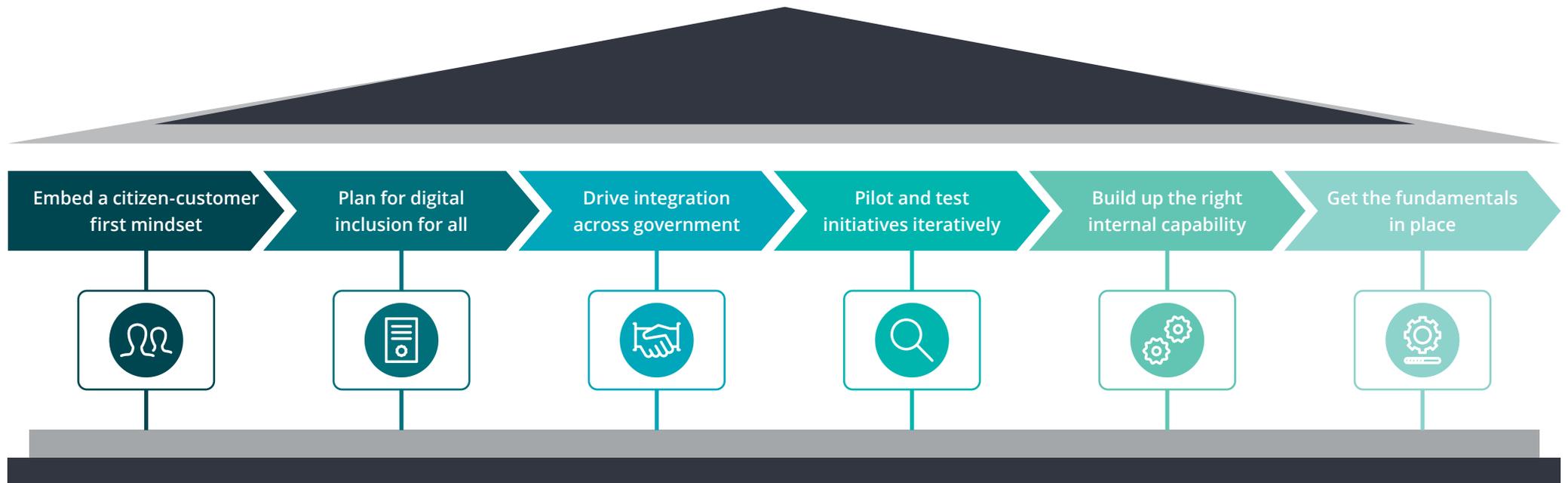
Priorities for government investment

Recommendation 1

Embed a citizen-customer first mindset

Governments are ultimately aiming to deliver useful and impactful services to their citizens. There are modern tools and technologies available to enable government to seize the digital opportunity to enhance the quality of services for its citizens.

As such, it is important to embed a customer-first mindset, making sure citizen experience is the focal point when designing services.

This starts by understanding citizens' needs, wants and expectations of public services, and how citizens will engage with technology to access digital public services. There needs to be a shift in thinking from designing services based on governments' requirements and internal processes to focusing on the needs of the citizens, and how they will use these digital government services. This requires an adoption of human-centered design into governments' operating models.

In this way, government can deliver digital services through the lens of the citizens, and in doing so, increase public engagement and satisfaction.

Recommendation 2

Plan for digital inclusion for all

Digital technologies are reshaping the way people work and live. The shift towards a more digitized economy while providing a pathway to greater opportunities, can widen the digital divide across society – those who are able to benefit from digital transformation and those who are not able to because they are financially disadvantaged or living in areas without easy access to digital services.

The pandemic has accelerated the shift to digital government services from health, education to social services. This shift while easy for a large part of the population has made things somewhat more difficult for others. An example is the difficulty for students without stable internet connection or own computing devices to switch to online learning.

Governments need to relook at their digital strategies through an equity lens to strengthen digital inclusion, ensuring digitisation does not widen existing inequalities and the digital divide. Design of digital government services need to consider access for citizens of all ages, abilities and economic backgrounds.

Government actions can include investing in connectivity infrastructure to improve internet access (connection reliability and affordability) and applying human-centred design approaches in developing services to cater for all abilities, online and in person. Further, government can build an ecosystem of trust through community engagement in the design of citizen services.

Recommendation 3

Drive integration across government

Best practice examples and digital strategies from the region have showcased how governments have invested in ensuring greater integration of citizen services whether that be through 'one-stop-shop' applications, or centralised digital agencies. A connected government requires a committed effort to provide seamless integration of government services aligned to the customer journey, and through this simplify citizen access to government services.

To enable better integration, governments need to consider:

- how to ensure services designed are of improved quality, security, and seamlessness
- how to meet citizen expectations of omni-channel government interactions that facilitate increased access to services anywhere, anytime with reduced downtime
- ways that government departments can break down silos, reduce duplication and share resources
- how to promote a collaborative culture that shares learnings and pursues more of a 'whole-of-government' approach.

Priorities for government investment

Recommendation 4

Pilot and test initiatives iteratively

Agile ways of working and service design illustrate the benefits of frequent and iterative testing when rolling out digital initiatives. Some of these benefits include the ability to gather feedback, enable continuous improvement, illustrate value earlier to gain approval and seek further budget, as well as reduced risk as issues are identified earlier.

Thus, when planning future service delivery, governments should pilot and test to ensure services meet citizen needs and are cost effective. Additionally, developing and testing will help to demonstrate value and secure longer-term investments to ensure initiatives have the appropriate support to be brought to life.

Governments need to consider:

- how to set up longer-term investment roadmaps, which incorporate shorter term iterative assessment- in a similar manner to public infrastructure plans

- how to define a more streamlined way to allocate funding to digital project

- establishing a defined testing and proof of concept methodology for digital initiatives

- how to set up the appropriate ways of working to enable a more agile and iterative approach.

Recommendation 5

Build up the right internal capability

COVID-19 has forced citizens to adapt to digital ways of working, socialising, receiving health care and other services. This in addition to advancements in technology has not only changed what is possible digitally but also changed citizen expectations.

The past two years have demonstrated the importance of governments being able to pivot in a short time to ensure the continuity of the economy, meet new expectations, and also to proactively support citizens.

To do this, the right skillsets and capabilities need to be in place. This would likely require an assessment of potential skill gaps in the workforce, to identify reskilling opportunities.

Governments do not have to build capability from scratch, rather they could look to be supported through partnerships with the private and academic sectors. Partners can help bolster existing capabilities within government, through learning of best practices outside the public sector, and knowledge transfer.

Recommendation 6

Get the fundamentals in place

To increase uptake of digital government services, governments need to get the fundamentals right, they need to build trust among citizens, and aim to improve citizen satisfaction levels with their services.

As digital connectivity expands, it also opens new doors for cyber criminals. Governments have to improve cyber frameworks. This includes keeping regulations up to date and lead on this front through digital services for citizens, and advocating an effective risk culture and behaviour in the public sector workforce.

Demonstrating that governments are prepared for potential cyber security breaches and have a robust cyber governance strategy in place will help build citizen trust. This is especially important when citizens are sharing highly personal information with governments, and trusting governments to be responsible with their data.

Ease of access and use needs to be the front and centre of all digital government services to encourage adoption. With over 40% of citizens across Asia-Pacific needing some level of assistance when accessing digital government services, there is further work needed for government to be done in this area.

Having the right infrastructure operating model is important to enable teams to have the agility, scalability and speed to develop and deliver the services to citizen where and when required quickly securely.

A view from VMware

Adopting a multi-cloud strategy – the use of multiple cloud services from different vendors – is a key enabler of high-quality digital government services.

Over the past few years, governments have been adopting multi-cloud at a rapid speed. In fact, 97% of government organisations expect to be managing more than three separate cloud environments in three years.[1] There are many benefits of utilizing multi-cloud, which include:

- Increased choice and flexibility – governments can choose the cloud that best suits each of their individual tasks (based on data type, app, workload and/or security requirement), instead of being forced to use a single provider.

- Greater speed and efficiency – by adopting a multi-cloud approach, governments can cut down on administrative overhead, streamline IT workflows and deploy new software features faster. As a result, they can achieve 46% quicker cloud migration and 70% faster Kubernetes.[2]

- Improved operational resilience – the multi-cloud Operating Model is a framework that allows government to bind businesses, applications, and cloud strategies together to accelerate agility, optimise performance, and control your multi-cloud environment. It brings people, process, and technology together for consistent service delivery, operations, and governance wherever workloads reside, providing consistent operations, management, and security.

The COVID-19 rapidly accelerated the uptake of multi-cloud by governments. As the pandemic forced governments to go digital, multi-cloud enabled them to switch smoothly between on-premise and public clouds, scale up and down easily, and test new solutions in a closed environment. For example, Singapore's Government Technology Agency (GovTech) described multi-cloud as an essential component of its response to the digital demands of the pandemic, ensuring GovTech reacted in an agile, scalable and reliable manner.[3] By June 2020, Singapore had over 150 systems on the commercial cloud and had committed over S$870 million to double this number.[4]
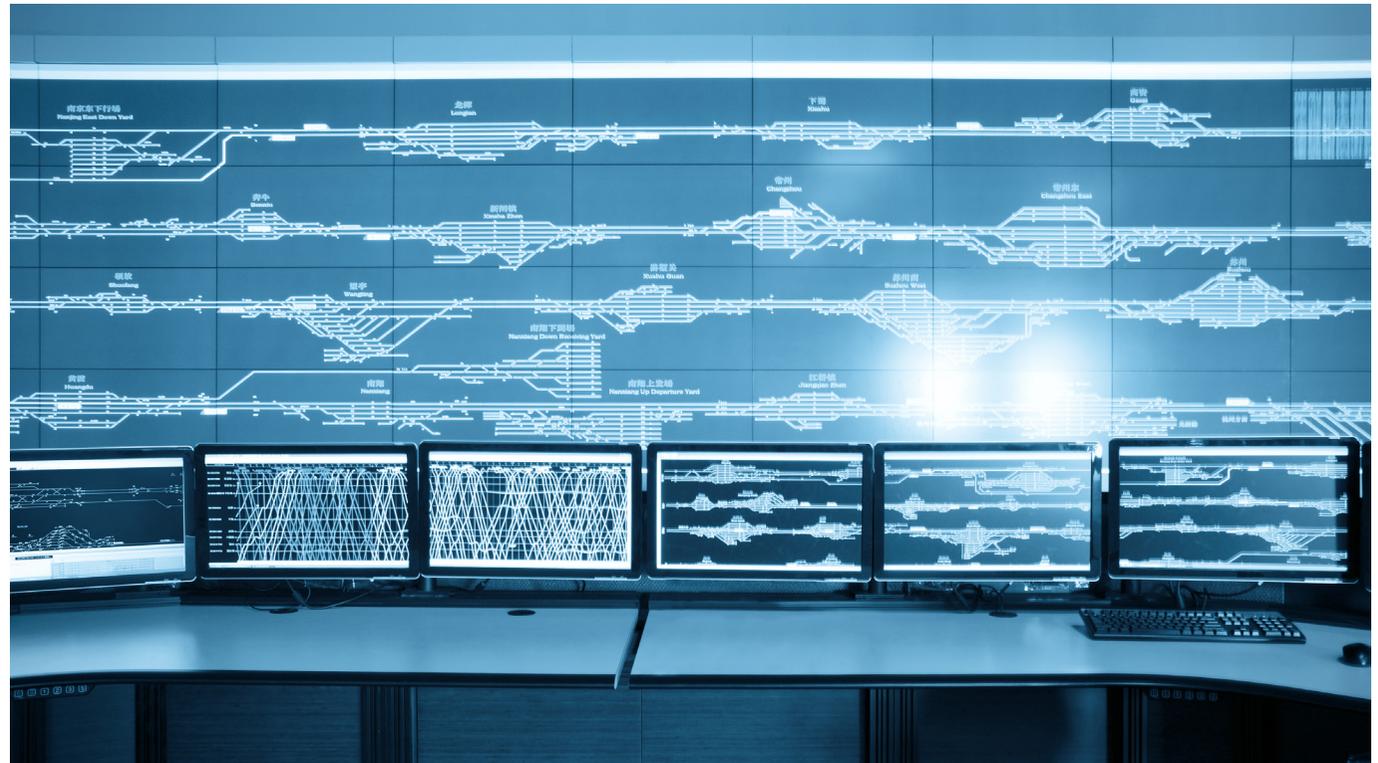
Appendix and acknowledgements

Survey demographics

About the survey

The online citizens survey was fielded by Ipsos in April 2022 to 3,840 citizens across seven markets including Australia, Singapore, Indonesia, Vietnam, India, Japan, and South Korea – equivalent to approximately 550 responses per country. Survey data is nationally representative in terms of sex, age, and locality. The survey asked citizens about their current use of digital government, and expectations for the future of digital government services.

Gender

Female	51%
Male	49%

Country of residence

Australia	14.2%
India	14.3%
Indonesia	14.3%
Singapore	14.3%
South Korea	14.3%
Vietnam	14.2%
Japan	14.2%

Age

18-24	11%
25-34	21%
35-44	21%
45-54	18%
55-64	13%
65 and older	15%

Education level

Lower secondary education	3%
Upper secondary education	20%
Post-secondary non tertiary education	14%
Bachelor or equivalent	49%
Master or equivalent	11%
Doctoral or equivalent	2%

Employment status

Employed full-time	49%
Employed part-time	10%
Employed casually	2%
Self-employed	12%
Student	4%
Unemployed/not in labour force	22%

Authors and acknowledgements

John O'Mahony
Partner
joomahony@deloitte.com.au

Stephen Smith
Partner
stephensmith1@deloitte.com.au

Nick Smith
Partner
ngsmith@deloitte.com.au

Simon Cooper
Partner
simcooper@deloitte.com.au

Sharon Foo
Associate Director
sfoo@deloitte.com.au

Rhiannon Yetsenga
Manager
ryetsenga@deloitte.com.au

Isabella Ryan
Consultant
irayn@deloitte.com.au

Lorena Xie
Analyst
lorxie@deloitte.com.au

Katie Mcgregor
Analyst
kmcgregor@deloitte.com.au

Market contributors

Swati Agarwal
India
swatiagarwal@deloitte.com

Erlangga Soeria Atmadja
Indonesia
eatmadja@deloitte.com

Tomohiro Morimura
Japan
tomorimura@tohmatsu.co.jp

Chew Chiat Lee
Singapore
chewlee@deloitte.com

Jae Jun Lee
South Korea
jaejlee@deloitte.com

Thanh Do Danh
Vietnam
thanhdanhdo@deloitte.com

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