The pandemic has rapidly advanced technology strategies and agile ways of working.

A global survey of 600 technology decision-makers conducted by MIT Technology Review Insights, in association with VMware, finds that most organizations in Asia-Pacific and the world over had largely prepared for the online commerce and remote working the pandemic made compulsory. More than three quarters of Asia-Pacific organizations had made digital and IT investments – and their efforts augmented their collective ability to handle new ways of doing business.

Asia was the first world region to see the spread of the novel coronavirus, and as such it was the first to feel the disease’s disastrous impact on its societies, its economies, its ways of life. As businesses were closed, and office workers sent to their homes, Asia-Pacific retailers, banks, manufacturers, and government agencies were also the first to try to effectively manage the crisis, putting IT infrastructures across the region to the test.

Digital acceleration in the time of coronavirus
Six out of 10 Asia-Pacific respondents indicate they had business-continuity plans in place, although less than half consider them effective. By contrast, organizations that had heavily invested in digital transformation – incorporating modern technologies in processes and strategies to achieve business goals – universally found that their plans worked. These “digital leaders,” as we refer to them in this study, have built robust digital foundations to support the technologies they need to better respond to change.

“We call ourselves a technology company,” says Gautam Aggarwal, regional chief technology officer at Mastercard Asia-Pacific. “We do not see our technology adoption as ‘transformation’ so much as it a continuous journey.” He considers this mindset one of the key success factors that allowed Mastercard to operate normally during the pandemic. “We have a strong growth infrastructure – both an external customer-facing network and internal corporate network. We also have a very comprehensive business-continuity plan behind our infrastructure – even if it has never been tested to this level before.”

Digital leaders – before and during the crisis

More than 70% of survey respondents in Asia-Pacific say the pandemic has caused their organizations to step up digital transformation (see Figures 1 and 2). “Priorities have changed for all firms since the crisis – or rather, existing priorities have intensified,” says Sanjay Poonen, chief operating officer at VMware. “The pandemic has just altered the composition of the channels firms leverage, using the digital tools with which they are already familiar.”

Jimmy Ng, group chief information officer and head of technology and operations at Singapore-based DBS Bank, recognized early on the strategic advantage of advancing digital capabilities. “This early start on the journey has really helped us deal with this pandemic.”

Key takeaways

1. The coronavirus pandemic has forced Asia-Pacific organizations to accelerate digital transformation. Responding to a global survey, technology executives in the region report the highest levels of increased investment in mobile and cloud applications in the world.

2. Even after the pandemic restrictions ease, remote work will be routine for millions of employees across Asia-Pacific. With 20% of organizations expecting their workforces to remain at home, businesses are codifying work-from-home policies to keep employees engaged while separated from co-workers.

3. Asia-Pacific organizations are reorganizing amid the pandemic-driven tumult. They are looking to new tools to keep business buoyant, striving to secure data and applications used by dispersed workforces, and relying on agile application development methods to swiftly deliver new products and services to employees and customers – and stay on a growth path.

About this series

This MIT Technology Review Insights report is part of a series examining the degree to which business preparedness, particularly in technology strategy, contributed to corporate resilience during the ongoing coronavirus pandemic in three world regions: Asia-Pacific, Europe, and North America. Based on survey research and in-depth executive interviews, the series also seeks to understand how technology priorities are changing as a result of ongoing business-continuity efforts.
DBS's digital aspirations are codified in a program it calls GANDALF, an acronym combining the initials of the digital business giants it seeks to emulate—Google, Amazon, and Facebook, with the D representing DBS itself. The name derives from the powerful wizard in J.R.R. Tolkien's novels *The Hobbit* and *The Lord of the Rings*. “The intention was twofold,” says Ng. “First, to learn from the best of the technology companies and bring the best of their practices into the bank. Second, we wanted to ensure that we actually operate like a technology company rather than a bank.”

The initiative enabled specific pandemic-response capabilities that bolstered DBS’s business resilience: When the bank saw the first covid-19 case among its workforce, Ng’s team sprang to action. “We used AI tools to ingest data from staff calendars, staff access data, and even staff use of Wi-Fi networks to do contact tracing up to three degrees of separation very quickly, building up models in a couple of days. This also informed how we developed protocols within the bank to stop the spread among employees,” he says. The emergency protocols facilitated a multitude of efforts, sanitization guidelines, and the reorganization of team members across DBS facilities to enforce physical-distancing measures.

As the DBS and Mastercard testimonies confirm, digital tools have allowed organizations to nimbly respond to the new challenges of swiftly changing times—and, in general, be better prepared for them. Asia-Pacific digital leaders, who report substantial digital transformation progress, indicate that their organizations have more reliable technology planning as a result: 55% of Asia-Pacific digital-leader respondents, for instance, report that their 2020 IT budgets will be the same. At the same time, more than a third of Asia-Pacific respondents indicate that they are increasing their IT budgets, by an average of more than 10% over 2019 spending. This is reflective of efforts in the region to ramp up digital transformation: nearly four in 10 respondents are increasing the adoption of mobile applications and moving to a “cloud-first” development strategy—more than those from any other region (see Figure 2).

Ng describes how the DBS digital infrastructure has achieved results: “Today we are about 99% virtualized, and by the end of this year, over 90% of our entire legacy stack will have been transformed.” For some time, the bank has pursued a “mobility-first” concept for application development, which Ng points to as a key factor in the swift shift to remote working. Also, the bank’s extensive data lakes and artificial intelligence (AI) and machine-learning libraries allowed it to quickly create and deploy new applications. All of these technologies, Ng says, will see new increased investment over the next 18 months.
Remote work: Good for the soul of the business?
Asia was not only the first region to be affected by the coronavirus, but its governments were collectively the first to impose extensive lockdowns to stop its spread. As of this writing, most of Asia’s two billion workers, including more than 700 million in India, are still under some form of government-imposed restrictions. Chinese internet service company Soft6 recently estimated that demand for remote-working technology and access services in China would more than double this year, to 47.8 billion yuan ($7 billion).

Asia-Pacific’s sudden and massive transition to remote working is starting to have longer-term business culture implications. Fujitsu, among many other large multinational corporations in Japan, is looking to keep more of its workers out of its offices permanently: it is seeking to reduce the amount of non-factory staff commuting to work by 80%, with the aim of halving its office footprint by 2023. The company is shifting its employee subsidies of public transportation to monthly stipends to help people maintain home offices.

The MIT Technology Review Insights survey asked technology executives to indicate what percentage of their total staff were working remotely most of the time, before the pandemic struck and currently. Asia-Pacific respondents on average say 26% of their teams are working remotely full time, a more-than threefold increase on pre-crisis work-from-home levels (see Figure 3).

Asia-Pacific respondents believe remote working will decrease eventually, but only slightly: on average, 21% of staff will stay at home – even after the government restrictions ease. Ng notes that though Singapore is gradually restarting its economy, the bank, which...
currently has about 30% of its workforce in the office, is in no hurry to bring more people back. “During the entire lockdown period in Singapore, we haven’t really suffered significantly,” he says. “In terms of productivity, in terms of customer service levels, we’ve held up very well.”

Ng looks at the future of remote work at DBS through three lenses: staff welfare and productivity, customer satisfaction, and technology innovation. The bank is running various controlled experiments on which tasks can be optimally carried out remotely and from which locations – a “work from anywhere” ethos. But more fundamentally than measuring productivity, he notes, these experiments are testing “the bigger question of what remote work does to the soul of the bank, its culture, innovation, and the mental health of our workers? How will this hold up over a long period of time? How do we enable joyful customer journeys even through these remote modes of engagement?”

To answer these questions, Asia-Pacific respondents are laying out new work-from-home policies to improve employee engagement: 52% indicate that they will formalize remote-work practices (see Figure 4). And one out of three organizations in the region is creating official “on-campus time,” or in-person working days, at the office.

These responses suggest that workplaces will be very different in the post-pandemic era, but the changes will not be uniform, nor will the technologies that enable productivity across organizations. Reliance on a robust portfolio of virtualized, cloud-based technologies and powerful AI tools will allow organizations in Asia-Pacific to adjust operating environments and the ways in which teams and partners collaborate.

“We used AI tools to ingest data from staff calendars, staff access data, and even staff use of Wi-Fi networks to do contact tracing up to three degrees of separation very quickly, building up models in a couple of days.”

Jimmy Ng, Group Chief Information Officer and Head of Group Technology and Operations, DBS Bank
invested in and have been providing to our employees for some time," he says. Mastercard is also looking to adopt these tools into the overall fabric of the organization. “We are encouraging our managers to use Zoom and MS Teams calls to spend time with our employees doing virtual celebrations like a birthday or casual water cooler chats, to bring in a personal touch.”

Another byproduct of workers being remote is a sharpened focus on cybersecurity. Nearly half of all respondents in the region say educating employees on security threats is a top challenge for IT teams, and 31% report that protecting data and apps wherever they reside has become critical during the pandemic. Among digital leaders, 40% see cybersecurity training as a challenge, and just 20% say securing data and apps is an increased priority. That may indicate that maintaining tight IT security has perennially been the most important objective among Asian-Pacific corporations, so there’s not as much catching up to do. At Mastercard, for example, cybersecurity has always been the “topmost priority in the technology organization,” Aggarwal says.

But with many more people at home, it has become even more important. “You might be living with a roommate, and you’re getting on a call where you’re discussing some confidential stuff. We have to make sure that our employees have the right tools and the security awareness to protect themselves and us from prying ears and eyes in such cases,” Aggarwal says. “We have to make sure we are providing that kind of security layer while not making it a barrier for our employees.”

Increasing the use of agile application development is, globally, the highest operational priority. Nearly 60% of Asia-Pacific respondents indicate that they’ll focus on continuous-delivery methods—in which software is swiftly built, tested, and released—over the next 18 months. In the post-covid world, with economies still rebuilding, few businesses will want to expand

**Figure 4: Workplace priorities as a result of the pandemic** Asia-Pacific organizations are revitalizing remote-work practices and strengthening security for staff laptops and devices.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Priority Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>52%</td>
<td>Formalizing work-from-home policies</td>
</tr>
<tr>
<td>47%</td>
<td>Securing new endpoints and expanding threat management</td>
</tr>
<tr>
<td>43%</td>
<td>Optimizing employee efficiency</td>
</tr>
<tr>
<td>42%</td>
<td>Prioritizing software as a service over traditional software development</td>
</tr>
<tr>
<td>34%</td>
<td>Assigning defined &quot;on-campus&quot; working days</td>
</tr>
<tr>
<td>33%</td>
<td>Extending remote IT services and help desk support</td>
</tr>
<tr>
<td>31%</td>
<td>Increasing online learning and development budgets</td>
</tr>
<tr>
<td>31%</td>
<td>Extending universal digital access to applications and systems</td>
</tr>
</tbody>
</table>

Source: MIT Technology Review Insights survey of 600 technology decision-makers worldwide, conducted in July and August 2020

Nearly half of Asia-Pacific organizations say educating employees on security threats is a top challenge for IT teams.
of Asia-Pacific organizations say they will reduce investment in IT resources over the coming year.

Yet, accelerated digital efforts have given organizations the processes and technologies to keep pace with competitors, even with few new hires. Ng points out that digital investment at DBS allowed the bank to respond to emerging requirements. “We have been able to move very nimbly and reprioritize activities to respond to customer needs in a short period of time.” One such need was for corporate customers, who could not come into branches to submit trade documents. As a result, DBS deployed an accelerated digital trade document application within two weeks. Internally, the bank launched a company-wide remote access program overnight, says Ng. “Our ability to roll out all these applications, both for our customers and employees, has been a major factor in our crisis responsiveness.”
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References

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