



Road to Recovery: Overcoming COVID-19's Impact on the Construction Industry with Digital Technologies

An IDC InfoBrief • January 2021






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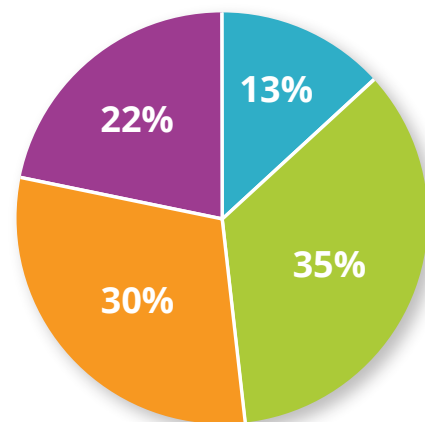


Methodology

IDC's COVID-19 and Road to Recovery in Construction survey was conducted in July to October 2020 to assess 283 construction companies across Asia/Pacific including Japan (APIJ), particularly from Australia and New Zealand (ANZ), India, Singapore, and Japan.

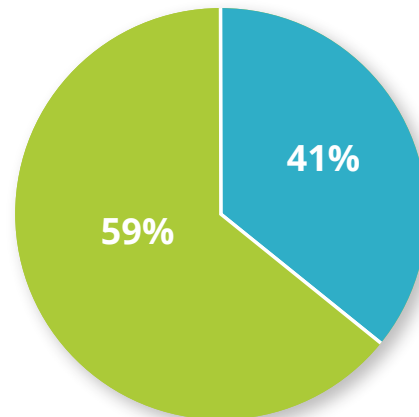
Country	Sample Size
 Australia and  New Zealand	41
 India	150
 Singapore	42
 Japan	50
Total	283

By Company Size
(Number of Employees)



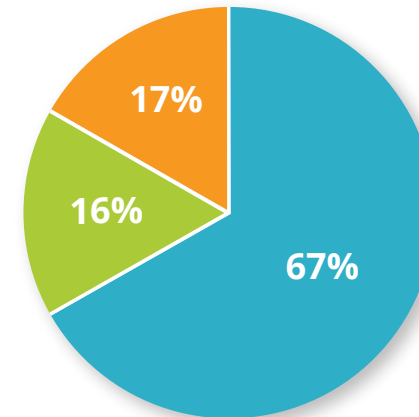
- 100 to 249
- 250 to 499
- 500 to 999
- 1,000 or more

By Job Function



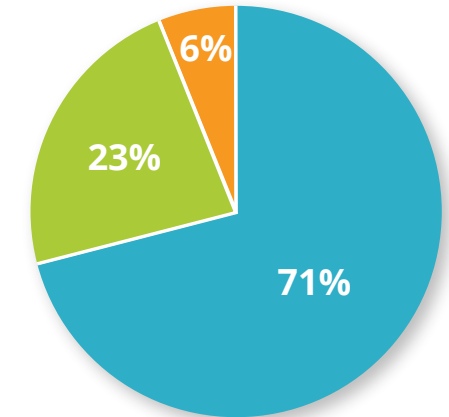
- IT role (including CIO/CTO/CSO)
- Line of Business Role (including President, CEO, CFO, Human Resources, Marketing, Sales, etc.)

By Job Title



- Director
- Vice President
- C-Level

By Role



- I am the primary decision maker.
- I am part of a team that makes the decisions.
- I influence the decisions and I am highly knowledgeable about the topic.

Note: Numbers in this InfoBrief may not be exact due to rounding.

COVID-19's impact on APIJ construction industry

The COVID-19 pandemic is an unprecedented health crisis that has impacted us all. It has caused a global slowdown, striking down the world's economies. Industries across APIJ are in varying stages of response and recovery, with some faring better than others. The construction industry is amongst the most severely affected by this crisis.

- As uncertainty persists, construction activities remain limited due to ongoing health and safety concerns and social distancing measures, causing labour shortages and project delays.
- Despite the reduction of activity, high costs in construction remain unchanged. Construction companies are seeking ways to remain operational to mitigate losses, whilst observing health and safety compliance.
- Construction companies need to ensure a safe restart — with protected worksites and a secure workforce. Since it is difficult to predict when this COVID-19 crisis will be resolved, companies must take the necessary steps to build resilience for the future through the use of digital technologies. The construction industry, however, has yet to fully adopt these changes.

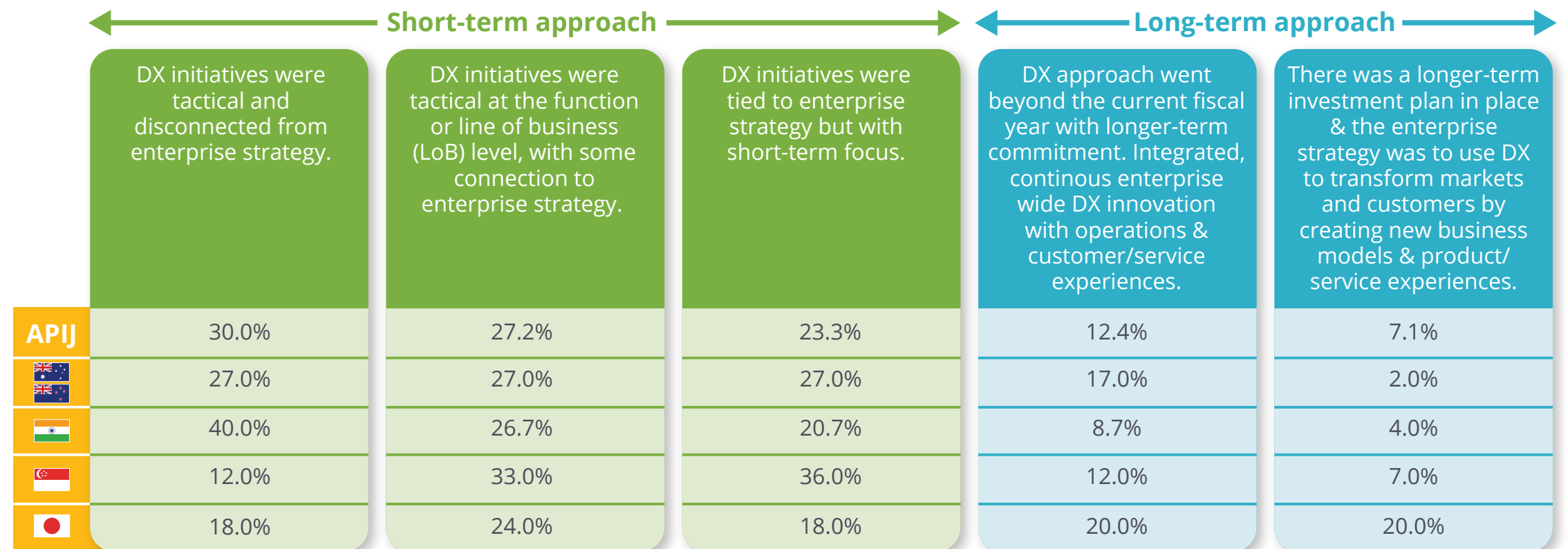
In the face of business disruption, digital technologies have paved a road to recovery for construction companies. Whilst these offer solutions that the industry can leverage as it adapts to the next normal, digital transformation (DX) amongst construction companies remains largely at its earliest stages within this industry. One thing is clear, DX is no longer an option; it is a necessity. Construction companies should transform to become resilient and future-proof their businesses.

This IDC InfoBrief takes a closer look at where APIJ construction companies are in their recovery journey, the steps they must take to overcome the COVID-19 crisis, and the technologies they must invest in to aid their recovery and return to growth.



COVID-19 exacerbated the digital transformation divide in APIJ construction industry

Before the pandemic, **80%** of APIJ construction companies were in the earliest stages of digital transformation (DX), which is vital to address the industry's current challenges. Majority of organisations' DX initiatives were tactical, disconnected, and only had short-term focus. However, COVID-19 has exacerbated the industry's challenges — construction companies which had embraced DX and digital technologies were better prepared for this crisis.



Japan shows the strongest commitment to DX, with **40%** already taking a long-term approach prior to the pandemic.

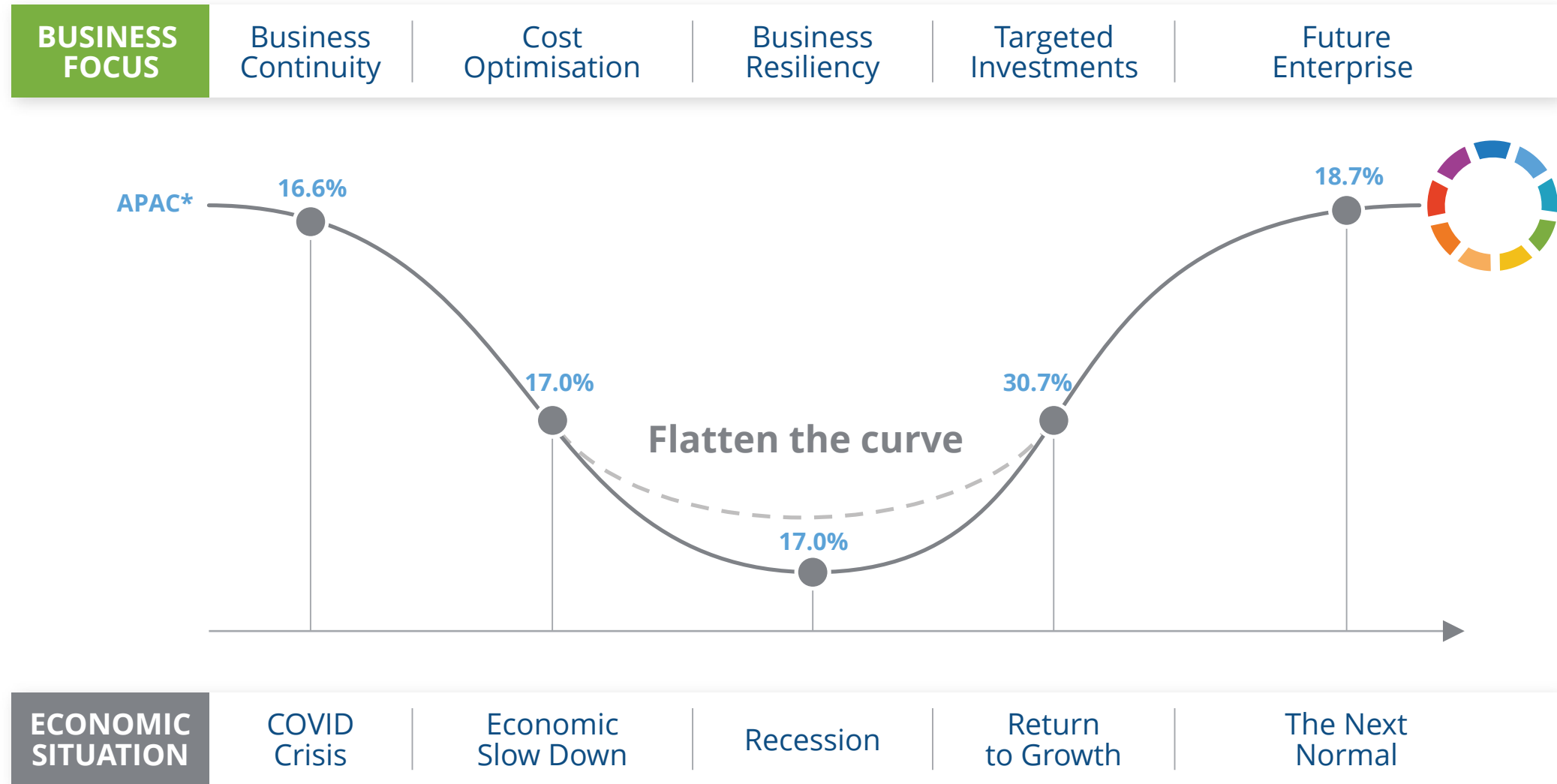
India is behind its APIJ peers, with **40%** only employing a tactical approach to DX before COVID-19.

There is an opportunity to accelerate the adoption of digital technologies and solutions especially for construction companies which are lagging behind. The time has come to fully embrace DX, which will enable them to build resiliency to be ready for future risks and thrive in the next normal.

Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

How APIJ construction companies manage the impact of COVID-19

Construction companies in the region are in different stages of recovery against COVID-19. Respectively, 17% of APIJ are still deep in COVID crisis mode, trying to establish business continuity, focused on cutting down costs in response to a slowdown in revenue, and are experiencing a prolonged decline in revenue. These companies have focused their efforts to build business resiliency as they endure recession.



Leading construction companies return to growth.

31% of APIJ construction companies are slowly starting to see revenue returning and are aggressively investing in new technologies to fast-track their recovery.

19% have already successfully adapted to the next normal and stabilised their businesses. These are the companies that have made pre-pandemic investments in digital technologies, which allowed them to be the most adaptable.





Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

A closer look by country at APIJ construction companies

Leading in the recovery stages are ANZ with nearly 30% prepared for the next normal, followed by Japan at 20%.

Meanwhile, Singapore is still working towards a return to growth, building business resiliency (29%) and making targeted investments (33%).

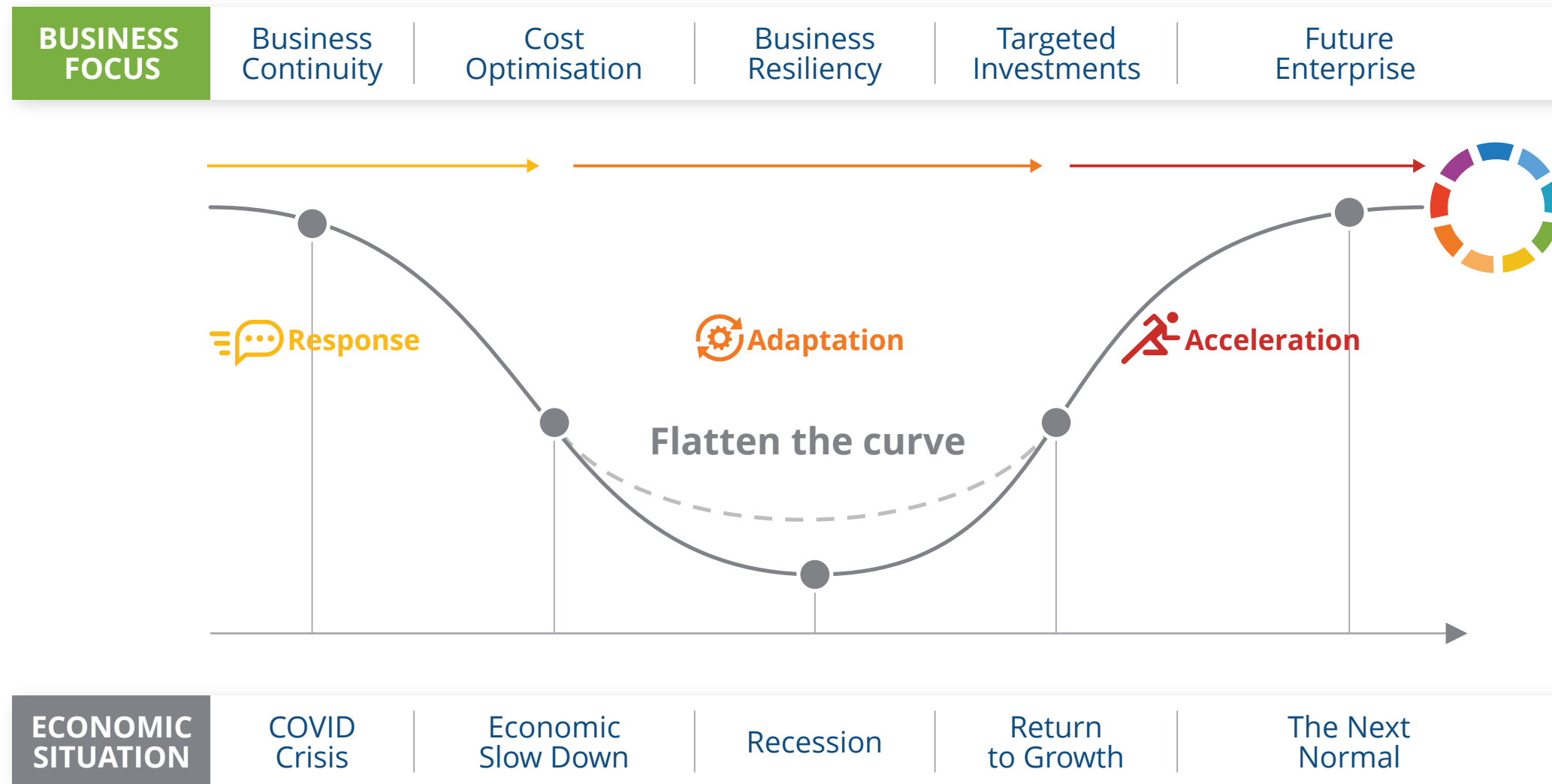
India is also still trying to ensure business continuity (23%) and cutting down on costs related to economic slowdown (21%). However, a notable 32% are already making aggressive technology investments to secure future business viability.

BUSINESS FOCUS	Business Continuity	Cost Optimisation	Business Resiliency	Targeted Investments	Future Enterprise
APIJ	16.6%	17.0%	17.0%	30.7%	18.7%
	7.3%	7.3%	29.3%	26.8%	29.3%
	23.3%	21.3%	6.7%	32.0%	16.7%
	9.5%	14.3%	28.6%	33.3%	14.3%
	10.0%	14.0%	28.0%	28.0%	20.0%
ECONOMIC SITUATION	COVID Crisis	Economic Slow Down	Recession	Return to Growth	The Next Normal

Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Effects of COVID-19 vary across construction companies in APIJ

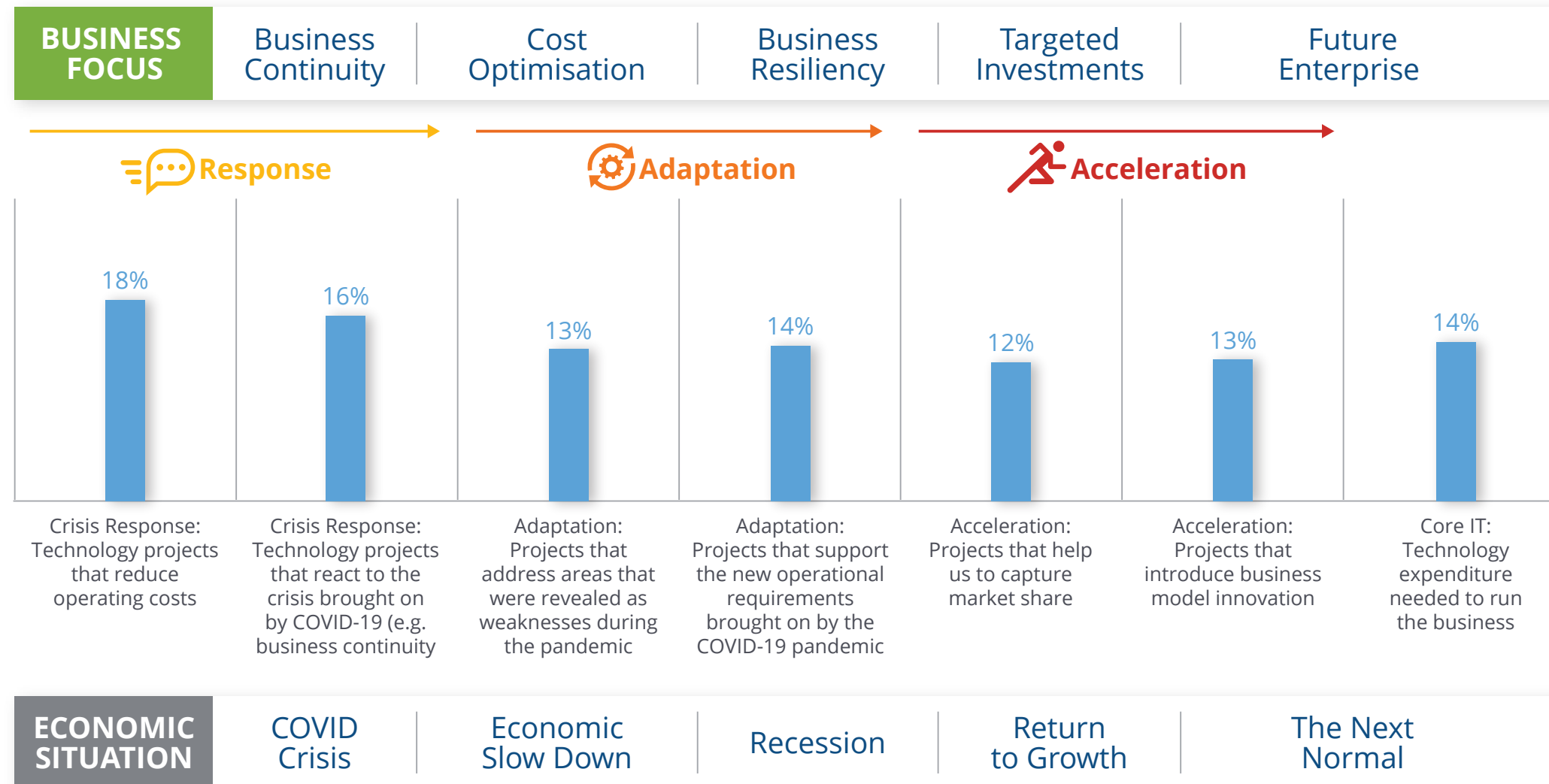
The recovery of these companies can be classified into three phases: **Response, Adaptation, and Acceleration.**



Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

APIJ construction companies from crisis to recovery

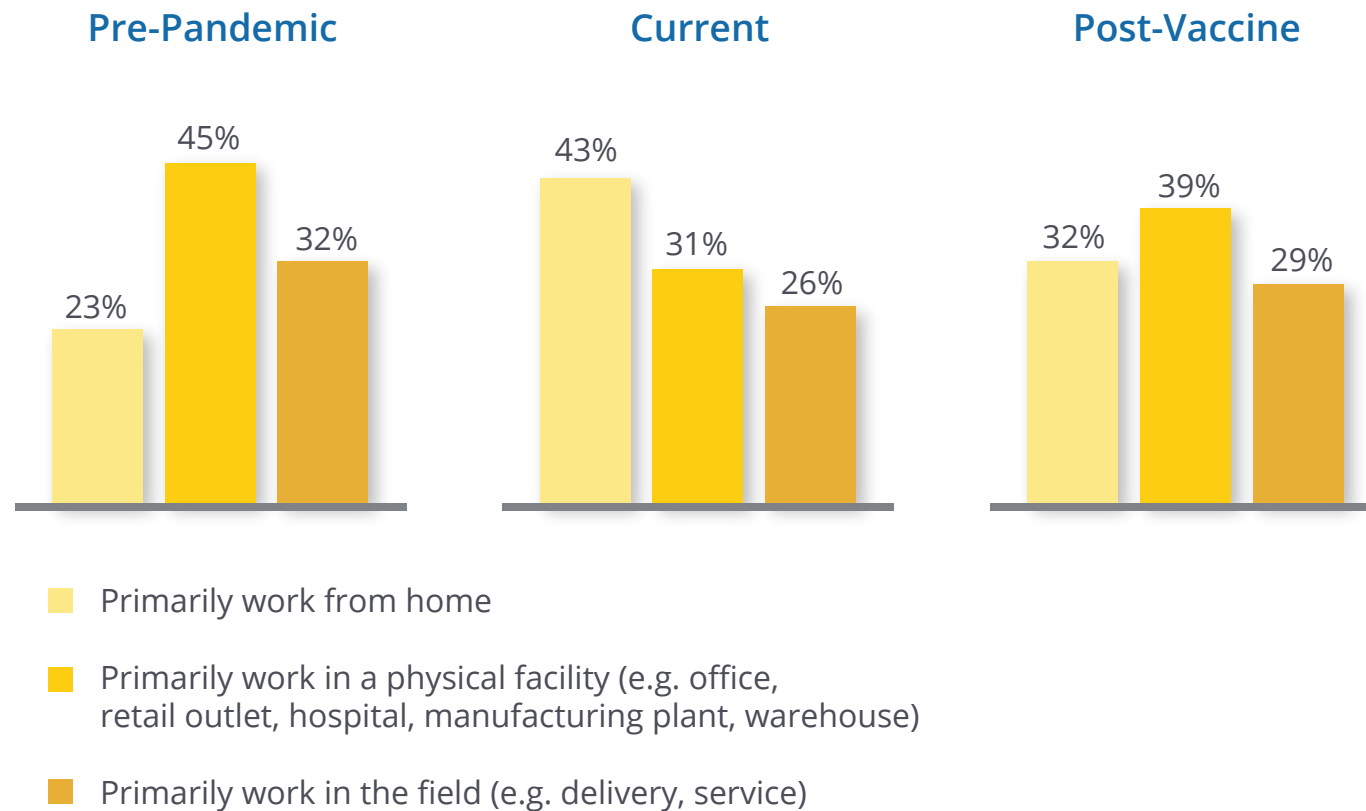
Each phase is characterised by specific technology investments construction companies must make to aid their recovery — from initiating projects to reduce costs and survive, to adapting technologies to address gaps and new requirements within the business brought forth by the pandemic, and to beginning new innovations and capturing market share.



Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Response phase in the road to recovery

Construction companies in the response phase were caught unprepared by COVID-19 and are still managing its business impact. These organisations lack the resiliency needed to support their workforce and are striving to equip workers with the necessary technologies to ensure business continuity. Currently, 43% of employees of construction companies work from home, whilst the rest are still performing functions in a physical environment.



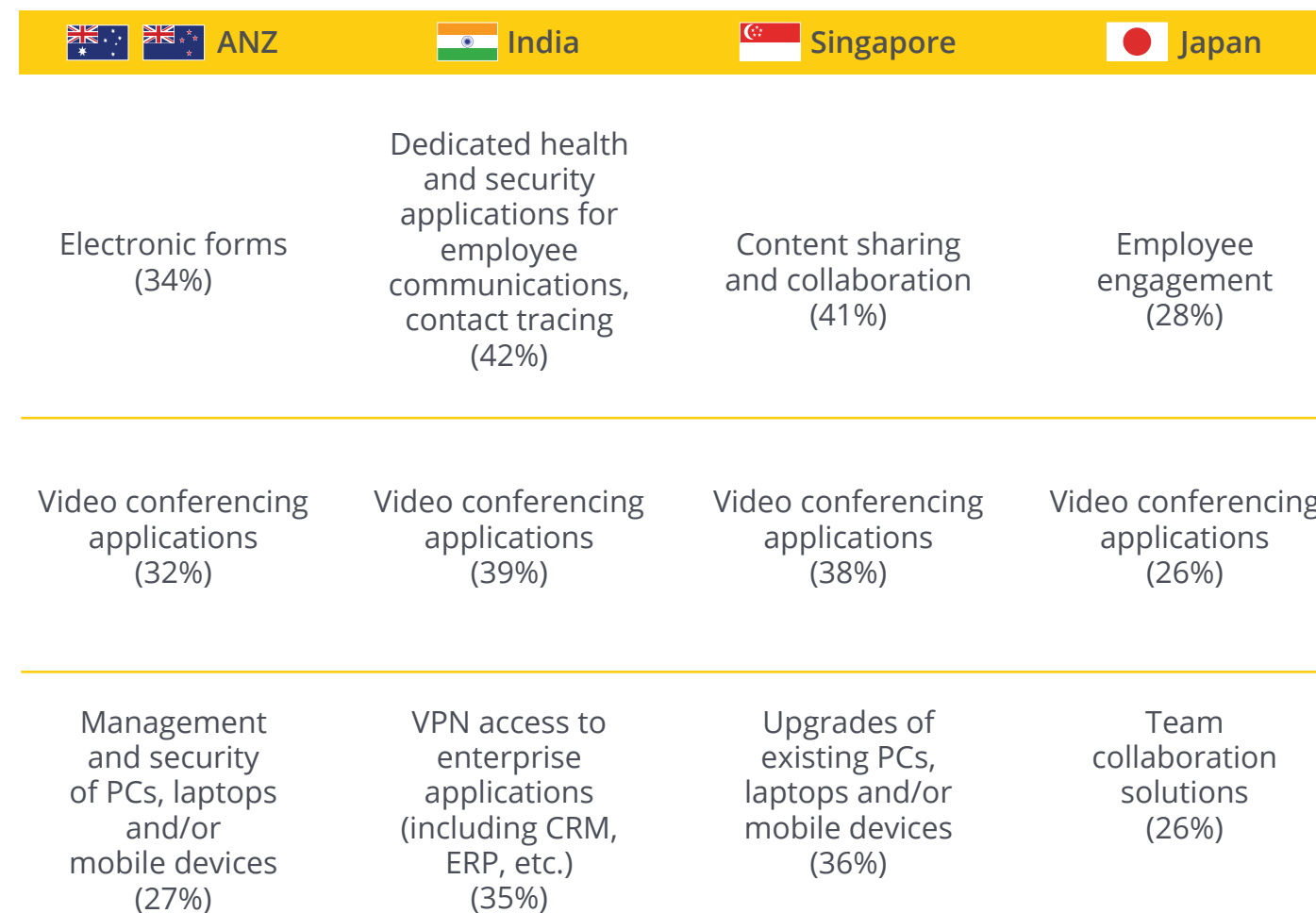
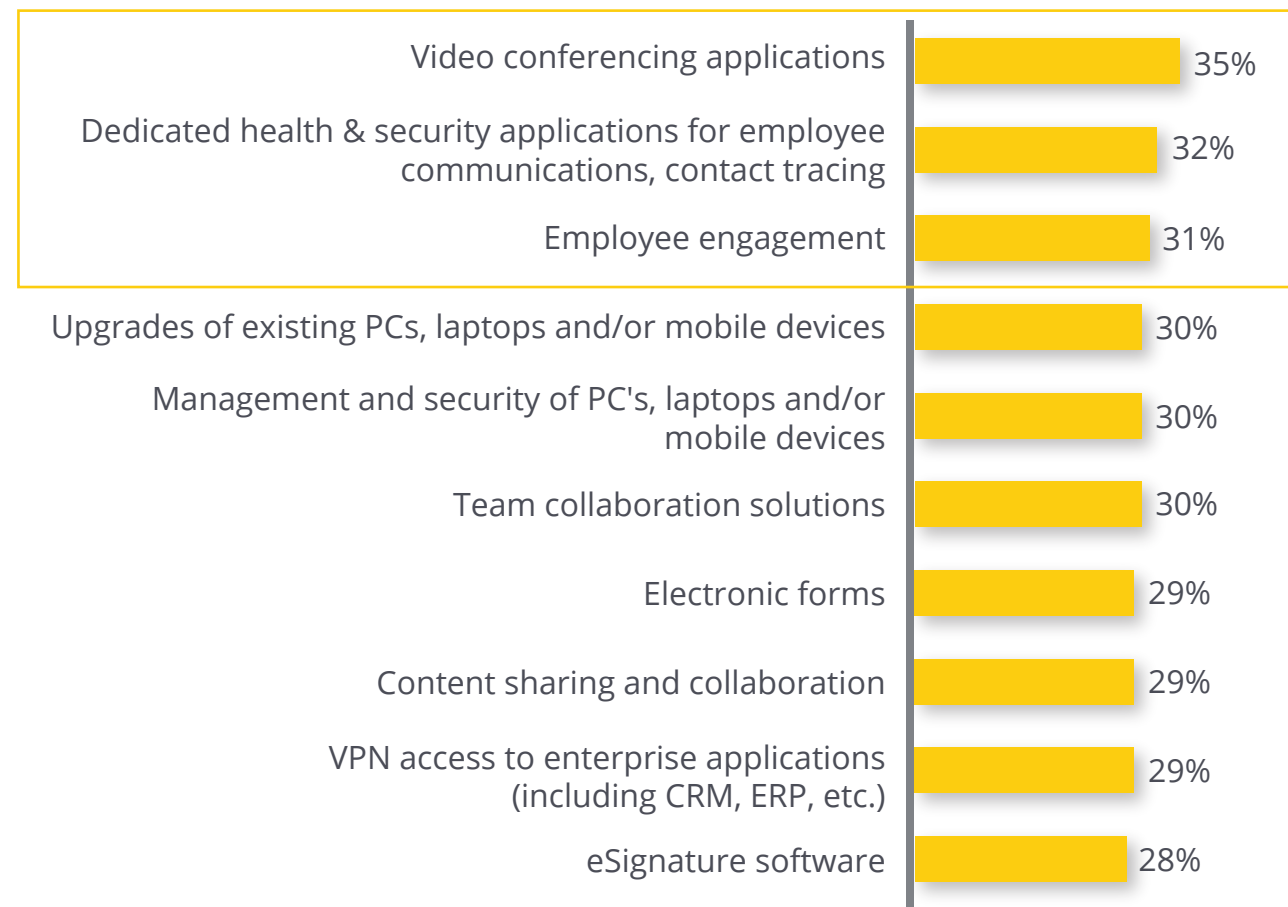
Whilst the percentage of employees working on the field has decreased from pre-pandemic days to just 26%, these organisations need to make investments that will ensure the health and safety of employees when businesses increase onsite operations. The shift from a physical to digital workplace is a must in order to reduce human intervention and establish autonomous operations, and at the same time, ensure productivity and engagement amongst employees.

Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Response phase: Top 3 technology investments

To support the workforce, construction companies must establish technology parity, where all workers have secure access to the resources required to do their jobs, no matter their preferred device or if they are local, remote, or on the field.

Top 3 Technology Investments in APIJ



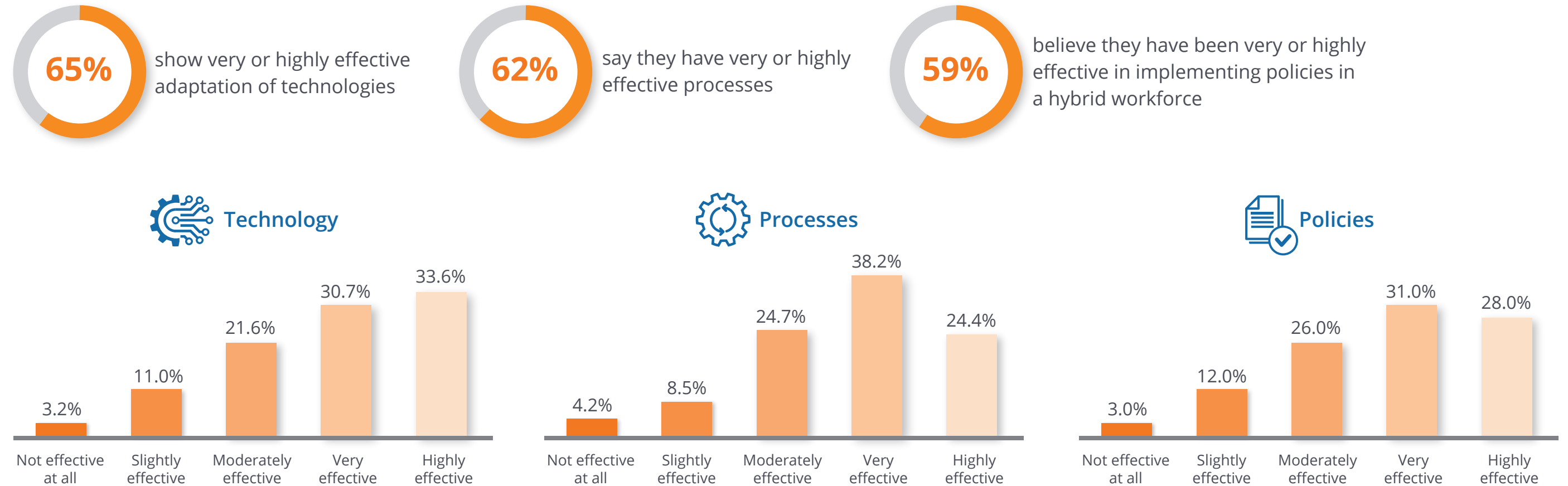
The goal of construction companies in the response phase is to ensure the workforce remains connected, engaged, and most of all, safe. A shift in mindset amongst construction companies in this phase is a must, where management must recognise that employee outcomes bear a significant role in crisis response over strictly adhering to processes during a pre-pandemic time.

Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Adaptation phase in the road to recovery

Construction companies in the adaptation phase must secure and support a well-adjusted workforce regardless of their location. These organisations should support a hybrid workforce, characterised by effective management of policies, processes, and technologies.

Amongst APIJ construction companies:



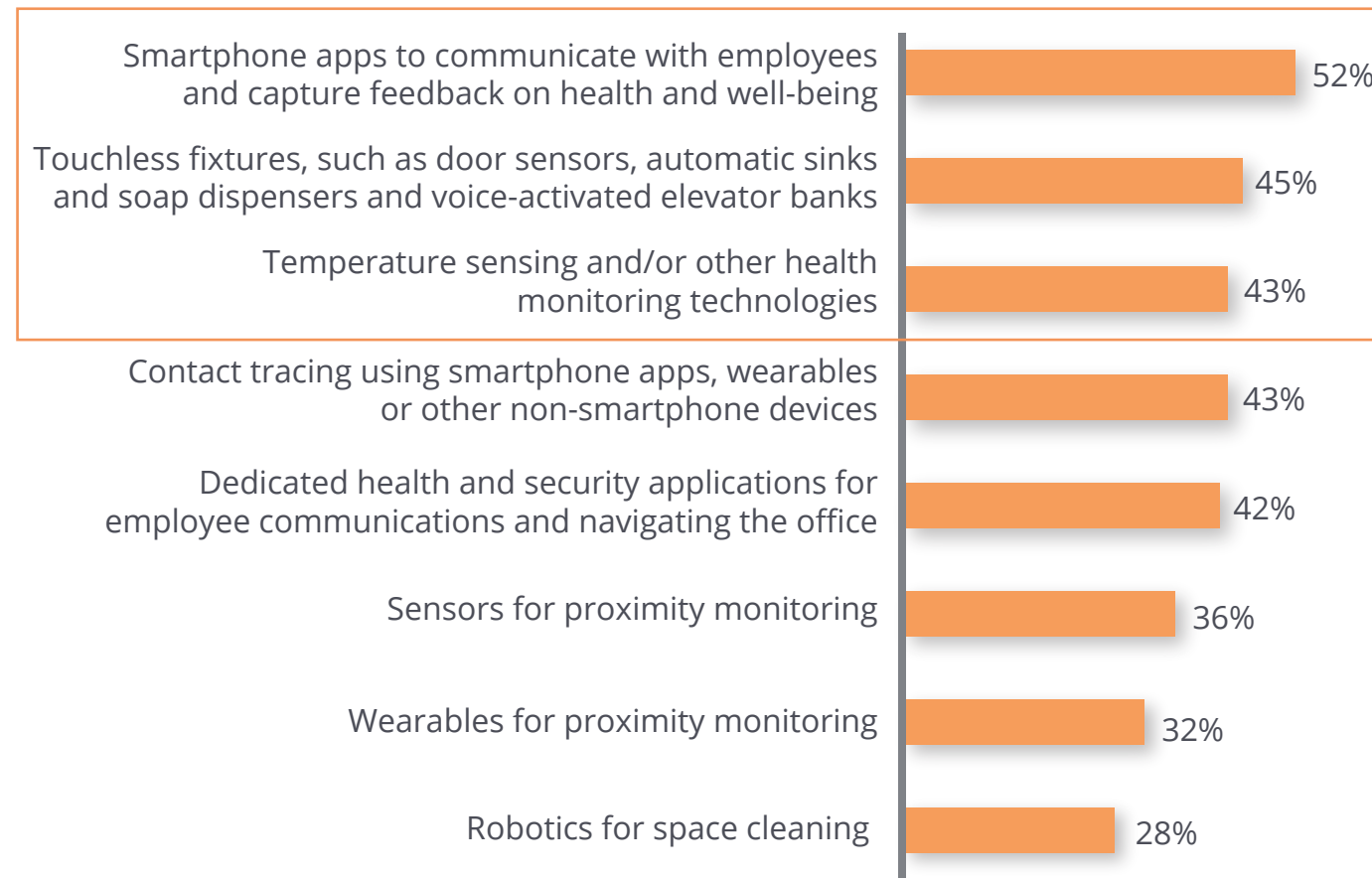
Companies in this phase must focus on investing in technologies more selectively in a move towards building resiliency with the business, especially since they are experiencing the impact of recession due to a prolonged decline in revenue and are looking to overcome this situation.





Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Adaptation phase: Top 3 technology investments

As these construction companies anticipate the increase of onsite operations, technology investments must be made to ensure safety and security amongst employees. The key to successful reopening are smartphone apps to communicate with employees and capture feedback on health and well-being (52%), touchless fixtures (45%), and temperature sensing technologies (43%).

Return-to-Office Technology Investments in APIJ



	 ANZ	 India	 Singapore	 Japan
	Touchless fixtures, (door sensors, automatic sinks, soap dispensers) and voice-activated elevator banks (42%)	Smartphone apps to communicate with employees and capture feedback on health and well-being (63%)	Smartphone apps to communicate with employees and capture feedback on health and well-being (60%)	Smartphone apps to communicate with employees and capture feedback on health and wellbeing (30%)
	Contact tracing using smartphone apps, wearables or other non-smartphone devices (42%)	Touchless fixtures, (door sensors, automatic sinks, soap dispensers) and voice-activated elevator banks (53%)	Temperature sensing and/or other health monitoring technologies (52%)	Temperature sensing and/or other health monitoring technologies (30%)
	Temperature sensing and/or other health monitoring technologies (37%)	Dedicated health and security applications for employee communications and navigating the office (51%)	Contact tracing using smartphone apps, wearables or other non-smartphone devices (45%)	Contact tracing using smartphone apps, wearables or other non-smartphone devices (30%)

For construction companies in the adaptation phase, the primary consideration is to capture feedback on a real-time basis, to ensure that any breach in workforce safety is captured immediately to avoid possible disruptions in the workplace and in operations.

Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

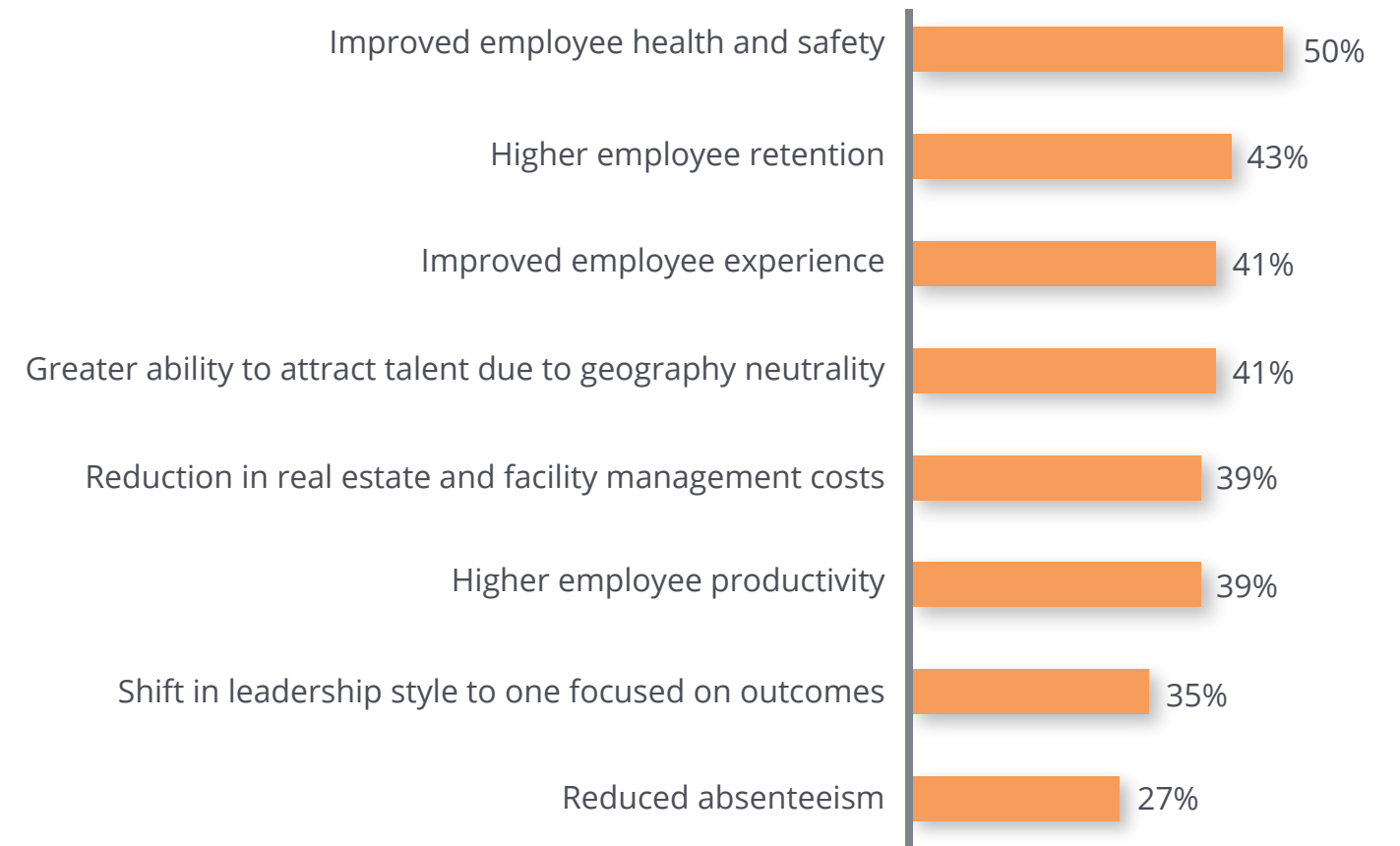
Work-from-home benefits in APIJ

Whilst preparations are being made for safe return to work, construction companies in the adaptation phase are likely to retain a portion of its employees working primarily from their homes because of the benefits experienced by both the business and the workforce.

By supporting a hybrid workforce, 50% of construction companies in APIJ have seen improved employee health and safety, 43% realised higher employee retention, and 41% noted improved employee experience.



Hybrid Workforce in APIJ



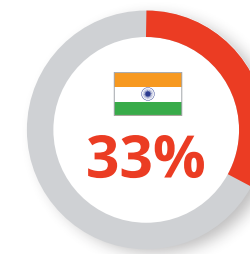
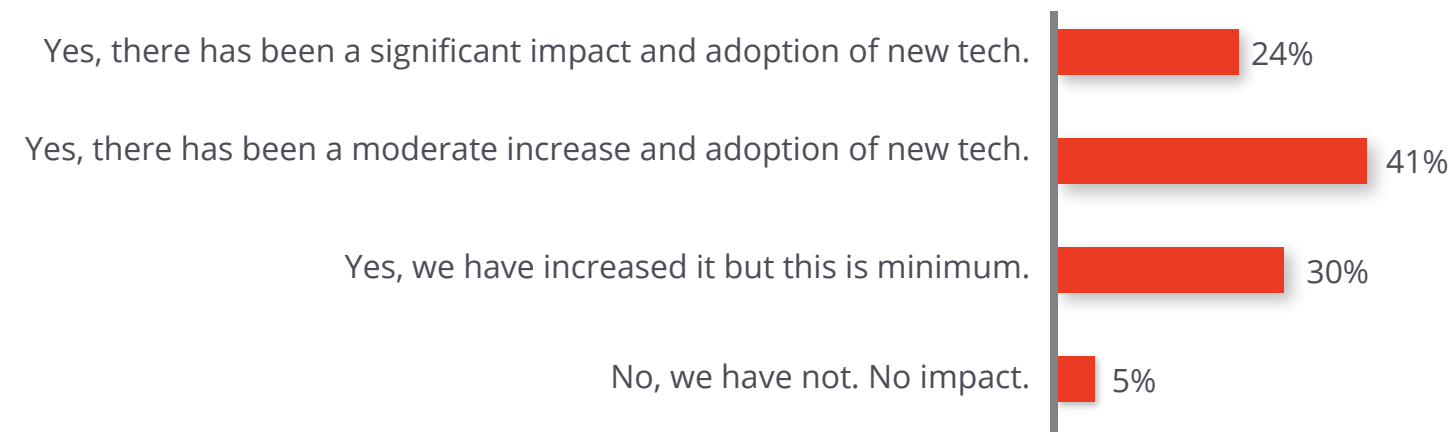
Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Acceleration phase in the road to recovery

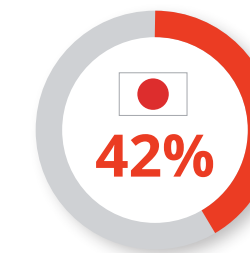
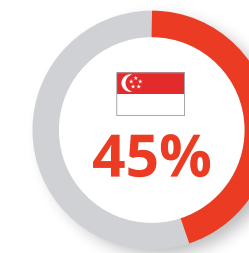
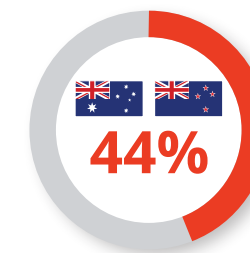
Construction companies in the acceleration phase are the most advanced when it comes to using digital transformation to future-proof their businesses. Throughout the COVID-19 crisis, **95%** of construction companies have increased the adoption of digital technologies to drive digitalisation and become resilient. However, only 24% of APIJ construction companies so far have seen significant impact of their adoption of digital technologies.

Adoption of digital technologies in APIJ

Q. When thinking about COVID-19 and the need to become resilient, has your company increased focus on adopting new technologies to drive digitalisation and become resilient?



India (33%) construction companies report the most significant impact, as more organisations turn to the adoption of new technologies to address the impact of COVID-19 on the country.



ANZ (44%), Singapore (45%), and Japan (42%) construction companies have only demonstrated moderate focus on the adoption of new technologies.

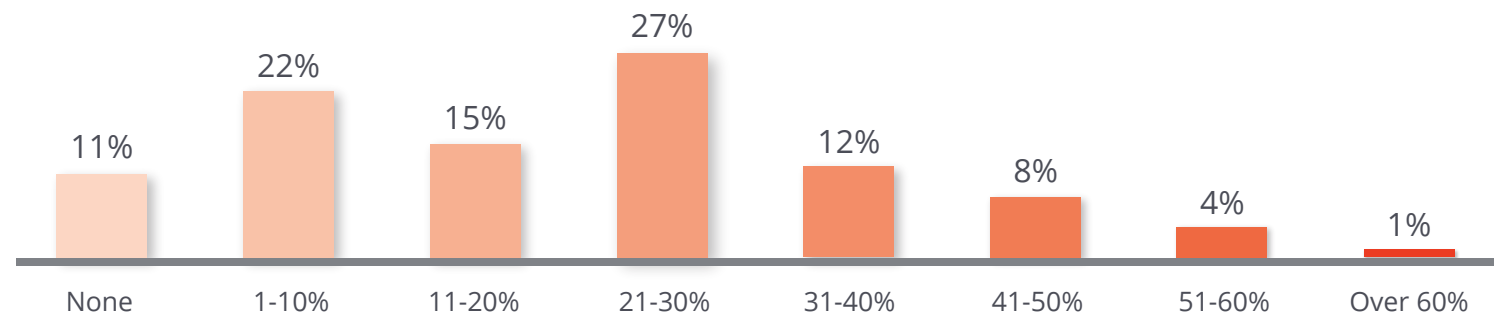
Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Increase in digital construction solutions

To further resiliency in the next normal and to capture market share, construction companies in the acceleration phase should prepare for future growth opportunities with the use of digital construction solutions.

% Increase in Digital Construction Solutions – APIJ View

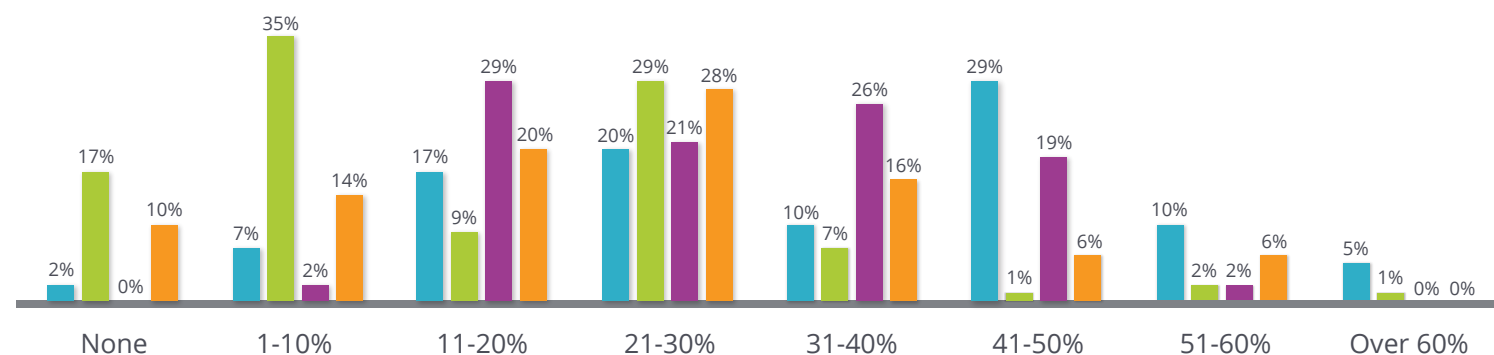
Q. How much has the percentage of projects using digital construction solutions (such as BIM workflows, bid management, project management, and insights) increased as a result of COVID-19?



of APIJ construction companies have seen an upsurge of these solutions, with 27% of companies seeing a 21-30% increase in usage.

% Increase in Digital Construction Solutions – Country View

■ ANZ ■ India ■ Singapore ■ Japan



of ANZ construction companies increased the use of digital solutions by 41-50%.



of Japan construction companies have seen 21-30% usage growth.



of Singapore construction companies have also grown usage by 11-20%.



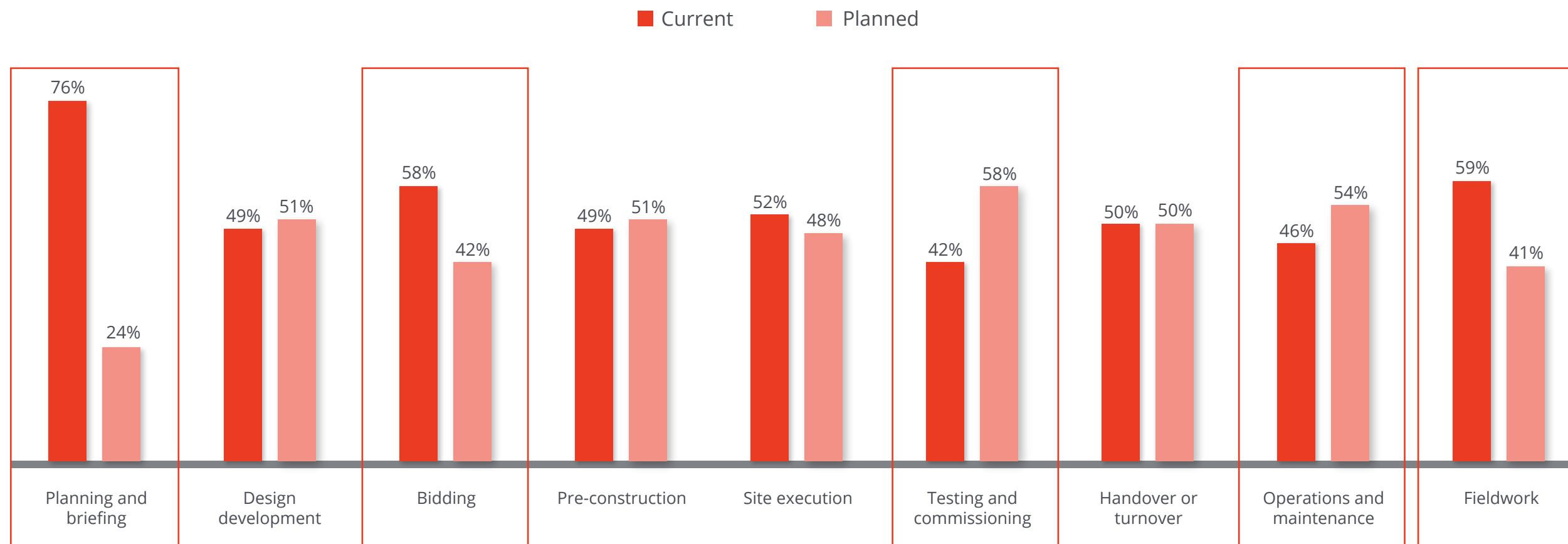
of India companies have reported only 1-10% increase of digital construction solutions, whilst 17% are still not using them.

Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Technology investments in the construction phases

Construction companies must also evaluate the construction phases where they need to increase use of technologies to support their businesses' acceleration. The current highest technology investments are in the construction phases of planning and briefing (76%), fieldwork (59%), and bidding (58%).

Current versus Planned Investments in Construction Phases



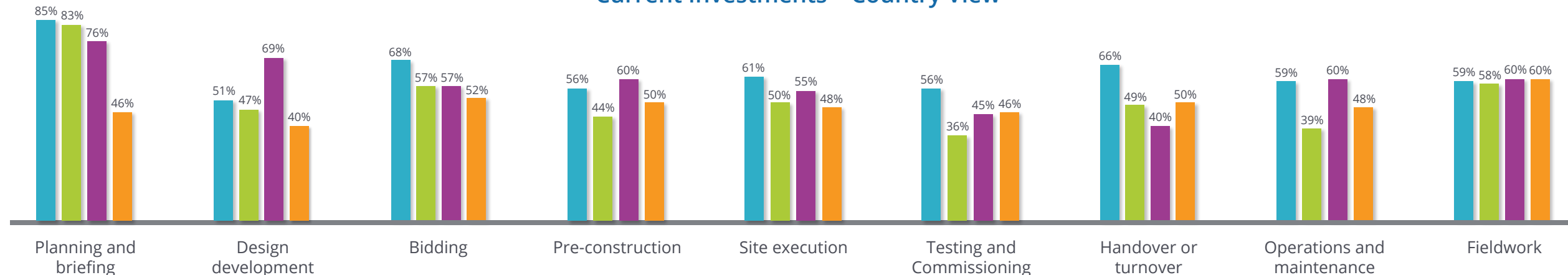
More investments are planned in testing and commissioning (58%), as well as operations and maintenance (54%), to continue acceleration into the next normal.

Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Construction phases - current versus planned investment

The top construction phases for planned investments are design development for ANZ (49%) and Japan (60%), testing and commissioning for India (64%), and handover or turnover for Singapore (60%).

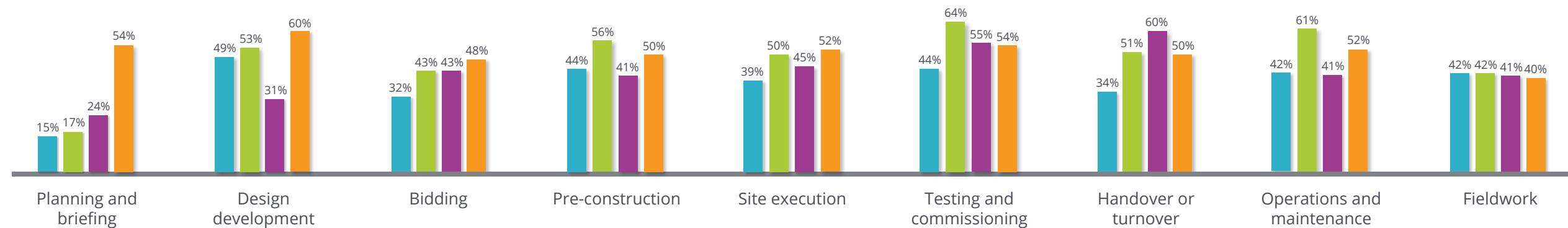
Current Investments – Country View



The use of technologies in planning and briefing is currently most common in ANZ (85%), India (83%), and Singapore (76%); Japan's construction companies use digital construction solutions the most in fieldwork (60%).



Planned Investments – Country View

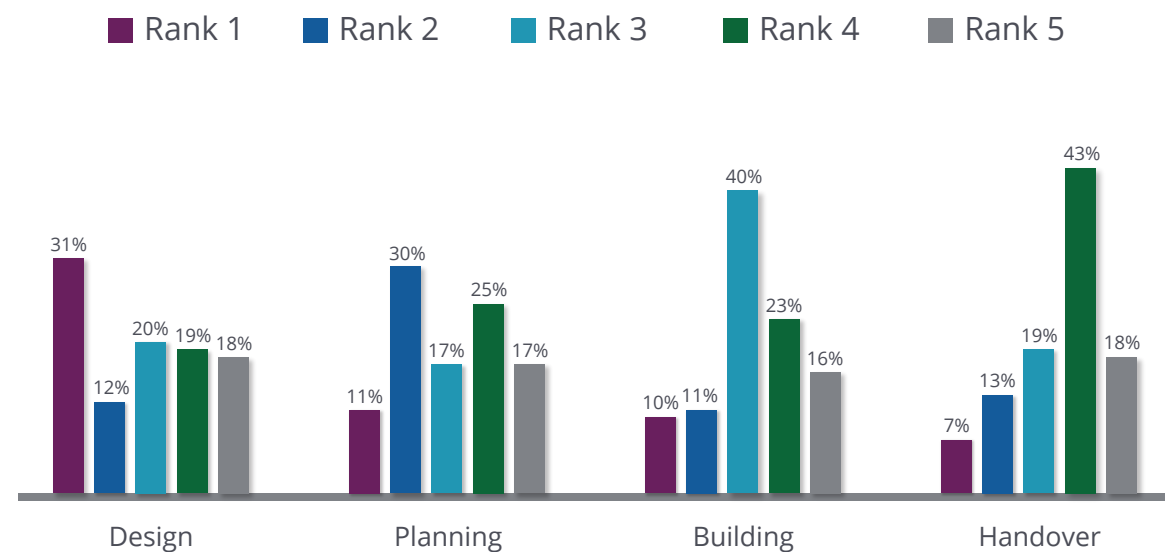


Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Construction phases in APIJ

Opportunities to increase the adoption of digital solutions in construction phases are still present. Currently, there is a notable solutions knowledge in the handover phase with 43% of APIJ companies indicating high proficiency (from a scale of 1 to 5, with 1 as not knowledgeable at all to 5 as very knowledgeable).

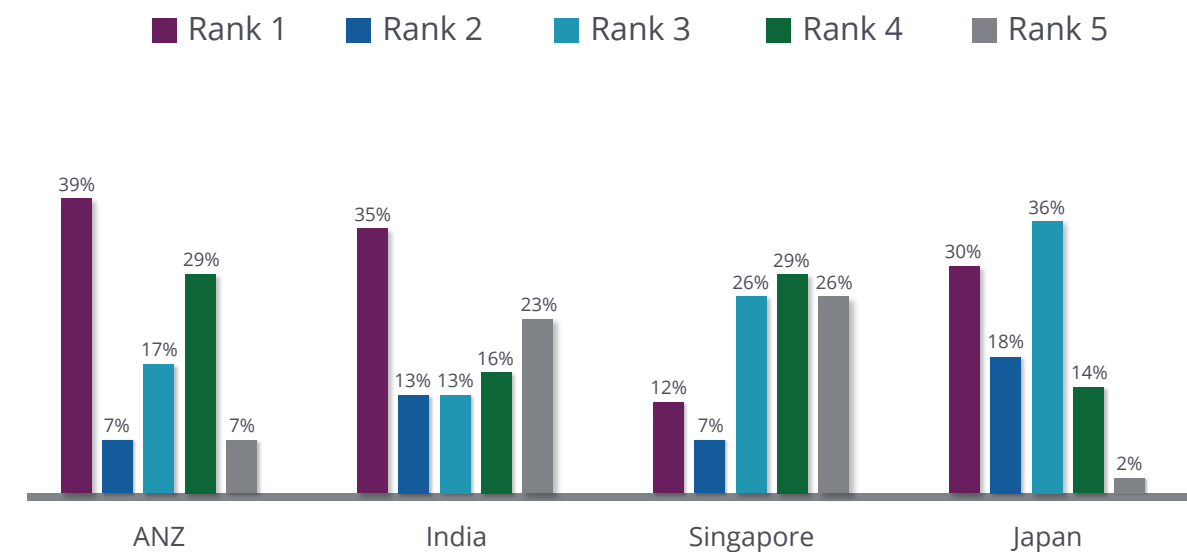
Solutions Knowledge in Construction Phases – APIJ View



However, amongst the construction phases, 31% of APIJ construction companies believe they are not yet very knowledgeable about the type of digital solutions which can be used in the design phase.

Taking a closer look at countries, more than one-third of ANZ and India construction companies believe they are not knowledgeable about digital solutions in the design phase.

Solutions Knowledge in Design – Country View

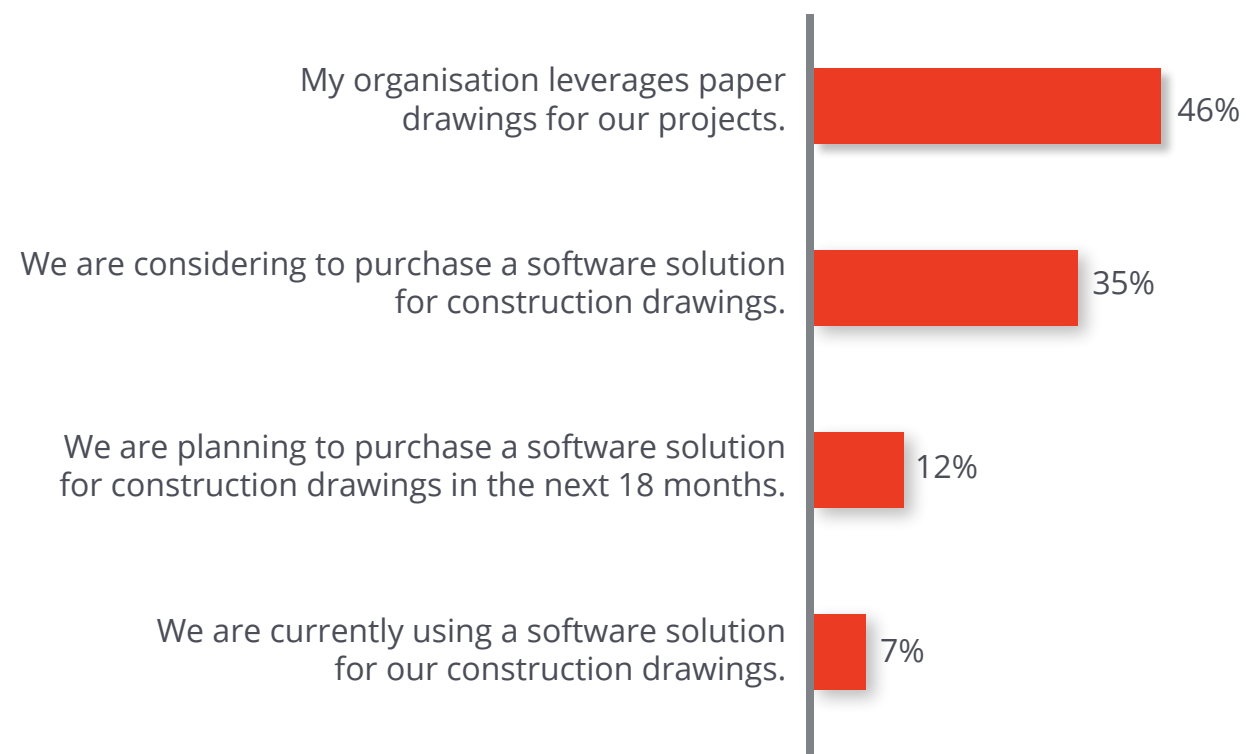


Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Technology for construction drawings

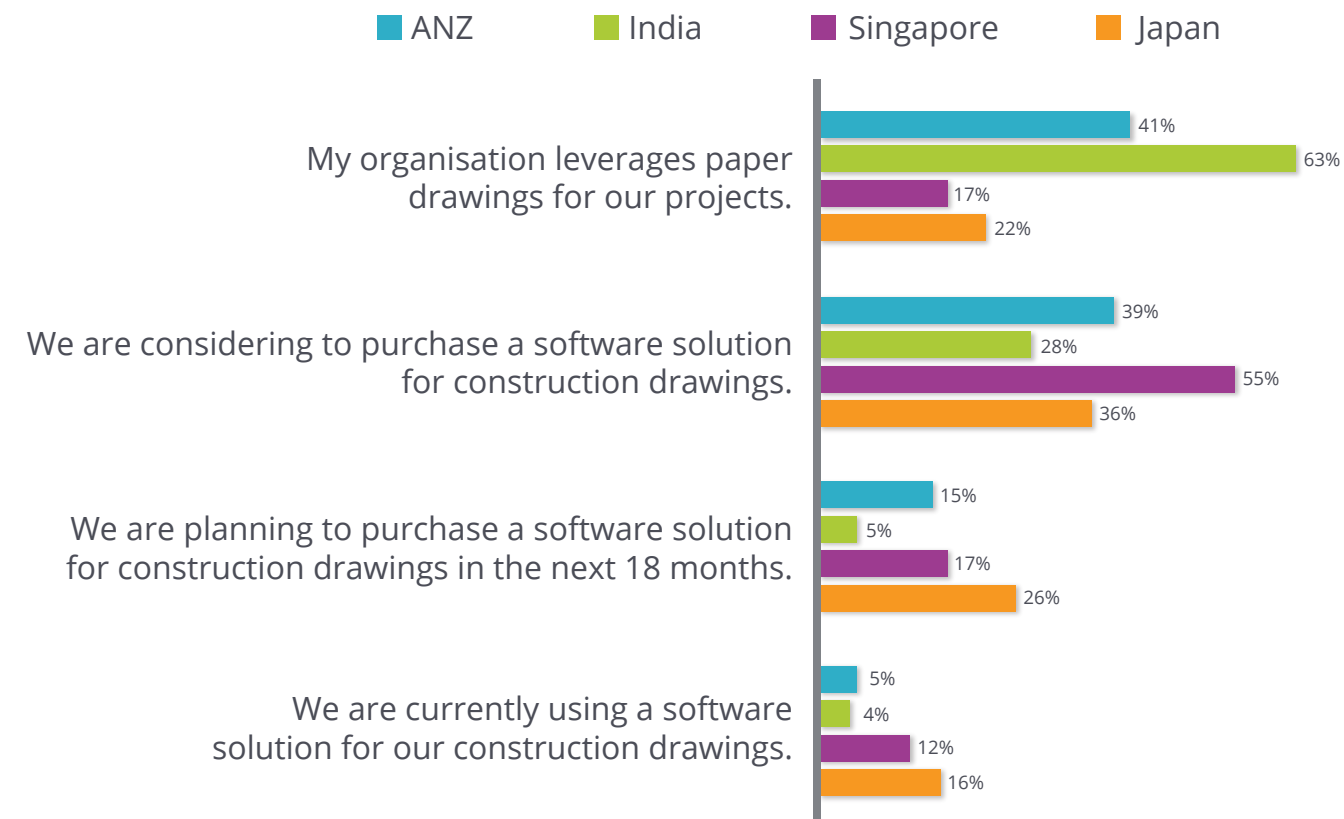
46% of APIJ construction companies still leverage paper drawings for their projects, and 35% are considering purchasing a software solution to address this. Only 7% are using software solutions for the design phase.

APIJ Regional View



From a country view, Japan construction companies lead the region with 16% already using software solutions for their construction drawings and 26% planning to purchase these solutions in the next 18 months.

Country View



63% of India construction companies still use paper drawings. 55% of Singapore and 39% of ANZ construction companies are considering purchasing software solutions for drawings.

Source: IDC's COVID-19 and Road to Recovery in Construction, 2020, n = 283 (ANZ = 41, India = 150, Singapore = 42, Japan = 50)

Essential guidance: Ensuring a smooth road to recovery in APIJ construction companies

The road to recovery may seem long for the APIJ construction industry. Regardless of where organisations are on this journey, it is imperative to ensure a smooth transition from one phase to the next so their businesses can grow and thrive in the next normal. By focusing on technologies in each recovery phase, companies will be able to accelerate their digital transformation (DX) — which will allow the construction industry to address the many challenges it has faced even before the pandemic. With DX as the key to building resilience for the next normal, construction companies can mitigate the impact of COVID-19 and future-proof their businesses against other market disruptions.



Because there is no clear indication of when the COVID-19 pandemic will end, construction companies must embrace the changes that surround them, from which they can learn valuable lessons so they can drive the necessary changes across their businesses, especially by ensuring the health and safety of their employees — where a safe working environment is a digital environment.



A better way to build, together.

Construction businesses understand the power of digital transformation for achieving new levels of operational excellence. But integrating different digital tools – and forming a strategic roadmap that will guide the whole business – can be difficult.

Autodesk Construction Solutions is changing the way construction projects operate, by combining both robust project management capabilities and simple, yet powerful, field collaboration tools. The Autodesk Construction Cloud also provides powerful construction insights by storing and managing all project documents and data from design through construction in a Common Data Environment.

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