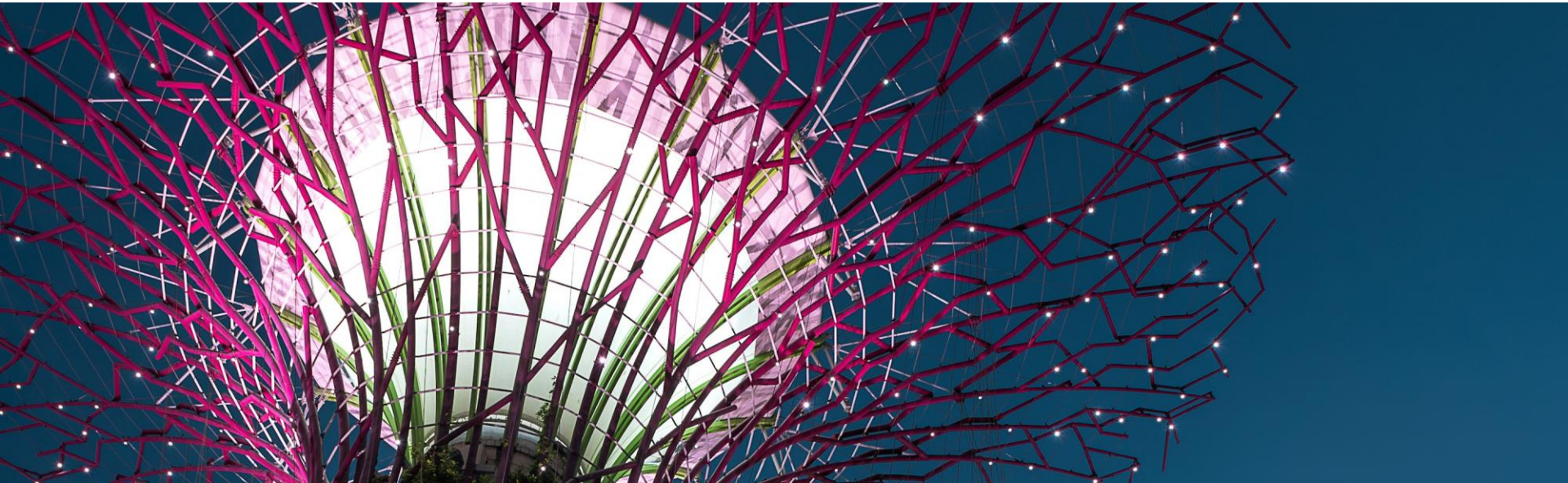


# National Business Survey (NBS) 2024 – Smart-Enabled Businesses Edition

Final Report (September 2024)



# About the Study

The National Business Survey (NBS) 2024 – Smart-Enabled Businesses Edition forms part of the 17<sup>th</sup> annual edition of the NBS.

The Singapore Business Federation (SBF) appointed Acorn Marketing & Research Consultants (Group) Pte Ltd to administer its NBS 2024 – Smart-Enabled Businesses Edition.

This survey seeks to curate feedback on issues and challenges related to digitalisation and the adoption of smart technologies as companies embark on their transformation journeys and venture into the digital landscape.

The survey period of this study was from **23 May to 5 July 2024**. The study drew responses from businesses across all key industries. A sample size of **n = 529** was achieved for this report.

For the sub-group analyses of certain filtered questions, the sample base may be small, thus, the results should be read with caution.

## Overview

01

Current  
State of  
Digitalisation










02

Challenges  
and Support  
Required

03

Future Trend  
of  
Digitalisation

# Respondents by Sector

Sectors		2017	2018	2019	2020	2021	2022	2023	2024
	Wholesale Trading	15%	18%	18%	20%	19%	16%	17%	15%
	IT & Professional Services	17%	11%	11%	11%	11%	15%	13%	15%
	Construction & Civil Engineering	12%	13%	12%	14%	15%	10%	14%	14%
	Manufacturing	17%	16%	13%	10%	17%	15%	13%	13%
	Banking & Insurance	4%	3%	3%	3%	3%	8%	11%	12%
	Other Services (eg. Education, Repairs & Servicing)	11%	11%	13%	17%	15%	10%	11%	11%
	Retail, Real Estate, Hotels, Restaurants & Accommodation	8%	11%	10%	10%	11%	12%	9%	8%
	Logistics & Transportation	8%	7%	6%	5%	6%	8%	7%	6%
	Others (eg. Fishing, Mining, etc.)	6%	11%	14%	5%	3%	6%	6%	6%
		N=1,019	n=705	n=1,018	n=1,075	n=1,096	n=931	n=1,056	n=529



**82% SMEs**



**18% Large companies**



**48% Production & Trade**

Manufacturing, Construction & Civil Engineering, Logistics & Transportation, Wholesale Trade



**46% Services**

IT & Professional Services, Other Services, Retail, Real Estate, Hotels, Restaurants & Accommodations, Banking & Insurance



**6% selected "others"**

The sample proportion collected for this survey across the various sectors is largely comparable with that of previous years.



# Summary



*Digital transformation continues to be seen as a critical element in maintaining competitiveness and competency, despite challenging market demands. As such, businesses continue to invest in digital technologies, particularly cloud, e-payment and cybersecurity, spending an average of one-tenth of their annual budget. This helps to improve business performance by optimising operations, reducing operation costs and enhancing employee collaboration and remote work channels. Return on investment of such digitalisation efforts are primarily measured by operational efficiency such as time and cost savings.*

*Nonetheless, the biggest perceived roadblock to technology adoption are cost issues and upskilling of staff to keep up with the new technologies. To address the digitalisation challenges, businesses require financial support for digital advisory and project implementation services tailored to their specific digitalisation needs, central reference for up-to-date information, solutions and resources, as well as seminars to raise awareness of new technologies and best practices.*

*Moving forward, the two trends that stand out are Artificial Intelligence (AI) and cybersecurity.*

## Artificial Intelligence

*About 2 in 3 businesses have adopted or plan to adopt AI in the next 12 months, primarily in the areas of operational process automation, cybersecurity defence and analytics. IT & Professional Service sector leads in AI adoption, while Logistics & Transportation and Manufacturing have the lowest adoption. High cost and lack of knowledge and expertise remain as the top challenges in AI adoption. Despite the challenges, sectors that are lagging in the adoption of AI have plans to catch up in the next 12 months, so that they can reap the benefits of improved operational efficiency and time savings, as well as generate insights through data analytics.*

## Cybersecurity

*Cybersecurity is one of the top pervasive technologies currently being adopted, with more companies planning to jump on the bandwagon in the next 12 months. 79% of businesses have expressed confidence in their security measures against cyber-threats, a slight decrease of 1%-point from last year. Key cybersecurity challenges include high cost of implementation and maintenance, risks from third-party service providers and suppliers and employees' lack of awareness on cybersecurity.*

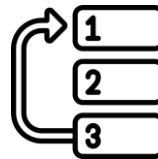
# Summary: CURRENT STATE OF DIGITALISATION (1/6)



## 1. Perception

Digital transformation continues to be seen as a critical element in maintaining competitiveness and competency, given changing market demands.

- Over 9 in 10 (94%) businesses recognise the importance of digital transformation, similar to last year. The proportion of large companies have increased by 4%-points (from 94% to 98%), while the proportion of SMEs remain the same. IT & Professional Services (99%) and Manufacturing (97%) sectors are at the forefront of recognising the importance of digital transformation.



## 2. Prioritisation

Businesses are focusing their digital transformation efforts primarily on **Operational Processes (77%)** and **Information Technology (IT) Systems (71%)**.

- Among the business aspects, five have seen increases in prioritisation of digital transformation when compared to last year – Operational Processes by 7%-points (from 70% to 77%), Information Technology Systems by 19%-points (from 52% to 71%), Business Models by 3%-points (from 62% to 65%), Research & Development by 9%-points (from 39% to 48%) and Expanding Overseas by 5%-points (from 41% to 46%); and two have seen decreases in prioritisation of digital transformation – Products or Services by 3%-points (from 68% to 65%) and Customer Experience / Service by 1%-point (from 66% to 65%).



## 3. Performance

Digital transformation helps to improve business performance by **optimising operations (67%)**, **reducing operation costs (58%)** and **enhancing employee collaboration and remote work channels (49%)**.

- The top 3 improvements in business performance are similar for both SMEs and large companies. Compared to SMEs, more large companies report improvements across all categories of business performance except for access to new markets and customers.



## 4. Budget

On average, businesses devote about **one-tenth (11%) of their annual budget to digitalisation.**

- SMEs allocate an average of 11% of their annual budget to digitalisation, whereas large companies spend about 8%.
- Cloud (69%), E-payment (62%) and Cybersecurity (60%) are the top 3 pervasive technologies currently adopted by companies, with more companies planning to jump on the bandwagon. In the next 12 months, the top digital technologies that businesses plan to adopt are Artificial Intelligence (46%), Data Analytics (38%) and Internet-of-Things (31%).
- More large companies have adopted most of the digital technologies, as compared to SMEs. Nonetheless, more SMEs plan to catch up and adopt digital technologies in the next 12 months.
- IT & Professional Services sector (41%) is leading the adoption of Artificial Intelligence, while Logistics & Transportation (6%) and Manufacturing (10%) have the lowest adoption. Nonetheless, sectors that are lagging have plans to catch up in the next 12 months.



## 5. Return on Investment

**Return on Investment (ROI) of digitalisation efforts are primarily measured by time savings by employees through digital processes (87%) and increase in cost savings due to improved efficiency (86%).**

- The top 2 measurements of ROIs of digitalisation efforts are similar for both SMEs and large companies. Penetration of overseas markets and opportunities (16%) is least likely to be factored as part of businesses' ROI measurement of digitalisation efforts.





## 6. Digitalisation Challenges

The biggest perceived **roadblock** to technology adoption are **cost issues [high cost (73%) and expensive intellectual property (IP) licensing payments (47%)], upskilling of staff to keep up with the new technologies (47%) and awareness of suitable technologies (45%)**.

- Challenges seem more acute this year, as all varieties of challenges in technology adoption are highlighted by a larger proportion of businesses, compared to last year.
- While the top 3 challenges in technology adoption are the same in last year's NBS 2023/2024, the proportion of businesses have increased – high cost of technology adoption by 9%-points (from 64% to 73%), expensive IP licensing payments by 16%-points (from 31% to 47%) and upskilling of staff to keep up with the new technologies by 18%-points (from 29% to 47%). Businesses in Retail, Real Estate, Hotels, Restaurants & Accommodations and Logistics & Transportation sectors are most affected by the top challenges.



## 7. Support

To address the digitalisation challenges, businesses prefer having **financial support for digital advisory and project implementation services tailored to company's specific digitalisation needs (69%), central reference for up-to-date information, solutions and resources (57%), seminars / workshops to raise awareness of new technologies and best practices (52%) and platforms for sharing of best practices and innovative solutions used by companies (51%)**.

- The top 2 support initiatives that both SMEs and large companies find useful are **financial support for digital advisory and project implementation services and central reference for up-to-date information, solutions and resources**. Other than these initiatives, SMEs find **seminars / workshops to raise awareness of new technologies and best practices (52%)** useful, while large companies find **platforms for sharing of best practices and innovative solutions (60%)** useful.





## 8. Existing Initiatives

**Productivity Solutions Grant (PSG) (67%), Enterprise Development Grant (EDG) (64%) and Start Digital (54%) are the top 3 existing digitalisation initiatives that businesses find useful in supporting them adopt digital transformation.**

- SMEs find **Start Digital (55%)** to be useful, while large companies find **cybersecurity health check for organisation (61%)** and **InvoiceNow Financial Support or Grants (60%)** to be useful.
- Perception and usefulness of cybersecurity programmes tend to be high among large companies. This includes **cybersecurity health check for organisation (61%)**, **SG cyber talent (59%)**, **data protection essentials (DPE) (57%)**, **data protection certifications (57%)**, and **Cyber Trust Mark / Cyber Essentials Mark (54%)**.



## 9. Singapore Budget 2024

**Businesses also look forward to have advisory guidelines on the use of Personal Data in AI Recommendation and Decision Systems (60%), curation of more AI-enabled solutions under the SMEs Go Digital (54%) and support for companies to build AI Centres of Excellence (54%), as announced during Singapore Budget 2024.**

- SMEs indicate that more AI-enabled solutions under the SMEs Go Digital (60%), advisory guidelines on the use of Personal Data in AI Recommendation and Decision Systems (58%) and support for companies to build AI Centres of Excellence (54%) will be most beneficial; whereas large companies indicate that advisory guidelines on the use of Personal Data in AI Recommendation and Decision Systems (71%), support for companies to build AI Centres of Excellence (52%) and Generative AI (GenAI) x Digital Leaders initiative (48%) will be most beneficial.
- The top industry support initiatives across sectors are **curation of more AI-enabled solutions under the SMEs Go Digital** and **support for companies to build AI Centres of Excellence**, while the top talent initiative across sectors is the **uplifting of enterprises and workers in the age of AI**, as part of the **Digital Enterprise Blueprint (DEB)**.



## 10. Trends

Moving forward, **emerging technology, such as artificial intelligence (AI) and augmented reality (AR) (70%), and cybersecurity (68%)** are the top trends likely to impact businesses in the next 12 months.

- The proportion of businesses citing the top 3 trends have increased from last year's NBS 2023/2024 – emerging technology, such as AI and AR, by 35%-points (from 35% to 70%), cybersecurity by 23%-points (from 45% to 68%) and automation by 29%-points (from 22% to 51%). The top 3 trends are similar for SMEs, whereas large companies are more conscious of trends related to cybersecurity (73%), emerging technology, such as AI and AR (69%) and reduction of carbon footprint through usage of sustainability technology (60%).



## 11. Artificial Intelligence

Riding on the trends in Artificial Intelligence (AI), about **2 in 3 businesses (66%)** have adopted or plan to adopt AI in the next 12 months, with **process automation for operations (45%), cybersecurity defence (45%) and analysis of customers' data or transaction data (44%)** as the most preferred areas.

- IT & Professional Services sector leads in AI adoption (41%), while Logistics & Transportation (6%) and Manufacturing (10%) have the lowest adoption. Nonetheless, sectors that are lagging have plans to catch up in the next 12 months.
- Adoption of AI allows businesses to reap the **benefits of improved operational efficiency and time saving (57%) and insights generation through data analytics (43%)**.
- There is greater impact of AI on large companies, with more large companies having improved operational efficiency and time saving (77% versus 52%) and generating insights through data analytics (63% versus 39%) than SMEs.
- High cost of implementation and lack of knowledge and expertise remain as the top 2 challenges in AI adoption. Most of the challenges in AI adoption have been amplified this year, as compared to 2023.



## 12. Cybersecurity

**On cybersecurity, 86% of businesses have adopted or plan to adopt cybersecurity in the next 12 months. 79% of businesses have expressed confidence in their security measures against cyber threats, a slight decrease of 1%-point from last year (80%).**

- The top sectors that have adopted Cybersecurity are Logistics & Transportation (73%) and Banking & Insurance (70%); while the top sectors that plan to adopt Cybersecurity in the next 12 months are Construction & Civil Engineering (38%) and Retail, Real Estate, Hotels, Restaurants and Accommodations (38%).
- The top 3 cybersecurity challenges faced by businesses are high cost of implementation and maintenance (56%), risks from third-party service providers and suppliers (50%), and employees' lack of awareness on cybersecurity (39%). While 2 of the top 3 cybersecurity challenges are the same in last year's NBS 2023/2024, the proportion of businesses have decreased – risks from third-party service providers and suppliers by 17%-points (from 67% to 50%) and employees' lack of awareness on cybersecurity by 6%-points (from 45% to 39%).

# CURRENT STATE OF DIGITALISATION

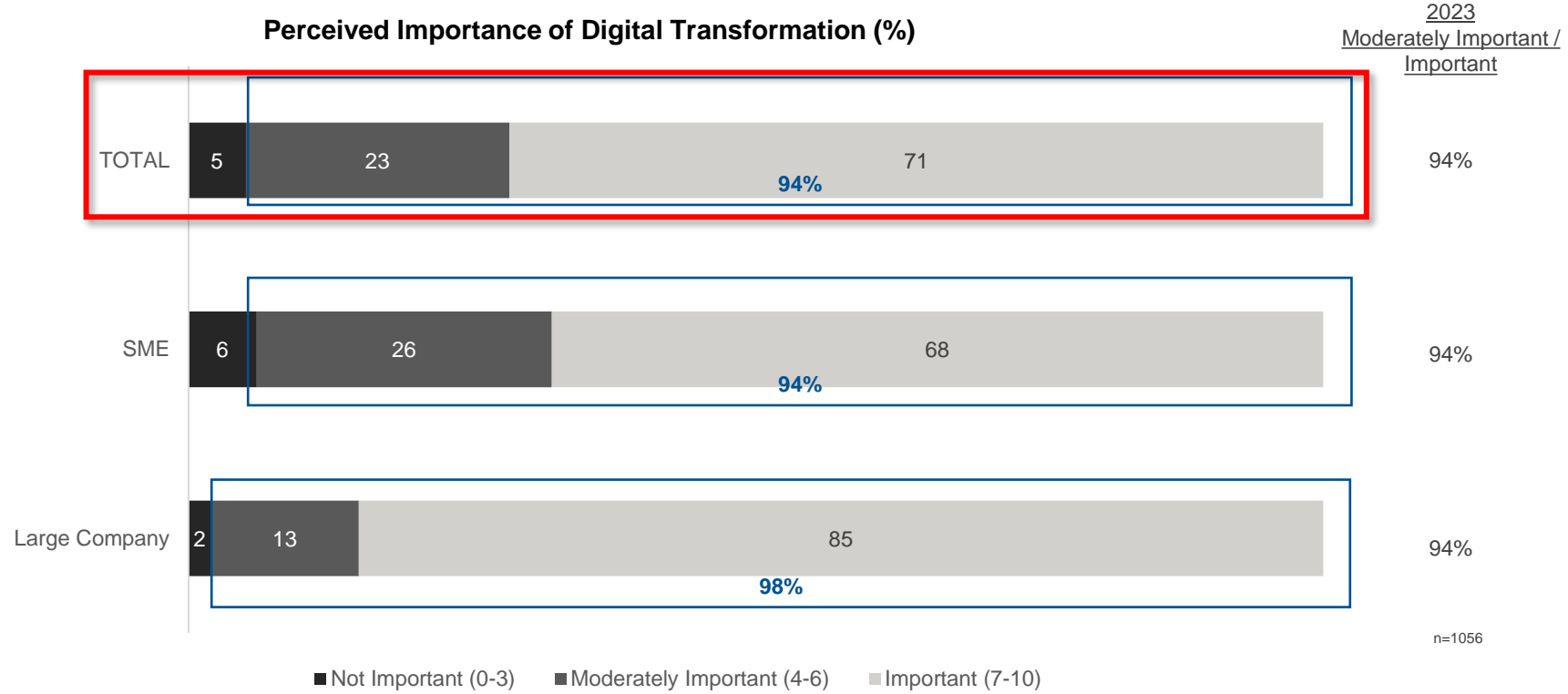
The background is a vibrant digital landscape. It features a dense field of blue and white light trails that create a sense of depth and movement, resembling data streams or fiber optic connections. In the lower-left foreground, the dark silhouettes of several people are visible, appearing to be engaged in a collaborative activity or looking at a screen. The overall color palette is dominated by deep blues and bright whites, giving it a high-tech, futuristic feel.



# CURRENT STATE OF DIGITALISATION

**Digital transformation continues to be seen as a critical element in maintaining competitiveness and competency, given changing market dynamics.**

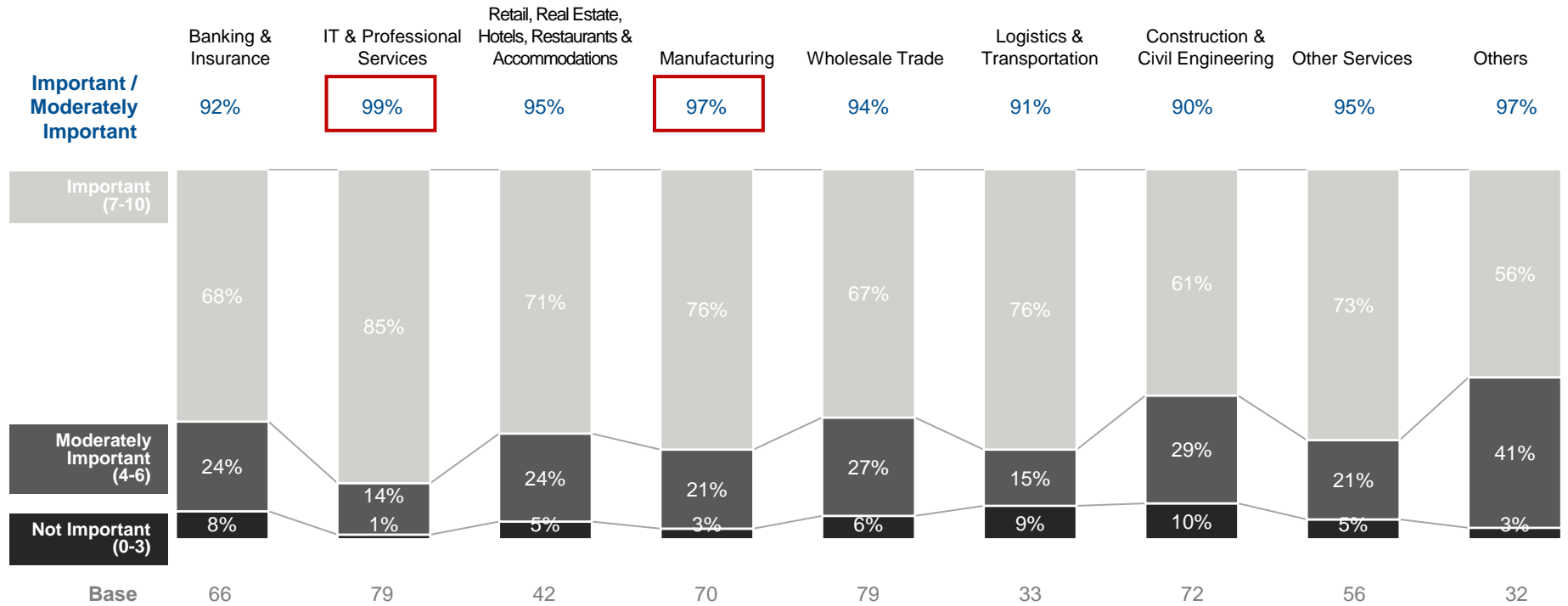
Over 9 in 10 businesses recognise the importance of digital transformation, with more large companies recognising it in 2024 (98%), compared to the year before (94%).



Base: All Respondents (n=529). Decimal points have been rounded up. The total may not add up to 100%.  
2a. On a scale of 0-10, how would you rate the importance of digital transformation in your company?

# CURRENT STATE OF DIGITALISATION

IT & Professional Services and Manufacturing sectors are at the forefront of recognising the importance of digital transformation.



Base: All Respondents (n=529)  
 2a. On a scale of 0-10, how would you rate the importance of digital transformation in your company?

## CURRENT STATE OF DIGITALISATION

### Businesses are focusing their digital transformation efforts primarily on operational processes and Informational Technology (IT) system.

The importance of digital transformation on IT systems has increased markedly in 2024 (71%) vis-à-vis 2023 (52%).

More focus has also been placed on operational processes, business models, research & development and internationalisation in 2024 as compared to the previous year.

Business Aspects	Important (7-10) (%)	2023 (%)
Operational Processes	77 (▲ by 7%-points)	70
Information Technology (IT) System	71 (▲ by 19%-points)	52
Products or Services	65 (▼ by 3%-points)	68
Customer Experience / Service	65 (▼ by 1%-points)	66
Business Models	65 (▲ by 3%-points)	62
Research & Development	48 (▲ by 9%-points)	39
Expanding Overseas	46 (▲ by 5%-points)	41

n=529

n=1056

Base: All Respondents (n=529)

2b. On a scale of 0-10, how important are the digital transformation and innovation efforts implemented in relation to the following aspects of your business?

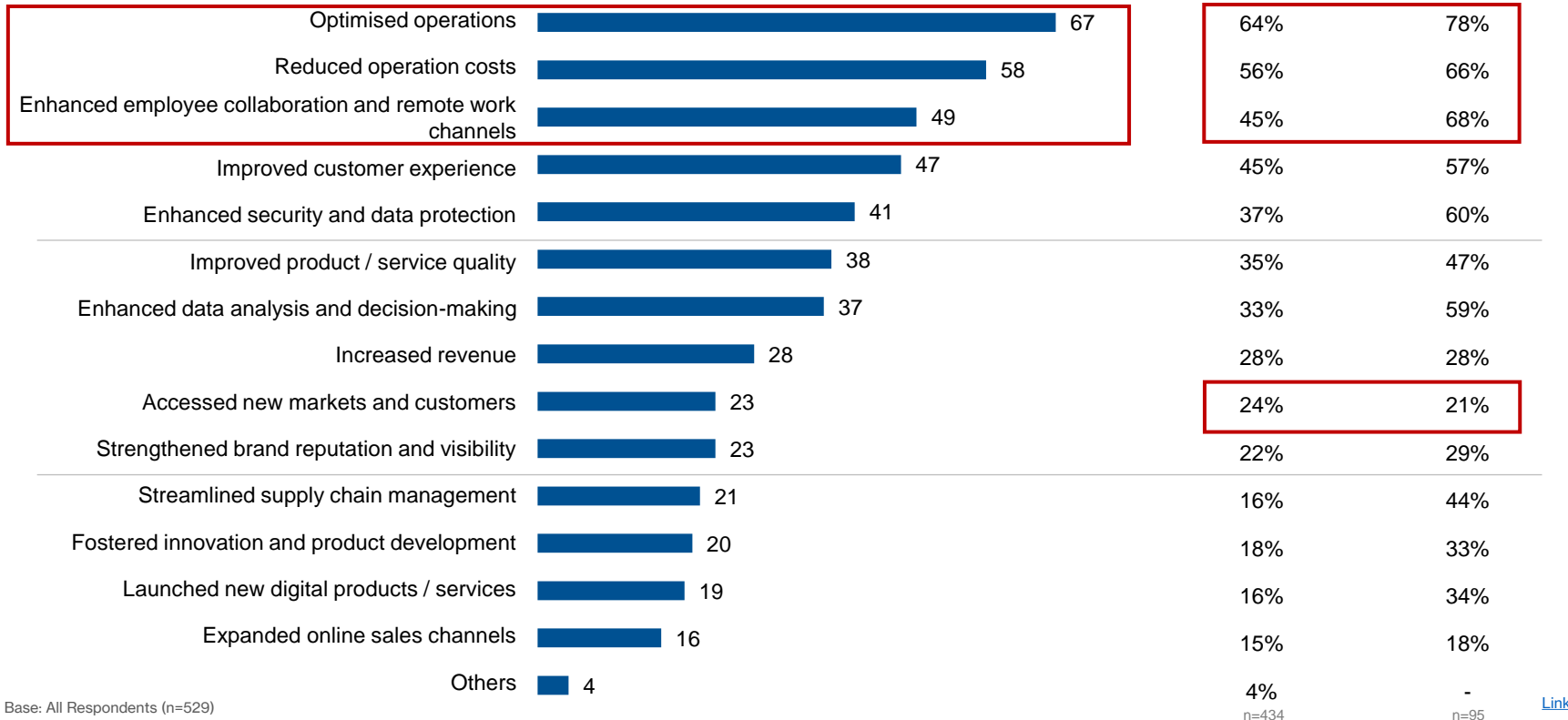
[Link to Summary](#)

# CURRENT STATE OF DIGITALISATION

## Digital transformation helps to improve business performance by optimising operations, reducing operation costs and enhancing employee collaboration and remote work channels.

Compared to SMEs, more large companies report improvements across all categories except for access to new markets. Digital adoption has lowered the cost of penetrating new markets and enabled a wider reach for SMEs.

### Digital Transformation Improvements (%)



Base: All Respondents (n=529)

4. How has digital transformation improved your business performance?

n=434

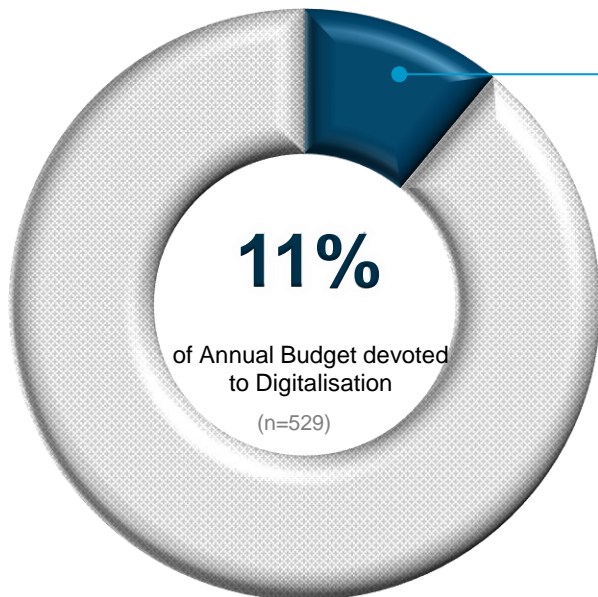
n=95



# CURRENT STATE OF DIGITALISATION

**On average, businesses devote about one-tenth (11%) of their annual budget to digitalisation.**

Cloud, E-Payment and Cybersecurity are the top 3 pervasive technologies currently being adopted, with more companies planning to jump on the bandwagon. Artificial Intelligence, Data Analytics and Internet-of-Things are fast gaining traction in the next 12 months.



**SME: 11%** (n=434)

**Large Company: 8%** (n=95)

## Digital Technology Adoption (%)

	Has adopted and will continue adoption	Has not adopted but plan to adopt in next 12 months	Do not intend to adopt or plan to discontinue
Cloud	69	16	15
E-payment	62	17	21
Cybersecurity	60	26	13
Data Analytics	38	38	25
Internet-of-Things	35	31	34
E-commerce	30	25	45
Artificial Intelligence	20	46	34
Immersive Media	9	27	64
Blockchain	8	24	68

Base: All Respondents (n=529)

5. What percentage of your company's annual budget is devoted to digital initiatives/programmes?

3. Which of the following digital technologies has your company adopted or plan to adopt / discontinue in the next 12 months?

## CURRENT STATE OF DIGITALISATION

More large companies have adopted most of the digital technologies, as compared to SMEs. Nonetheless, more SMEs plan to catch up and adopt digital technologies in the next 12 months.

	SME n=434			Large Company n=95		
	Has adopted and will continue adoption	Has not adopted but plan to adopt in next 12 months	Do not intend to adopt or plan to discontinue	Has adopted and will continue adoption	Has not adopted but plan to adopt in next 12 months	Do not intend to adopt or plan to discontinue
Cloud	66	18	16	80	7	13
E-payment	62	17	21	63	16	21
Cybersecurity	56	29	15	82	13	5
Data Analytics	32	41	27	63	23	14
Internet-of-Things	31	32	36	49	24	26
E-commerce	29	26	45	36	18	46
Artificial Intelligence	18	44	38	29	54	17
Immersive Media	8	28	64	12	22	66
Blockchain	8	23	70	8	31	61

# CURRENT STATE OF DIGITALISATION

**IT & Professional Services sector (41%) leads the adoption of Artificial Intelligence. While Logistics & Transportation (6%) and Manufacturing (10%) have the lowest adoption, they register the highest jump in having plans to catch up in the next 12 months.**

(Figures in %)		TOTAL	Banking & Insurance	IT & Professional Services	Retail, Real Estate, Hotels, Restaurants & Accommodations	Manufacturing	Wholesale Trade	Logistics & Transportation	Construction & Civil Engineering	Other Services	Others
<b>Has adopted and will continue adoption</b>	Cloud	69	83	72	74	63	65	79	49	77	69
	E-payment	62	48	47	76	66	70	67	61	71	59
	Cybersecurity	60	70	63	52	60	57	73	42	70	66
	Data Analytics	38	36	51	48	40	29	55	18	39	38
	Internet-of-Things	35	26	39	33	36	33	39	32	41	34
	E-commerce	30	20	27	57	36	32	36	14	39	19
	Artificial Intelligence	20	26	41	21	10	15	6	10	27	13
	Immersive Media	9	2	15	17	3	8	3	7	18	9
	Blockchain	8	5	16	7	4	6	6	6	11	6
	<b>Has not adopted but plan to adopt in next 12 months</b>	Cloud	16	11	15	17	24	13	15	24	9
E-payment		17	18	29	19	17	10	9	18	13	13
Cybersecurity		26	24	30	38	23	19	24	38	16	28
Data Analytics		38	27	33	45	43	37	30	43	36	50
Internet-of-Things		31	17	34	40	36	34	30	28	30	31
E-commerce		25	15	28	19	27	30	15	33	25	19
Artificial Intelligence		46	33	49	43	54	37	64	46	43	63
Immersive Media		27	11	39	36	21	33	18	28	21	28
Blockchain		24	17	33	26	23	23	24	21	21	31
Base		529	66	79	42	70	79	33	72	56	32

Base: All Respondents (n=529)

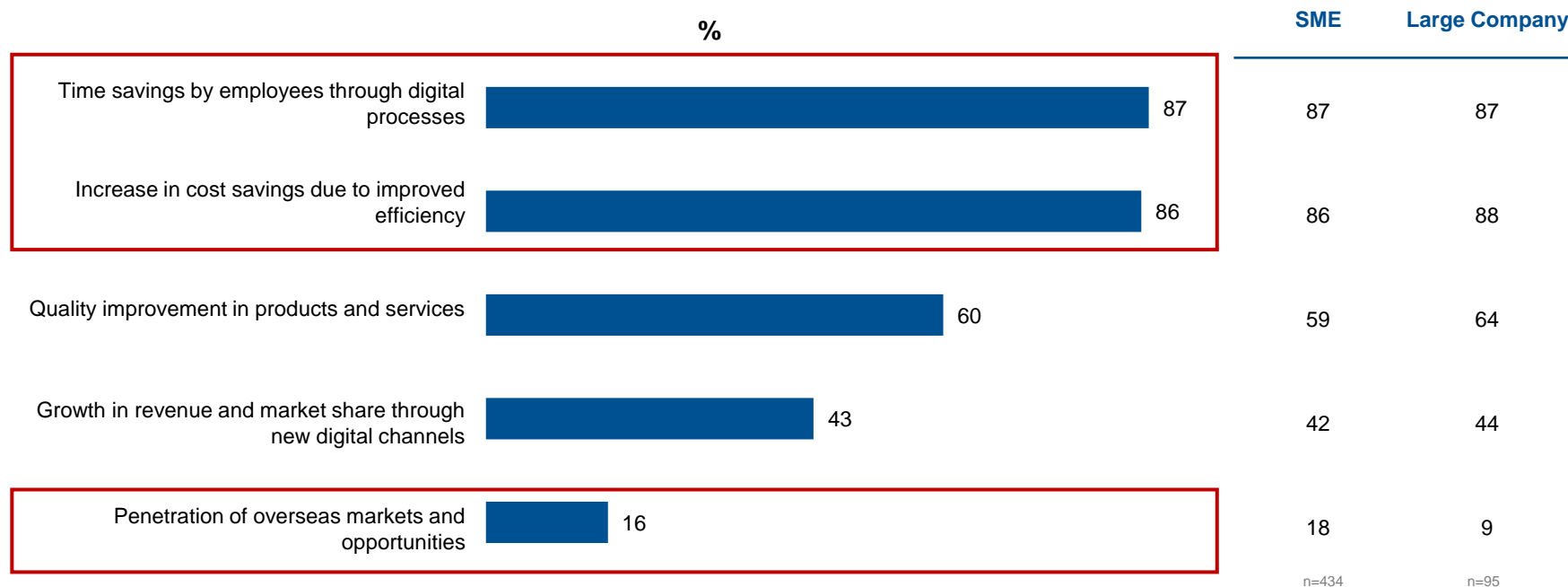
3. Which of the following digital technologies has your company adopted or plan to adopt / discontinue in the next 12 months?

Over-representation by at least 5%-points (compared with TOTAL)

## CURRENT STATE OF DIGITALISATION

**Return on Investment (ROI) of digitalisation efforts are primarily measured in terms of operational efficiency, specifically in workforce time savings and cost savings.**

'Penetration of overseas markets and opportunities' is least likely to be factored as part of companies' ROI measurement.







# DIGITALISATION CHALLENGES AND SUPPORT REQUIRED

## CHALLENGES AND SUPPORT REQUIRED

The biggest perceived roadblock to technology adoption are cost issues (high cost and expensive Intellectual Property (IP) licensing payments), upskilling of staff and awareness of suitable technologies. Challenges seem more acute this year, as a larger proportion of businesses highlight the variety of challenges in technology adoption.

(Figures in %)

	2023	2024		
		TOTAL	SME	Large Company
High cost of the technology adoption	64	73	73	74
Expensive licensing payments for commercial use of intellectual property	31	47	47	45
Upskilling of staff to keep up with the new technologies	29	47	44	57
Awareness of suitable technologies	-	45	45	48
Access to the relevant technologies	25	34	35	33
Lack of management expertise to drive the technological change	29	33	34	26
Existing staff not attuned or inclined to the use of the technologies	20	28	27	34
Lack of clear strategy to drive technological adoption	21	26	27	23
Unable to keep up with the pace of technology development	-	26	27	24
Unable to find good experts to implement the technology successfully	20	25	25	24
Lack in digital trust (cyber security, data privacy, responsible AI, etc)	15	25	25	27
Reluctance to replace legacy hardware/software	18	23	22	29
Base	1056	529	434	95

High cost is a barrier to the adoption of new technology among 73% of businesses, compared to 64% in 2023.

More businesses highlight the variety of challenges in technology adoption in 2024, as compared to 2023.

Base

1056

529

434

95

Base: All Respondents (n=529)

7. Which of the following challenges has your business encountered in technology adoption in general?

## CHALLENGES AND SUPPORT REQUIRED

Other than high cost of technology adoption, expensive licensing payments for Intellectual Property has become a prominent issue for SMEs, while large companies face the challenge of upskilling of staff to keep up with new technologies.

(Figures in %)	SME		(Figures in %)	Large Company	
	2024	2023		2024	2023
High cost of the technology adoption	<b>73</b>	63	High cost of the technology adoption	<b>74</b>	68
Expensive licensing payments for commercial use of intellectual property	<b>47</b>	32	Upskilling of staff to keep up with the new technologies	<b>57</b>	35
Awareness of suitable technologies	<b>45</b>	-	Awareness of suitable technologies	<b>48</b>	-
Upskilling of staff to keep up with the new technologies	<b>44</b>	28	Expensive licensing payments for commercial use of intellectual property	<b>45</b>	26
Access to the relevant technologies	<b>35</b>	25	Existing staff not attuned or inclined to the use of the technologies	<b>34</b>	16
Lack of management expertise to drive the technological change	<b>34</b>	29	Access to the relevant technologies	<b>33</b>	26
Existing staff not attuned or inclined to the use of the technologies	<b>27</b>	21	Reluctance to replace legacy hardware/software	<b>29</b>	22
Lack of clear strategy to drive technological adoption	<b>27</b>	21	Lack in digital trust (cyber security, data privacy, responsible AI, etc)	<b>27</b>	18
Unable to keep up with the pace of technology development	<b>27</b>	-	Lack of management expertise to drive the technological change	<b>26</b>	25
Unable to find good experts to implement the technology successfully	<b>25</b>	20	Unable to keep up with the pace of technology development	<b>24</b>	-
Lack in digital trust (cyber security, data privacy, responsible AI, etc)	<b>25</b>	14	Unable to find good experts to implement the technology successfully	<b>24</b>	18
Reluctance to replace legacy hardware/software	<b>22</b>	17	Lack of clear strategy to drive technological adoption	<b>23</b>	25
Base	<b>434</b>	871	Base	<b>95</b>	185

Base: All Respondents (n=529)

7. Which of the following challenges has your business encountered in technology adoption in general?

# CHALLENGES AND SUPPORT REQUIRED

**Businesses in Retail, Real Estate, Hotels, Restaurants & Accommodations and Logistics & Transportation sectors are most affected by the top 4 challenges in technology adoption.**

(Figures in %)

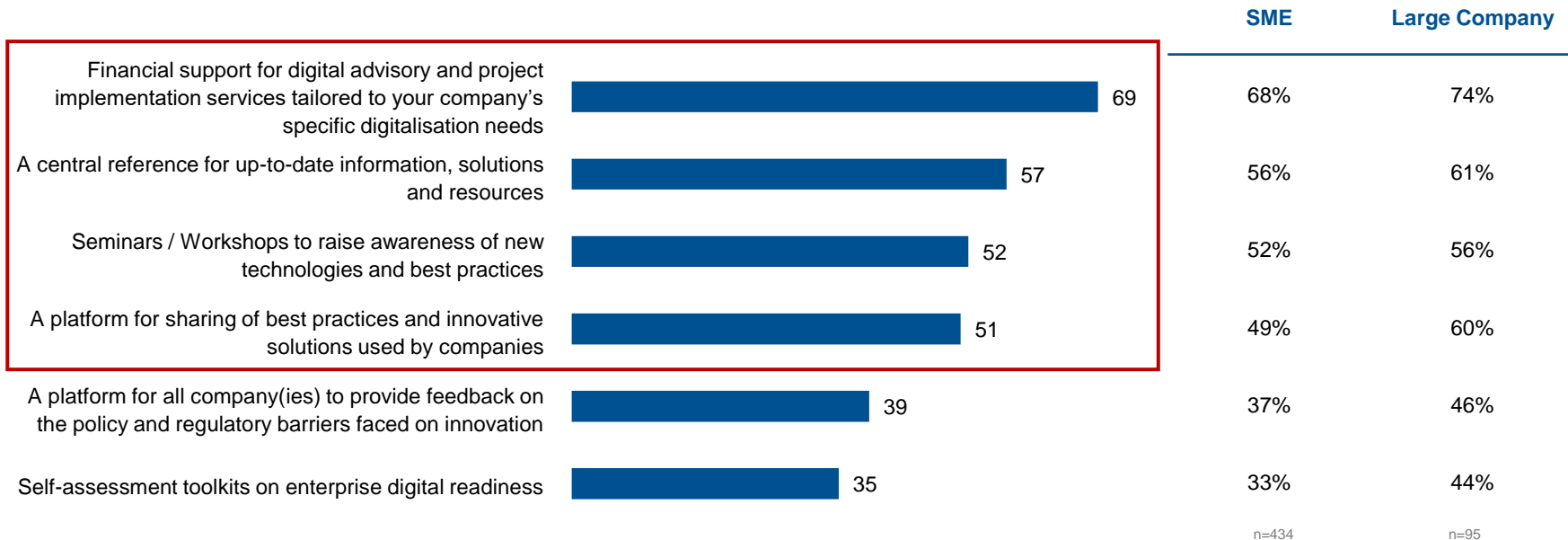
	TOTAL	Banking & Insurance	IT & Professional Services	Retail, Real Estate, Hotels, Restaurants & Accommodations	Manufacturing	Wholesale Trade	Logistics & Transportation	Construction & Civil Engineering	Other Services	Others
High cost of the technology adoption	73	76	72	90	77	59	82	69	79	63
Expensive licensing payments for commercial use of intellectual property	47	35	52	60	50	42	55	50	36	50
Upskilling of staff to keep up with the new technologies	47	41	42	60	50	44	52	46	48	47
Awareness of suitable technologies	45	36	37	50	40	41	52	57	59	47
Access to the relevant technologies	34	27	39	29	34	35	36	33	38	38
Lack of management expertise to drive the technological change	33	24	18	40	43	41	30	39	32	28
Existing staff not attuned or inclined to the use of the technologies	28	12	15	45	41	30	30	32	32	19
Lack of clear strategy to drive technological adoption	26	26	19	36	27	19	30	31	38	19
Unable to keep up with the pace of technology development	26	12	28	24	34	30	12	33	29	22
Unable to find good experts to implement the technology successfully	25	27	23	17	20	23	21	29	29	44
Lack in digital trust (cyber security, data privacy, responsible AI, etc)	25	20	23	19	27	23	24	35	20	34
Reluctance to replace legacy hardware/software	23	21	24	29	30	23	12	17	27	28
Base	529	66	79	42	70	79	33	72	56	32

Over-representation by at least 5%-points (compared with TOTAL)

## CHALLENGES AND SUPPORT REQUIRED

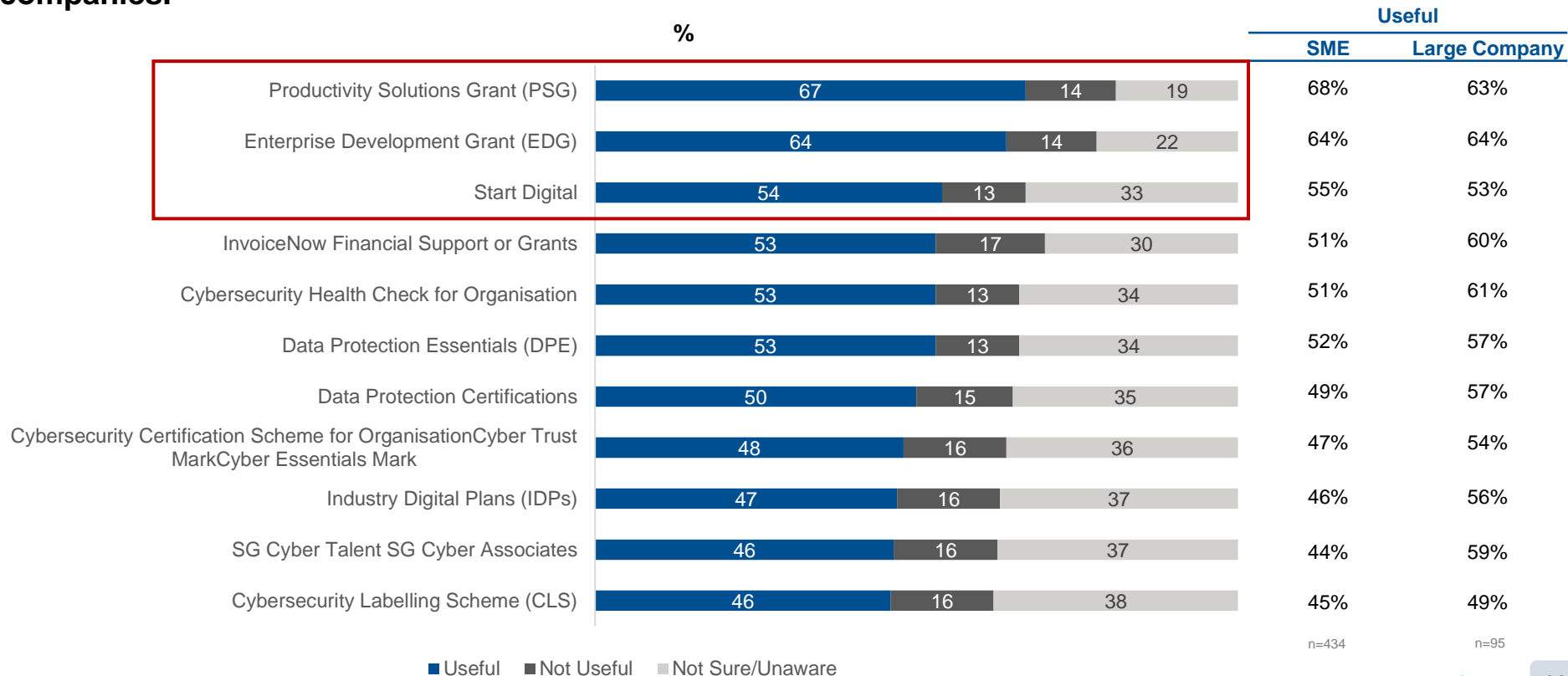
To address the digitalisation challenges, businesses preferred having financial support for digital advisory and project implementation services, central reference, seminars / workshops and sharing platform.

### % of businesses rating at least 4 out of 5



## CHALLENGES AND SUPPORT REQUIRED

**Productivity Solutions Grant (PSG), Enterprise Development Grant (EDG) and Start Digital are the top 3 existing digitalisation initiatives that businesses find useful in supporting them adopt digital transformation. Perception and usefulness of cybersecurity programmes tend to be high among large companies.**



Base: All Respondents (n=529)

18a. How useful are the following existing digitalisation initiatives in helping your company adopt digital transformation?



# CHALLENGES AND SUPPORT REQUIRED

Businesses also look forward to have advisory guidelines on the use of Personal Data in AI Recommendation and Decision Systems, curation of more AI-enabled solutions under the SMEs Go Digital and support for companies to build AI Centres of Excellence, as announced during Singapore Budget 2024.

## Initiatives that likely benefit businesses (%)

		TOTAL	SME	Large Company
Trusted Environment	<b>Advisory guidelines</b> on the use of <b>Personal Data in AI Recommendation and Decision Systems</b>	60	58	71
Industry Support	Curate more <b>AI-enabled solutions</b> under the <b>SMEs Go Digital</b>	54	60	26
Industry Support	Support companies to build <b>AI Centres of Excellence</b>	54	54	52
Talent	Uplifting of enterprises and workers in the age of AI, as part of <b>Digital Enterprise Blueprint (DEB)</b>	52	53	47
Infrastructure	Upgrade the <b>Nationwide Broadband Network to 10 Gigabits per second</b>	43	43	42
Industry Support	<b>Generative AI (GenAI) x Digital Leaders</b> initiative	42	40	48
Infrastructure	<b>Investment of up to \$500 million</b> to enhance access to <b>high-performance computing</b> for AI innovation and capability building	38	36	45
Infrastructure	Establish a new <b>National Cybersecurity Command Centre</b>	38	38	36
Industry Support	<b>Generative AI Sandbox by EnterpriseSG and IMDA</b> for small and medium-sized enterprises	36	37	33
Talent	<b>AI training opportunities for students</b> over three years	31	28	46
		n=529	n=434	n=95

# CHALLENGES AND SUPPORT REQUIRED

## Singapore Budget 2024 Digitalisation-related Initiatives

Most beneficial for SMEs: Curation of more AI-enabled solutions under the SMEs Go Digital (60%), advisory guidelines on the use of personal data in AI recommendation and decision systems (58%) and support for companies to build AI Centres of Excellence (54%).

Most beneficial for Large Companies: Advisory guidelines on the use of personal data in AI recommendation and decision systems (71%), support for companies to build AI Centres of Excellence (52%) and Generative AI (GenAI) x Digital Leaders initiative (48%).



### SME

Base: n=434

60%	Curate more <b>AI-enabled solutions</b> under the <b>SMEs Go Digital</b>	Industry Support
58%	<b>Advisory guidelines</b> on the use of <b>Personal Data in AI Recommendation and Decision Systems</b>	Trusted Environment
54%	Support companies to build <b>AI Centres of Excellence</b>	Industry Support
53%	Uplifting of enterprises and workers in the age of AI, as part of <b>Digital Enterprise Blueprint (DEB)</b>	Talent
43%	Upgrade the <b>Nationwide Broadband Network to 10 Gigabits per second</b> in the second half of this decade	Infrastructure



### Large Company

Base: n=95

71%	<b>Advisory guidelines</b> on the use of <b>Personal Data in AI Recommendation and Decision Systems</b>	Trusted Environment
52%	Support companies to build <b>AI Centres of Excellence</b>	Industry Support
48%	Generative AI (GenAI) x Digital Leaders initiative	Industry Support
47%	Uplifting of enterprises and workers in the age of AI, as part of <b>Digital Enterprise Blueprint (DEB)</b>	Talent
46%	<b>AI training opportunities</b> for students over three years	Talent


# CHALLENGES AND SUPPORT REQUIRED

The top industry support initiatives across sectors are curation of more AI-enabled solutions under the SMEs Go Digital and support for companies to build AI Centres of Excellence, while the top talent initiative is the uplifting of enterprises and workers in the age of AI, as part of the Digital Enterprise Blueprint (DEB).

	TOTAL (in %)	Banking & Insurance	IT & Professional Services	Retail, Real Estate, Hotels, Restaurants & Accommodations	Manufacturing	Wholesale Trade	Logistics & Transportation	Construction & Civil Engineering	Other Services	Others
Curate more AI-enabled solutions under the SMEs Go Digital	54	39	47	64	46	65	48	60	66	53
Support companies to build AI Centres of Excellence	54	56	58	52	59	52	45	51	54	47
<b>Industry Support</b>										
Generative AI (GenAI) x Digital Leaders initiative	42	41	44	50	40	38	45	43	38	41
Generative AI Sandbox by EnterpriseSG and IMDA for small and medium-sized enterprises	36	24	37	33	31	37	27	46	52	28
Launch a sectoral Centre of Excellence for manufacturing	20	17	15	12	34	28	18	13	14	25
<b>Trusted Environment</b>										
Advisory guidelines on the use of Personal Data in AI Recommendation and Decision Systems	60	71	54	60	59	56	67	60	55	66
Development of Digital Enterprise Blueprint (DEB)	52	45	57	62	50	49	67	51	50	44
<b>Talent</b>										
AI training opportunities for students over three years	31	36	35	24	29	37	30	33	21	28
New AI Accelerated Masters Programme in collaboration with local universities	14	20	19	7	14	10	9	8	13	22
New AI Visiting Professorship to attract world-class AI researchers to establish collaborations with Singapore	13	17	9	12	16	14	9	22	9	3
<b>Infrastructure</b>										
Upgrade the Nationwide Broadband Network to 10 Gigabits per second in the second half of this decade	43	42	42	40	40	33	58	43	46	53
Investment of up to \$500 million to enhance access to high-performance computing for AI innovation and capability building	38	33	42	45	37	37	42	36	38	34
Establish a new National Cybersecurity Command Centre	38	44	38	33	41	42	30	25	41	41
Base	529	66	79	42	70	79	33	72	56	32

Base: All Respondents (n=529)

17. Which of the following new or enhanced digitalisation-related initiatives announced during Singapore Budget 2024 will likely benefit your company?

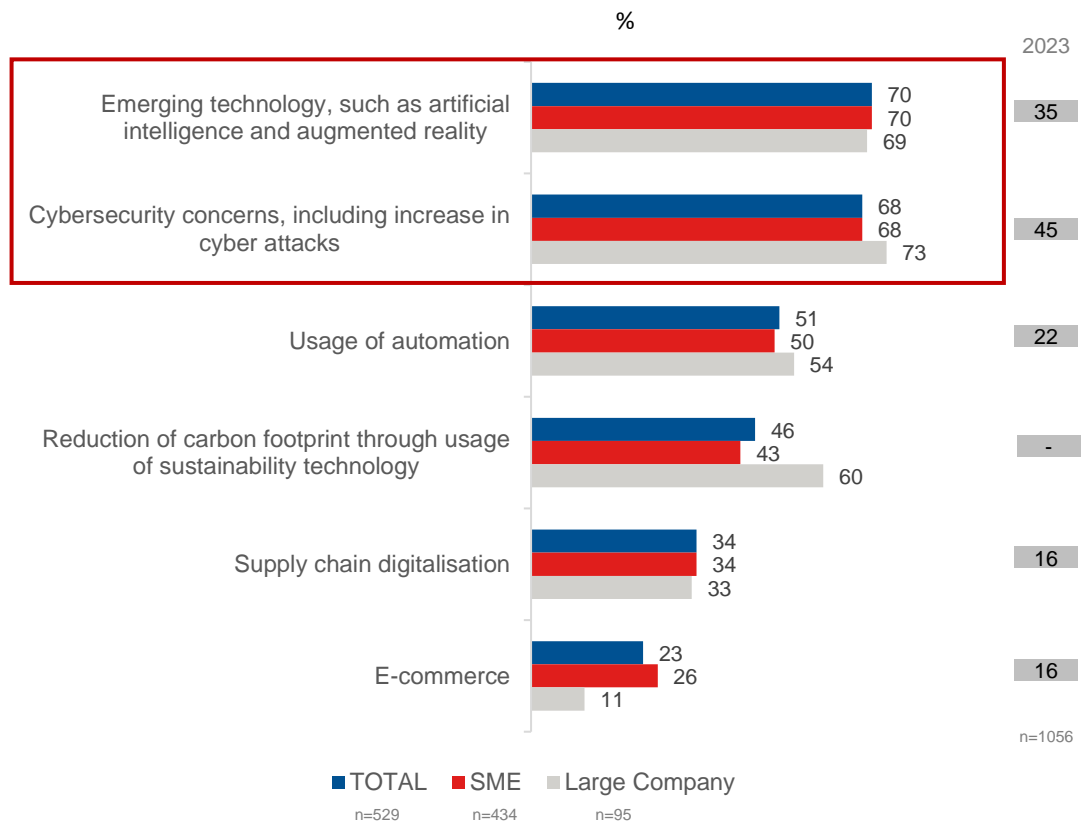
 Top initiative within the category

# FUTURE TREND OF DIGITALISATION



# FUTURE TREND OF DIGITALISATION

Looking ahead in the next 12 months, the top trends likely to impact businesses reside in the areas of emerging technology, such as artificial intelligence, and cybersecurity.



Emerging technology, such as Artificial Intelligence (70%), and cybersecurity (68%) are considered the top trends likely to impact businesses in the next 12 months.

Large companies are more conscious of trends related to cybersecurity (73%), emerging technology (69%) and the reduction of carbon footprints through the use of sustainability technology (60%).

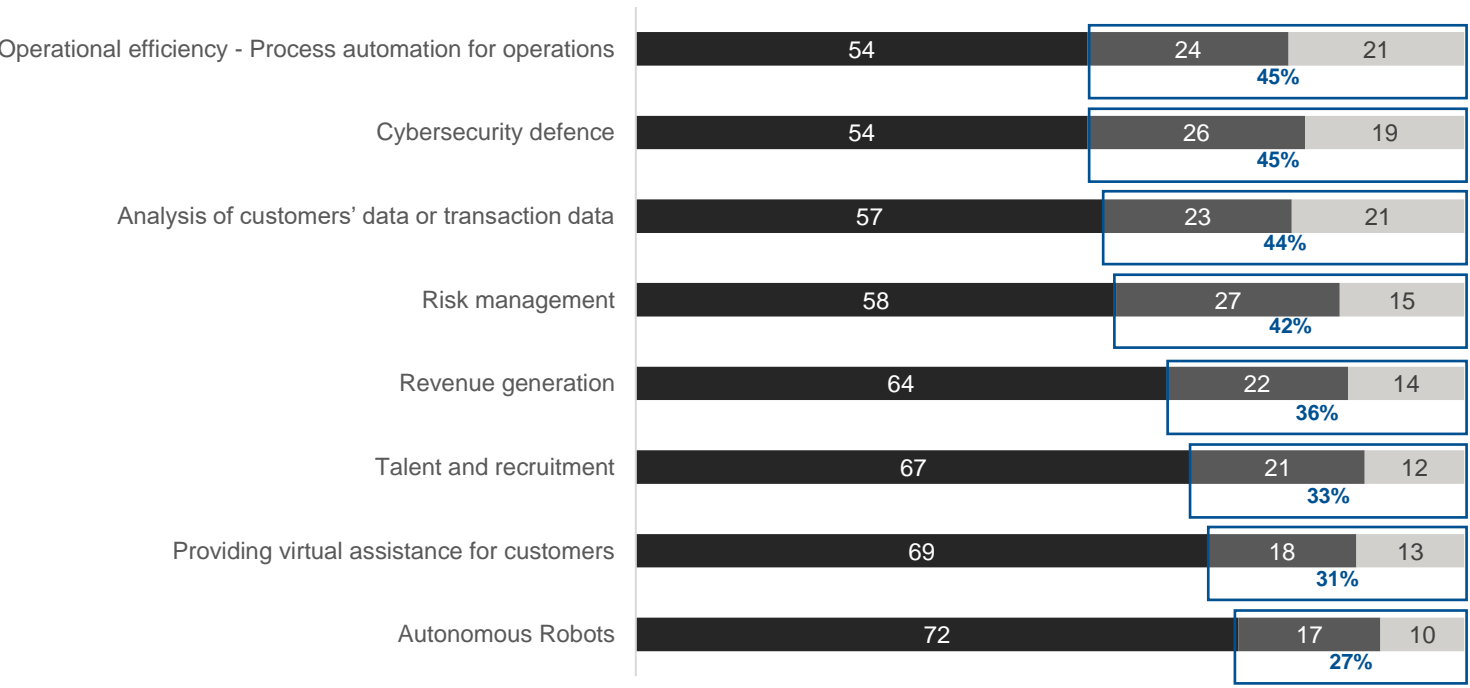
Base: All Respondents (n=529)  
1. Which of the following new trends and developments would likely impact your business in the next 12 months?

# FUTURE TREND OF DIGITALISATION

**Riding on the trends in Artificial Intelligence (AI), AI is used mostly in process automation for operations, cybersecurity defence and customer data analytics.**

As compared to SMEs, large companies have higher implementation rates of AI across all business areas.

**Implementation of AI in Key Business Areas (%)**



Implemented (4-10)	
SME	Large Company

43%	58%
-----	-----

43%	57%
-----	-----

41%	55%
-----	-----

41%	49%
-----	-----

35%	41%
-----	-----

32%	38%
-----	-----

30%	36%
-----	-----

25%	38%
-----	-----

n=434

n=95

■ Minimally Implemented (0-3)   ■ Moderately Implemented (4-6)   ■ Highly Implemented (7-10)

Base: All Respondents (n=529)

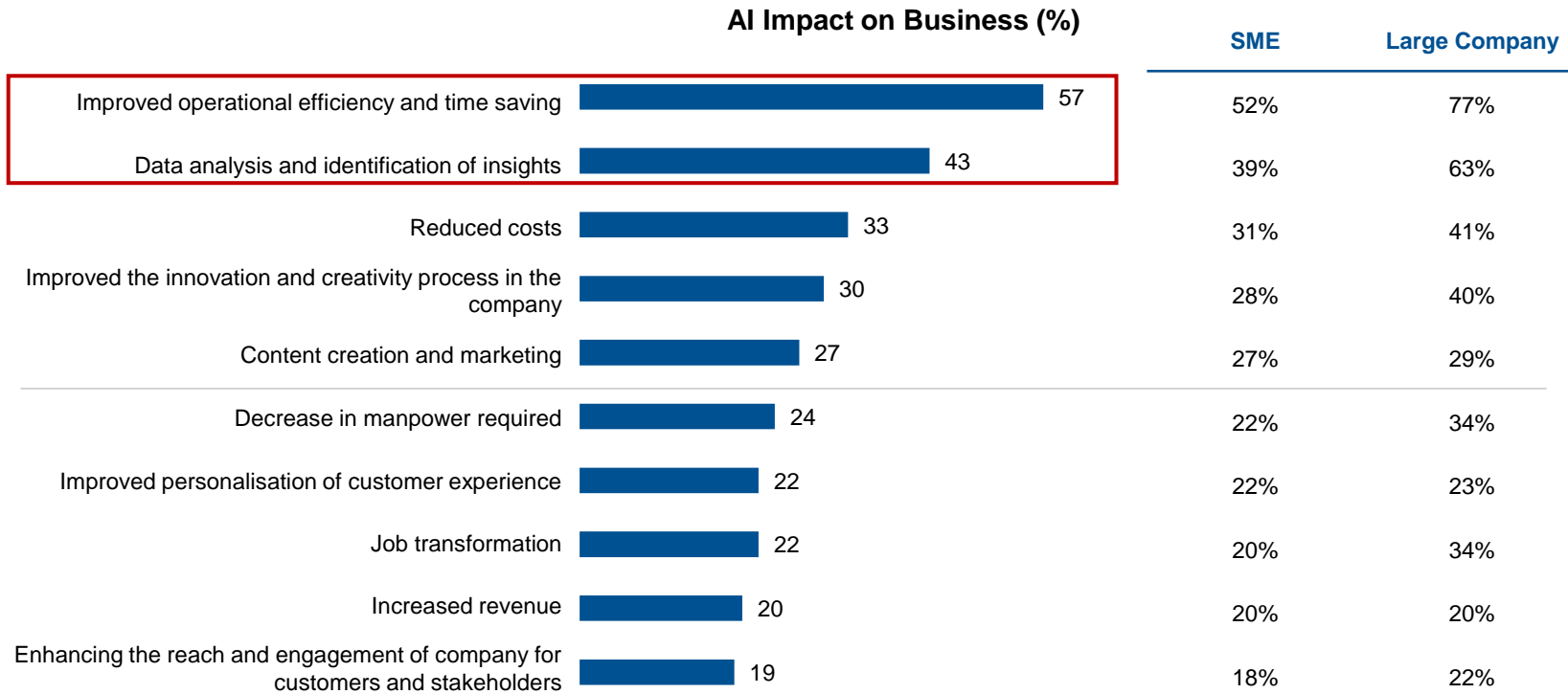
14. On a scale of 0 -10, to what extent have you implemented artificial intelligence (AI) in relation to the following aspects of your business?



# FUTURE TREND OF DIGITALISATION

## Adoption of AI allows businesses to reap the benefits of improved operational efficiency and time saving, and insights generation through data analytics.

There is greater impact of AI on large companies, with more large companies having improved operational efficiency and time saving (77% versus 52%) and identifying insights through data analytics (63% versus 39%) than SMEs.



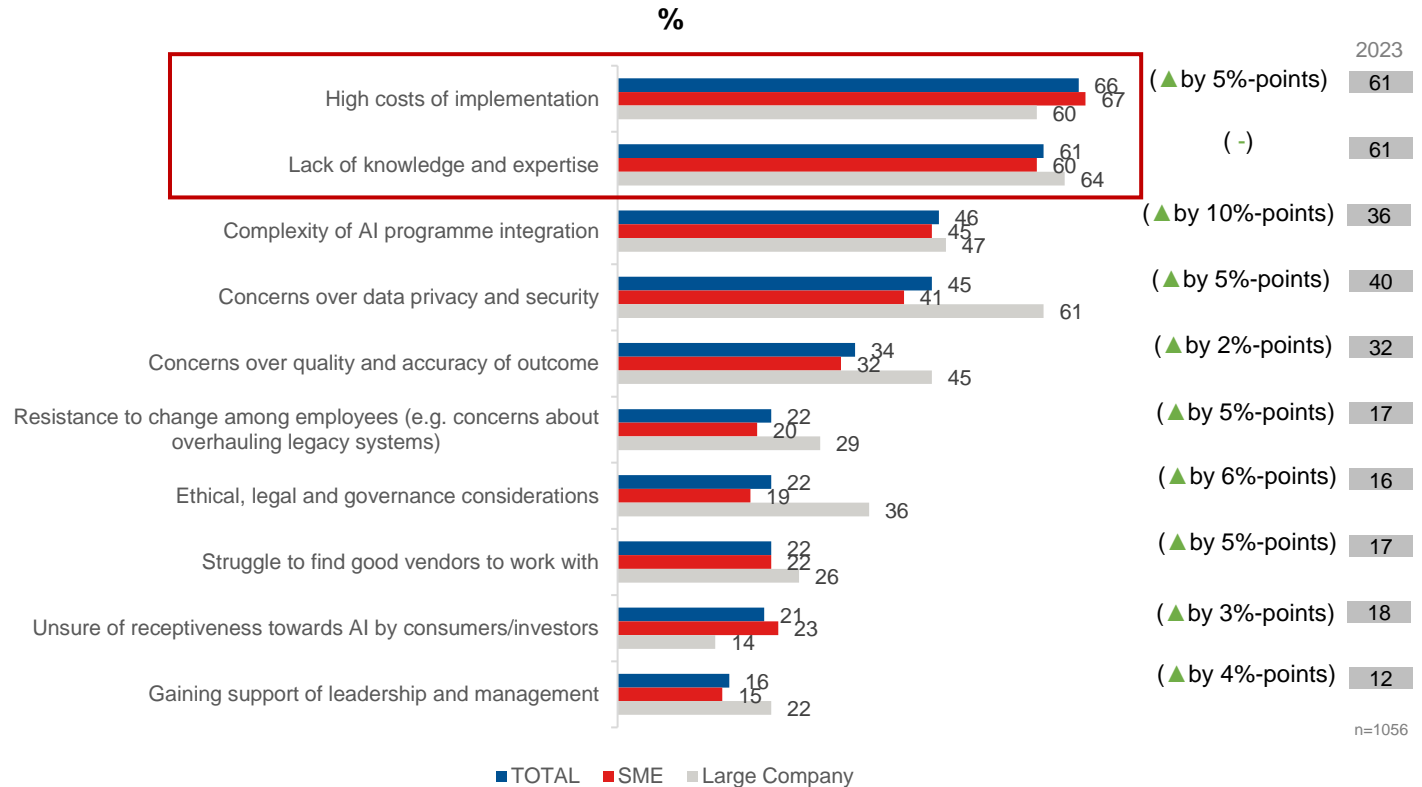
n=434

n=95

# FUTURE TREND OF DIGITALISATION

## High cost of implementation and lack of knowledge and expertise remain as the top 2 challenges in AI adoption.

Most of the challenges in AI adoption have been amplified this year, as compared to 2023, particularly the complexity of AI programme integration, which has increased by 10%-points (from 36% in 2023 to 46%).



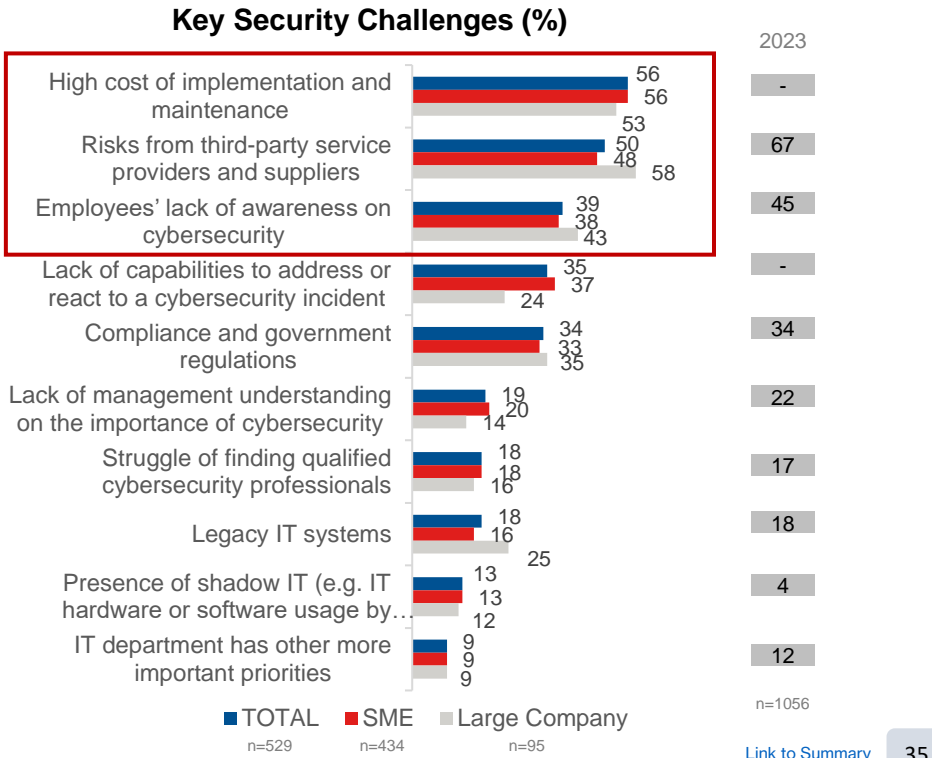
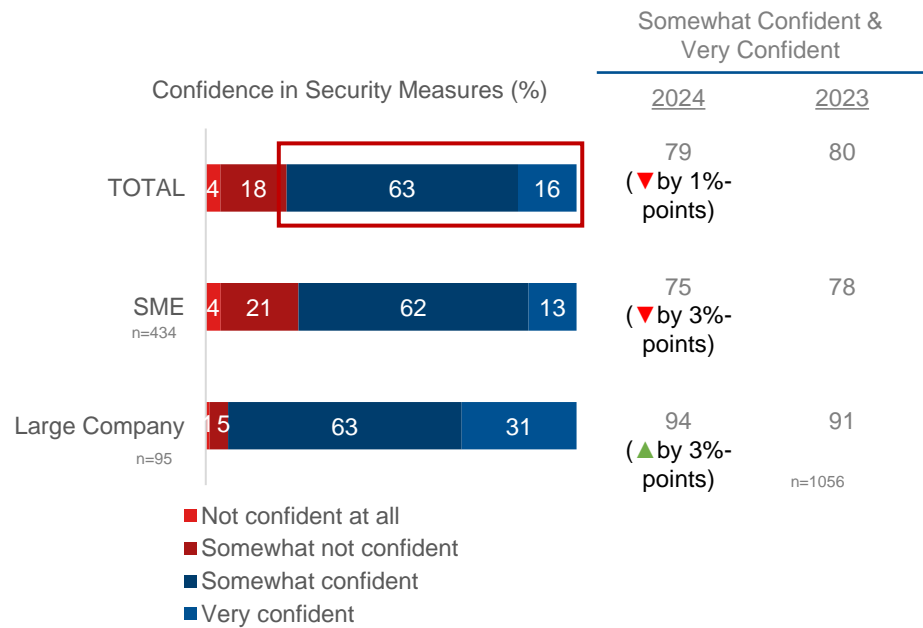
Base: All Respondents (n=529)

15. What are the challenges that your business face when it comes to AI adoption?

# FUTURE TREND OF DIGITALISATION

## On cybersecurity, 79% of businesses have expressed confidence in their security measures against cyber threats.

The proportion of SMEs that are confident in their cybersecurity measures have decreased by 3%-points (from 78% to 75%), while the proportion of large companies have increased by 3%-points (from 91% to 94%). The top 3 cybersecurity challenges are high cost of implementation and maintenance, risks from third-party service providers and suppliers and employees' lack of awareness on cybersecurity.



Base: All Respondents (n=529)  
 12. How confident are you that your security measures protect the organisation from cyber threats?  
 13. Please select the 3 biggest cyber security challenges that your organisation is facing.

n=1056



Thank you



Annex





# Company Profile

