

REPORT ON CPA AUSTRALIA'S BUSINESS TECHNOLOGY INVESTMENT SURVEY 2020

MAINLAND CHINA, HONG KONG, MALAYSIA, SINGAPORE

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OVERVIEW

As organisations around the world adapt to changing work environments brought about by the COVID-19 pandemic, one consequence has been the acceleration of technology investment among businesses.

CPA Australia's Business Technology Investment Survey 2020 received responses from 573 members in Mainland China, Hong Kong, Malaysia and Singapore. The survey gauged the impact of COVID-19 on technology investment in businesses, the types of technology invested in, the reasons for investing in technology, and the desired technology skills.

Conducted in June and July 2020, the survey found that for most businesses, the COVID-19 pandemic had either brought forward planned investment in technology or resulted in an increase in unplanned technology investment.

Improving business efficiency and facilitating remote working arrangements appear to be the key reasons for investing in technology. Businesses were most likely to invest in video conferencing and group collaboration tools, computer equipment, and accounting / audit software in the past 12 months.

The strong focus of technology investment by businesses look set to continue. Most survey respondents in these markets expect their business to invest in additional technology in the next 12 months.

The survey findings reflect the strategic importance of investing in technology, and the need for organisations to enhance their digital capability in difficult economic times.

SUMMARY OF KEY FINDINGS

Impact of COVID-19 on business technology investment

57.1 per cent of respondents indicated that COVID-19 had either brought forward planned investment in technology, or had resulted in an increase in unplanned technology investment. Only 13.8 per cent said it had resulted in a delay or cancellation of planned technology investment.

Singapore (68.2 per cent) had the highest percentage of respondents who stated that COVID-19 had led to planned technology investment being brought forward or had led to an increase in unplanned investment in technology, followed by Hong Kong (58.8 per cent), Malaysia (57.6 per cent), and Mainland China (47.5 per cent).

Business capital expenditure on technology in the past and next 12 months

The increased investment in technology over the past few months because of COVID-19 is expected to continue in 2021, with the percentage of businesses expected to invest in technology in the next 12 months being the same as the previous 12 months. There is a slight increase in the percentage of businesses that expect to invest 30 per cent or more of their capital expenditure in technology over the coming 12 months

By market, businesses in Singapore were most likely to have invested in technology in the past 12 months (95.2 per cent), followed by Malaysia (90.7 per cent), Mainland China (85.1 per cent) and Hong Kong (79.6 per cent).

Overall, businesses that registered a decrease in profitability in 2019 were less likely to have made any investment in technology in the past 12 months compared to businesses that registered an increase in profitability in 2019.

Top ten technology investments in the past and next 12 months

Video conferencing and group collaboration tools were the technology businesses most likely to have been invested in, followed by computer equipment such as desktop computers and laptops, with accounting and audit software third.

By market, video conferencing and group collaborations tools were ranked first in Mainland China (12.7 per cent) and Hong Kong (13 per cent), while computer equipment came up as the top investment in Malaysia. In Singapore, video conferencing and group collaboration tools and computer equipment were joint highest.

Illustrating the growing demand for automation, plus workplace flexibility and online collaborations, video conferencing and group collaboration tools and accounting / audit software were the joint highest technologies that respondents in each the four markets expect their business would most likely invest in over the next 12 months.

Reasons for investing in technologies

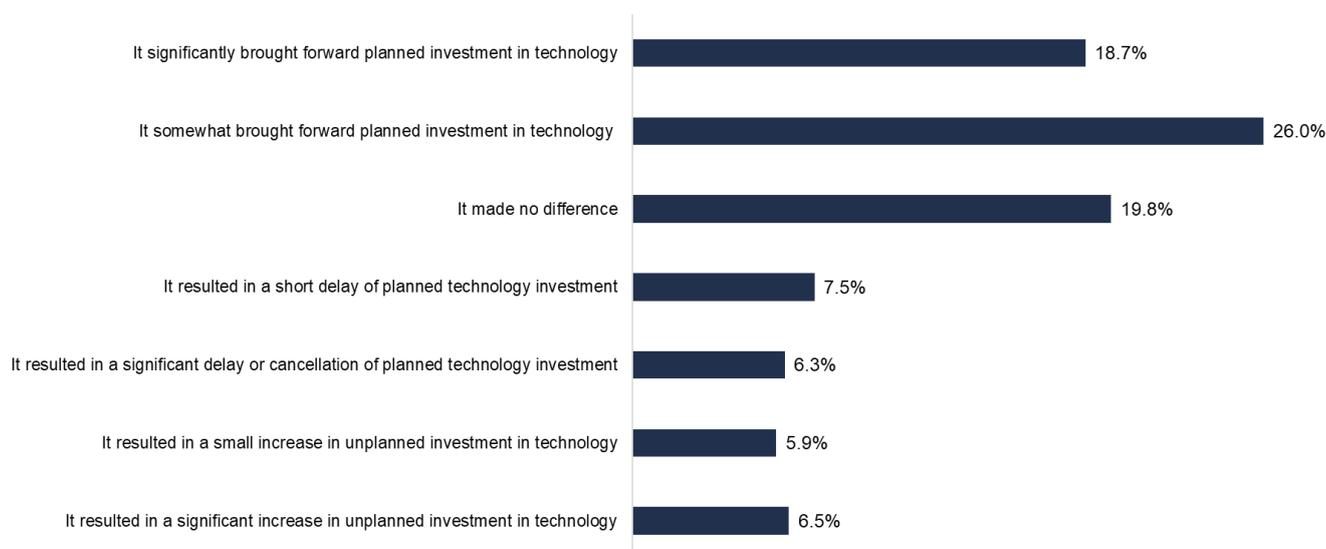
Respondents were most likely to cite improving efficiency and facilitating workplace mobility / work-from-home arrangements as the main reasons for investing in technologies. Other major reasons include to help accelerate digital transformation, increase competitiveness, improve customer satisfaction and reduce costs.

In-demand technology skills

The top three technology skills respondents identified as most needed to enhance their knowledge were: big data analytics (38.9 per cent), business analytics and reporting (33.5 per cent), and artificial intelligence / machine learning applications (27.9 per cent).

Senior-level staff were somewhat more likely than other staff to choose cybersecurity as a skill they need to enhance, signifying that as companies continue to digitalise, business leaders are increasingly aware of the vulnerabilities of their organisation to cybersecurity threats and are putting in efforts to protect their organisation from such threats.

IMPACT OF THE COVID-19 PANDEMIC ON BUSINESS TECHNOLOGY INVESTMENT



Note: The percentage of respondents who chose 'Don't Know' was 9.4 per cent.

Question: What has been the single largest impact of the COVID-19 pandemic on technology investment by your business/employer (Select one only)

The COVID-19 pandemic has been a major disruptor to many business operating models and has provided a strong impetus for businesses to accelerate their digitalisation through increased technology investment and adoption. Impacted by lockdown restrictions that disrupted their clients, suppliers and employees, many companies across different sectors brought forward their investment in technology.

Reflecting this change, 57.1 per cent of respondents across the four surveyed markets indicated that COVID-19 had either brought forward planned investment in technology, or had resulted in an increase in unplanned technology investment, with only 13.8 per cent saying it had resulted in a delay or cancellation of planned technology investment.

Analysed by individual markets, Singapore (68.2 per cent) had the highest percentage of respondents who stated that COVID-19 had led to planned technology investment being brought forward or to an increase in unplanned investment in technology, followed by Hong Kong (58.8 per cent), Malaysia (57.6 per cent), and Mainland China (47.5 per cent).

The high percentage in Singapore is a result of the combination of COVID-19 acting as a catalyst for businesses to digitally transform and strong government support to help businesses embrace digitalisation. This support was underlined in Singapore's Fortitude Budget which allocated more than SG\$500 million to assist businesses in their digital transformation.¹ Specific government incentive schemes include the Productivity Solutions Grant which co-funds 80 per cent of businesses' digitalisation expenses and covers expenses on IT solutions such as online collaboration tools, and virtual meeting and telephony tools.²

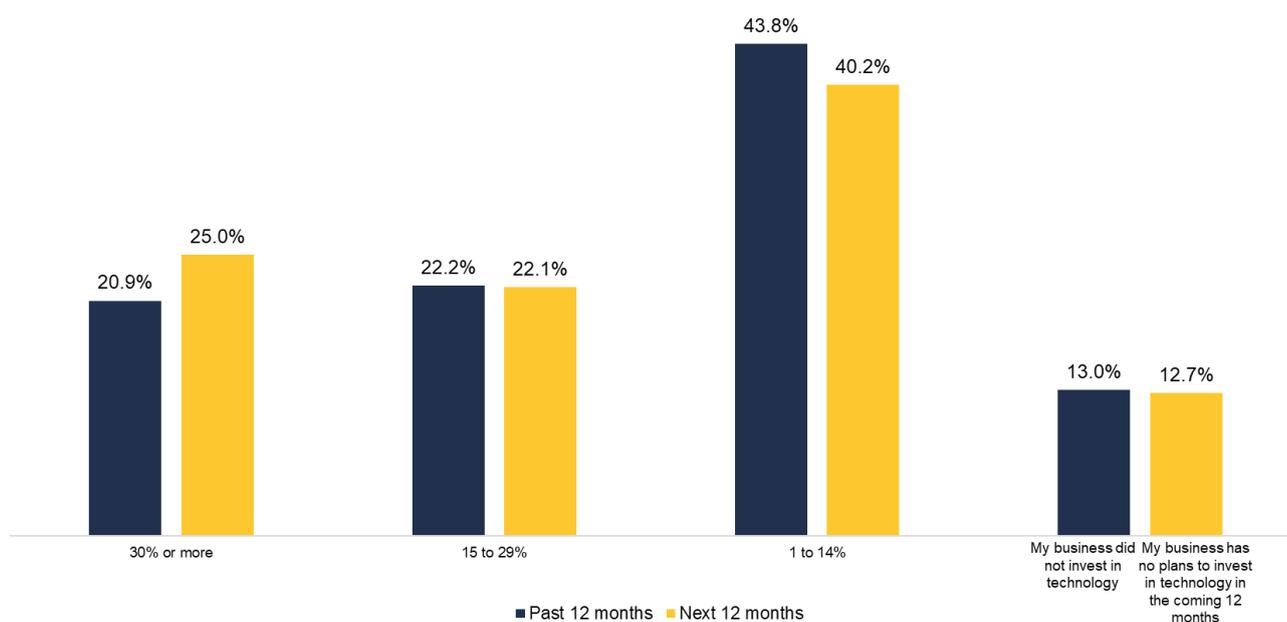
¹ Government of Singapore. (2020). [Fortitude Budget Statement](#)

² Enterprise Singapore. (2020). [Productivity Solutions Grant \(PSG\)](#)

The significantly lower percentage in Mainland China suggests that, in comparison to the three other surveyed markets, Mainland Chinese businesses may have already implemented the necessary technology infrastructures, such as mobile or digital payment technologies, needed to cope with the increasing demand for digital and online services, before the outbreak of COVID-19. The findings echo CPA Australia's *Business FinTech Usage Survey* which shows that, in comparison to the three other markets, Mainland China reported the highest percentage of businesses using FinTech products or services, as well as the highest percentage of businesses using mobile payment technology, in the past 12 months.³ Further, CPA Australia's *Asia Pacific Small Business Survey 2019-20*, showed that small businesses in Mainland China were regional leaders in online commerce and digital payment technologies before the pandemic.⁴

While it is likely that a small percentage of surveyed businesses may have scaled back investment plans due to the need for short-term survival, given the uncertainty around COVID-19 and its implications for work practices, more businesses revisited their digital strategy with a view to hasten investment in technology. Investments in upgrading digital infrastructure could position such business for growth post-pandemic by improving their ability to access customers in an uncertain environment and by improving their efficiency.

BUSINESS CAPITAL EXPENDITURE ON TECHNOLOGY – PAST AND NEXT 12 MONTHS



Question: In the past 12 months, what percentage of your business' capital expenditure was in technology? (Select one only)

Question: In the next 12 months, what percentage of your business' capital expenditure will be in technology? (Select one only)

The figure above shows that the percentage of respondents who expected their business to invest in technology in the next 12 months is the same (87 per cent) as those that invested in technology in the past 12 months.

³ CPA Australia. (2020). [Report on CPA Australia's Business FinTech Usage Survey 2020](#)

⁴ CPA Australia. (2020). [CPA Australia Asia-Pacific Small Business Survey 2019-20](#)

The percentage of respondents expecting their business to invest 30 per cent or more of capital expenditure in technology in the next 12 months is 4.1 percentage points higher than the percentage of respondents who stated that their business had invested 30 per cent or more of capital expenditure in technology in the past 12 months. The results suggest that there is a growing consensus among many businesses that changes to consumer behaviour and work, brought by COVID-19, is permanent and that medium to longer-term investments in technology and digital initiatives are critical for the business to operate and compete in the 'new normal'.

By market, businesses in Singapore were most likely to have invested in technology in the past 12 months (95.2 per cent), followed by Malaysia (90.7 per cent), Mainland China (85.1 per cent) and Hong Kong (79.6 per cent). More respondents in Singapore expect their business will invest in technology in the next 12 months (94 per cent) than the other three markets.

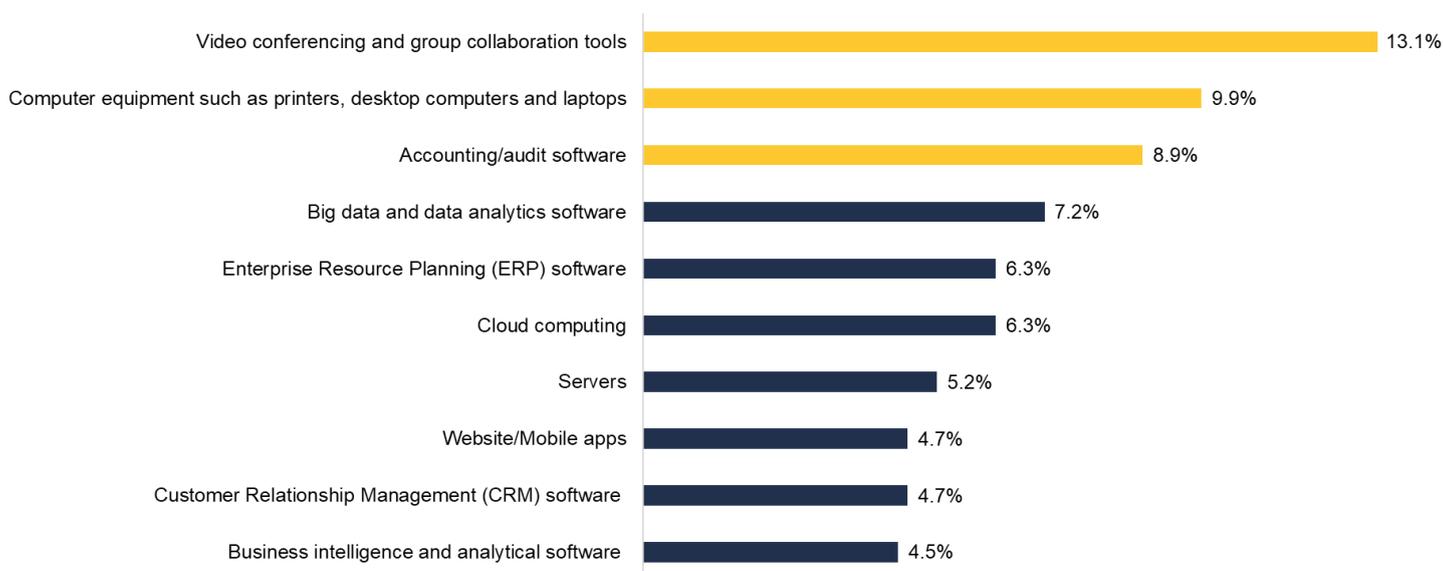
Businesses in Malaysia were most likely to have 30 per cent or more of capital expenditure dedicated to technology investment in the past 12 months (31.8 per cent) and were also the most likely to expect 30 per cent or more of capital expenditure to be invested in technology in the next 12 months (40.2 per cent). The high technology investment among Malaysian businesses is in line with the push for technology adoption by the Malaysian government in light of the COVID-19 pandemic. Government initiatives include the SME Business Digitalisation Grant which provides a 50 per cent matching grant of up to RM5,000 per SME for digitalising their business process,⁵ and the Automation and Digitalisation Facility to help eligible SMEs obtain financing of up to RM3 million for up to 10 years to automate processes and digitalise operations.⁶

In addition, businesses that registered an increase in profitability in 2019 were more likely to have invested 15 per cent or more of their capital expenditure in technology and were less likely to have not made any investments in technology in the past 12 months, compared with businesses that reported a decrease in profitability in 2019. The results suggest that investment technology may have a favourable impact on profitability. Given the potential link between technology investment and business profit, it would be beneficial for organisations to recognise the strategic importance of investing in technology.

⁵ Malaysia Digital Economy Corporation. (2019). [Propelling SMEs into the Digital Space](#)

⁶ Bank Negara Malaysia. (2020). [Measures to Assist Businesses and Households Affected by the COVID-19 Outbreak](#)

TOP TEN TECHNOLOGY INVESTMENTS IN BUSINESSES OVER THE PAST 12 MONTHS



Question: Which of the following technologies did your business invest the most in over the past 12 months (Select one only)

The figure above shows the technology in which businesses in the four markets are most likely to have invested during the past 12 months. Unsurprisingly, video conferencing and group collaboration tools were the technologies in which business were most likely to have invested, while computer equipment such as laptops came second.

By market, video conferencing and group collaborations tools were the top choice in Mainland China (12.7 per cent) and Hong Kong (13 per cent), while computer equipment was ranked first in Malaysia (15.9 per cent). In Singapore, respondents were most likely to nominate both video conferencing and group collaboration tools and computer equipment (both at 12.7 per cent). This finding shows that social distancing measures and work-from-home arrangements have intensified the need to enhance remote interaction with clients, stakeholders and staff. Given that such tools provide a reliable and cost-efficient way of virtual collaboration and communication, usage of web and videoconferencing tools will likely continue to grow.

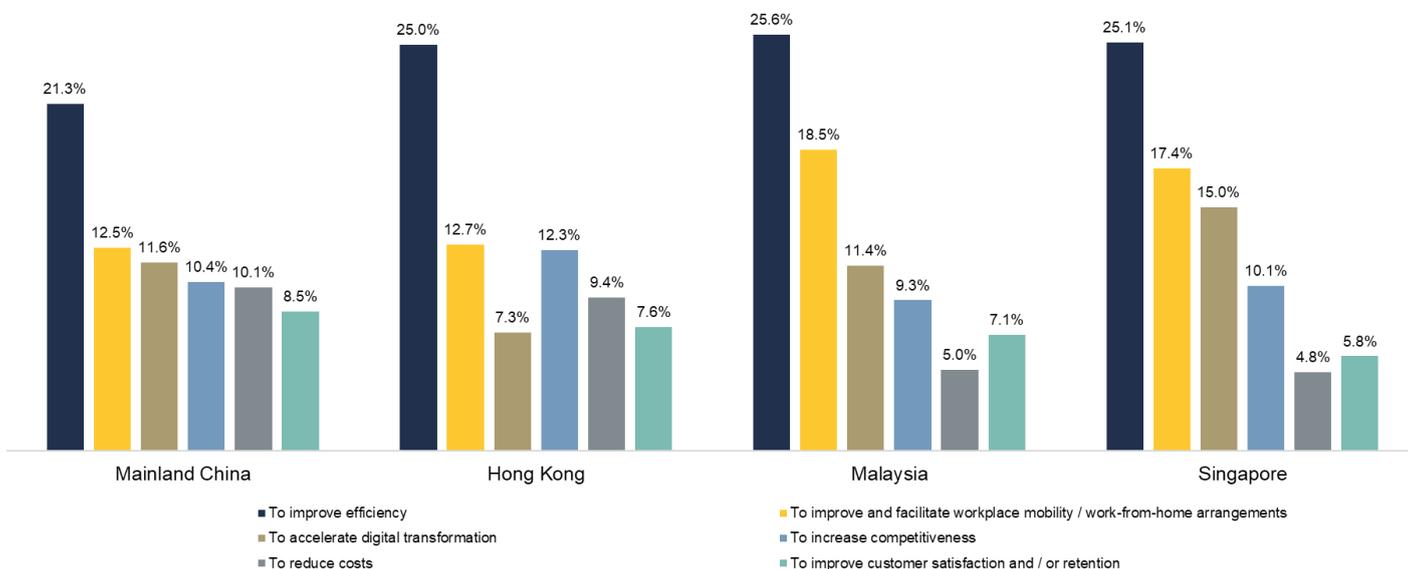
Reflecting the increasing demand for automating routine and repetitive tasks, accounting and audit software was the third-highest technology in which businesses invested during the past 12 months. As accounting and auditing professionals seek ways to increase efficiency and productivity and improve the value they bring to business, they will continue to drive adoption of such software.

Business technology investment in the next 12 months

Overall, video conferencing and group collaboration tools and accounting / audit software were jointly the technologies in which respondents expect their business would most likely be investing over the next 12 months. By individual markets, video conferencing and group collaboration tools were the most likely technology chosen in Singapore, while Malaysia respondents were most likely to choose both computer equipment and video conferencing and group collaboration tools.

In Mainland China, respondents were most likely to choose big data and data analytics software, and respondents in Hong Kong were most likely to choose accounting / audit software. This indicates that automation to improve processes and to better deliver business insights is an area of focus for businesses in Mainland China and Hong Kong.

REASONS FOR INVESTING IN TECHNOLOGY IN THE PAST 12 MONTHS

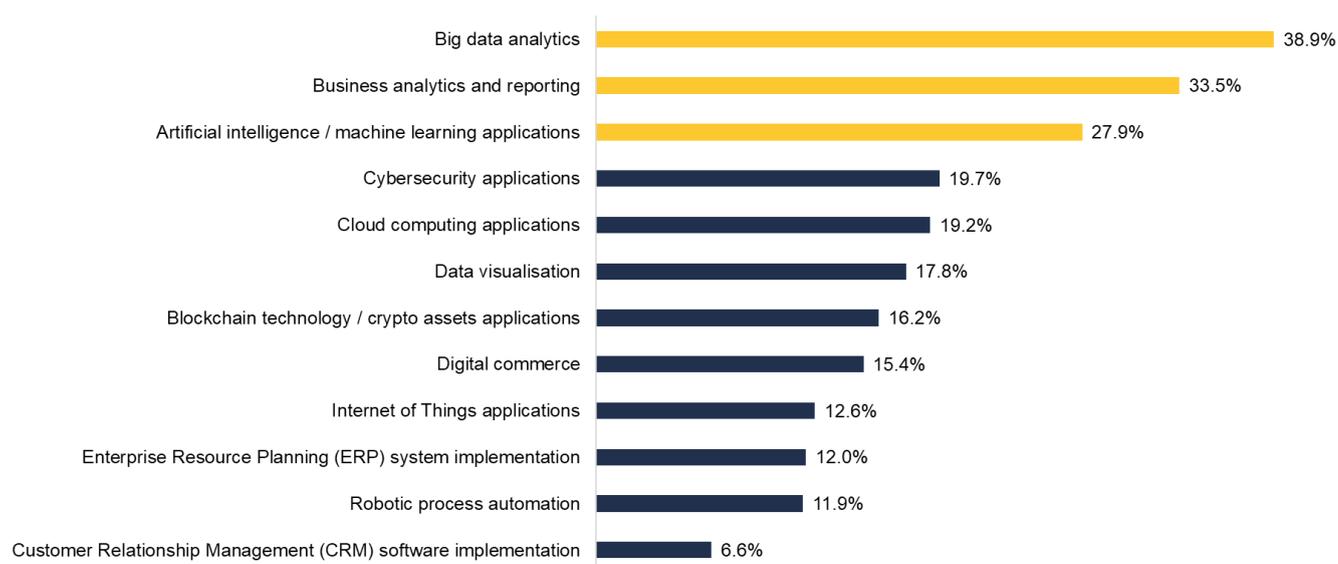


Question: Which of the following best describes the reasons your business/employer invested in technology in the past 12 months? (Select up to three)

Enhancing operational processes is the major motivator for businesses to invest in technology, with improving efficiency being the most likely reason to invest in technology in all four markets. With the global pandemic and a more challenging business environment, making greater use of technology to improve efficiency, enable work flexibility and accelerate digital transformation are essential elements for organisations to sustain themselves and to succeed in a disrupted environment. Furthermore, businesses can increase productivity of staff and improve the customer experience by embedding technology within their systems.

The results show that for many businesses, the main aim of technology investment is to find the right tools and software to achieve better performance in a changing external environment. This also means that in addition to adopting new technologies, businesses need to possess a firm foundation in digital literacy to make full use of their investment. This would require seeking talent and developing staff with technical skills, across data, programming, technology and statistics.

IN-DEMAND TECHNOLOGY SKILLS



Question: Thinking about your personal level of understanding of technology, which of the following technologies do you believe you need most to enhance your knowledge of? (Select up to three)

When asked what technology skills respondents believe they need to enhance their knowledge, more than a quarter of total respondents chose big data analytics (38.9 per cent), business analytics and reporting (33.5 per cent), and artificial intelligence (AI) / machine learning (ML) applications (27.9 per cent). These were the top three skills identified in Hong Kong, Malaysia and Singapore. In Mainland China, big data analytics, data visualisation, and artificial intelligence / machine learning applications were the top three identified technology skills.

Big data analytics was the skill with the highest number of nominations in Mainland China (50 per cent), while business analytics and reporting received the most picks in Singapore (40 per cent). Singapore and Malaysia were most likely to select AI / ML applications (both 29.1 per cent). With worldwide revenues for big data and business analytics solutions expected to expand at a five-year compound annual growth rate of 13.2 per cent from 2018 to 2022, reaching US\$274.3 billion in 2022⁷ and worldwide revenues for the AI market expected to surpass US\$300 billion in 2024,⁸ the findings shows that respondents across the four markets believe that developing their skills in big data analytics, business analytics and reporting, as well as AI and ML, can help their company gain valuable insights and assist in uncovering new growth opportunities. The need to enhance technology skills is observed in CPA Australia's *The Impact of Technology on the Desired Skills of Early Stage Accountants* report which noted that recent technological trends mean employers are seeking accountants with IT skills and who possess the capability to both apply and oversee technology which automates administrative tasks.⁹

⁷ International Data Corporation. (2019). [Worldwide Big Data and Analytics Spending Guide](#)

⁸ International Data Corporation. (2020). [Worldwide Semiannual Artificial Intelligence Tracker](#)

⁹ CPA Australia. (2020). [The Impact of Technology on the Desired Skills of Early Stage Accountants](#)

Analysing by company position of the respondents, mid-level staff were more likely to pick big data analytics (43.7 per cent) than junior-level (36.4 per cent) and senior-level (33.5 per cent) staff. On the other hand, junior-level staff were more likely to choose business analytics and reporting (42.5 per cent) compared to mid-level (36.6 per cent) and senior-level (32 per cent) staff.

There appears to be little difference in the percentage of respondents by company position on the need to enhance their knowledge of artificial intelligence and machine learning applications, with 27.3 per cent of junior-level staff, 29.2 per cent of mid-level staff and 27.5 per cent of senior-level staff choosing this option. This indicates that artificial intelligence and machine learning are perceived to have an equal impact on the work conducted by staff across all company positions.

Importantly, senior-level staff (23 per cent) were somewhat more likely than junior (15.2 per cent) and mid-level (18.3 per cent) staff to choose cybersecurity as a skill they need to enhance. This may signify that as companies continue to digitalise, business leaders are increasingly aware of the vulnerabilities of their organisation to cybersecurity threats and are putting in the efforts to protect their organisation from such threats.

RECOMMENDATIONS FOR BUSINESSES

Based on the survey findings, CPA Australia suggests that businesses consider the following recommendations:

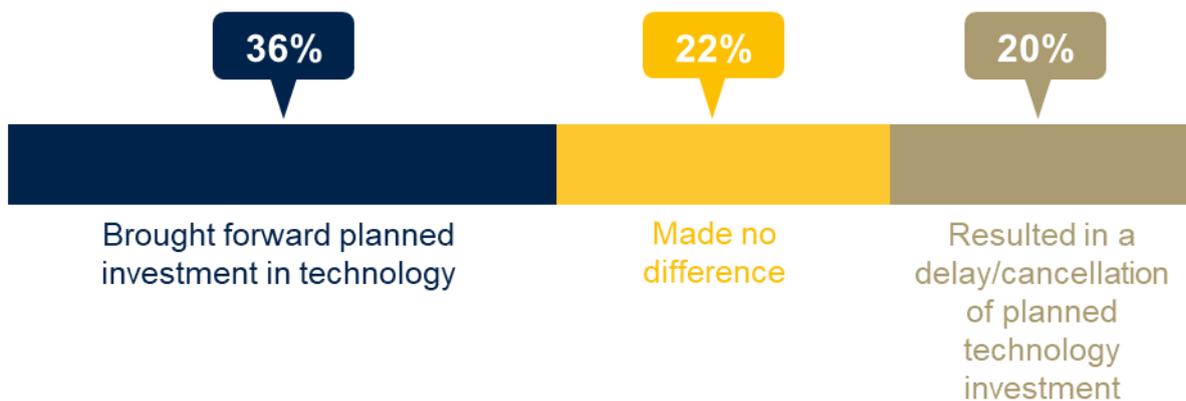
- Invest in enhancing the digital capability of the organisation so it is better positioned to decide which technologies may be best for their business, and on how best to utilise such technology.
- Identify the technology needs of the business and allocate a reasonable amount of capital expenditure on technology investments.
- Identify and implement appropriate technology tools and solutions that improve efficiency, increase competitiveness and reduce cost in their business.
- Make use of video conferencing and group collaboration tools to improve and facilitate flexible work arrangements.
- Encourage a corporate-wide innovative culture through developing a technology talent pool, such as by providing technology training programs to all employees in the business and adopting innovative approaches to secure top technology talent.
- Establish a board-level technology committee to stay actively informed of new trends and potential technologies.

MAINLAND CHINA MARKET SUMMARY



Invested in technology in the past 12 months

IMPACT OF THE COVID-19 PANDEMIC ON TECHNOLOGY INVESTMENT



TOP 3 TECHNOLOGY INVESTMENTS

PAST 12 MONTHS

-  Video conferencing and group collaboration tools
-  Big data/data analytics software
-  Enterprise resource planning software

NEXT 12 MONTHS

-  Big data/data analytics software
-  Enterprise resource planning software
-  Customer relationship management software

REASONS FOR TECHNOLOGY INVESTMENT

-  To improve efficiency
-  To improve and facilitate workplace mobility / work-from-home arrangements
-  To accelerate digital transformation

TOP 3 IN-DEMAND TECHNOLOGY SKILLS

-  Big data analytics
-  Data visualisation
- 
NEURAL NETWORK Artificial intelligence/machine learning applications

HONG KONG MARKET SUMMARY



Invested in technology in the past 12 months

IMPACT OF THE COVID-19 PANDEMIC ON TECHNOLOGY INVESTMENT



TOP 3 TECHNOLOGY INVESTMENTS

PAST 12 MONTHS

-  Video conferencing and group collaboration tools
-  Accounting/audit software
-  Cloud computing

NEXT 12 MONTHS

-  Accounting/audit software
-  Cloud computing
-  Cybersecurity software

REASONS FOR TECHNOLOGY INVESTMENT

-  To improve efficiency
-  To improve and facilitate workplace mobility / work-from-home arrangements
-  To increase competitiveness

TOP 3 IN-DEMAND TECHNOLOGY SKILLS

-  Big data analytics
-  Business analytics and reporting
-  Artificial intelligence/machine learning applications

MALAYSIA MARKET SUMMARY



Invested in technology in the past 12 months

IMPACT OF THE COVID-19 PANDEMIC ON TECHNOLOGY INVESTMENT



TOP 3 TECHNOLOGY INVESTMENTS



REASONS FOR TECHNOLOGY INVESTMENT



To improve efficiency



To improve and facilitate workplace mobility / work-from-home arrangements



To accelerate digital transformation

TOP 3 IN-DEMAND TECHNOLOGY SKILLS



Big data analytics



Business analytics and reporting



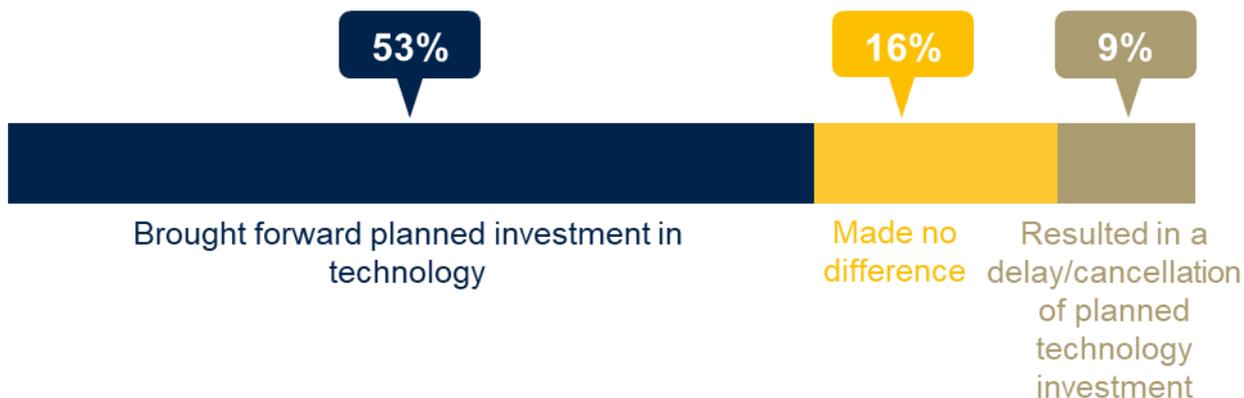
Artificial intelligence/machine learning applications

SINGAPORE MARKET SUMMARY



Invested in technology in the past 12 months

IMPACT OF THE COVID-19 PANDEMIC ON TECHNOLOGY INVESTMENT



TOP 3 TECHNOLOGY INVESTMENTS

PAST 12 MONTHS

-  Video conferencing and group collaboration tools
-  Computer equipment
-  Accounting/audit software

NEXT 12 MONTHS

-  Video conferencing and group collaboration tools
-  Business intelligence and analytical software
-  Computer equipment

REASONS FOR TECHNOLOGY INVESTMENT



To improve efficiency



To improve and facilitate workplace mobility / work-from-home arrangements



To accelerate digital transformation

TOP 3 IN-DEMAND TECHNOLOGY SKILLS



Business analytics and reporting



Artificial intelligence/machine learning applications



Big data analytics

ABOUT THE SURVEY

The survey was conducted by CPA Australia from 23 June to 14 July 2020. A total of 573 responses were received from accounting and finance professionals in Mainland China (158), Hong Kong (154), Malaysia (151), and Singapore (110).

Respondents came from a variety of industries, with financial services (19 per cent), consulting (11.5 per cent), and public practice/CPA firm (11 per cent) being the industries with the largest representation.

ABOUT CPA AUSTRALIA

CPA Australia is one of the world's largest accounting bodies with more than 166,000 members working in 100 countries and regions around the world, and with more than 25,000 members working in senior leadership positions. It has established a strong membership base of more than 19,000 in the Greater China region and more than 20,000 in the ASEAN region.

ACKNOWLEDGEMENTS

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