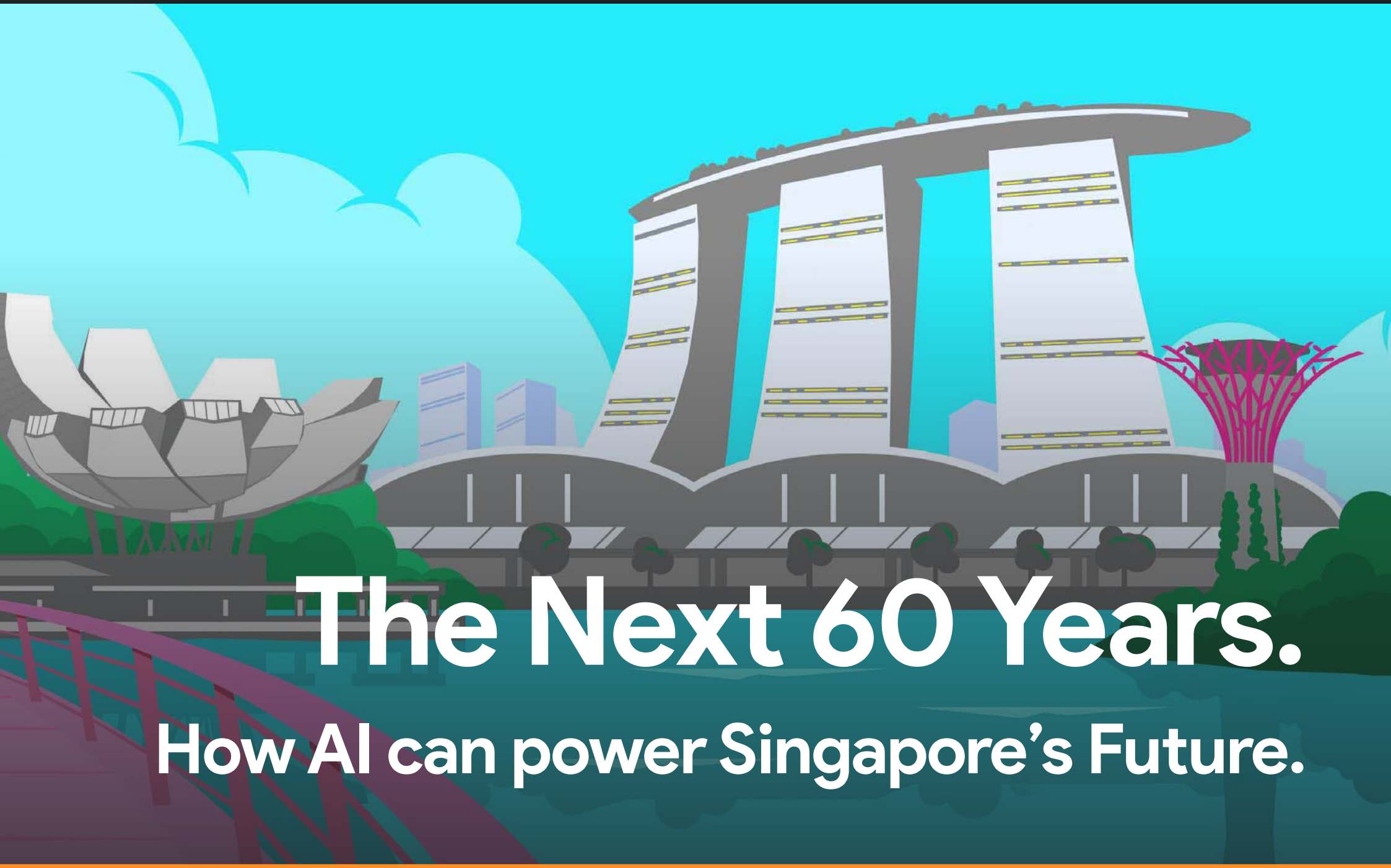


The Next 60 Years.

How AI can power Singapore's Future.

Contents.

Executive Summary.

Singapore has undergone rapid and transformative growth over the past 60 years, evolving into one of the world's leading global cities. Its economic success has been driven by its emergence as a major hub for trade and business, alongside continuous technological innovation.

The AI Opportunity.

AI can support the next 60 years of Singapore's growth, representing the next stage in the country's economic journey. With a skilled workforce that is already making use of AI, Singapore is well-positioned to take full advantage of this transformational technology.

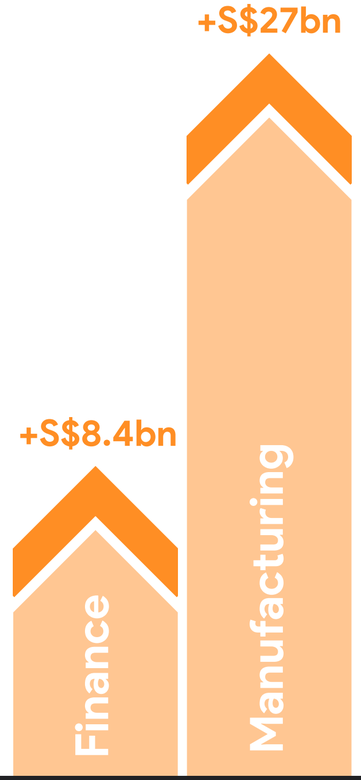
+8%

AI technologies will support higher wages.

AI could save Singaporean workers almost **21 working days** a year by automating routine administrative tasks. This allows workers to focus on higher value tasks with greater earning power, leading to estimated higher wages of **over 8%**.

Optimising the manufacturing and finance sectors.

The **top two sectors** with the greatest opportunity from AI are Singapore's **manufacturing** and **finance** sectors. In total, we estimate that AI could help grow the manufacturing sector by **S$27 billion** (US$20 billion) and the financial services sector in Singapore by almost **S$8.4 billion** (US$6.3 billion).



Maximising the Opportunity.

Singapore is leading the region when it comes to AI adoption. To maintain its comparative advantage, Singapore must:

Meet demand for skills training.

82% of Singaporean workers expressed an interest in taking up additional training to help them better use AI tools at work. Workers were most interested in practical training that would help them to use AI to automate repetitive tasks.

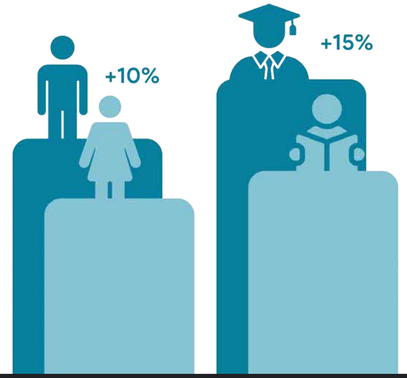
Formalise support for workers.

58% of current AI users said they had largely chosen to use AI tools at work themselves, while

27% said they had been encouraged to do so by their company leadership. This reveals a "grassroots adoption" dynamic, and a need for a greater supply of formal skills training.

Bridge adoption gaps.

There is a **10%** gap in self-reported regular use of AI between men and women, along with a **15%** gap between university graduates and non-graduates. In order to maximise the potential from AI, Singapore must work to close these adoption gaps.



Developing AI Responsibly.

Singaporeans identified fears over misinformation, cybersecurity, and worsening data privacy as the potential outcomes of increased AI uptake that concerned them the most. Addressing these challenges will be vital in order to foster public confidence in the AI transformation.

Singaporeans want to see AI developed responsibly.

While the majority of adults are optimistic about the impact of AI on the country, **89% agree that it should be developed responsibly**. Building trust will require responsible design and clear safeguards to ensure AI benefits everyone.

AI can help to combat cybersecurity threats.

While AI could create new risks, it can also be a powerful cybersecurity ally. The combination of more effective prevention and faster response times from AI driven solutions could help **prevent over 60% of the costs** from cybersecurity threats and fraud.

Securing Singapore's Future.

AI can help Singapore sharpen its competitive edge — strengthening its position as Southeast Asia's hub for trade and innovation. It can accelerate breakthroughs in medical research, and help the country navigate the long-term fiscal and workforce pressures of an ageing population.

Offsetting the effects of an ageing population.

By helping workers boost productivity and get more done, AI could offset **over half of potential labour shortages** in Singapore driven by an ageing population. Our research shows that today's AI technologies are likely to augment 76% of workers, while fewer than 9% will need career transition support.

Accelerating R&D in the healthcare sector.

By integrating AI tools into pharmaceutical R&D, we estimate that Singapore's biotech firms could **reduce the average time for drug discovery by over 40%**. This can help reduce the overall cost of drug development while also reducing the time it takes to deliver cures to the people who need them.

Helping companies navigate non-tariff barriers to trade.

Businesses can find it challenging to navigate the regulatory requirements of exporting beyond their borders. By helping ease current barriers to trade from different languages and aligning with different regulatory systems worldwide, we estimate AI could help **boost exports for Singapore by over S$380 billion** (US$280 billion).

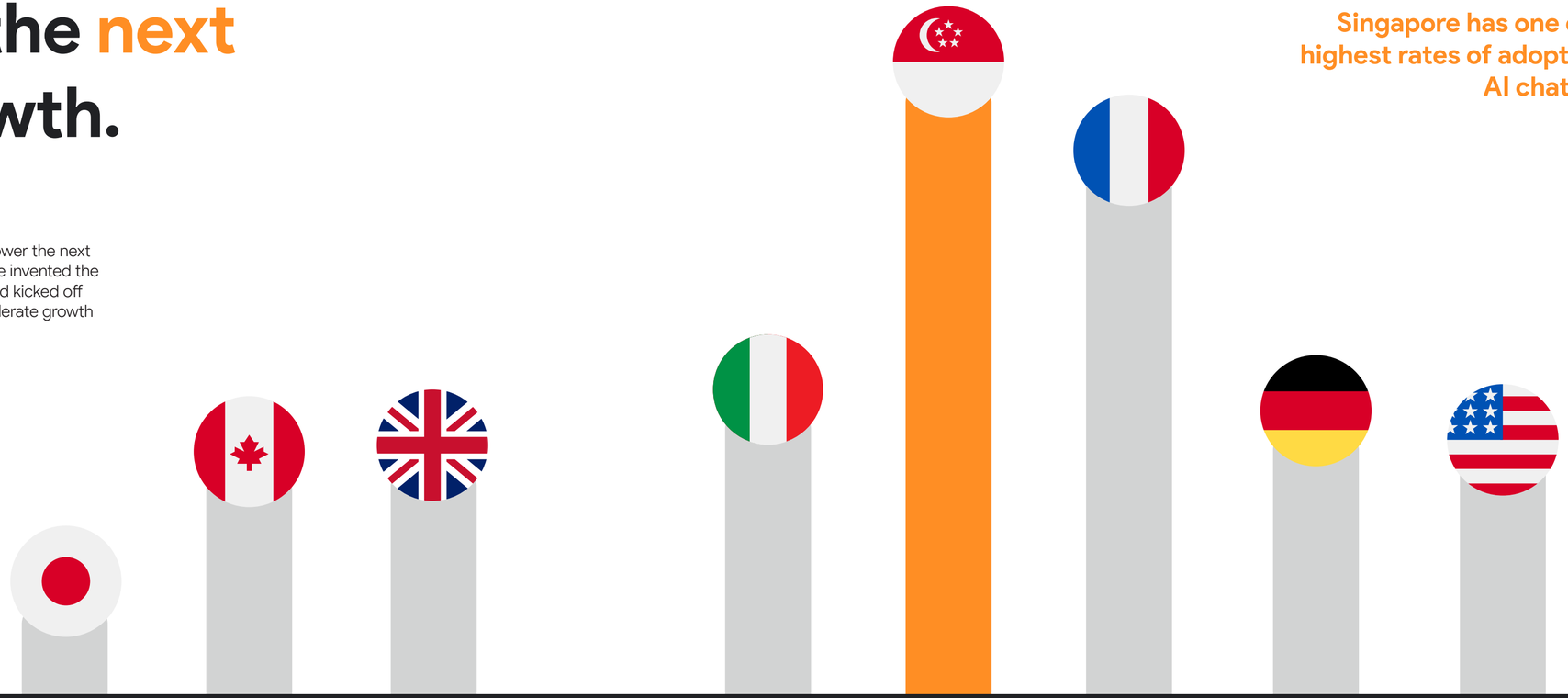
The AI Opportunity.

AI can support the next 60 years of Singapore's growth, representing the next stage in the country's economic journey. With a skilled workforce that is already making use of AI, Singapore is well-positioned to take full advantage of this emerging technology.

AI will support the next 60 years of growth.

Every few decades, a new general purpose technology has helped power the next stage of world economic development. In 2019, researchers at Google invented the transformer model: which in turn made it easier to scale AI models and kicked off the current wave of innovation in AI we are seeing.[1] This is set to accelerate growth worldwide, and offers Singapore a new opportunity to thrive.

Singapore has one of the highest rates of adoption of AI chat bots.

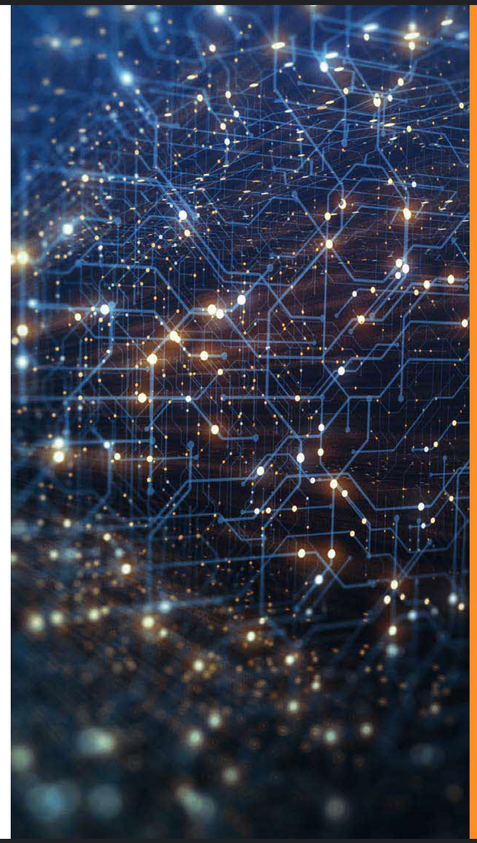


Singaporeans already grasp the potential of AI.

Half of Singaporeans told us they are using AI at least once a week both at work and in their personal lives. In fact, Singaporean workers are some of the fastest in the world at adopting AI skills. Our polling has found that an overwhelming majority are ready to learn the new skills they will need to fully leverage the AI opportunity.

60%

of Singaporeans are optimistic about the impact that AI will have on the country.



What is AI?

Artificial Intelligence are computational systems designed to mimic or surpass human cognitive capabilities, including perception, reasoning, learning, decision-making, and adapting autonomously to new contexts. In the last few years, AI systems have seen rapid improvements in capability, driven by better algorithms, faster parallel processing chips and training on ever greater amounts of data.

AI's impact will grow over time.

AI is a General Purpose Technology. That means both that it is likely to have use cases across most sectors and types of jobs, and that it can help accelerate the process of growth itself. Over time, we expect that its impact will continue to expand. In this report, we look at all four types of growth.

Saving time for workers.

In the short term, AI can help workers in getting their day to day tasks done, and helping free up time to spend on other activities. Goldman Sachs has estimated that AI could create around another 7% of world GDP in economic value over a decade through boosting labour productivity.[2] **In Singapore, we estimate that this kind of impact from AI could create over S$53 billion (US$40 billion) of value.**

Increasing business efficiency.

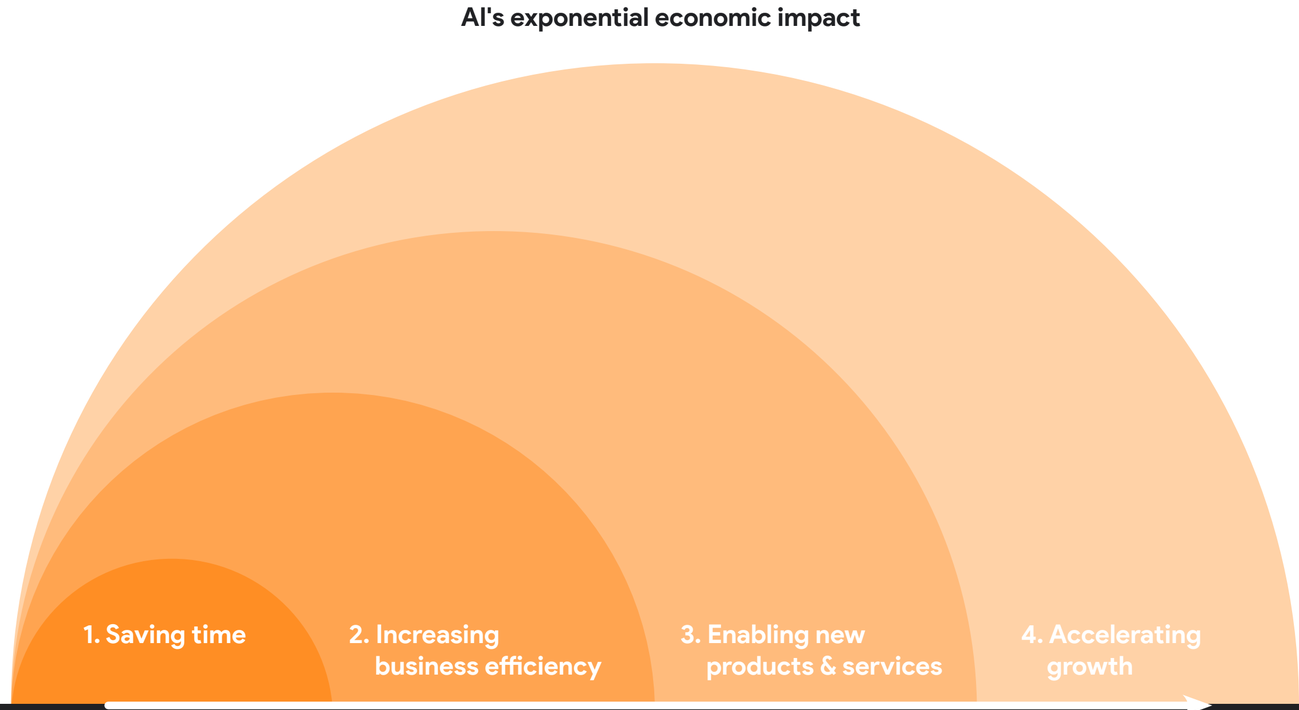
Over time, AI will enable businesses to redesign their business processes and how they work: letting them be more proactive, reduce waste and increase efficiency. This could multiply again the total value created by AI. Last year, for example, Access Partnership[3] looked at a range of AI use cases and estimated that AI could **create S$198 billion (US$148 billion) of value.**

Enabling new kinds of products and services.

If you think back to the invention of the Internet, what made it really transformative wasn't just how it boosted efficiency in roles that already existed - but how it enabled entirely new types of product and service, from Google to Amazon to eBay. As Google's Chief Economist noted in a recent article, AI is likely to activate latent markets - helping meet currently unmet needs, and enabling a new generation of start-up companies to find a niche.[4]

Accelerating growth and innovation.

The Industrial Revolution didn't just see the invention of new technologies like the steam engine, but a fundamental acceleration in the process of growth itself. In the same way, AI could act as a new catalyst for wider growth. In more advanced economies like Singapore, AI is already speeding up the process of R&D in areas from pharmaceuticals to material design, and this is only likely to continue.



AI can support Singapore's key industries.

Alongside the benefits AI presents for the whole economy, the technology can help to boost competitiveness among Singapore's key economic sectors.

Finance.

Singapore is Southeast Asia's largest financial centre, and one of the command centres of the global economy; around a seventh of Singapore's GDP is generated by the financial services sector.[5] AI could help companies in the financial services and insurance industries improve their efficiency, make more accurate projections, and detect fraud earlier. **In total, we estimate that AI could help grow the financial services sector in Singapore by almost**

S$8.4 billion
(US$6.3 billion)

Manufacturing.

Manufacturing represents about a fifth of Singapore's economic output, and the sector is well positioned to benefit from the country's enthusiastic embrace of AI. Firms in the manufacturing sector could utilise AI to optimise their supply chains, reduce downtime, and minimise defects. **In total, we estimate that AI could help grow the manufacturing sector in Singapore by**

S$27 billion
(US$20 billion)

Top 5 by Economy Share.

- Wholesale & retail trade
- Manufacturing
- Transport & storage
- Finance & insurance
- Real Estate

Top 5 most likely to be Augmented.

- Public administration & defence
- Human health & Social work
- Science & technical
- Accomodation & food
- Agriculture & forestry

AI tools allow workers to augment their work and focus on higher value tasks.

On average, we estimate that AI could save the average worker **over 21 working days a year** by automating administrative tasks. This allows workers to focus on higher value tasks with greater earning power, leading to estimated **higher wages of around 8%.**

Singapore's Top AI Use Cases.

51%
of Singaporean AI users say they regularly use it for **programming or coding**

58%
of Singaporean AI users say they regularly use it for **education and career development**

61%
of Singaporean AI users say they regularly use it for **academic research**

68%
of Singaporean AI users say they regularly use it for **language translation**

62%
of Singaporean AI users say they regularly use it for **data analysis or visualisation**

While today's AI models are increasingly powerful, there are still many tasks that they can't do as well as a human.

However, while today's AI models are increasingly powerful, there are still many tasks that they can't do as well as a human. Analysis shows that today's AI technologies are likely to augment **76%** of workers, boosting their ability to deliver and increasing their wages without reducing the demand for their skills.

By contrast, we found that fewer than **9%** of occupations are at risk of displacement from AI[1] – where AI could take on a significant proportion of tasks, meaning that some workers will require support with their career transition. The remaining **15%** will be unaffected.

1 **Augmented occupations** are those who are likely to see their productivity at work significantly boosted by AI, but unlikely to see an overall fall in labour demand. **Insulated occupations** are those who are relatively unaffected by AI, either positively or negatively. **Occupations at risks of substitution** are those occupations where AI could take on a significant proportion of tasks, and some workers within them are likely to require support with career transition.

How are Singaporeans using AI?

"AI could help me plan trips by recommending destinations, flights, and creating itineraries based on my preferences."

Male, 25-34

"I would use AI in daily planning of cooking dinners. It would plan my weekly menus and suggest what to purchase and where to purchase."

Female, 65+

"I could use AI to help with managing my finances, teach me how to trade/invest, or even do the trading/investing for me."

Female, 18-24

"I could use AI to help me improve my way of life and become healthy, as well as use it to generate more income - hopefully from trading as I become more knowledgeable & make better decisions. Also, I can use AI to learn skills and pick up key information faster, or to stay updated with the news around the world."

Male, 18-24

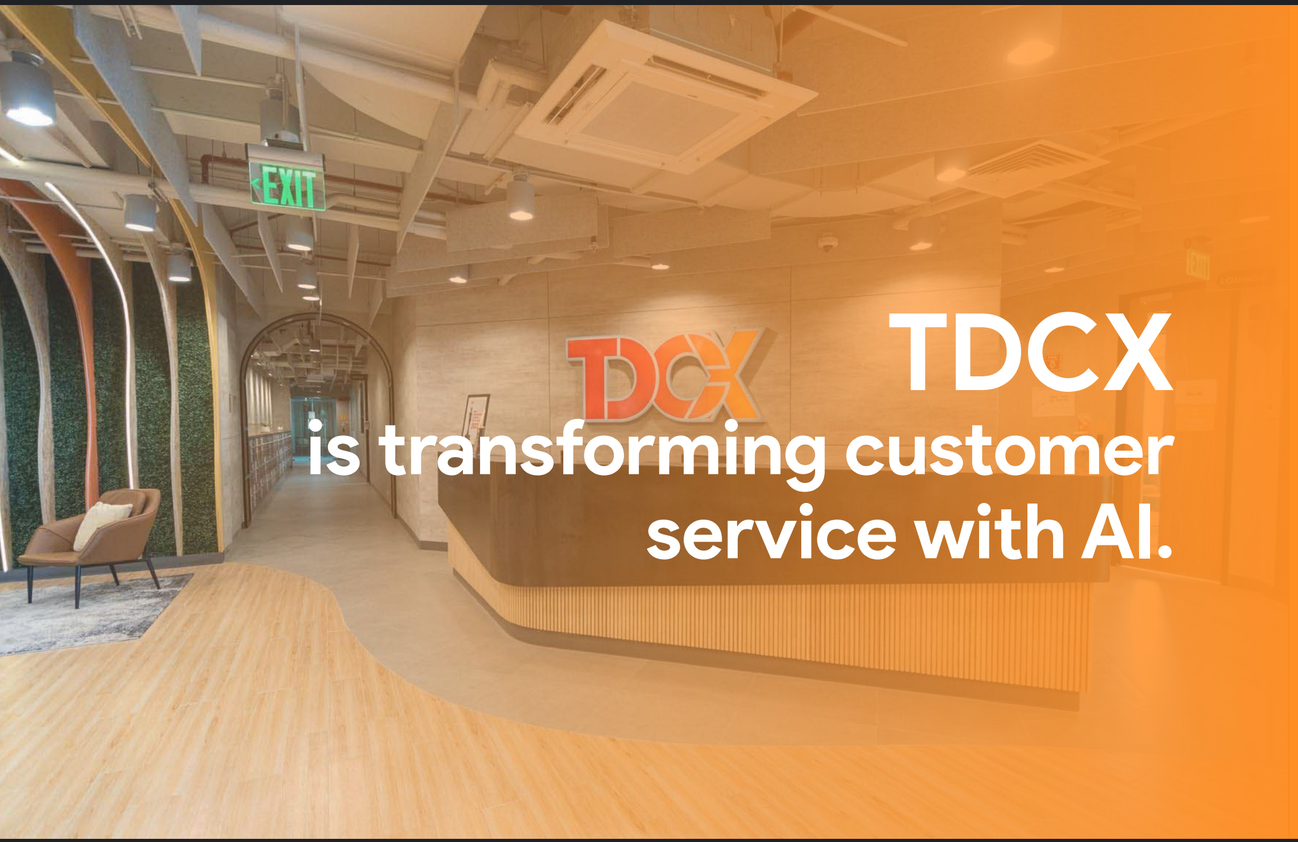
"I can use AI to help me to summarise my work so that I don't have as many administrative things to work on."

Female, 25-34

"AI could compare prices with competitors and to work out details on how to improve."

Male, 55-64

Responses to question: Can you think of any ways you would use AI in your [personal/work] life?
Responses are edited for grammar and spelling, but otherwise unchanged.
All responses taken from a Public First survey of Singaporean adults



TDCX is transforming customer service with AI.

Transformative Digital Customer Experience (TDCX) is a Singaporean company that leverages AI in order to support better, faster, and safer customer experience tools. Specifically, the company employs generative AI to monitor the interactions between customers and customer service agents, in order to support the training and development of their staff. This allows the company to generate customised performance scores, helping to develop a more tailored and effective training programme for new starters and legacy employees alike.

TDCX took part in Google Cloud's programme launched in partnership with the Government of Singapore to help Singaporean companies identify real-world challenges that can be addressed with generative AI, build generative AI solution prototypes, and bring these prototypes to production.

The programme's clearly defined structure and dedicated training - such as tailored workshops for the company - were pivotal in the company's ability to implement the AI solution. This was then strengthened by the company's access to a team of AI developers and experts from Google Cloud and the Singapore government, both providing real-time support and insights throughout the process.

The company built TDCX FastTrack, a generative AI-powered assistive tool that automatically converts audio recordings from speech to text, analyses and scores customer service specialists' interactions, and generates customised performance enhancement strategies.

This solution also provides customer experience team managers with visibility into the top customer issues that their agents are encountering, actionable insights and recommendations on specific areas that can be improved with further coaching, and week-on-week performance analysis to determine if training interventions have been effective. To help agents more efficiently access the information they need during calls with customers, the TDCX FastTrack solution also includes a generative AI-powered TDCX Live Call Assistant that transcribes the call in real-time, categorises the customer concern, and provides a set of recommended actions - curated from TDCX's knowledge database of best practices - that the agent can choose from to address the concern. This solution adheres to a human-in-the-loop design, which means that the agent still ultimately chooses the recommended action most relevant and helpful to the customer. TDCX is currently testing and refining TDCX FastTrack and TDCX Live Call Assistant with two key clients, before implementing both tools at scale and across multiple languages.

TDCX's use of AI in their training programme has helped to reduce the amount of time between hiring a new staff member and being able to rely on them as a fully fledged customer service agent. This in turn reduces costs and supports the customer's operations to become more efficient overall. It also allows the company to provide real-time support for their agents – both those that are new to the company and those that have worked with the company for a while – further supporting their professional development.

Source: TDCX is accelerating talent training & quality assurance with Google Cloud's AI

Maximising the Opportunity.

Singapore is leading the region when it comes to AI adoption. To maintain its comparative advantage, Singapore must ensure its workers continue to receive high quality AI training, and drive adoption among the harder-to-reach parts of the population that are more hesitant of new technologies.

Singapore has some of the greatest regional potential from AI.

Taking a look at Singapore's journey to maximise its AI opportunities, we learned three key things:

1

Singapore is well-prepared for the AI transformation.

The strength of Singapore's digital infrastructure and the country's energy resilience will support substantial increases in AI use. As a result of these underlying strengths, Singapore's economy is well-positioned to grow as a result of AI adoption across the economy.

2

The public policy framework in Singapore lays strong foundations for AI innovation.

Compared to other similar countries, the wider policy framework for AI is highly developed in Singapore, and could support widespread AI adoption.

3

There is work to be done to minimise the adoption gap.

Our polling suggests that some demographics are falling behind in their adoption of AI tools, indicating an area of potential vulnerability that could undermine a whole-of-economy push to adopt AI. Improving the training and resources to adopt AI should be a key priority of the government over the coming years.

To take full advantage of AI, Singapore will need to keep its workforce's AI skills up-to-date.

Singaporean workers already have some of the highest digital skills in the region, and are considered the fastest in the world at adopting AI skills.[6] However, there is still work to be done. From 2023 to 2025, Singapore needed to expand the number of digital workers it had by **55%** to remain competitive, equivalent to 1.2 million additional workers equipped with digital skills.[7]

This is all the more urgent today, given the increasing role AI will play in the future of Singapore's economy.

82% of Singaporean workers told us they would be interested in skills training to help them use AI. According to our representative survey, they are particularly interested in developing practical skills:

80% of workers want to better understand how AI models worked

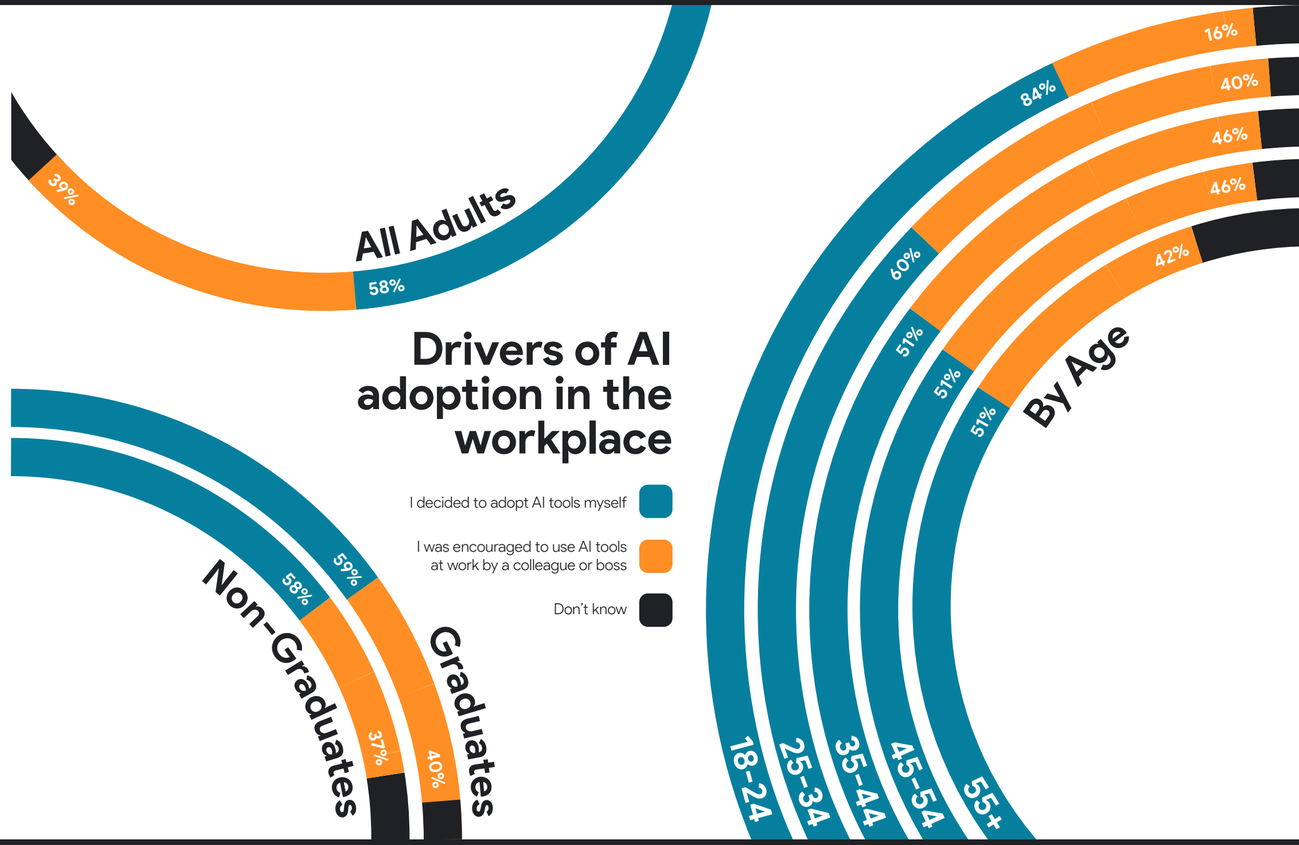
84% of workers want to understand more practical use cases of how to use AI

82% of workers want to learn how to prompt AI models to get the most of them

Current adoption of AI tools is largely being driven by workers themselves.

Unlike the technologies that came before it, the diffusion of AI is largely powered by 'bottom up' adoption dynamics, with employees choosing to use the technology themselves - with or without the knowledge of their bosses. **58%** of current AI users said they had largely chosen to use AI tools at work themselves, while **39%** said they had been encouraged to use AI tools by a colleague or boss.

This is truer still among younger workers - with **84%** of 18-24 year old Singaporean workers saying they decided to use AI at work themselves, rather than being encouraged to do so by their boss or by their colleagues.

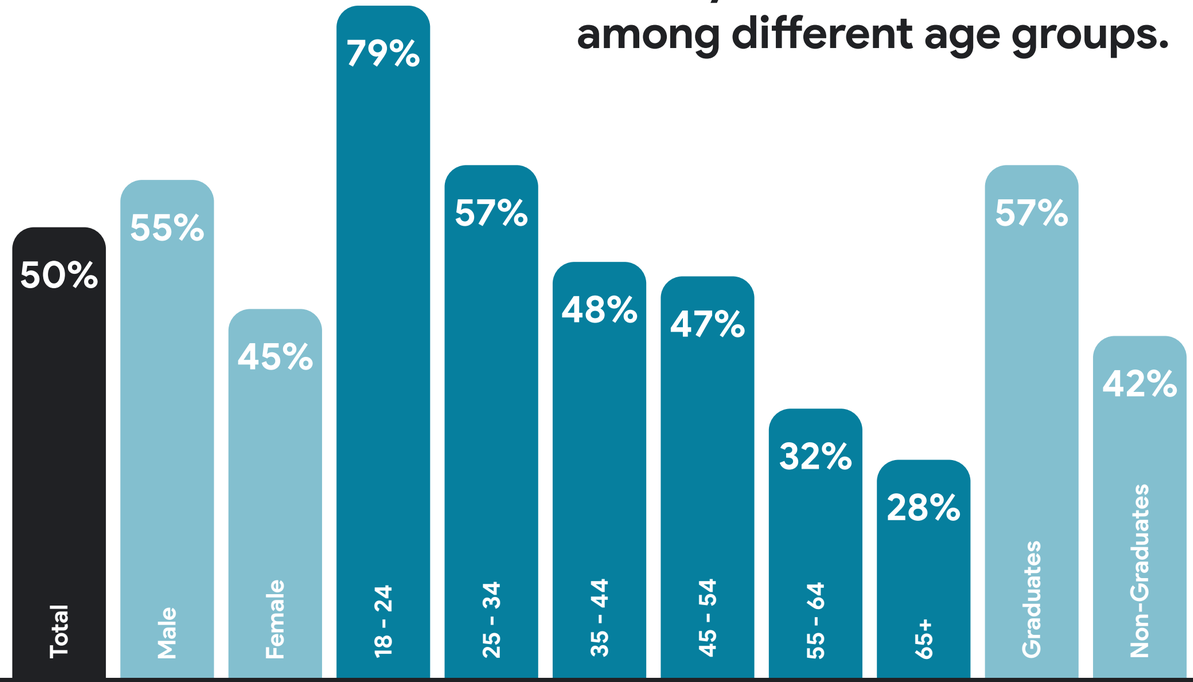


There is an adoption gap emerging between key demographic groups that must be bridged.

Economic transformation as a result of AI adoption will require consistent, habitual usage across the majority of the population. We found a **10 percentage point** gap in self-reported regular use of AI between men and women, along with a **15 percentage point gap** between university graduates and non-graduates.[8]

Despite differing levels of adoption, we find women and non-graduates tend to identify similar barriers to AI adoption as their male or university educated counterparts, implying that the largest barrier to increased AI use may be an overall lack of confidence to overcome these perceived barriers, rather than the barriers themselves. These groups will therefore require targeted interventions to help them upskill in a format that works for them.

Weekly use of Generative AI among different age groups.



What barriers are preventing AI uptake?

"With so many AI tools available, it can be overwhelming to choose the right one for specific needs or tasks, leading to uncertainty and hesitation."

Male, 25-34

"Generative AI models often need access to personal data that might compromise with your privacy and data security. Generative AI can also be misused and manipulated to generate misleading data or to create fake news."

Female, 45-54

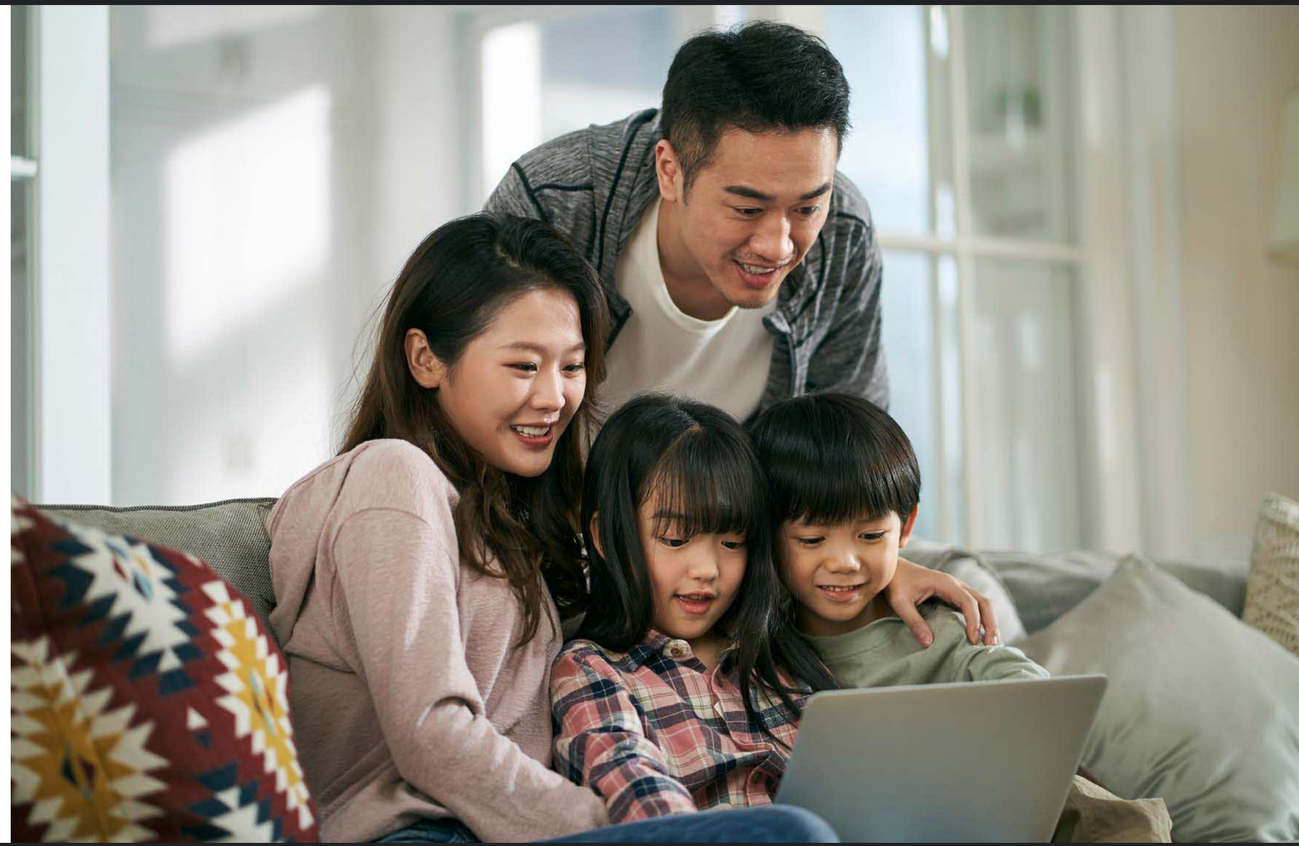
"The cost of using AI, as some programmes are not free. Also, not all features are free and some can be costly. There can be data inaccuracy from AI thus we need to do our own research and fact check the facts given by AI."

Male, 18-24

"The fact that with most if not all technologies, the nascent advent of said tech are in themselves their own Achilles heel. Thus I would prefer to let them mature first before utilising them. I am a cautious user and would prefer to depend on proven tech as opposed to the alternative."

Male, 65+

Responses to Question: What are the main barriers preventing you from expanding your use of Generative AI tools in your personal life?
Responses are edited for grammar and spelling, but otherwise unchanged.
All responses taken from a Public First survey of Singaporean adults



Google Career Certificates

AI Essentials Course gives key AI skills to Singaporeans without a graduate degree.

Google Career Certificates are flexible, self-paced, 3-6 month online training courses that can lead to jobs in high-growth fields such as Data Analytics, Project Management, and Business Intelligence. Offered through Coursera, the program aims to develop an accessible pathway to employment, equipping learners with the right theory and practical skills required.

Students are able to enroll on a Google Career Certificate course with a S$49.00 (US$37) per month subscription to Coursera, or through a scholarship with one of the program's 27 local distribution partners, including Temasek Polytechnic, Institute of Technical Education (ITE), and the National University of Singapore. To date, Google has sponsored 13,000 scholarships for Singaporeans to participate in the Google Career Certificate programme, helping thousands of additional Singaporeans develop new skills to support their careers.

Google Career Essentials are short courses designed to help you build in-demand skills to grow your career. One of the courses offered is Google AI Essentials, which aims to give students actionable, practical knowledge on how to integrate AI into their regular working lives. The transformational capabilities of the course are straightforward; by providing learners with the ability to effectively leverage AI, AI Essentials supports the growth of digital skills among the Singaporean workforce. Among the benefits the course brings are:

- **A foundational understanding of AI.** The course equips individuals with a strong grasp of AI principles, language, and vocabulary, enabling them to confidently navigate the evolving AI landscape.
- **Boosting worker productivity through AI.** By introducing a variety of AI tools and applications, the course empowers users to streamline their workflows, improve the quality of their work, and boost overall productivity.
- **Better understanding of how to effectively prompt AI tools.** The focus on prompt engineering has been particularly impactful, enabling users to maximise the potential of AI tools by crafting precise and effective prompts.
- **Prompting responsible AI usage.** The course emphasises the importance of using AI responsibly, highlighting safety, ethics, and confidentiality concerns, ensuring users are equipped to leverage AI tools ethically and effectively.

"The Google AI Essentials course has tremendously increased my understanding of AI and has cut the time I spend on administrative tasks for school and my internship in half."

JAIMEER G.
Google AI Essentials graduate

AI Essentials is a flagship course to help people across roles and industries get essential AI skills to boost their productivity, address some of Singapore's most pressing AI concerns; boosting the digital skills of workers who may otherwise find themselves 'left behind', providing straightforward and actionable AI use cases to overcome the 'knowledge barrier', and learning how to use AI responsibly by mitigating unfair biases and inaccuracies. More courses like these are needed if Singapore hopes to maximise the opportunity from AI.

Source: Google AI Essentials, 2025

Google’s Skills Ignition SG

Traineeship Programme helps Singapore to maintain its highly skilled workforce.

Google and the Infocomm Media Development Authority (IMDA) have collaborated on Skills Ignition SG Traineeship Programme, a skilling initiative focused on workforce development that helps Singapore build a highly skilled working population to help retain its comparative advantage. Launched in July 2020, Skills Ignition SG aims to enhance the employability of Singaporean entry-level and mid-career job seekers by equipping them with in-demand digital skills, through initiatives like the traineeship programme. To date, over 20,000 Singaporeans have unlocked new career opportunities through Skills Ignition SG since 2020.

The Skills Ignition SG Traineeship programme is a twelve-month programme comprising of three months external training, and a hands-on experience through the immersive nine months on-the-job training at Google. The programme focuses on two key tracks designed to address high-demand skills, Digital Marketing (DM) and Professional Cloud Architect (PCA).

These tracks are now redesigned to include AI into the curriculum, strategically aligning with Singapore’s national priorities in developing a robust and future-ready digital workforce.

Overall, Skills Ignition SG exemplifies a successful public-private partnership, addressing the evolving needs of Singapore’s workforce by providing comprehensive training and practical experience in high-growth digital sectors.

“These initiatives are meant to allow you to hone your interests, further develop your skills, and allow you to gain hands-on experience and expertise. For instance, Google also has its Skills Ignition SG Traineeship Programme to help Singaporeans acquire in-demand skills for the digital future – and the Traineeship Programme continues to evolve with the integration of AI modules into the 2025 iteration.

Some graduates, such as Muhammad Syahiran Bin Abdul Jamal who joined the Digital Marketing track last year, have seen it as a springboard to land themselves a job. Syahiran is now at GroupM as a Search Performance Executive. I am very glad to hear of many of such stories, where individuals, perhaps those with more traditional IT or digital backgrounds, deciding to pivot into the tech industry. They have secured good jobs and now enjoy very good prospects.”

SMS Mr Tan Kiat How
- during Singapore Computer Society’s Splash Forum 2024

“Working over 6 years in various fields, I made a transition to pursue a traineeship at Google. The hands-on experience I gained, and the mentorship and support from the programme, helped me hone up on my technical skills and boosted my confidence during job interviews, enabling me to secure a position at a tech company.”

Royce Lua
Traineeship Programme Graduate

Source: https://grow.google/intl/ALL_sg/skillsignitionsg/

Developing AI Responsibly.

Singaporeans identify fears over misinformation, cybersecurity, and worsening data privacy as the potential outcomes of increased AI uptake that concerned them the most. Addressing these challenges will be vital in order to maintain public buy-in to the AI transformation.

To increase confidence in AI tools, we need to ensure they are rolled out in a responsible way.

Like any powerful technology, AI will change the way that people will live and work – and navigating the transitions it creates will need careful management. **89% of people in Singapore believe that AI needs to be rolled out responsibly.**

84%

agree that private individuals should have **control of their own appearance, face or voice.**

85%

agree that we should ensure there are **protections for content creators** to ensure they're not harmed by AI.

88%

agree that there should be controls on the use of AI to ensure it is **not used in a misleading way.**

Singaporeans are mostly concerned about **increasing unemployment, increasing the amount of misinformation and deception on the internet,** and the **loss of key life skills among the population.**

Google's Responsible AI approach.

Google's approach to AI governance is guided by its AI Principles of bold innovation, responsible development and deployment, and collaborative progress, to ensure that people, businesses, and governments around the world can benefit from AI's potential while mitigating its potential risks.

Based on its recent Responsible AI Progress Report, the company employs a **full-stack governance approach** across the AI lifecycle, from design to testing to deployment to iteration, comprising:

1. **Governance:** Google's governance is guided by its AI Principles, as well as various frameworks and policies like the Secure AI Framework and Frontier Safety Framework. They employ pre- and post-launch processes with leadership reviews to ensure alignment and regularly publish model cards and technical reports for transparency.

2. **Mapping:** Google takes a scientific approach to mapping AI risks through research and expert consultation, publishing over 300 research papers on responsible AI and safety topics and codifying this into a risk taxonomy.

3. **Measuring:** Google employs a rigorous approach to measuring AI performance with a focus on safety, privacy, and security benchmarks. Multi-layered red teaming, involving both internal and external teams, proactively tests AI systems. Model and application evaluations are conducted pre- and post-launch to assess alignment with policies before and after launch.

4. **Managing:** Google deploys and evolves mitigations for content safety (filters, instructions, safety tuning), security (the Secure AI Framework), and privacy. Google also works to advance user understanding through provenance technology (like SynthID, which has been open-sourced for any developer to apply) and AI literacy education. They also support the broader ecosystem with research funding, tools, and by promoting industry collaboration.

AI should be deployed to pre-empt cybersecurity threats.

Cybercrime and fraud are a major concern to people in Singapore, with Singaporeans some of the largest per capita victims of cybercrime in the world.[9] Misuse of AI by hostile actors could create new attack vectors, and developers of foundation models need to do all they can to counter these use cases.

AI tools could also help shift the balance between offence and defence in favour of the latter.

At the moment, most cybersecurity solutions rely on scanning for known threats, whereas AI driven tools can more proactively monitor for hostile software, on both a technical level and through new types of social engineering such as phishing.

By 2035, we estimate that the combination of more effective prevention and faster response times from AI driven solutions could help prevent over 60% of the costs from cybersecurity threats and fraud.

Transparently.ai is using AI to improve trust in financial reporting.

Trust in financial markets is underpinned by the knowledge that those engaging with companies and markets - as customers or as potential investors - have all of the information they need before making a decision. In many cases, this means being certain that the company they are dealing with has sound financial accounts. Forensic accounting is a core part of this expected transparency, but the process is costly, and it can take a team of forensic accountants months to pore over a major company's financial accounts.

Transparently.ai is a Singapore-based company that uses Generative AI to speed up and reduce the costs associated with this process. With access to the right information, the company's AI tool can generate a financial report that might otherwise have taken two or three weeks to produce in a matter of seconds, and for a fraction of the cost.

The impact of this cost and time saving cannot be overstated. Whereas previously an investor or institution with a large portfolio might take months to review all of their investments, AI-powered tools like Transparently allow investors to have greater levels of trust and certainty in all of the companies in their portfolio in a far shorter timespan.

Transparently.ai developed their tool with the support of Google through the Google for Startups Accelerator: AI First Singapore. The accelerator brings the best of Google to high potential tech startups using artificial intelligence, machine learning and cloud technology to tackle some of the most urgent challenges around the globe.

How Google's AI: First Accelerator Supports Growth

- Each cohort of startups comes together to tackle technical challenges that can help grow their businesses through a mix of remote and in-person, 1-to-1, group learning sessions, and sprint projects.
- Founders outline the top technical challenges for their startup, and are paired with experts from Google and the industry to solve those challenges and grow their business.
- Accelerators include deep dives and workshops focused on software engineering, product design, customer acquisition, and leadership development for founders.
- Eligible participants receive Google Cloud credits, dedicated support from startup experts, technical training and access to key industry events. Additionally, participants are eligible to receive 30 days of free Cloud TPU access through the TPU Research Cloud program to accelerate their open-source machine learning research.

Transparently.ai had been using Google Cloud infrastructure to support its tools prior to participating in the accelerator, and used the programme to develop a Gemini-powered agent that could serve as a more intuitive and interactive way for their customers to leverage Transparently.ai's core tools. Alongside the benefits the company accrued by participating in workshops and mentoring programmes, it was the ability to directly access Google's engineering team that provided the greatest impact to Transparently.ai's GenAI project.

"Unfortunately, engineering doesn't work [with a strict structure]. You run into problems and you need to ask someone a question right away. Having access to the engineering team and being able just to pick up the phone or text them directly and say: 'Okay, I'm having this problem. How do I solve this?', and then having them come back to me and adding value to that, adding stuff that I didn't know, was amazing."

Mauro Sauco
Co-Founder and CTO at Transparently.ai

Going forward, Transparently.ai aims to continue developing its AI tools to further strengthen its customer experience, and the effectiveness of the forensic accounting analysis it produces.

Source: Interview with Transparently.ai

Securing Singapore's Future.

AI can help Singapore sharpen its competitive edge — strengthening its position as Southeast Asia's hub for trade and innovation. It can accelerate breakthroughs in medical research, and help the country navigate the long-term fiscal and workforce pressures of an ageing population.

AI will support Singapore's position as Southeast Asia's regional trade hub.

Since its founding, Singapore has thrived as a hub for regional and world trade. Today, Singapore remains one of the world's most open economies, while the overall performance of its economy has been strongly correlated to that of the wider Southeast Asia region in recent decades.

Our research identified three core mechanics by which AI and trade could continue to benefit the wider Singaporean economy:

Help companies navigate non-tariff barriers to trade.

Businesses can find it challenging to navigate the regulatory requirements of exporting beyond their borders. Even the complications of filling in paperwork in different languages becomes a serious point of friction. Conversely, AI is typically well suited for supporting this kind of administrative task. **By helping ease current barriers to trade from language or regulatory submissions, we estimate AI could help boost exports for Singapore by over S$380 billion (US$283 billion).**

Rising Southeast Asia tide for regional trade

AI is likely to lead to leapfrog growth in many of the less developed economies in Southeast Asia - helping accelerate their wider economic development. This in turn is likely to increase their economic demand and inter-regional trade as a whole, with Singapore as the central hub of this. **Over the next ten years, AI is likely to increase the GDP of the whole Southeast Asia region by almost S$360 billion (US$270 billion).**

AI will amplify Singapore's exports across Southeast Asia

Map displays value of exports to Southeast Asia supported by AI.

Enhanced supply chain optimisation.

AI-driven logistics could help optimise shipping routes, warehousing, and inventory management. This in turn could lower costs and enhance reliability and help offset supply chain disruption. Early surveys have found that some of the highest cost reductions from AI are coming in supply chain management[10], while early adopters of autonomous supply chain planning report[11] that it can "lead to an increase in revenue of up to 4 percent, a reduction in inventory of up to 20 percent, and a decrease in supply chain costs of up to 10 percent."

SEA-LION is helping to improve the accuracy and experience of using AI across Southeast Asia.

Skilled Singaporean workers can also support the development of an indigenous tech sector in the rest of Southeast Asia. Researchers and developers at AI Singapore built **SEA-LION** (South East Asian Languages In One Network); a family of home-grown Large Language Models (LLMs) that were designed from scratch to better understand the specific languages and dialects of Southeast Asia.

Existing LLMs display a large amount of cultural bias, especially in terms of cultural values, political beliefs, and social attitudes. Many of the most widespread LLMs have been developed in the United States and China - the two giants of AI innovation - and reflect the cultural values of each country. The development of an indigenous Southeast Asian LLM is designed to cater to the region's many disparate social groups, helping to lower the bar for AI adoption among government, business, and individuals in the wider region. More broadly, by supporting AI adoption, an indigenous LLM such as SEA-LION can enable would-be entrepreneurs to use their new digital skills to develop their own domestic tech sectors. While the scale of adoption potential within Singapore is more limited than other countries in the region, as a first mover Singapore is shaping AI strategy and regulation as a true thought leader.

All of this regional growth is made possible through the nexus of Singapore; it is the country's existing digitally skilled workforce, well-developed tech ecosystem, and access to startup capital that enabled AI Singapore to embark upon a programme such as SEA-LION.

Source: SEA-LION (2025)

Nov 2023

Version 1.

Outperformed most models based on SEA-HELM benchmarks.

Jul 2024

Version 2.

Improved performance on SEA tasks while maintaining credible performance on standard English benchmarks.

Aug 2024

Version 2.1.

Enchanced conversational abilities across SEA languages with more contextually appropriate responses.

Nov/Dec 2024

Version 3.

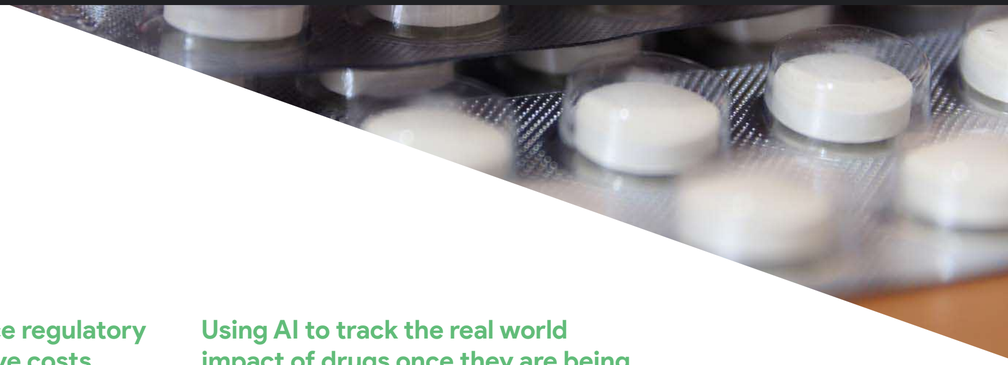
Outperforms similar-sized open-source models and some larger models in both general and SEA capabilities.

2025 onward

Future Plans.

Release of SLM models, release of larger models, covering more local languages/dialects, better regional alignment and guardrails, multimodality.

AI will accelerate R&D in the healthcare sector.



From 1950 to 2010, the number of new drugs approved per billion US dollars has halved roughly every nine years - meaning, the average cost to develop each drug has doubled. While in the 1950s, it might have cost a few million to develop a new treatment, today it can cost close to S$4.02 billion (US$3 billion) to develop each drug. This has acted as a crucial brake on world growth: while semiconductors have seen exponentially declining costs, this has been offset by the slower innovation in medicine.

There are likely to be multiple causes for this so-called 'Eroom's Law' of cost increases, including the increasing complexity of the drug targets being investigated, the challenge in finding new treatments that perform better than those that already exist, increases in wider regulatory costs and the general decline in research productivity seen across the sciences.[12]

We have now seen exciting evidence that AI could help offset some of these factors, slowing increases in costs or even reducing them.

Using AI to better understand and simulate how different biological proteins and molecules work.

There are more than 10^{60} potential drug-like molecules and until now, most drugs have been developed by slow and expensive trial and error.[13] The discovery phase for new drugs can therefore take between 4 to 5 years - and even after this, around two-thirds of drugs go on to fail in Phase II trials.

However, new AI driven simulation tools such as Google DeepMind's AlphaFold make it possible to digitally simulate how different molecules interact with each other. This can cut the time to discover new lead candidates, in some cases from years to weeks or even days.

By integrating AI tools into pharmaceutical R&D, we estimate that Singapore's biotech firms could reduce the average time for drug discovery by over 40%. This can help reduce the overall cost of drug development while also reducing the time it takes to deliver cures to the people who need them.

Using AI to reduce regulatory and administrative costs.

Almost as significant as the costs to find new drug candidates are the ongoing administrative costs as new drugs go through the lengthy process of clinical trials to ensure their safety. AI tools can support here, helping cut time and support with routine data analysis or clinical paperwork.[14] **In total, we estimate that AI could augment between 10 to 20% of tasks done by those working on medical R&D.** This can help reduce the overall costs of medicine development for pharmaceutical companies, ultimately reducing the cost of medicine for consumers.

Using AI to track the real world impact of drugs once they are being used more widely.

Even after this testing, many drugs have unexpected impacts - both positive and negative - once they are used by the population at large. AI can help monitor for and identify these kinds of effects, particularly if combined with wearables and personal devices that give ongoing, real-time health metrics.

Singapore's biomedical sector has seen significant growth since the creation of the National Biomedical Sciences initiative in 2000. The industry is now seen as a potential fourth pillar for the economy after electronics, chemicals and engineering, with four of the world's top 5 pharmaceutical companies locating manufacturing facilities in the country. Meanwhile, the number of local biotech companies has risen from 7 in 2012 to over 50 by 2022.[15] Singapore is becoming a centre for many of the leading trends in the sector, including biologics, mRNA and RNA-based drug development, as well as precision medicine and genomic science.

AI-Assisted Structural Analysis in Parkinson's Disease Research.

Researchers at the Agency of Science, Technology, and Research (A*STAR) and the National Neuroscience Institute (NNI) have applied artificial intelligence (AI)-driven tools, including AlphaFold, to study how the immune system may contribute to the progression of Parkinson's Disease (PD).

The study investigated how autoantibodies in some PD patients target a neuroprotective protein known as STIP1, potentially interfering with its normal function in the brain. A critical challenge in this research was visualising and interpreting the complex 3D structure of the protein and its interactions with autoantibodies—traditionally a time-intensive process.

To support their structural analysis, the team used AlphaFold, a deep learning-based protein structure prediction tool developed by Google DeepMind, to model how autoantibodies might bind to STIP1 at the molecular level. The use of AI-based protein structure prediction complemented laboratory methods and contributed to a more efficient understanding of disease mechanisms.

These findings may support future efforts in early detection and targeted therapeutic strategies for neurodegenerative diseases.

This research was jointly led by scientists from the A*STAR Singapore Immunology Network (A*STAR SIgN) and the National Neuroscience Institute (NNI), including Prof Tan Eng King, Prof Olaf Rötzschke, Dr Chao Yinxia, Dr Jackwee Lim and Dr Jolene Tan Su Yi.

The application of AI tools such as AlphaFold has transformative implications for the health sector. By reducing the time and cost associated with drug discovery and development, these tools have the potential to counteract Eroom's Law, which describes the declining efficiency of pharmaceutical research and development. The ability to rapidly generate accurate protein structure predictions can accelerate the development of novel diagnostic tools and therapeutic interventions for a range of diseases, including neurodegenerative disorders like Parkinson's Disease.

*Source: Interview with A*STAR and NNI*

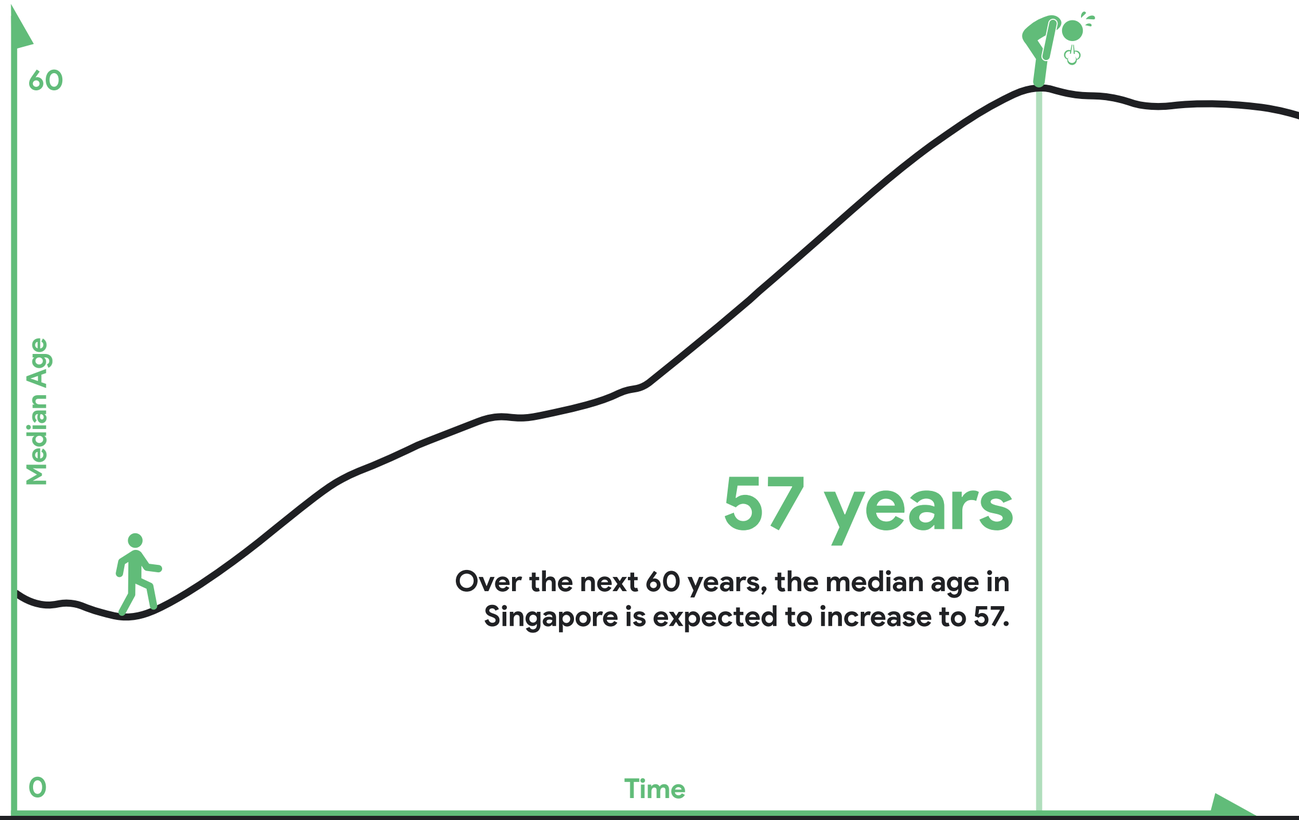
AI will help to mitigate the effects of an ageing population.

In the 60 years since its founding, the median age in Singapore has more than doubled from 17 to 36 years. Over the next 60, it is expected to increase again to 57 years - while the share of the population aged over 65 will more than triple.

This demographic shift presents significant challenges for Singapore, as the country will need to find the resources to maintain the quality and expand the provision of health and social care for its older residents, while being able to draw from a shrinking pool of working-age adults to fund and staff these services.

According to government estimates, Singapore needs to hire at least **6,000 new nurses every year** in order to keep up with the country's ageing population, and maintain the quality of healthcare services provided to the country's residents.[16]

AI is not a silver bullet for ageing, and it cannot offset all the increased pressures of an ageing population. However, it can ease this transition.



Using AI to offset a shrinking workforce.

To start, the higher labour productivity created by AI can aid in offsetting the naturally lower economic growth that would otherwise arise as a result of a smaller working age population. Beyond this, AI can help industries maintain their existing productivity despite experiencing a shrinking workforce by taking over more repetitive tasks.

In total, we estimate that the greater use of AI could help offset over half of potential labour shortages in Singapore driven by an ageing population.

Using AI to support diagnosis.

AI can help to diagnose conditions in patients by supporting doctors as part of a routine check up or during a formal diagnostic process, but can also get ahead of future health problems by tracking and identifying subtle changes in personal health data. After being combined with data from your smartphone or watch, AI could help provide earlier detection of emerging health conditions when they are still treatable. For example, in Singapore **we estimate that AI could help save over 1,100 lives from earlier detection of chronic conditions such as hypertension, diabetes mellitus or hyperlipidaemia.**

Hospitals in Singapore are already employing this technology to help in the diagnostic process. **The National University Hospital (NUH)** uses home-grown AI to help reduce the amount of time it takes a radiologist to interpret an MRI scan, helping to free up radiologists' time to focus on other priorities.[17]

Singaporeans are mostly supportive of the principle of involving AI in the diagnostic process - with greater confidence if a human doctor is still involved in the process.

58%

of Singaporeans would **support the use of AI to diagnose patients**

68%

of Singaporeans would support the use of AI to diagnose patients, **as long as this was overseen by a human doctor**

Using AI to boost healthcare capacity.

AI also can help improve the productivity of the health sector more directly. AI tools can help generate efficiency savings for healthcare workers by taking over administrative tasks, and freeing up more time for them to spend directly interacting with patients. **In our modelling, we found that over 30% of health sector workers are likely to have their jobs augmented by AI.**

Using AI to support eldercare.

With a rapidly ageing population, and an increasing number of older people living alone, loneliness is likely to become an increasingly pressing problem for Singapore's elderly population.[18] Busy workers may struggle to find time to visit their older relatives, leaving many without sufficient social interaction and contributing to worsening mental health conditions. While the government is in the process of boosting mental health provision by training up to 28,000 volunteers to help older people in their community, AI can also offer people another source of social interaction and to keep older people mentally stimulated.[19]

Singaporean company **Dex-Lab** has developed a humanoid robot powered by AI to provide social connection to dementia patients, supporting them as their condition worsens and helping to keep them mentally stimulated - vitally important in slowing the onset of conditions such as dementia. The company partnered with Bright Hill Evergreen Home in Punggol for a trial of the technology, with 'Dexie' guiding dementia patients in the care home through daily exercises. Alongside the direct social and health benefits of an AI companion, Dexie also helps to free up human time that would otherwise be spent on the task, allowing care workers to focus on more intensive priorities that would be difficult for technology to replicate.

About the Research.

In this paper, we used a range of different methods to quantify the economic and social potential of AI for Singapore:

- We created a new set of economic models, exploring the potential of AI for labour productivity and business efficiency across the economy.
- We ran new representative polling of 1,005 online adults in Singapore. Fieldwork for this study took place between 14th February - 6th March 2025. Results quoted here are weighted by age group, gender, and education level to nationally representative proportions. While we undertook our best efforts to make the sample as representative as possible with extensive attention checks and neutral question design, all polling is subject to the potential for response bias and our sample does not include non-online adults.

You can access our detailed methodology here.

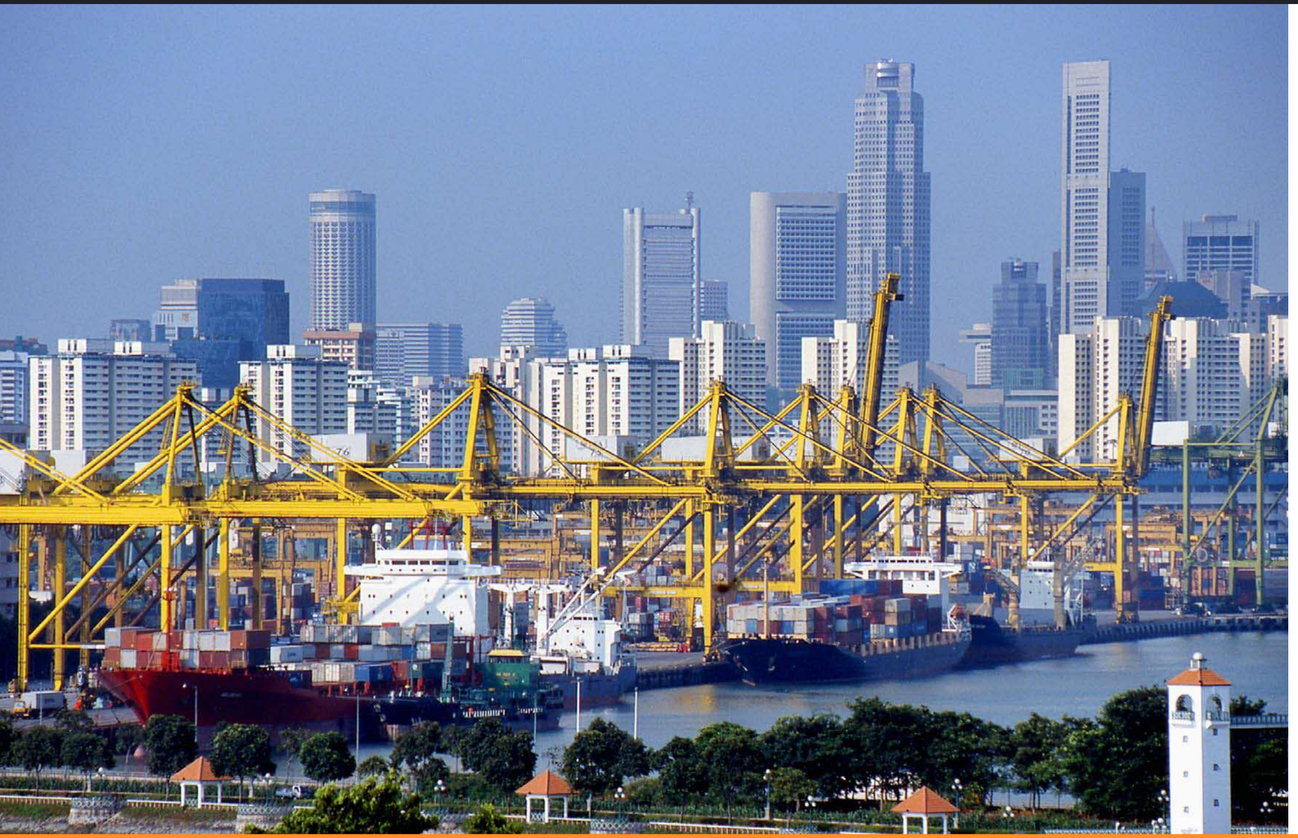
This report has been prepared by Public First for Google. All information in this report is derived or estimated by Public First analysis using both non-Google proprietary and publicly available information. ***Google has not supplied any additional data, nor does it endorse any estimates made in the report.*** *Where information has been obtained from third-party sources and proprietary research, this is clearly referenced in the endnotes.*

With the exception of desktop researched claims which have been footnoted, all claims in the report have been derived based on Public First modelling or polling. All estimates given here are Public First's best estimate at the time of publication. All calculations were done in US$, and have been converted to local currency based on average exchange rates in the last year.

This report has been prepared solely for information purposes over a limited period of time to provide a perspective on the market. It is not intended for investment purposes. Projected market and financial information, analyses, and conclusions contained in this report should not be construed as definitive forecasts or guarantees of future performance or results.

Google, Public First and their respective affiliates, or any other third party involved make no representation or warranty, either express or implied, as to the accuracy or completeness of the information in the report and shall not be liable for any loss arising from the use of this report.

Public First is a global strategic consultancy that works with organisations around the world to better understand public opinion, analyse economic trends and craft new policy proposals. For more information, please visit our website.



Endnotes.

1 Transformer: A Novel Neural Network Architecture for Language Understanding, Google Research (2017).

2 The Potentially Large Effects of Artificial Intelligence on Economic Growth, Goldman Sachs (2023)

3 Economic Impact Report: Strengthening Singapore's AI Leadership with Google, Access Partnership (2024)

4 AI-driven growth: Navigating the path to new markets, World Economic Forum (2024)

5 Singapore's growing financial and telecom industries, LSEG (2024); Global Financial Centres Index 36, Z/Yen and China Development Institute (2024)

6 Future of Work, LinkedIn, 2023

7 Unlocking APAC's Digital Potential: Changing Digital Skill Needs and Policy Approaches, AWS, 2023

8 Future of Work, LinkedIn (2024)

9 $1.4 trillion lost to scams globally; S'pore victims lost the most on average: Study, Straits Times (2024)

10 The state of AI in 2022—and a half decade in review, QuantumBlack by McKinsey (2022)

11 Autonomous supply chain planning for consumer goods companies, McKinsey (2022)

12 From Eroom's Law to Moore's Law", Medium, 2020

13 From Eroom's Law to Moore's Law", Medium, 2020

14 ASPE, 2014

15 How Singapore punches above its weight in drug discovery and development, A*STAR (2024).

16 Annual Hiring Targets for Healthcare Workers, Ministry of Health Singapore (2024)

17 NUH team invents AI tool to accelerate diagnosis of lumbar spinal stenosis, National University Health System (2024).

18 Seniors Staying Alone, Ministry of Health Singapore (2023)

19 Mental health a national priority, says DPM Wong; 28,000 more to be trained to help in community, The Straits Times (2024)

PUBLIC FIRST

A SHGH Company

Deep insights. Straight advice. Real results.