Digital transformation in South-East Asia: Reaping the fruits in government and society

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Key research findings:

- The pace of digital transformation has accelerated in almost all government agencies in South-East Asia

- Covid-19 has resulted in significant increases in technology investment across public-sector agencies of all kinds

- Government agencies in South-East Asia are likelier to take a piecemeal approach to digital transformation, though larger organisations with bigger budgets tend to take a more holistic approach

- Budget constraints and legacy systems are the biggest barriers to digital transformation for government, but security and privacy risks are growing in importance

- Across South-East Asia, the pandemic has put the focus squarely on skill-building and various aspects of sustainability such as public health and safety, diversity and inclusion, and energy security

The last 20 years have seen a gradual digital shift among public-sector organisations as citizens and businesses come to expect digital services from their government. Covid-19 served as a catalyst for increased digitalisation in government, creating new incentives and opportunities. For the first time, public-sector organisations had to truly contend with the challenges of delivering their services primarily over the internet. Large-scale experiments, such as remote work and virtual offices, and the digitalisation of service delivery, have illustrated there is a major role for digital technologies to play in how government is run. Implementing such processes is easier said than done, however.

According to a survey of senior-level employees from 150 government organisations across South-East Asia, conducted by Economist Impact and commissioned by Microsoft, 71.3% say the pandemic has accelerated the pace of their digital transformation in their field. This wide acknowledgement has also resulted in a corresponding increase in investments in digital technologies, with nine in ten (90.7%) of respondents saying their organisations have increased investment in digital technology since the onset of covid-19.

"**Digital transformation can pave the way for equity in the form of inclusive access to deliver beneficial digital government services that can be accessed anytime, anywhere and reduce cost of transacting with the government as a result of effective and efficient service delivery,**"

Angelica Sarmiento,
chief information officer,
Philippines' Department
of Finance

A piecemeal approach

While the digitalisation imperative is clear, four in ten (39.3%) government bodies in South-East Asia are still applying digital transformation when needed to one-off processes or verticals.[1] In comparison, about a third (32.0%) say digital transformation is applied broadly across the organisation, a sentiment that was highest among Indonesian respondents (43.4%).
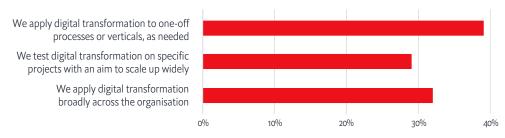
Wei Chuan Beng, council member of the National Digital Economy and Fourth Industrial Revolution (IR 4.0), which is chaired by the Prime Minister of Malaysia, shares the same observation.

"There are some good reasons behind it. While we talk about digital transformation, one factor that remains very inconsistent is the level of the digital leadership. When it comes to digital leadership, it means all the various ministries, agencies, statutory bodies, will have to be aligned with the leadership at the national level. If all the country level leadership is dedicated and committed, it will cascade down," he adds. He takes the example of Indonesia, which he says has a "very coherent" digitalisation strategy for this reason.

Bearing in mind the relationship between budget and strategy, it's not surprising that those working at the national or federal-level organisations (45.5%) are likelier than those working at local (14.8%) and municipal (31.6%) ones to take an organisation-wide approach to digital transformation as they have access to larger budgets. Interestingly, a significant number of local respondents (40.7%) say digitalisation projects are used as testing grounds prior to scaling, suggesting that local leaders are looking for strategic opportunities to create the most value.

However, cross-functional analysis reveals there is general agreement among those working in public infrastructure (50%) and finance (48.8%) that digital transformation is only applied as and when needed to one-off processes and verticals. In comparison, only 27.8% from the infrastructure function and 16.3% from the financial services function take a broad-based approach to digitalisation.
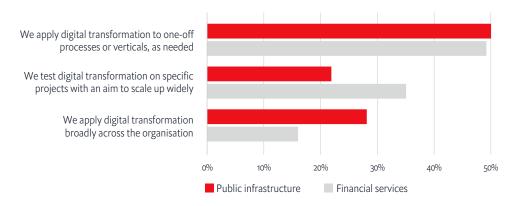
Exhibit 1: Organisation-wide digital transformation still not popular in South-East Asia
Which of the following best describes your organisation's digital transformation strategy? Select one.


Source: Economist Impact

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1   Respondents involved in the survey worked in various public utility departments including defence and international relations; health, housing and public welfare; infrastructure (public roads, utilities, etc.); public schools and education; public safety and protective services (police, fire, corrections, etc.); environmental services; financial services; judicial and legal; public transportation; etc.

Exhibit 2: Finance focuses more specific projects

Which of the following best describes your organisation's digital transformation strategy? Select one.

We apply digital transformation to one-off processes or verticals, as needed

We test digital transformation on specific projects with an aim to scale up widely

We apply digital transformation broadly across the organisation

0% 10% 20% 30% 40% 50%

■ Public infrastructure   ▢ Financial services

Source: Economist Impact

The engines driving digitalised government

Social distancing and lockdown policies have required governments in South-East Asia to reimagine how they can remotely deliver vital support and services. "Digitalisation helps governments meet citizen expectations and become more resilient and efficient, especially in challenging times such as during covid-19," says Yusof bin Ismail, director general of the Malaysia Administrative Modernisation and Planning Unit (MAMPU), the leading agency in accelerating Malaysia's public-sector digitalisation programme. "Digitalisation also unlocks the benefits of digital technology to transform the way a government operates, thinks and interacts to increase the well-being of the people, business viability and economic resilience."

According to Angelica Sarmiento, chief information officer at the Philippines' Department of Finance, for the government to capture the wider benefits that digital transformation can bring to people and society, it is necessary to translate this in the form of public policies and its subsequent

implementation. "Public policies that will require government to rethink and remodel its organisational structure, work processes, mindset and culture, not just the way it looks at and uses new technologies," she says.

"Following this, digital transformation can pave the way for equity in the form of inclusive access to deliver beneficial digital government services that can be accessed anytime, anywhere and reduce cost of transacting with the government as a result of effective and efficient service delivery," Ms Sarmiento adds.

For most government bodies in South-East Asia, the digital transformations undertaken over the past 12 months have been motivated by the need to improve operational efficiency (45.3%). This is closely followed by the desire to increase organisational agility in the post-pandemic era (41.3%) and to keep up with technological innovation in society (39.3%).

However, those motivations are beginning to change. With two years' worth of lessons from the pandemic, most respondents are beginning to shift towards focusing on keeping up with

technological innovation in society (45.3%) and improving operational efficiency (43.3%). This change in hierarchy might suggest that more organisations are already looking to the future—beyond the immediacy of the pandemic to what is possible in the future.

For respondents working in infrastructure (47.2%) as well as public finance (44.2%), the chief motivator of digitalisation efforts is keeping up with technological innovation in society. However, there are differences between the two—those working in finance place far greater emphasis on improving user experience, operational efficiency and boosting employee productivity, reflecting the latter's role as a risk and cost manager. In the Philippines, for example, Ms Sarmiento says "the move towards digitalisation will ease tax administration and benefit not only the government, but more importantly, the taxpayers."

On the other hand, for those working in critical infrastructure, achieving sustainability targets is a more important motivator.

Future-proofing government

Covid-19 has upended most aspects of normal life, but for the public-sector it has dealt a major blow. From the outset, it was clear that the pandemic was going to accelerate the pace of public-sector digital transformation, as noted by 71.3% of respondents across all markets. However, with the benefit of hindsight and time, it's clear that covid-19 is set to have a lasting effect on public-sector organisations. According to Mr Yusof, "digital transformation is about changing the organisation in terms of organisational operations and work culture, which includes human, process and technology aspects."

The change has been especially marked in Thailand, where 83.3% of respondents say the pandemic altered their field's pace of digitalisation. Similarly, strong sentiments were expressed in Indonesia and Singapore (70%). The pandemic has also pushed organisations with smaller budgets to finally make the digital leap, as the biggest gains have been made by organisations with annual budgets of less than $500m (76%).
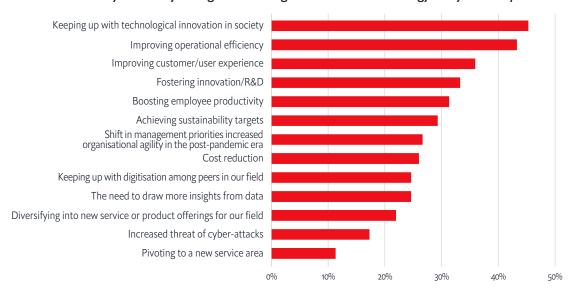
With this accelerated pace of digital transformation, there has been a related and observable increase in digital technology spend. More than 90% of respondents—irrespective of country, organisation size or type—say their organisations have increased their digitalisation investments, a trend visible across the board. "The momentum in digitalisation investments accelerated due to the pandemic, and this will now continue. There is no turning back," reiterates Mr Wei.

Mr Yusof is of the same opinion and says that even "for the Malaysian government, this trend is seen to continue."

Where is most of that digital spend going? By and large, most government agencies are planning to increase the use of technology to develop new products and services (27.3%), boost their capabilities to enforce labour and human rights laws, and reinforce security and privacy protections (26.7%).
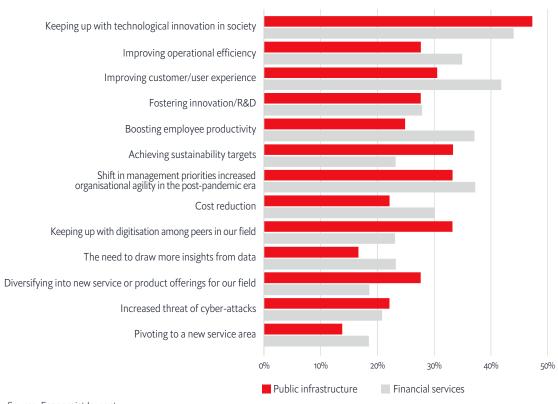
Post-pandemic, respondents working in public-sector infrastructure are focusing on increasing technology for skills development (27.8%), perhaps reflecting organisations' long-term goals for more digital government. Finance respondents, on the other hand, are looking to increase the use of technology to better comply with labour and human rights laws (32.6%), suggesting their view that these requirements will only grow in complexity over time.

Exhibit 3a and 3b: Keeping up with innovation in society is a key motivator of digital transformation
What factors chiefly motivate your organisation's digital transformation strategy today? Select up to four.

Keeping up with technological innovation in society	
Improving operational efficiency	
Improving customer/user experience	
Fostering innovation/R&D	
Boosting employee productivity	
Achieving sustainability targets	
Shift in management priorities increased organisational agility in the post-pandemic era	
Cost reduction	
Keeping up with digitisation among peers in our field	
The need to draw more insights from data	
Diversifying into new service or product offerings for our field	
Increased threat of cyber-attacks	
Pivoting to a new service area	

Source: Economist Impact

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■ Public infrastructure   ▨ Financial services

Source: Economist Impact

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Short- and long-term barriers to digitalisation

It should come as no surprise that most government organisations face major challenges in integrating new technology with legacy systems (28.7%). Most of the older systems being used by the public-sector today struggle with modern digital interactions and fail to serve the experiences most users expect.

Constrained budgets are the second biggest barrier (26.7%) to public-sector digital transformation overall, but from a functional perspective, budgetary concerns emerged as the top barrier across both infrastructure (38.9%) and financial services (27.9%) departments. "While legacy systems are a problem and budget will always be a constraint, I think more than that the key issue is digital leadership," says Mr Wei.
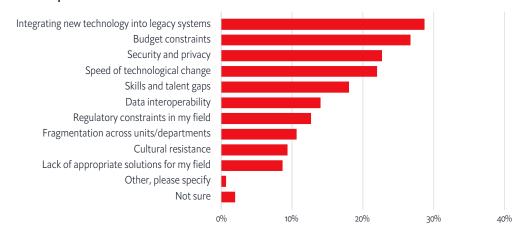
At a regional level, Malaysian and Filipino respondents (40%) selected budget constraints as the biggest challenge, in comparison with neighbours Indonesia (40%) and Singapore (46.7%), where legacy systems are the main issue.

However, most respondents think these barriers will shift in importance over the next three years. Integrating new technology into legacy systems (19.3%), for example, will no longer be as significant a barrier as it is now, suggesting that the surveyed government bodies are embracing digitalisation and already consider it a core aspect of their development in the short-term.
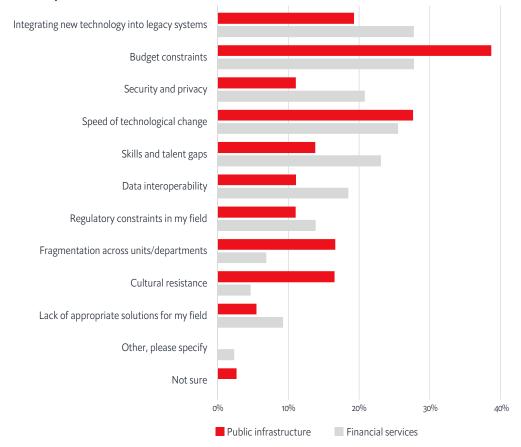
Instead, security and privacy (28.7%) emerge as the biggest barrier to digital transformation, likely in response to the growing number of hackers and bad actors lured by the opportunities of an increasingly-digitalised public-sector. Budget constraints (23.4%) are expected to continue posing a significant problem for organisations at all levels of government, but the perspective changes depending on organisational function. According to Mr Wei, security—cybersecurity in particular—is a big threat going forward. Governments in general, more so in developing countries, lack the ability to ensure that data is totally secure. This is because most of developing countries are recipients of technology, and not the source of the innovation or the expertise, he says.

For example, those working in infrastructure functions express particular concern about the speed of technological change (33.3%) and integrating new technology into legacy systems (27.8%) and list them as the top two barriers. Considering that respondents from infrastructure functions are responsible for their organisations' day-to-day operations, it stands to reason that their top barriers are focused on their digital tools' availability and ease-of-use. In contrast, finance respondents weighed security and privacy, and budget constraints (27.9% each) as equally important barriers to digitalisation.

Exhibits 4a and 4b: Hurdles in implementing digital transformation strategy today

What are the top barriers to implementing your organisation's digital transformation strategy today? Select up to two.

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Source: Economist Impact
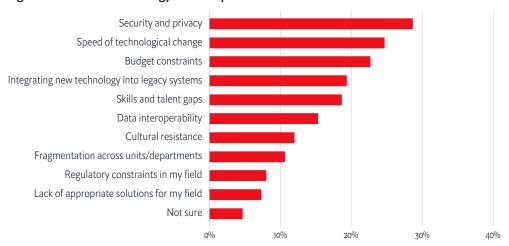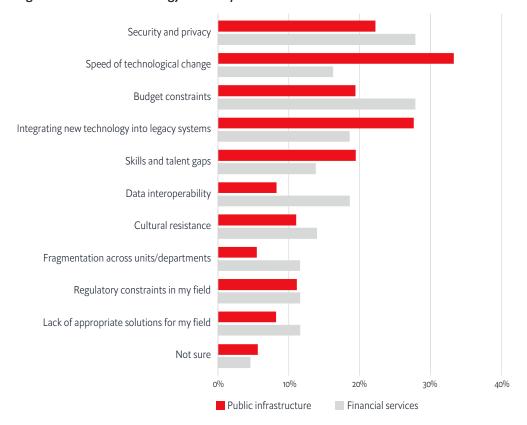
Exhibits 5a and 5b: Security is top of mind for government organisations

What do you expect will be the top barriers in three years' time to implementing your organisation's digital transformation strategy? Select up to two.

What do you expect will be the top barriers in three years' time to implementing your organisation's digital transformation strategy? Select up to two.

■ Public infrastructure　　■ Financial services

Source: Economist Impact

"We use data to predict the amount of power generation from renewable energy, and also predict operational conditions and maintenance. In the future, we can use data from customers, if they allow it, to provide better services."

Nitus Voraphonpiput, assistant governor – corporate strategy, Electricity Generating Authority of Thailand

Focus on sustainability

There is a marked increase in governments thinking about the preparedness of their systems to handle a major crisis in the future. Nine of ten (90.7%) respondents say that in the event of another pandemic or a similar crisis, their organisations are now well-prepared to support remote delivery of online services or virtual courts, as compared to 56% prior to covid-19. Meanwhile, governments have also improved their preparedness in terms of remote work (87.3% versus 76.7%) and modelling the impact of the pandemic on their assets and workforce (68% versus 54.7%).

A majority (77.8%) of infrastructure bodies' technology infrastructure was extremely or very prepared to monitor employee safety during the pandemic, which could point to these organisations' roles in building public works. Only marginally higher, 79.1% from the financial services function, stated their technology infrastructure was extremely or very prepared to enable remote service delivery.

However, organisational preparedness is only one aspect of a greater focus on sustainability that has emerged among public-sector organisations, especially in light of the pandemic's disruptions, climate change issues, a renewed focus on public health and well-being, and growing awareness of human rights imperatives. Sustainability encompasses many aspects, including the role of organisations in promoting environmental and social responsibilities.

According to the survey, roughly a third (30.7%) of organisations have been chiefly motivated to digitalise over the last 12 months to achieve sustainability targets, and the number remains similar today (29.3%), illustrating that sustainability remains top of mind.

"Malaysia, I think has done reasonably well. It's not that far ahead, but it's certainly not behind. Even rural communities have access to connectivity. So, the need to commute to avail government services is also less. In this regard, it is helping in achieving the sustainability targets," says Mr Wei.

Sustainability emerged as a strong motivator for both infrastructure (33.3%) and financial services (23.3%) respondents to digitalise today. "Digitalisation improves sustainability through emerging technologies such as data analytics capability, blockchain and the Internet of Things," says Mr Yusof.

In fact, in future, data will become even more important for decision making across all sectors. Dr Nitus Voraphonpiput, assistant governor – corporate strategy at Electricity Generating Authority of Thailand (EGAT), says that "on the government side, we have the National Energy Information Centre (NEIC), which is located in the Energy Policy and Planning Office. The NEIC has the data from all the power generation in Thailand, which is sent to the government, that can use the data to make decisions."
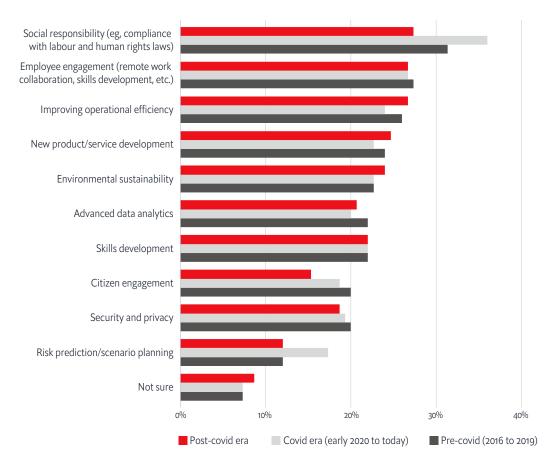
Thailand also has the Renewable Energy Forecast Centre, Dr Voraphonpiput says, "which makes use of weather and other data to forecast the electricity produced by renewable energy. We use data to predict the amount of power generation from renewable energy, and also predict operational conditions and maintenance. In the future, we can use data from customers, if they allow it, to provide better services."

Though the pandemic has undoubtedly impacted how organisations think about technology's relationship to sustainability, certain things remain unchanged. From the pre-covid era (2016 to late 2019) to the post-

covid era, technology has been seen as a key tool for social responsibility (complying with labour and human rights laws) and environmental sustainability.

Post-pandemic, these factors will remain top, with 26.7% of organisations increasing technology use for social responsibility; and another 24.7% for environmental sustainability.

Exhibit 6: Favourable social and environmental outcomes will remain important areas of technology use in a post-covid environment
Which of the following areas has your organisation increased its use of technology or is looking to? Select up to three.

Post-covid era　　Covid era (early 2020 to today)　　Pre-covid (2016 to 2019)

Source: Economist Impact

Remote work shifts mindsets
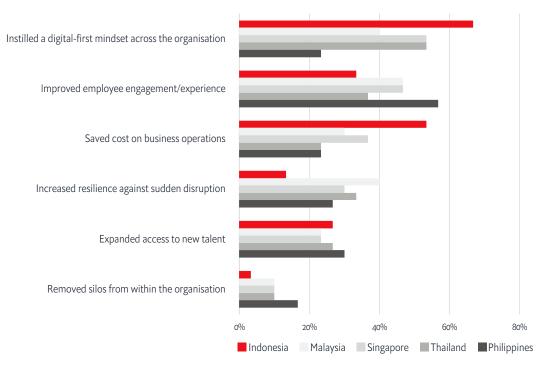
With the onset of covid-19, governments across South-East Asia were able to experiment with work-from-home models, leading to a significant mindset shift among respondents. "Covid-19 has indeed changed priorities in organisations, including in the Malaysian public sector. The pandemic has had profound effects on our public service delivery, which included increased demands for services with rising citizen expectations of delivery of virtual services, workforce planning and the need to test the resilience of working virtually," says Mr Yusof. He believes that these effects "illuminate opportunities for how to rethink our future strategies, policies, and services, such as continuing to move towards digital."

Across government organisations in the region, almost half say the experience of working from home or remotely has instilled a digital-first mindset (47.3%), especially among those working at organisations with budgets above $1 billion (55%). In comparison, government agencies with smaller budgets (48.1%) were likelier to say that remote work has improved the digital experiences of their employees.

From a function perspective, half of infrastructure respondents (50%) noted the potential of distributed/remote work to highlight the need to improve equity in public health outcomes. This opinion might reflect the experiences of many infrastructure respondents unable to work remotely throughout the pandemic—thus placing them at higher risk of infection—in order to ensure the continuity of government services.

Figure 7: Covid-19 has resulted in a digital-first mindset
What do you think are the most prominent work-related benefits for your field from the rise of distributed/remote work due to the covid-19 pandemic? Select up to two.


Source: Economist Impact
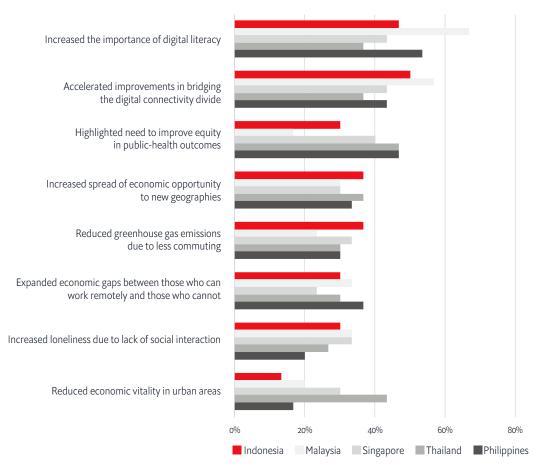
However, the great remote work experiment has not been without its share of challenges. As collaboration and work has increasingly shifted online, the potential for miscommunications between colleagues (32%) has also risen in prominence.

Organisations also report that since remote work silos workers in their individual spaces, they see fewer proactive or unscheduled interactions (31.3%), and a stronger sense of worker isolation and loneliness (30.7%).

Interestingly, those working in financial services (30.2%) are far likelier to experience isolation and loneliness than their infrastructure counterparts (11.1%), reflecting distinctions in the nature of each role's work. Where financial services employees might find themselves working from home in siloed spaces, infrastructure employees may have had more opportunity to engage with one another outside. However, employees from both infrastructure (33.3) and financial services (20.9%) functions faced more or less equal degrees of work-life balance erosion.

Figure 8: Spotlight on digital literacy
What do you think are the most prominent societal impacts from the rise of distributed/remote work due to the covid-19 pandemic? Select up to three.

Source: Economist Impact

"Digitalisation helps governments meet citizen expectations and become more resilient and efficient, especially in challenging times such as during covid-19"

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The digital skills imperative
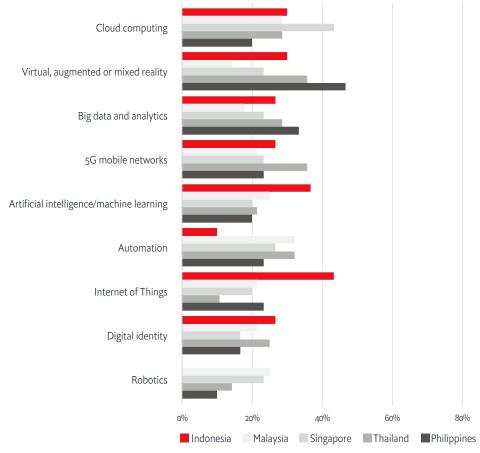
As entities that are primarily responsible for catering to citizens, the digital transformation of government organisations will have an impact across a broad range of areas in society, especially in the area of skills building, according to 46% of respondents. Certain countries display particular tendencies in this regard, such as Thailand, where 60% feel very strongly about the ability of digital transformation to improve public health and welfare (60%). Meanwhile, those from the Philippines cite public safety (53.3%) as the most important area.

Other areas that stand to benefit the most from digital transformation in government include public health and welfare (41.3%), public safety (36%), and diversity and inclusion initiatives (28.7%).

Among surveyed respondents, there are also growing sentiments around the importance of bolstering digital skills among their workforces. Around 28.0% of organisations were chiefly motivated to digitalise over the last 12 months to boost employee productivity, and today, that metric has reached 31.3%. Respondents from infrastructure (25.0%) and financial services

Figure 9: Perceptions around the benefits of using different technologies differ across South-East Asia

Which of the following types of technology factor most prominently in positively impacting broad societal areas? Select up to three.

Source: Economist Impact

(34.9%) functions were especially motivated to digitalise in order to boost employee productivity over the last 12 months.

"It is undeniable that the lack of skills and talent is one of the two main barriers to digitalisation in organisations," says Mr Yusof. "Programmes need to focus on developing employee competencies in critical thinking and decision-making, leadership and management of others, and advanced data analysis. We believe that these types of skills will be more in demand in the years to come," he adds.

Even pre-covid, there were similar moves to leverage technology to engage employees (27.3%) and develop skills (22%). Those numbers have risen and fallen with the severity of the pandemic, but that doesn't mean that digital upskilling is any less important. In fact, a portion of respondents say that skills and talent gaps would hinder their organisations' digital transformations, both now (18%) and in future (18.7%). Compared to the overall results, skills and talent gaps were a bigger concern among respondents from financial service functions (23.3%), but less significant among infrastructure employees (13.9%).

Public organisations are not turning a blind eye to these needs, as evidenced by strong levels of preparedness: three-fourths (75.3%) revealed that their tech infrastructure was either extremely or very prepared to support employment upskilling.

When asked which technology will factor most prominently in the impact of digitalisation on society, most respondents picked cloud computing (30.1%). However, respondents also see virtual, augmented or mixed reality technologies (30.1%) as growing in importance. Malaysians say automation (32%) will be the most important piece of technology for society, while Indonesians pick the internet of things (43.3%).

Concluding remarks

Post-covid, there are major aspirations to reimagine what society could look like. But governments cannot alone bear the responsibility for making this happen. In fact, a vast majority (91.3%) of public-sector respondents say the pandemic has revealed the major role companies have to play in society.

Most importantly, from a digitalisation perspective, most respondents say they are no longer content to perceive digitalisation as a tool for just business, but that it should be used to generate widespread social change too. In particular, 90% say digitalisation should benefit society's disenfranchised, while the largest share (92.7%) say digitalisation shouldn't focus on making incremental improvements but should be marshalled to enact broader, systemic change. The pandemic has provided an opportunity—and a realisation.

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