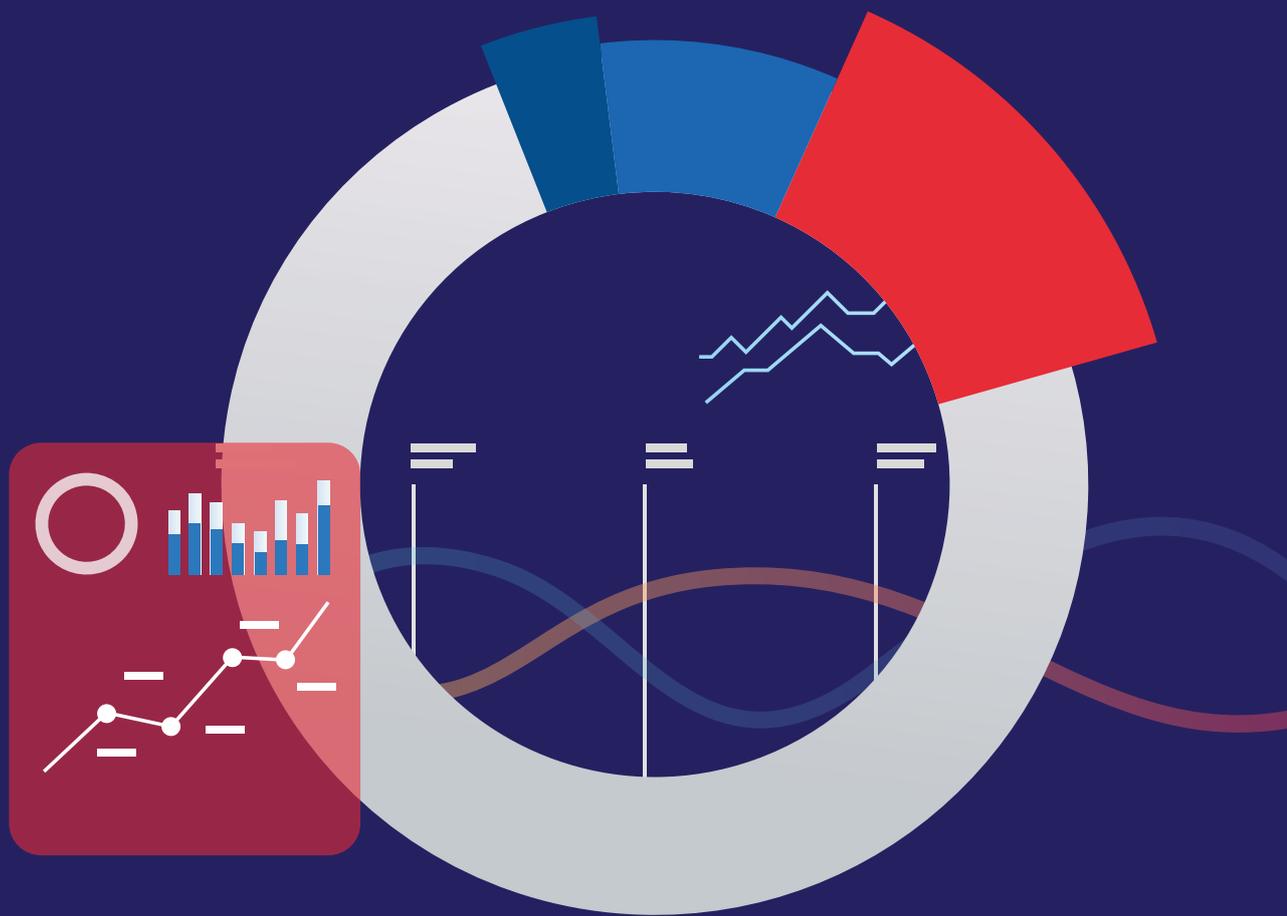


SGTECH



ANNUAL SURVEY 2019/2020

BUSINESS DIGITALISATION & TECH ADOPTION

The top challenge for businesses for technology adoption and innovation is manpower capabilities issues. Beyond this, SMEs are more concerned about costs and funding issues.

TECHNOLOGIES INVESTED AND STARTED IMPLEMENTING IN PAST 12 MONTHS



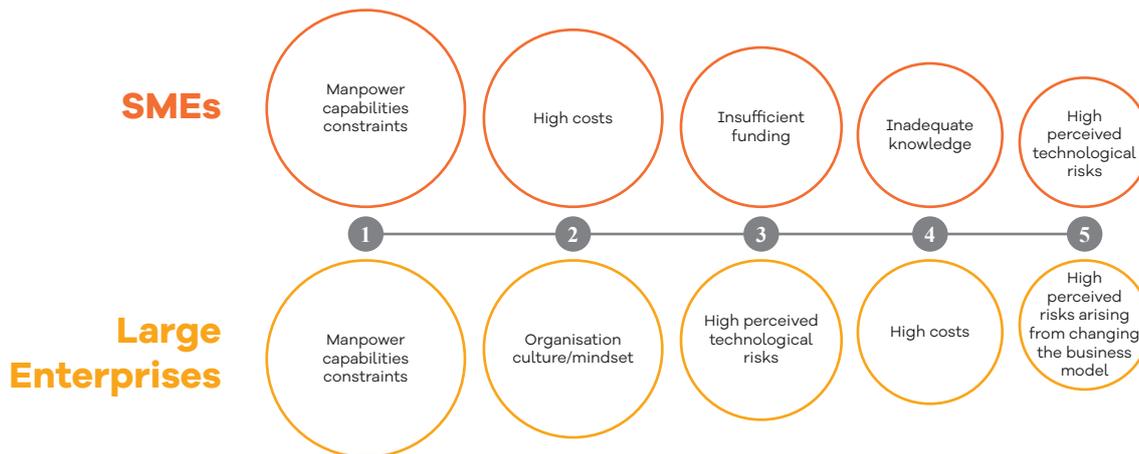
Cloud-enabled applications, data analytics and AI/Machine Learning rank among the top 3 technologies that businesses have invested in.

TECHNOLOGIES INTENDED TO INVEST IN NEXT 12 MONTHS



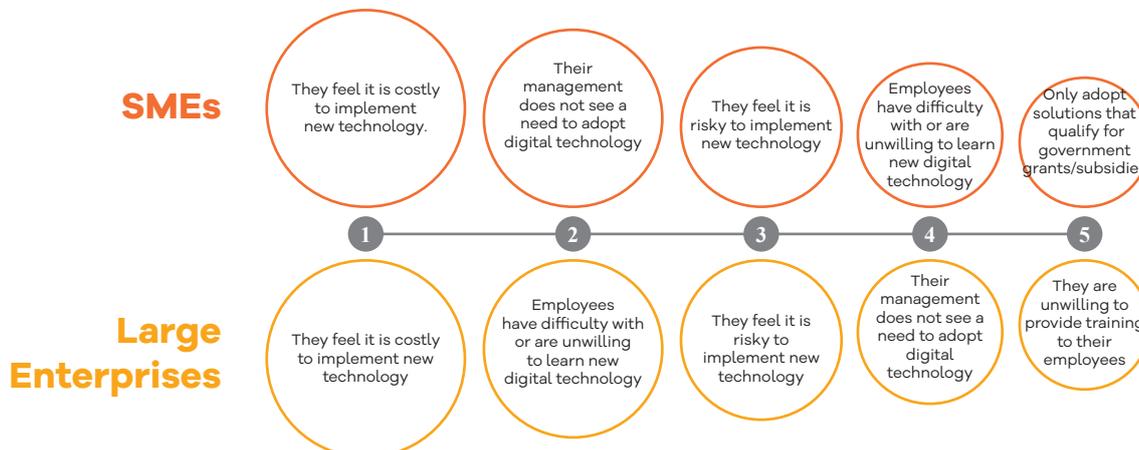
AI/Machine Learning, Data Analytics and Cloud-enabled applications are technologies businesses intend to invest in the next 12 months. Blockchain and 5G technologies are increasing in the radar of businesses for their upcoming investments.

Challenges In Tech Adoption And Innovation



Both SMEs and large enterprises face manpower capabilities issues. As expected, SMEs are more concerned with costs and hence funding becomes important. Large enterprises are more concerned with enterprise-wide challenges like organisation mindset and technological risks.

Challenges In Getting Potential Customers To Adopt Digital Technology



The top challenge in customer adoption for digital technology is the perceived high cost of technology implementation. For SME customers, the concern is also the lack of management buy-in, whilst for large enterprises, the concern is the lack of employee buy-in/adoption.

TECH MANPOWER

Concerns on lack of skillsets for local tech talent and concerns on EPs and S-Passes have eased, compared to previous years, based on the feedback from respondents.

This means these concerns are still valid and top of mind, but they bother the respondents to a much lesser magnitude. It is encouraging to see that more SMEs are taking on skills upgrading. 44% of SME respondents used this as a means to mitigate tech manpower crunch issues (versus 35% in last survey).

Demand for Tech Talent

Businesses have a growing demand for tech manpower. 76% of businesses plan to hire tech staff in the next 12 months.

51%

of businesses have sufficient tech talent to support their digital business strategy

76%

of businesses have plans for new headcounts in the next 12 months

Challenges faced in hiring local tech talent

Most pressing issues for SMEs are HR issues in matching salary expectations and tech staff retention. Concerns on skills have eased.

SMEs



52%

We cannot match the applicants' salary expectations



38%

High turnover of local tech talents



36%

Applicant lack the required skills (e.g Java, Python, Hadoop, etc.)

Versus Annual Survey (2018/19)

-15p.p.
(percentage points)

-4p.p.

-16p.p.

Challenges faced in hiring foreign tech talent

Concerns on S-Pass and EPs have seen eased significantly. Key concerns for SMEs are around foreign tech talent acquisition

SMEs



31%

Qualifying salaries for S-Pass and Employment Pass are too high



25%

We don't have sufficient S-Pass quota



14%

Don't know where to source for talents

Versus Annual Survey (2018/19)

-35p.p.
(percentage points)

-34p.p.

(not applicable)

Measures taken to meet tech talent needs

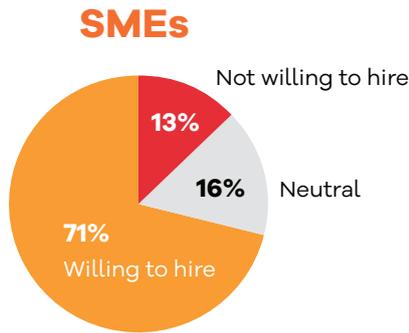
Large enterprises are relatively more willing to invest in resourcing (training and recruitment). SMEs prefer to outsource as a top business solution. However, SME skills upgrading has increased compared to last year.

SMEs Large Enterprises

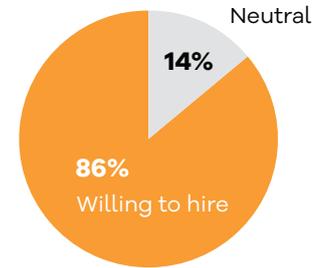
Outsource tech projects	45%	71%	Upgrade skills of existing workforce to take on more or higher-skilled work
Upgrade skills of existing workforce to take on more or higher-skilled work	44%	50%	Recruit foreign talent to work in Singapore
Employ contract staff/ part-timers/ freelancers	36%	50%	Employ contract staff/ part-timers/ freelancers

Willingness to Hire Mid-Career Switchers

Large enterprises are more open to hire mid-career switchers

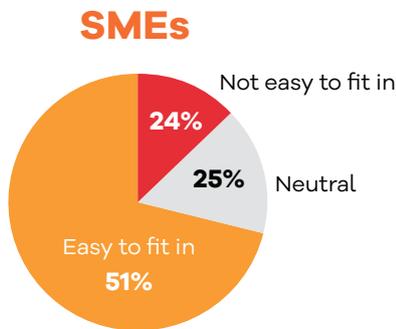


Large Enterprises

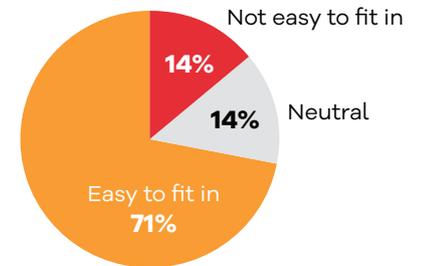


Mid-Career Switchers: Fit into Organisational Culture

More large enterprises feel that mid-career switchers can fit into their organisational culture

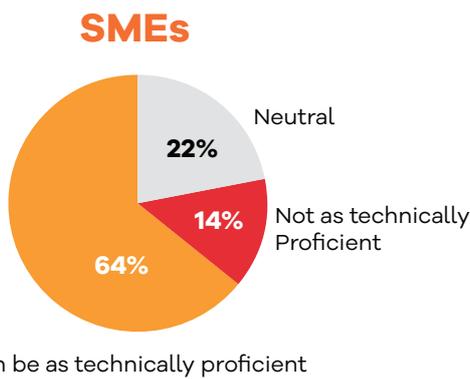


Large Enterprises

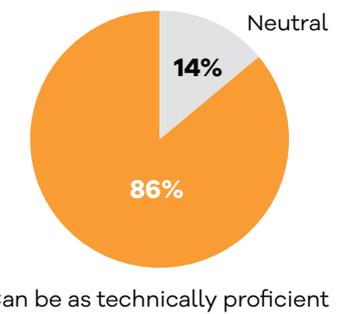


Organisational Mindset on Mid-career Switchers' Technical Proficiency versus other tech talents

Large enterprises are more open in their mindset about the potential for technical proficiency of mid-career switchers.

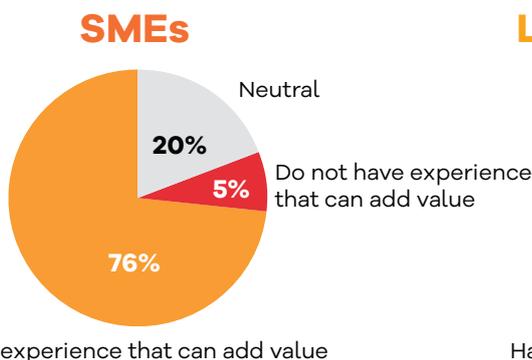


Large Enterprises

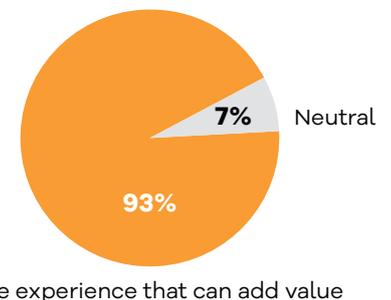


Organisational Mindset on Mid-career Switchers' potential to add value with their Experience

Large enterprises are much more appreciative of the experience that mid-career switchers bring into the organisation.



Large Enterprises



AUTOMATION AND MANPOWER

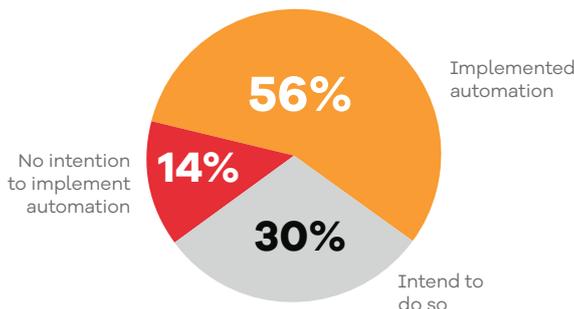
Businesses are very positive about automation. 3 in 4 of the respondents plan to automate their business in the next 12 months. Businesses are overwhelmingly positive on the expected value of automation, from both cost reduction and productivity.

Will automation displace jobs? 68% of the respondents don't think so, at least in the next 12 months. But further out in time, they are not so confident that the workforce will not be displaced.

Of the businesses that think that their workforce will be displaced, a worrying feedback is that a large majority of them (72%) think that at best 10% of the workforce can be re-deployed.

Why so? The top reasons given are no available jobs, workforce attitude misfit and inadequate training capacity.

Automation in Businesses



3 in 4

businesses with intention to automate intend to do so in the next 12 months

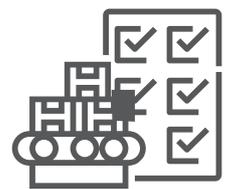
Expected Impact on Businesses



Cost Reduction

90%

of businesses say there is positive impact on cost reduction

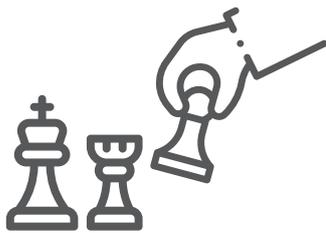


Productivity Increase

94%

of businesses say there is positive impact on productivity increase

Workforce Displacement Effect Over Next...



...12 months

68%

of businesses say there is no displacement of their workforce by automation

... 24 months

59%

of businesses say there is no displacement of their workforce by automation

Prospect for Redeployment of Displaced Workforce



72%

of businesses say less than 10% of the displaced workforce can be re-deployed

Top Reasons Why Displaced Workforce Cannot be Re-deployed



- 1 There are no available positions in the organisation.
- 2 The affected workers do not have the right attitude for the available positions.
- 3 There is no capacity in the organisation to manage the training effort.

INTERNATIONALISATION

Singapore itself is a small market. Hence 72% of respondent businesses embark on internationalisation to increase outbound sales.

Of the 28% of the respondents which have not started internationalisation efforts, the majority of them are SMEs. Their main geographical focus are ASEAN and China.

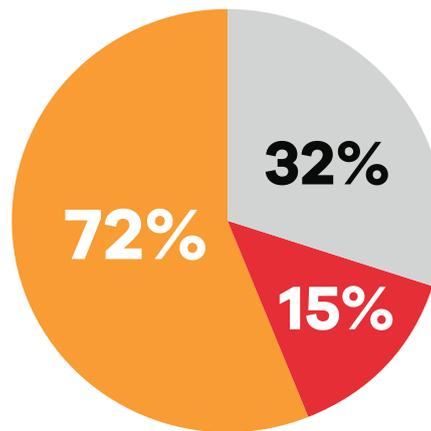
The first challenge they need to overcome is to set up the overseas operations. For SMEs, resource constraints are exacerbated with overseas operations. Once the overseas setup has been done, the concerns of contractual risks come in.

Approach To Internationalisation

3 in 4

businesses are interested in selling overseas

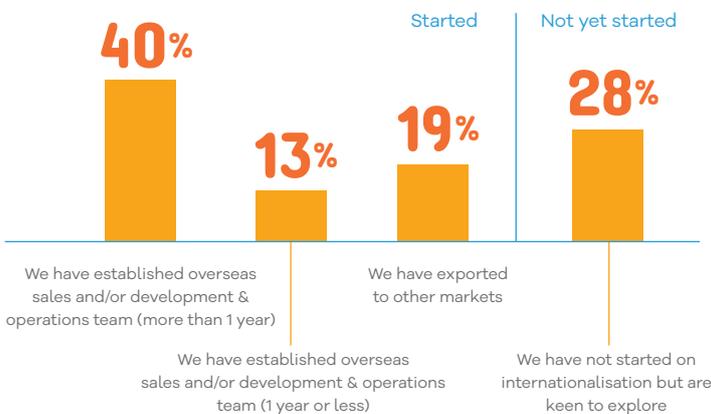
We are interested in bringing our solutions to overseas markets



We are interested in looking for solutions from overseas to bring to Singapore/other markets.

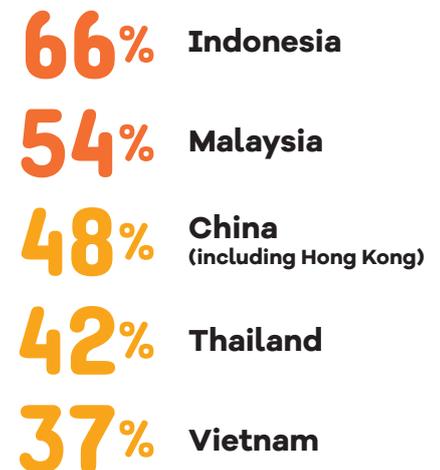
We are not interested in internationalisation

Current Internationalisation Efforts



Internationalisation Focus In Next 12 Months

Top 5 Countries



Challenges Encountered When Venturing Overseas

< 1 year Overseas Operations

- 1 Difficulty in establishing overseas operations (e.g. requires significant managerial attention & effort, difficulty in hiring local talents or sending staff overseas)
- 2 Unfamiliarity with foreign markets (culture, local business practices, limited access to local market information)
- 3 Difficulty in finding business partners

> 1 year Overseas Operations

- 1 Unfamiliarity with regulations (e.g. processes of foreign markets, legal)
- 2 Unfamiliarity with foreign markets (culture, local business practices, limited access to local market information)
- 3 Difficulty in establishing overseas operations (e.g. requires significant managerial attention & effort, difficulty in hiring local talents or sending staff overseas)

DATA GOVERNANCE

Data Governance is an important topic for businesses. 93% of large enterprises agree it is important and 84% of SMEs agree it is important. This is not surprising as a breach of data can mean significant financial loss and loss in customer trust. 88% of businesses have implemented data protection policies and procedures.

From the respondent feedback on Data Protection Trustmark (DPTM) and APEC CBPR and PRP certification, larger enterprises are generally more aware of and more ready to take on certification.

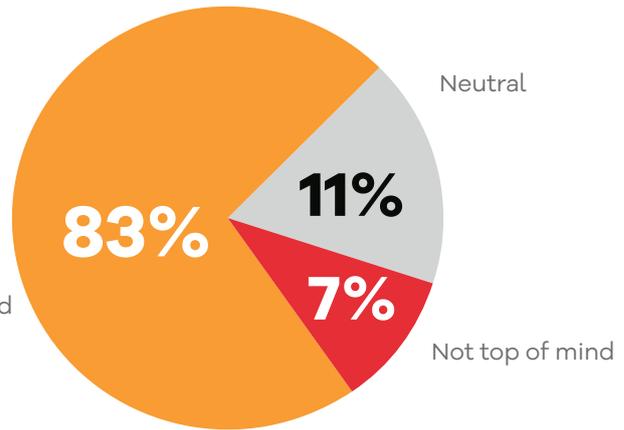
Importance of Data Governance to Businesses

Businesses recognise the importance of data governance. 93% of large enterprises agree and 84% of SMEs agree.

4 in 5

businesses agree that Data Governance is important

Top of mind



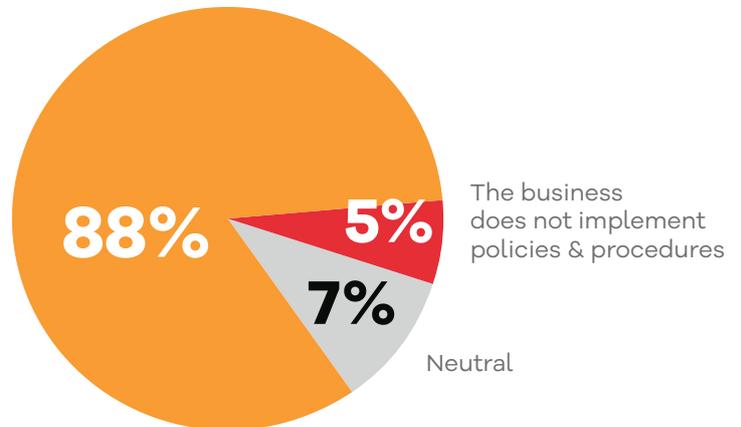
Implementation of Data Protection

Businesses do not just recognise the importance of data protection; 88% of businesses implement data protection policies and procedures. Amongst large enterprises, 100% of them do so (versus 87% for SMEs).

88%

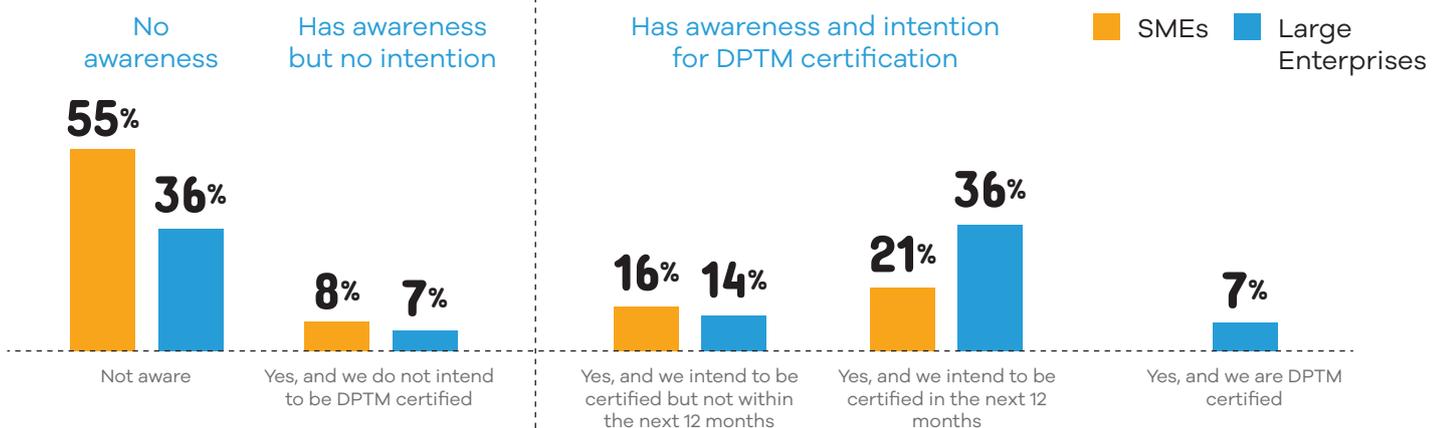
of businesses implement policies and procedures to ensure security of customer data

The business implements policies & procedures



Data Protection Trustmark (DPTM) Certification

Large enterprises are much more ready in terms of awareness and intention to pursue DPTM. 36% of large enterprises intend to be certified in the next 12 months.



SUSTAINABILITY

Larger enterprises are leading in defining their Sustainability positions. This may be due to SGX reporting requirements.

31% of SMEs have an intention to define their Sustainability positions in the next 12 months.

Sustainability is taken at a strategic level for large enterprises more than for SMEs.

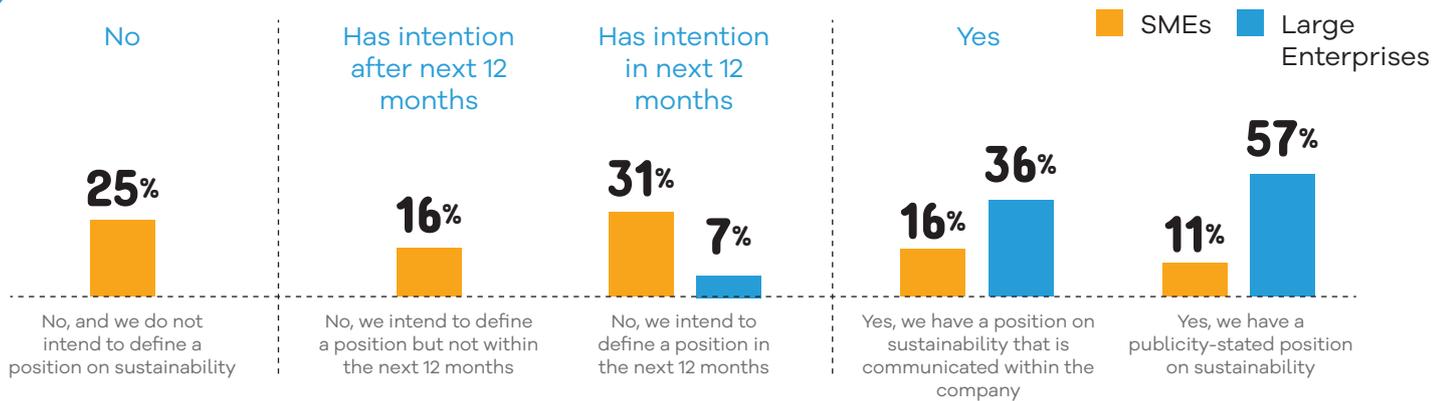
93% of large enterprises say they take sustainability into consideration in their corporate decisions.

The top 3 sustainability focus areas are waste reduction, sustainable products and sustainable materials.

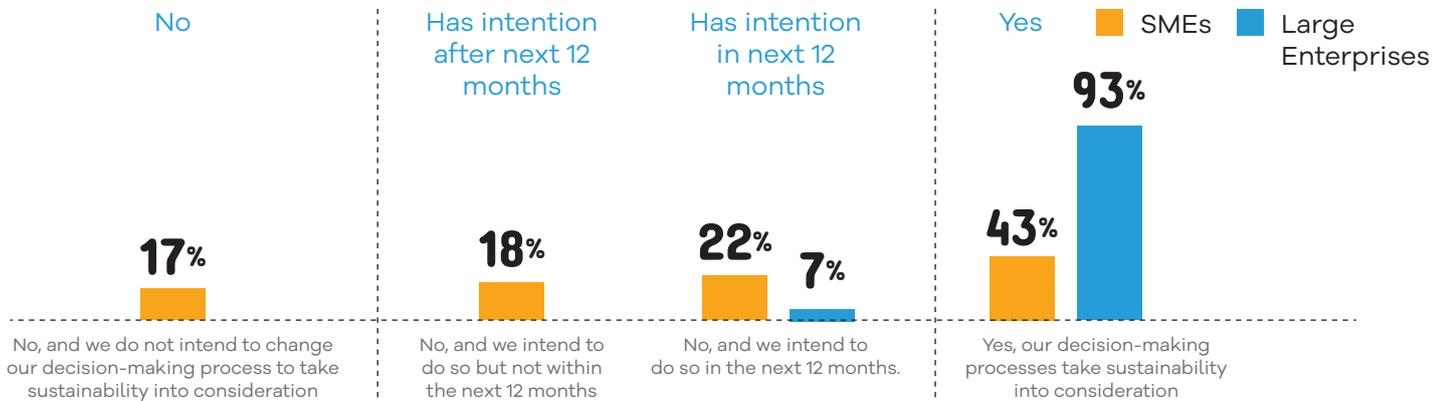
There is an opportunity to raise awareness of tech industry carbon emissions for SMEs.

Currently, the awareness is at 59% for SMEs.

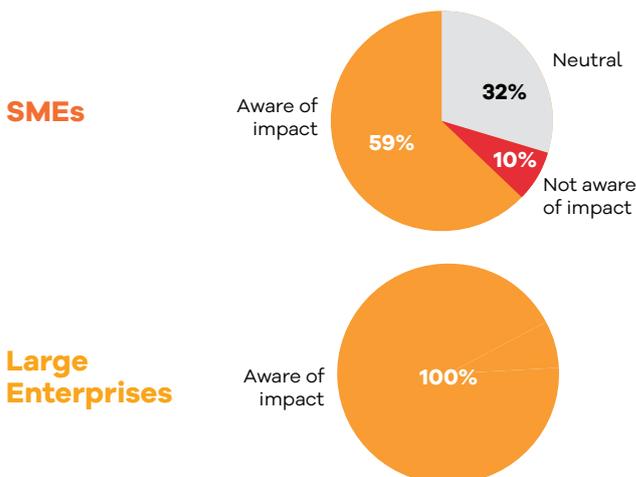
Stated Position on Sustainability



Sustainability and Corporate Decision Making



Level of Agreement that Tech Industry contributes significantly to Singapore's Carbon Emissions



Areas of Focus on Sustainability



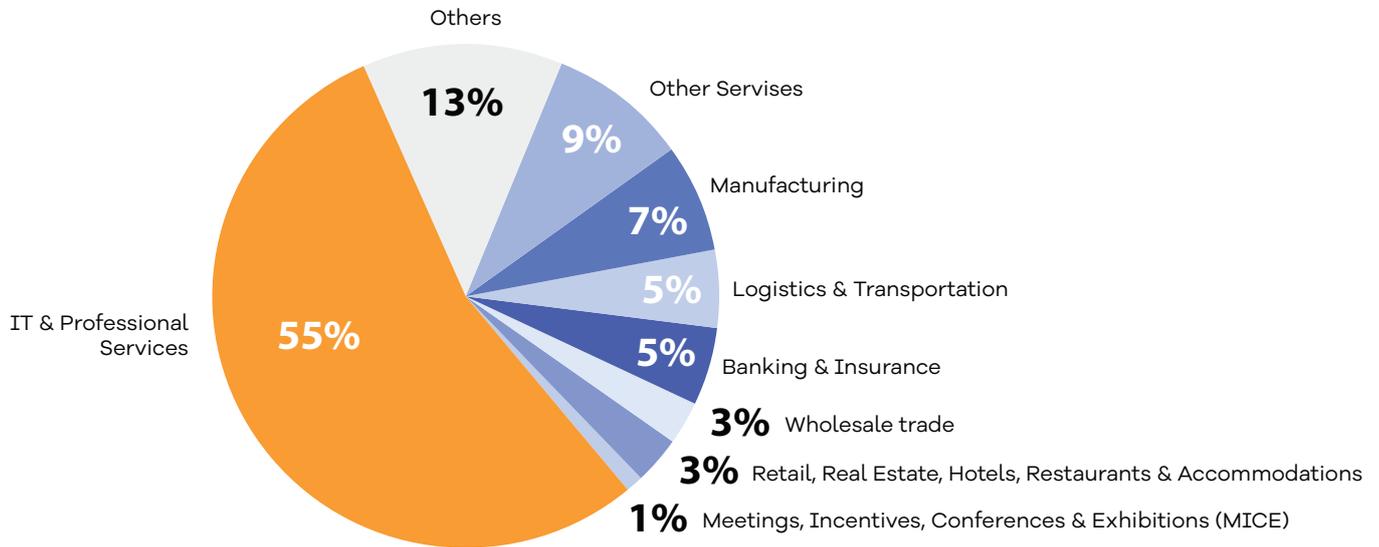
Actions Businesses have taken to curb Carbon Emissions



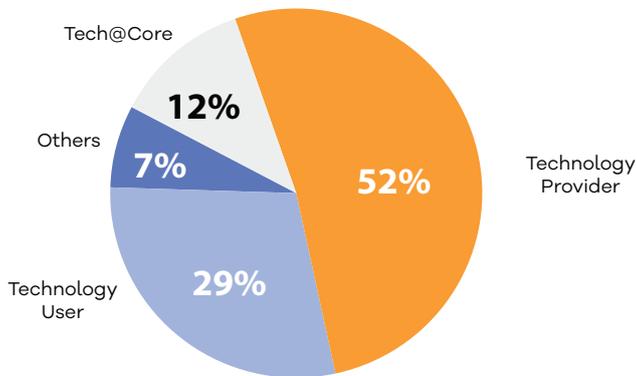
ABOUT THE SURVEY

The SGTech Annual Survey was conducted online between 24 October and 31 December 2019.

INDUSTRY TYPE

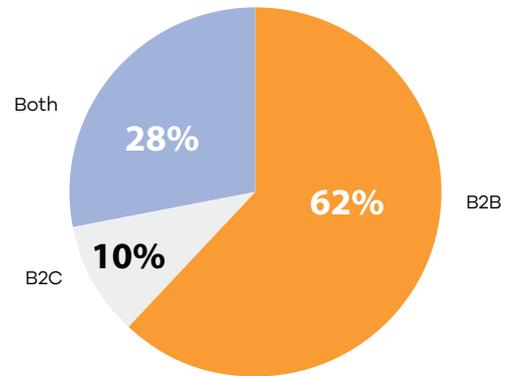


TECHNOLOGY OPERATING MODEL

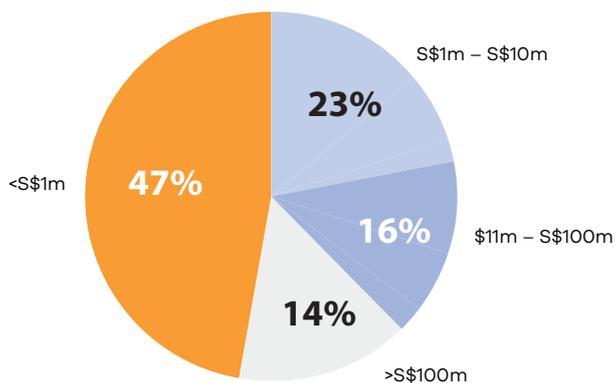


Tech@Core: Technology is at the heart of my organisation's business, even though we do not provide tech solutions to other organisations.

BUSINESS MODEL



COMPANY SIZE (Annual Revenue in Singapore)



ROLE PROFILE

