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Contents

Introduction	
Why Southeast Asia	05
Singapore: Where Startups Grow And Thrive	06
Why Singapore	08
Who Are Already Here?	11
Where Your Customers Are	23
Where To Find Talent	31
Be Part of Something Bigger	34
How You Can Scale Even Faster	36
What Is Next For You	43
Endnotes	45
References	46

Introduction

Spread over 45 million km², some 48 countries make up Asia, also known as the "Continent of Contrasts". Unequal distribution of natural resources, coupled with populations of disparate cultures, have contributed to a region that is not only diverse geographically and culturally, but also economically. Asia has been growing – surely, but not uniformly.

In this e-book, we focus on Southeast Asia, particularly the internet economy fuelling its growth and a key market driving it: Singapore. The country is an exciting tech node within the Southeast Asia tech ecosystem, providing a unique location for companies and startups to access new environments and fresh ideas, while leveraging its reliable infrastructure as well as collaborative ecosystem.

We investigate why Singapore is the topranked country in Asia and the only Southeast Asian country in the top 10 of the IMD's World Competitiveness Ranking,⁰¹ and the attributes that attracted nearly 60 per cent of the Asia regional headquarters of technology multinationals to be based in the country.

These attributes also explain why the world's top tech firms, from giants like Google, Meta (formerly known as Facebook) and IBM, to rising stars like Stripe and Grab, are not only running their regional operations out of Singapore, but also building products for the world.

Read on to find out how you can leverage Singapore's tech ecosystem to not only seize new business opportunities, but also drive sustainable and impact-focused growth in the Southeast Asian region.

Why Southeast Asia

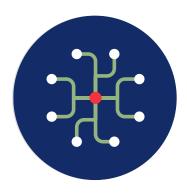
Southeast Asia's digital economy is growing rapidly, and is projected to hit US\$300 billion (S\$412 billion). ⁰² By 2030, Southeast Asia will be the fourth-largest economy in the world, with digitalisation contributing US\$1 trillion (S\$1.38 trillion) to the region's GDP over the next decade.

Furthermore, Southeast Asia's cloud computing market is expected to hit US\$40 billion (S\$54.16 billion) by 2050; coupled with the rise in small and medium enterprises (SMEs) in Southeast Asia looking for digital solutions and products to improve customer experience, opportunities are aplenty for enterprise technology companies.

The region continues to be a bright spot for capital despite global headwinds, with funding for tech startups in Southeast Asia having grown 50 times from US\$130 million (S\$180 million) in 2010 to US\$7.7 billion (S\$10.6 billion) in 2020, and this figure expected to exceed US\$14 billion (S\$19.4 billion) in 2023.03

Read on to find out, at a glance, the population demographics driving growth in the region, and its demand for tech solutions.

Changing Demographics Driving Growth in Southeast Asia



Digital natives are living their lives online

- > 50 per cent under 30: Over half of the population in Southeast Asia is under 30.04
- Highest global average internet usage: Mobile-first or even mobile-only, Southeast Asia has over 887 million mobile connections in the region – 132 per cent of the totalpopulation.
- A digital population larger than the US, UK and Canada combined: There were 310 million digital consumers in Southeast Asia in 2020, a number that was initially forecasted to be attained only in 2025. This growth is expected to accelerate with an additional 30 million digital consumers between 2020 and 2025.⁰⁶

Rising affluence and urbanisation are stimulating consumption

- Middle-affluent population to rise from 40 per cent to 64 per cent in 2030.⁰⁷
- City-dwellers in Indonesia, Philippines, Thailand, and Vietnam to rise from 48 per cent today to 57 per cent between 2015 and 2030, adding another 87 million urbanites.⁰⁸





Prioritisation of convenience is driving on-demand services and e-commerce

- On-demand services, such as ride-hailing and food delivery, are expected to experience significant growth moving forward. The ASEAN taxi market, including notable players Grab and GoTo, is expected to register a Compound Annual Growth Rate (CAGR) of 18.7% from 2020 to 2025.⁰⁹ The food delivery sector is projected to exceed US\$40 billion (S\$54 billion) by 2025.¹⁰
- E-commerce sees an average of 5 million orders a day, and is now the biggest sector of the internet economy. The sector is on track to exceed US\$150 billion (S\$204 billion) by 2025.
- With the addition of 100 million new internet users between 2015 and 2019, the Online Media sector quadrupled to US\$14 billion (S\$19 billion) in 2019, and is expected to reach US\$32 billion (S\$44 billion) by 2025.¹²

Singapore: Where Startups Grow and Thrive

More regional startups are becoming unicorns thanks to robust funding and a rising middle class. In fact, 25 unicorns were minted in the region in 2021, with 11 of them having their headquarters in Singapore.

While the business opportunities for tech firms in Southeast Asia are aplenty, it is not easy to enter a region that is home to 630 million people speaking hundreds of different languages and dialects.

It is not impossible, however. The trick is in finding the right launchpad, as tech companies based in Singapore can attest. Singapore is already home to 46 per cent of Asia regional headquarters across a diverse range of industries. Add our fast-growing startup scene to that and it is clear why companies are choosing to engage in a plethora of innovative activities in the city-state. In fact, 26 of the 47 current Southeast Asian unicorns are based in Singapore.¹³

Our growing ecosystem, supported by accelerators, professional services firms, research institutions and regional partners, amongst others, mean that companies based here are uniquely placed to seize new opportunities.

Unicorns Headquartered in Singapore

	Year Achieved Unicorn Status	Туре
Darwinbox	2022	HRtech
Livspace	2022	Proptech
Advance.ai	2021	Artificial intelligence (AI)
Bolttech	2021	Insurtech
Carousell	2021	Online classifieds
Carro	2021	Car services
Matrixport	2021	Cryptocurrency
Moglix	2021	B2B
Ninja Van	2021	Logistics
Nium	2021	Fintech
PatSnap	2021	Patent search engine
Secretlab	2021	Gaming chair
TDCX	2021	Business processing
HyalRoute	2020	Telecommunications
JustCo	2020	Co-working space
NanoFilm	2020	Deep tech
Acronix	2019	Cybersecurity
Bigo Live	2019	Social media
Trax	2019	Retail tech
One Championship	2018	Sports
TauRx	2018	Pharmaceuticals
Lazada	2017	E-commerce
GoTo Group	2016, 2017	Super app
Sea	2016	Gaming
Razer	2015	Gaming
Grab	2014	Super app

Source: Tech in Asia

Why Singapore?

This is what Singapore has to offer to top tech firms to power their work.



Technology

- Top tech innovation hub outside of Silicon Valley.14
- 2nd in digital competitiveness in Asia, beating South Korea, Japan, and China.¹⁵
- 1st in global smart city index, beating London and New York.

Business

- 2nd for ease of doing business in Asia, the only Southeast Asian nation in the top 10 for Asia, and 18th globally.¹⁷
- 1st for most innovative economy in the whole of Asia.18
- 1st for IP protection in Asia and 2nd globally. 19, 20





Talent

- 1st in developing, attracting and enabling talent in Asia and 3rd globally.²¹
- 2nd most attractive destination in Asia for global talent.²²
- More than five in 10 workers in high-skilled employment.²³
- 74.3% of resident population literate in two or more languages.24

Connectivity

Geographical

- In 2018, Changi Airport served >100 airlines flying to 400 cities in 100 countries and was named Asia's most connected international airport.²⁵
- >1,000 flights daily connect more than 65 million passengers annually.²⁶

Digital

- 2nd globally in digital connectivity.27
- 3rd most desirable location for data centres globally, with more than 60 per cent of Asia-Pacific's data centre supply.²⁸
- Top global submarine cable hub,²⁹ with 24 submarine internet cables linking to multitude of key locations worldwide.³⁰
- Established progressive Digital Economy Agreements (DEAs) with key trade partners such as Australia and Chile to ensure digital connectivity and data protection regime interoperability.³¹

Trade

 Access to 26 Free Trade Agreements (FTAs) that benefit Singapore-based exporters and investors.²⁷

Government agencies supporting the digital economy

The Singapore government takes pride in its collaborative approach to developing the digital economy. While different agencies focus on complementary parts of the sector, the Digital Industry Singapore office (introduced later in the guide) brings together the various agencies to support companies in their growth in Singapore. Here, we introduce the key agencies to take note of.



Infocomm Media Development Authority (IMDA)

The IMDA develops and regulates the converging infocomm and media sectors in a holistic way, creating a dynamic and exciting sector filled with opportunities for growth, through an emphasis on talent, research, innovation and enterprise. It looks after ecosystem development programmes such as TechSkills Accelerator (TeSA), Open Innovation Platform, Accreditation and Spark.

Economic Development Board (EDB)

The EDB is responsible for strategies that enhance Singapore's position as a global centre for business, innovation, and talent. It provides assistance for international investors looking to invest into Singapore, through a toolkit of connections, resources and incentives. It also works closely with other local government agencies to ensure that companies are supported by a well-developed business environment and a globally competitive workforce.





Enterprise Singapore (ESG)

ESG is the government agency championing enterprise development. They work with committed companies to build capabilities, innovate and internationalise. They also support the growth of Singapore as a hub for global trading and startups. As the national standards and accreditation body, they continue to build trust in Singapore's products and services through quality and standards. ESG is the lead agency for enterprise development activities such as Singapore Week of Innovation and Technology.



Who Are Already Here?

From fintech to e-commerce to SaaS, these global heavyweights have a presence in Singapore



Discover More

Learn about Singapore's robust cybersecurity ecosystem here.



Amazon

 E-commerce, cloud computing, digital streaming, and AI

The regional headquarters for Amazon Web Services and Amazon Consumer Business employs about 2,000 staff in Singapore. The company actively partners with local SMEs to support digital enablement and e-commerce adoption, and recently opened a new 100,000 ft² corporate office in 2021, with plans to create another 1,000 jobs locally by 2022.

Microsoft

 Software, consumer electronics, personal computers and related services

Microsoft's Asia-Pacific headquarters oversees its software, services and devices businesses across the region. The company's Experience Centre is the first-of-its-kind in the Asia-Pacific, while its transparency and cybersecurity centre is its first globally.

Microsoft's partners benefit from being in Singapore too – according to an IDC Economic Impact Study: for every dollar that Microsoft makes in Singapore, its partners earn US\$8.13 (S\$11).





Tencent

Internet services and products

Singapore is Tencent's regional hub, where it develops its global Games operations as well as its Tencent Cloud engineering and WeChat Product operations.

Cisco

Networking hardware and software

Cisco's Asia-Pacific headquarters includes an Innovation Centre and Cybersecurity Centre of Excellence, the latter in which it works on regional issues in cybersecurity and Internet of Things (IoT).





IBM

 Hardware, software, infrastructure, hosting and technology consulting

IBM's history in Singapore dates back 66 years. The city-state – its Asia-Pacific headquarters – houses IBM's Asia-Pacific Cloud Computing Data Centre, i4.0 Studio, iX (Interactive Experience) Studio, and the Watson Centre – an incubator that acts as a centre of expertise for almost 5,000 IBM Cognitive Solution Professionals across the region.



Discover More

Global tech companies
leverage Singapore's
leadership talent.

Hewlett Packard Enterprise

Enterprise technology

Hewlett Packard Enterprise has its Asia-Pacific & Japan headquarters and innovation centre in Singapore, where it helps local tech startups develop and commercialise solutions in collaboration with EDB.





Meta

Social media, extended reality

Meta's regional headquarters and Asia-Pacific engineering hub is located in Singapore. The company also built its first data centre in Southeast Asia here, and runs a data innovation programme, supported by the IMDA, for local startups.

Google

 Online advertising, AI, search engine, cloud computing and others

The majority of Google's senior management team is based in Singapore, the company's Asia-Pacific headquarters. The city-state also houses its engineering team for payments and the Next Billion Users (NBU) initiative. Google has also launched programmes in data science analytics, digital marketing and advertising to train fresh graduates and professionals in Singapore, and is working with the government to help accelerate the digitalisation of local SMEs.



The hallmarks of the Singapore digital economy are its future-looking policymaking, an open environment to drive innovation, and well-trained talent. These factors have cemented its regional standing as a leading technology innovation hub over the years. This is why Singapore has been our Asia-Pacific headquarters since 2007, with more than 2,000 Googlers across multiple functions.

We are fully committed to this country over the long term and we will continue to invest in empowering Singaporeans today, for tomorrow, which includes cultivating local talent to serve our diverse partner, customer and user needs across the region and the world.



Ben King

Country Managing Director, Google Singapore



Dell Technologies

Technology services

Alongside its headquarters for the Asia-Pacific and Japan, Singapore is also home to Dell Technologies' Global Innovation Hub. The first-of-its-kind innovation centre advances growth across augmented/mixed reality, data analytics, cloud-native, cybersecurity and edge computing. It also boasts a team specialising in driving user experience innovations to serve future-ready customers globally.

Singapore is globally recognised as an internationally vibrant business, technology and thriving R&D hub. Our Digital Future – Made in Singapore initiative further supports Singapore's unique standing by driving digital innovations developed in Singapore to the world. We're very excited to unveil our global innovation hub as part of this initiative that will allow us to ideate, experiment and co-create meaningful digital solutions for our global customer and partner ecosystem.

The Dell Technologies Global Innovation Hub in Singapore supported by talented local professionals will allow us to further contribute to the country's growth and develop innovative products and solutions in emerging technologies to serve the wider regional and global markets.



Amit Midha

President, Asia-Pacific & Japan and Global Digital Cities, Dell Technologies

Salesforce

Cloud software

Set up in 2009, Salesforce's regional headquarters is the company's first outside North America. Its AI centre here also aims to train up to 100 postgraduate students over three years, focusing on natural language processing and deep learning.



Singapore is an attractive location for Salesforce for many reasons. Its location within the heart of Southeast Asia makes it an ideal base for regional operations. This is bolstered by a competitive economy, political and operational stability and a strong commitment towards digital transformation through its Smart Nation vision.



Sujith Abraham

Senior Vice President & General Manager for ASEAN, Salesforce



Alibaba

. E-commerce, cloud computing, fintech and others

Since 2013 when Alibaba Group established its Singapore office, the company has significantly expanded its presence in the city-state. Singapore is currently the regional operations base for several business units in the Alibaba Ecosystem, including Alibaba Cloud, Tmall Taobao World, Lazada, Cainiao Network and Ant Group.

Alibaba has initiated collaborations with local government bodies, trade associations and institutes of higher learning that have culminated in the introduction of cutting-edge technologies and online business opportunities as well as nurtured home-grown digital talent in Singapore and the wider Southeast Asia region.

The company has also set up its first joint research institute outside China with Nanyang Technological University in Singapore to delve into Al.

With a diverse range of business units strategically housed in Singapore, Alibaba hopes to help businesses big and small tap on its technologies for growth opportunities in a digital world.



Dr. Derek Wang

General Manager for Singapore, Alibaba Cloud Intelligence

SAP

Enterprise application software

SAP's Leonardo Centre in Singapore helps businesses power digital transformation, while its Skills University has partnered five local polytechnics to develop industry-relevant skills in advanced technology.





Mastercard

Fintech

The global payments firm partners Singapore-based companies to design digital solutions for tourism, urban mobility and trade via MasterCard Labs, one of its global R&D centres, located in the city-state.



Discover More

Learn about how Twitter built a decentralised engineering organisation in Singapore here.

Twitter

Social media

Singapore is Twitter's Asia-Pacific Hub and the home of its first international data science team. The hub has partnered the Singapore Government to enhance and upskill the country's workforce, promote and strengthen digital literacy, and support its COVID-19 communication efforts. Its Asia-Pacific engineering hub aims to create 65 technical jobs in product engineering, software engineering, data engineering and data science.





Netflix

Digital streaming

Singapore is home to Netflix's Asia-Pacific headquarters and a base to a diverse and ever-expanding set of teams, including business development, content, communications, marketing and partner engagement, and more.

Paypal

Fintech

PayPal's Singapore-based workforce at its International Headquarters is advancing PayPal's international business by enabling merchants and consumers to connect to the global economy. Hundreds of technologists, trained professionals and business partners at the Singapore Development Centre and Asia-Pacific Cyber Defense Centre work across different domains and expertise to make strides in product development and bolster Paypal's security infrastructure.



The PayPal Innovation Lab, the first outside of the United States and one of only three worldwide, serves as a core research centre in areas like Al and machine learning, while also supporting the local fintech ecosystem through various outreach initiatives.

Over the past six years, the Singapore government has been a strategic partner in the PayPal Innovation Lab's growth. Throughout our journey, government funding and assistance schemes have aided the development of capabilities and talent in critical growth areas.



Jerry Tso

Head of Singapore Development Centre, PayPal



The Walt Disney Company

Media and entertainment

The Walt Disney Company has a long presence entertaining consumers in Singapore and the region, and over the years, has established creative teams in content development and distribution, streaming infrastructure, consumer products, games, publishing and media networks.

Singapore is the regional headquarters for the Disney Company, Lucasfilm Singapore and ESPN Asia-Pacific, and also houses Industrial Light & Magic (ILM) and ILMxLAB, a leading visual effects and immersive studio for feature films and interactive storytelling through virtual and mixed reality experiences.

Zoom

Videoconferencing

Zoom's R&D Centre in Singapore supplements its R&D Centers in the United States, India and China, and supports Zoom's engineering leadership team.



Singapore's Smart Nation ambition and keen focus on upskilling the workforce have positioned the city-state to thrive in the digital economy. Leveraging Singapore's excellent connectivity, business-friendly environment, and openness to leading-edge technology, we look forward to strengthening our base and expanding our teams in the region.



Ricky Kapur

Head of Asia-Pacific, Zoom



Bytedance

Content platforms

To support its rapidly expanding business, ByteDance has stepped up its investment into Singapore and is working on expanding its regional presence in Southeast Asia. ByteDance is especially committed to growing the next generation of deep tech, engineering and R&D talent in the city-state, including machine learning scientists, algorithm engineers and software engineers.

Startups, Fast-Growing Companies and Unicorns With a Global Footprint



Stripe

Fintech

Stripe is a financial infrastructure platform for businesses. Millions of companies—from the world's largest enterprises to the most ambitious startups—use Stripe to accept payments, grow their revenue, and accelerate new business opportunities. Its regional hub in Singapore builds products tailored to the Asian market, such as integrating local e-wallets in Singapore; building a bank-based payments system for Malaysia; and developing konbini, where e-commerce transactions are paid in cash at convenience stores in Japan.

HoYoverse

Interactive entertainment

HoYoverse operates a fully-fledged office in Singapore, which includes product, R&D, marketing, operations and branding to actively engage in global expansion. HoYoverse is committed to technology research and development, including building leading technical capabilities in cartoon rendering, AI, cloud computing, and other fields, as part of its mission to create immersive entertainment experiences for players around the globe.





Freshworks

Customer service software

The cloud software platform opened its first ASEAN regional hub here in 2019, and it has seen double digit year-on-year growth in the region since.



Discover More

Learn more about Zendesk Singapore's full-stack strategy to meet Asia-Pacific's needs here.

Zendesk

Customer service software

Singapore is the customer service software company's Asia-Pacific commercial headquarters and Chat Development Centre. Its engineering team was created via a US\$30 million (S\$41 million) acquisition of local live chat startup Zopim Technologies.





Sprinklr

Customer experience management platform

The SaaS company's R&D Centre in Singapore supports valuable brands in Asia-Pacific, including Samsung, GoTo, Starhub and Changi Airport Group.

Singapore provides Sprinklr an excellent platform to expand its business in the Asia-Pacific region. Singapore's world-class R&D talent pool, culture of innovation and position as a leading hub of technology for the Asia-Pacific region, has helped us enhance our product to cater specifically to the needs of customers in the region.



Arun Singh

Senior VP, Global Product Success, Sprinklr

SenseTime

Al

Singapore serves as the springboard for SenseTime's expansion in Southeast Asia. Its Al Innovation Hub enables businesses to cocreate and develop practical Al-empowered solutions to real-world problems in industry verticals such as Smart Business, Smart City, Smart Life and Smart Auto.



Regional Rising Stars



Did You Know?

In 2020, startups in the region raised over US\$8.2 billion (S\$11.3 billion), about four times more than they did in 2015. This trend continued in 2021, with regional M&A hitting a record high of US\$124.8 billion (S\$173.2 billion) in the first half of 2021, up 83per cent from a year earlier.³³



Sea

E-commerce, entertainment

Sea Limited is a leading global consumer internet company founded in Singapore in 2009. Its mission is to better the lives of consumers and small businesses with technology. Sea operates three core businesses across digital entertainment, e-commerce, as well as digital payments and financial services, known as Garena, Shopee, and SeaMoney, respectively. Garena is a leading global online games developer and publisher. Shopee is the largest pan-regional e-commerce platform in Southeast Asia and Taiwan. SeaMoney is a leading digital payments and financial services provider in Southeast Asia.

Grab

 E-commerce marketplace, on-demand services, financial services

Southeast Asia's leading super app, with one of its two headquarters in Singapore, is expanding its impact in the region. Grab partnered the IMDA to create an estimated 350 jobs in areas such as AI, cybersecurity, data science, software engineering and product management and design. It also helps post-seed startups to test and commercialise their solutions with Grab's customer base via a partnership with EDB. Its largest R&D centre globally and the Tech For Good Institute, a non-profit think-tank established to advance research and dialogue on Southeast Asia's fast-growing digital economy, are also located here.





GoTo

 E-commerce marketplace, on-demand services, financial services

GoTo, the largest digital ecosystem in Indonesia comprising on-demand services (ride, send and food delivery), e-commerce, and financial technology through the Gojek, Tokopedia, and GoTo Financial platforms, also has a presence in Singapore. In addition, with Singapore being one of its key markets, GoTo taps on the country for its deep and diverse talent pool, with various corporate and data science / tech functions led out of its Singapore office.

Singapore is an important and strategic market for Gojek, given the country's vast talent pool, high ridehailing penetration and tech-savvy population. These positive demographics make Singapore the ideal testing ground for Gojek's new features and technologies, which can be scaled to other markets.

Looking ahead, we plan to continue strengthening our presence in Singapore, by improving experiences for driver partners and consumers, as well as developing and introducing new services that meet the needs of the market here.



Lien Choong Luen

General Manager, Gojek Singapore



Discover More

"Earlier rather than later": Read more on Lazada's strategy to lead Southeast Asia's e-commerce space here.

Lazada

E-commerce marketplace, logistics, payments

The Singapore-founded and headquartered marketplace operates in six Southeast Asian markets. It acquired online grocer RedMart in 2016 and was acquired in the same year by Alibaba Group. Lazada is now a key regional flagship of the Alibaba Group, and targets to serve 300 million customers around the region by 2030.





Carousell

E-commerce

The Singapore-founded C2C Recommerce platform operates in eight markets and reached unicorn status through a US\$100 million (S\$138.8 million) fundraise in September 2021.

ADVANCE.AI

Al

Advance Intelligence Group is an AI tech startup, which has raised US\$400 million (S\$555.4 million) in a Series D funding round in 2021, valuing it at US\$2 billion (S\$2.7 billion). It currently employs 1,900+ staff in 15 offices across 14 markets in South and Southeast Asia, China and Latin America.





Trax

Computer vision

The image recognition and analytics tech company is headquartered in Singapore, with offices throughout Asia-Pacific, Europe, the Middle East, North America, and South America. It has more than 150 customers in the retail and fast-moving consumer goods (FMCG) industries, including beverage giants Coca-Cola and Anheuser-Busch InBev.



Discover More

From travel to lifestyle,
Traveloka rides the rapid
growth of Southeast Asia's
digital economy.

Traveloka

E-commerce

Traveloka is a lifestyle superapp in Southeast Asia with a mission to fulfil the travel and lifestyle aspirations of its users, tapping on Singapore as a base to lead its international expansion efforts, while also drawing on local expertise in areas such as data science, cybersecurity and cloud-native architecture to develop new and sophisticated products.



The biggest advantage to having an office in Singapore is access to a world-class tech talent pool. We also made the decision to invest here due to Singapore's strong digital infrastructure.



Caesar Indra

President, Traveloka



Where Your Customers Are

You know a country is serious about digitalisation when it makes it a national priority. Singapore started its journey towards being a <u>Smart Nation</u> when it crystallised this ambition as a national agenda and set up a dedicated programme office in 2014.

From streamlining government services for individuals and businesses using digital technologies, to fusing data across the country

via IoT sensors, and to also rolling out urban mobility solutions, technology solutions providers have been and will continue to be instrumental in making this goal a reality.

The business ecosystem in the country – from SMEs to multinationals – are also eager to harness technology to transform their operations.

SMEs: Making Up 99% of All Businesses in Singapore



They are primed to seize the opportunities that your business offers: Microsoft and IDC have done the research – 73 per cent of Singapore organisations are accelerating the pace of digitalisation in response to the pandemic, from launching digital payments to embracing automation.

Trust the tech behemoth to know – through over 1,000 of its cloud partners, many of which are local SMEs, Microsoft has successfully reached more than 100,000 unique SME customers globally in the last decade.

The government has launched initiatives to lower barriers to digital transformation, such as through the SMEs Go Digital programme, in which SMEs are incentivised to adopt digital technologies. Participating solution providers will get to work with these SMEs in their transformation efforts. In other words: business opportunities are aplenty.



Discover More

The place for who is next - Singapore.

Multinationals: Driving Momentum in the Region From Singapore

If SMEs are already embracing the digitalisation imperative, we will not be expecting anything less from the many large corporations in the country. In fact, many are now adding digital innovation centres to their presence in Singapore, where they leverage emerging technologies to enhance their products and services.

Needless to say, this presents an even bigger playing field for tech companies here. Notably, Singapore accounts for 59 per cent of Asia regional headquarters for technology multi-national firms.



Siemens

Europe's largest industrial manufacturing firm operates its fully-integrated Digitalisation Hub in Singapore, serving customers throughout Asia and beyond. The company has signed a partnership with Singapore to become the first country globally to pilot MindSphere, a cloud-based operating system for IoT devices in industrial and manufacturing sectors used to collect data from sensors in real time.

Honeywell

Honeywell opened its industrial cybersecurity centre of excellence in Singapore in 2018, the company's first in Asia-Pacific and third worldwide. Featuring a state-of-the-art cybersecurity R&D lab, advanced training facility, and security operations centre, the lab focuses on proprietary R&D of new cybersecurity technologies and products, hands-on training and certifications, as well as testing and validation of industrial cybersecurity solutions.





Procter & Gamble

The multinational consumer goods company currently has over 2,300 employees in Singapore, focusing on areas including R&D, manufacturing, brand building and product supply. Its Singapore Innovation Centre is one of the largest private R&D facilities in Singapore, with capabilities spanning 30 disciplines. P&G also launched the iFuture digital capability programme in 2020 to accelerate digital innovation in Singapore, building on its investment of over US\$150 million (S\$208.2 million) between 2018 to 2020. In 2021, the firm also launched a virtual innovation festival that invited startups to brainstorm and develop innovative solutions in the fields of advertising, retail and supply chain management.

MSD

Since 1993, the leading global biopharmaceutical firm has invested over US\$2 billion (S\$2.7 billion) in expanding its operations in Singapore, ranging from manufacturing facilities, to building its Asia-Pacific headquarters, Translational Medicine Research Centre and Global IT Innovation Hub. The latter was opened in 2015, and focuses on harnessing digital innovation, specifically data science and cybersecurity, to improve healthcare.





DHL

The DHL Asia-Pacific Innovation Center (APIC), strategically located in Singapore, was launched in 2015 to showcase and demonstrate how the company is at the forefront of logistics solutions and innovations. With a focus on digitalization, sustainability and applied analytics, It serves as a regional platform to discover, inspire, connect and create with customers, industry partners, research institutes and academia, as well as drive trend research and the development of innovative future-ready supply chain solutions.



Discover More

Powering economic
growth: Find out how
data science and Al drive
expansion for Aboitiz
Group from Singapore.

Aboitiz Group

The company powers solutions across the group's business interests, which spans power generation and distribution, banking and financial services, infrastructure, food, and real estate. Its subsidiary, Aboitiz Data Innovation, which focuses on data science and AI, is based in Singapore.



We picked Singapore as it gives us access. Access to an amazing innovation hub, access to prospective partners, access to a transparent and supportive government, access to an ecosystem that is constantly growing and more importantly, access to great talent.



Dr David R. Hardoon

Managing Director, Aboitiz Data Innovation

Forging Partnerships and Building Deal-Flow in Singapore

Find out how top tech firms that come to Singapore get connected with other businesses that can be customers, collaborators and co-innovation partners.

Corporates as Customers



Discover More

For tech startups: find your first customer in Singapore.

IoT in Manufacturing



Global consulting firm Accenture's first IoT research centre of excellence in Singapore has been a hive of collaboration activities since it opened in 2015. In this partnership, Accenture helped Sumitomo Chemicals to create its first global IoT initiative, where it explored innovations to improve the latter's global supply chain information management and production-related work.

Al in Financial Services



Through the IMDA's Open Innovation Platform, AI startup Zumata helped insurance provider Sompo Asia enhance its customer experience. The partnership culminated in a chatbot for handling customer enquiries, performing sales and transactions and conducting follow-up with prospective customers.

Fintech development



PayPal's Innovation Lab serves as a core research centre where it develops fintech research talents and collaborates with institutes of higher learning in Singapore. Through this facility, PayPal has also collaborated with SMEs and startups and developed 12 proof of concepts (POCs) and 8 patents. These SMEs include Tee-Saurus, Edible Garden City and Singapore Repertory Theatre. It has also offered startups, like InvoiceInterchange, Tenx and PolicyPal, a coworking space, market access, access to investors and guidance in developing POCs.

27

Government and Academic Collaborations



Discover More

Check out the Growth Islands podcast where tech leaders share how they enter new markets, find partners, navigate regulations and raise funds in Singapore and Southeast Asia.

Al in supply chain & finance





Element Al

Al Singapore

AISG partnered with Element AI, a global company that delivers AI products at scale, to jointly develop AI products and solutions for the local industry, with the aim to accelerate AI adoption and accelerate product implementation in supply chain and finance industries.

AR/VR in healthcare



SideFX Studios worked with local hospital Tan Tock Seng to offer a realistic way for medical personnel to experience complex situations. The collaboration leverages immersive tech like VR to enhance clinical training simulations, which helps to reduce clinician time and the need to replace expensive physical manikin parts, thereby cutting costs. The technology also helps to simulate complex scenarios such as bleeding and swelling, creating an enhanced experience of realism that helps medical personnel better internalise the skills that they have learnt.

Machine learning in cybersecurity



Local cybersecurity startup Attila Cybertech collaborated with researchers from Singapore University of Technology and Design (SUTD) to use machine learning to detect anomalous behaviour in computer systems that might indicate cyberattacks. Attila got some help along the way – the partnership was funded by the National Cybersecurity R&D Programme, where US\$94 million (S\$130 million) has been set aside to support research efforts into technological and human-science aspects of cybersecurity.

Al in delivery services





Alibaba

NTU

Alibaba's five-year partnership with the Nanyang Technological University – said to be the largest investment made in NTU from a company to date – aims to expand the boundary of the company's existing technologies by tapping on AI to improve the delivery of services in areas including healthcare and city planning. Singapore is also home to the Chinese tech giant's regional headquarters.

Al in mobility





Grab

NUS

The Grab-NUS AI Lab uses the former's wealth of data and the latter's expertise in AI research to map out traffic patterns and identify areas to impact mobility and liveability of cities across the region. The joint outfit will also help develop local AI talent as post-doctoral research scientists and PhD students can tap on real-life data from Grab to address urban transportation challenges and opportunities.

Co-Innovation between Corporates and Startups

IoT in healthcare





Intel

ConnectedLife

Intel joined hands with Singapore-based healthcare startup
ConnectedLife to develop a smart home sensor system that
remotely monitors elderly people in their homes. Packed with
IoT sensors connected to a data collection centre, the wrist-worn
wearable not only responds to abnormalities, but also collects
physiological information about the wearer that are sent for analysis.



Discover More

Accelerate your startup's growth through corporate innovation programmes in Singapore.

IoT in facilities management



SME Eutech Cybernetic worked with integrated security group Certis to develop an IoT-enabled facilities management solution that helps facility owners centrally manage and integrate building operations, thereby optimising energy consumption and security. Following the launch in Singapore, Eutech and Certis will be scaling the platform to the latter's facilities in Australia and Hong Kong.

IoT and cybersecurity



In February 2019, Cisco officially launched its Innovation Centre and Cybersecurity Centre of Excellence in Singapore. Cisco's Innovation Centre is the first of its kind in Southeast Asia and the 13th globally. It brings together customers, industry partners, startups, application developers, accelerators, government organisations and universities to work on problems unique to the region. It particularly focuses on cybersecurity and Internet of Things (IoT). The facility will also expand Cisco's threat intelligence research and security incident response capabilities in the Asia-Pacific region.

Digital payment capabilities development



Visa opened its first Innovation Centre in Asia in Singapore in 2016, the first in a network of regional innovation centres globally. The centre focuses on the development of leading-edge technology, new applications and business model innovation in the region. It also serves as a destination for clients, partners and developers across the region to jointly create new applications alongside Visa experts. One such partnership is the Visa Accelerator Program, which identifies commercial opportunities for startups to partner with Visa, banks, merchants and government partners in the Asia-Pacific region, with the eventual aim of helping these startups expand into new markets.



Where To Find Talent



Discover More

For comprehensive information on finding talent for your tech company in Singapore, download our Hiring your Dream Tech Team in Singapore Guide.

In 2020, there were 19,818 first degree graduates from Singapore's six national universities.³⁵

With some of the world's leading universities in the country, Singapore is ranked top globally for its high scores in tertiary education enrolment and in efforts to transition workers to a digital economy, beating traditional educational powerhouses Finland and Norway.³⁶

The city-state is also top in Asia for fostering and attracting talent, following only Switzerland and the United States globally.³⁷

Singapore is committed to ensuring companies can assemble their A-teams here to deliver impact. In 2022, the city-state introduced enhancements to its work pass framework to provide greater transparency, more flexibility, and reduce visa processing times. Among the key changes is a new five-year ONE Pass to attract top global talent to Singapore.

Singapore wastes no time in gearing its workforce for your business, where it aspires to groom the necessary level of tech-ready professionals for the economy. Here is what Singapore has been doing to ensure a ready talent pipeline to meet your tech business needs:

Grooming the Next Generation of Tech Talent



Training starts young – high schools already offer Python programming courses, developing computational thinking and logical reasoning at an early age.

Local universities and polytechnics have also established specialised centres and certifications to train students in emerging skillsets, such as Nanyang Technological University's Centre for Augmented and Virtual Reality (CAVR), where it offers programmes in AR/VR R&D. The Singapore Institute of Technology and the University of Glasgow are also offering a joint degree in Computing Science, the first programme by an autonomous university in Singapore to specialise in IoT.

Even banks are lending strong support - as part of OCBC Bank's digital strategic framework to deliver greater customer value through AI, the local bank launched a postgraduate scholarship in partnership with NUS and NTU – the first of its kind to be offered by a Singapore company, and the first by an Asian bank.

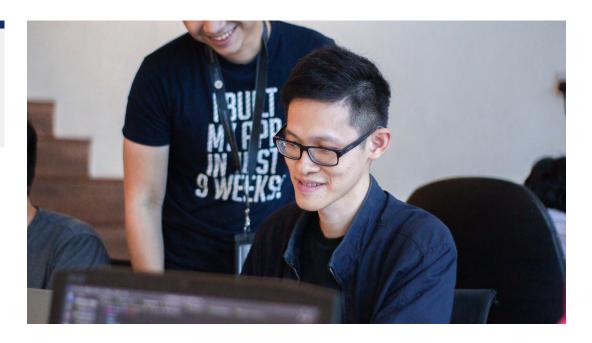
Technology giants based in the country are also contributing by availing learning platforms to students – IBM and RSA, for instance, set up Security Operations Centres which also function as learning centres for the students of Temasek Polytechnic (TP).

Building Additional Talent Pipelines Through Workforce Transformation



Discover More

Building or growing your team in Singapore? Tap on these services and schemes.





Discover more

Find out more on how PayPal secured skilled tech talent with TechSkills Accelerator here. Under the government-supported initiative TechSkills Accelerator (TeSA), government agencies are banding together in collaboration with industry partners and hiring employers in the area of tech skills development. Technology companies will not only be assured of a constant supply of well-trained professionals, but may also receive funding support for company-led training programmes.

Technologists in the Al-field can also fine-tune their skills with some help from AISG. Apprentices under the programme are paid a stipend by the agency, where they will work on Al-related coursework, followed by seven months of on-the-job training. AISG has also successfully launched 100 Experiments (100E), its flagship programme that helps companies solve Al problem statements and build their own Al teams. Companies, such as Sqreem, BeLive and Somin, have already successfully tapped into this programme.

Apprenticeships and immersion programmes are popular with companies as they provide a win-win solution for small and mid-sized companies that may not be able to compete with bigger corporations on compensation. Take ThoughtWorks as an example: the software design company launched a three-month coaching and mentorship program to provide intensive and hands-on training in agile software development. By taking matters in their own hands, ThoughtWorks is not only helping to build the next generation of coders for Singapore, but also cultivating talent for its operations in the country.

Meta, in collaboration with the Digital Industry Singapore (DISG) office, has also launched an initiative to train SMEs in domains such as marketing science, social media marketing and content creation. Google has also partnered IMDA to train young professionals in digital marketing and cloud technology via its Skills Ignition programme.

Be Part Of Something Bigger



Discover More

Securing an Inclusive and Sustainable Digital Economy in Southeast Asia.

Missionaries and
Mercenaries: Tech for
Good Opportunities in
Southeast Asia.

The Bottom Line for Creating Better Lives.

Learn more about how Singapore is a location for businesses to do good here.

Business for Good



Singapore sees itself as not just another node in the global tech ecosystem, but a place to spur technology into creating inclusive and impactful growth for Southeast Asia. To address Southeast Asia's social and economic needs, Singapore partners with businesses in innovating purposeled digital solutions to provide essential services, develop skills and support small businesses.

For example, under the non-profit better.sg, Meta partnered with Twilio to extend socially impactful products like Call-Home — a Voice-over-Internet-Protocol (VOIP) service enabling migrant workers contact family members back at home affordably. Grab also announced its Tech for Good Institute to explore how stakeholders across academia, industry and the government could leverage tech to address regional challenges and achieve digital inclusion. The digital platform is not new to economic empowerment: approximately one in 70 people in Southeast Asia have begun earning income through the Grab platform and Grab has also been an enabler for 1.7 million microentrepreneurs to open their first bank accounts.

Increasing digital inclusion among Micro, small, and medium-sized enterprises (MSMEs) will be crucial for driving the region's economic development.

Despite covering 97 per cent of all regional enterprises and 69 per cent of total workforce, MSMEs generate only 40.5% of average GDP and 19.2% of total export value in Southeast Asia.³⁸ With at least 70 per cent of MSMEs operating in their local communities⁴¹, there is much potential to generate more jobs and value for their ecosystem through digital tools.

Considering that more than 70 per cent of Southeast Asia's adults remain underbanked³⁹, and roughly 80 per cent of SMEs lack access to affordable credit, FinTech companies can make an outsized impact in the region. Wise's Asia-Pacific hub in Singapore recently launched a low-cost offering for fast transfers from India, as well as the Wise Account and debit cards in Malaysia⁴⁰, making it easier for businesses to manage cashflow, secure working capital and serve customers across the region.

As a hub for exchanging knowledge, Singapore focuses on boosting the overarching ecosystem for businesses to develop and thrive. PayPal's SME Business Challenge has contributed to growing local SME by sharing its digital expertise and networks. The recent batches of SMEs receive virtual training on e-commerce and social media marketing, while gaining access to business partnerships opportunities.

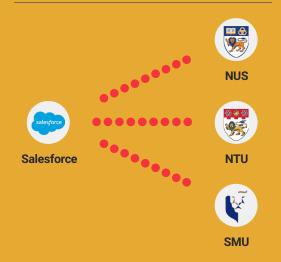
Building the Local Ecosystem

Companies can also invest in local talent to democratise the access to tools and skills. Read on to find how prominent multinational companies have partnered with local institutes of higher learning (IHLs) to build a steady stream of future-ready capabilities.





NVIDIA established an AI Lab in partnership with the Singapore University of Technology and Design (SUTD), to equip students with skills to translate AI into practical applications. NVIDIA previously launched a talent development programme with EDB, and established a "makerspace" platform with the Singapore National Supercomputing Centre (NSCC) that aims to bolster Singapore's AI ecosystem, under which it provides NSCC with AI machines and intensive deep learning training for at least 400 persons.



Salesforce opened an AI research hub in Singapore in 2019, where it aims to train up to 100 postgraduate students from major local universities in deep learning, machine learning, natural language processing (NLP), and areas specific to this region, such as language-based capabilities in chatbots, over the next three years.



As part of its expansion in Singapore and the region, SenseTime partnered NTU and EDB in a talent programme that supports selected PhD candidates to work on company-driven postgraduate degrees at the university, with SenseTime jointly scoping and supervising the projects with NTU. Qualified candidates will also have the opportunity to join SenseTime as a full-time employee.



How You Can Scale Even Faster



Tech@SG

Find out how Zenyum and Padlet Secure Critical Global Tech Talent in Singapore.

Leverage the Ecosystem

Singapore is home to a range of opportunities to acquire customers and grow your business.



Singapore Week of Innovation and Technology (SWITCH)

SWITCH is a leading "plug and play" platform that hosts tech ecosystems from around the world in Singapore to share developments around tech, innovation and lifestyle. In 2021, SWITCH kicked off as a year-long innovation movement that hosted close to 200 innovation-related activities and over 150 ecosystem partners, attracting a global community of 35,000 innovators. In November 2021, the annual SWITCH flagship hybrid conference brought together 15,000 attendees and 400 speakers from over 40 markets, with more than 750 business meetings requested through SWITCH.

Slingshot 2021, Asia's largest deep tech startup pitching competition that provides startups with an international platform to profile themselves to corporates, industry veterans and investors, was also held at SWITCH.

Market Entry Firms

Singapore for Asia is a slogan you will hear a lot, and our ecosystem of market expansion and scale-up consulting firms will provide essential support for you to achieve that vision. Engage with curated companies on our Connections Concierge such as Asia Market Entry and Action Community for Entrepreneurship.





Use the Fast-Pass to Secure Government Projects

Once based in Singapore, tech companies will have access to a wide range of project opportunities provided by the government. Government tenders on <u>GeBiz</u> are a good place to look, but if you want to stand out and increase credibility, consider participating in some of the programmes below.



IMDA Spark

For Infocomm & Media companies looking to build their presence in Singapore but are unsure about market demand, the IMDA Spark programme can help. This initiative accelerates market discovery by providing select companies with opportunities to pitch for government projects, and to assist them with a hybrid of government grant tools and support from leading industry community partners such as venture capital and professional services firms.

IMDA Accreditation

For that extra boost of confidence, tech companies can consider applying for IMDA Accreditation, a programme that validates Singapore-based enterprise tech product companies to potential clients and increases their value in the eyes of investors and stakeholders. To date, over S\$814 million (US\$586.2 million) worth of project opportunities have been created and over 2,000 projects awarded. Eleven accredited companies had successful exits through acquisitions (Deep Identity, Dynamic Yield, Kai Square, Qubole, Signavio, Paxata, Basis AI) and IPOs (Affle, Anacle, Confluent and WalkMe).



Digital Industry Singapore (DISG)



The <u>Digital Industry Singapore (DISG)</u> office serves as a single interface for the industry. The streamlined approach will enable DISG to better understand companies' needs, with a view to anchor global technology leaders, build local champions, and nurture future ready talent in Singapore.

For example, under the partnership with DISG, Samsung provided global problem statements and market opportunities curated from its 13 regional offices around Asia-Pacific and helped Singapore-based tech companies develop cyber-secured mobility solutions by allowing them access to the Samsung KNOX and SmartThings platforms.

Tech corporations including IBM and Microsoft have also availed their platforms to other tech companies, and in the process, equipped these companies – which span retailers, food and beverage players, and logistics firms – with tools and resources to better serve their clients.



Discover More

How An Accreditation
Programme is Helping Tech
Companies Get Customers
Quickly in SEA.

Case Study: How IMDA Accreditation Fast-Tracked Customer Acquisition for DataRobot



The IMDA Accreditation programme helps innovative Singapore-based tech companies accelerate their growth in local and regional markets through winning contracts with government agencies and large enterprises.

Recognised as CB Insights' top 100 AI companies, US-based AI firm DataRobot offers an enterprise automated machine learning platform that empowers users to make better and faster predictions.

DataRobot's technology has helped insurance companies detect fraudulent claims, helped businesses in price-setting, and aided financial institutions in predictions of loan defaults, among others. After receiving Accreditation, DataRobot went on to win a major government contract, subsequently setting up their regional business headquarters in Singapore and expanding its advanced R&D centre in the country.

Tap Innovation Platforms



Open Innovation Platform (OIP)

To narrow the gap between research and commercialisation, the Singapore government also implemented the Open Innovation Platform (OIP), a virtual crowdsourcing initiative.

Singapore-based tech companies will have the chance to coinnovate with industry players and other technology providers on multi-disciplinary and complex problems. In the process, companies gain first-hand visibility of real business challenges and opportunities in the region, further augmenting their growth plans in Southeast Asia.

About

IMDA, the lead agency of the OIP, launches Innovation Calls multiple times a year. During the exercise, a set of challenges from various industry players (i.e. Problem Owners) will be put forth.

OIP is mostly open to global and Singapore-based individuals, research providers, and companies with digital technology expertise and innovation capabilities. Technology companies can participate in ideation, development of proof-of-concepts, and/or creation of prototypes that may be extended to larger deployments at the premises of participating Problem Owners.

For example, via the OIP, Vouch, a travel-tech company offering digital solutions to streamline hotel operations and enhance end-to-end guest experience, created a Reservations Concierge that complements Fraser Hospitality's current digital solution suite, and mobile platform that allows remote check-in/out and automation of internal processes for Pan Pacific and PARKROYAL hotels.

Besides the chance of winning prize money, winners can also look forward to receiving dedicated support from IMDA, including the access to mentors and advisors, design thinking and innovation expertise, and prototyping facilities.

For more information, please refer to www.openinnovation.sg.



National Cybersecurity R&D Laboratory (NCL)

If you are a cybersecurity firm, you may find the National Cybersecurity R&D Laboratory (NCL) a valuable asset to your next cybersecurity breakthrough. With a compute cluster of about 200 nodes, NCL provides researchers with tools and resources to conduct their experiments in the cloud. They can also gain access to a wealth of data through NCL's large collection of datasets contributed by other researchers. At NCL, firms can easily replicate experiments conducted by other researchers and/or reuse a specific network topology. In other words, spend more time conducting experiments, and less on setting up!

Among its partnerships is one with local startup Insider Security and NUS to develop a proof-of-concept testing environment for cybersecurity technologies.

Features



Ready-to-use common vulnerabilities and exposures Common Vulnerabilities and Exposures (CVE) environments:

Deployable environments where known internet vulnerabilities exist and are difficult to build.



Software-Defined Networking (SDN) provisioning tools:

SDN technology relies on hardware features on switches. Such switches on large networks are not easily available. NCL provides 14 SDN switches connecting 300 nodes. Ready-to-use blockchain environment and algorithm validation tools: distributed trust system where security relies on a large number of peers.



Virtual mid-size enterprise network:

Medium-sized virtual network that can simulate multiple real-life scenarios which will be useful for training and validation.

Partner Leading Academic and Research Institutes

The National University of Singapore (NUS) and the Nanyang Technological University (NTU), two of the oldest higher education institutions in Singapore, are ranked as Asia's top universities.⁴²

It is thus hardly a coincidence that these institutions, among others in the city state, have also established themselves as "living testbeds" for the industry and government, creating global solutions straight from their campuses.

Synergies between the industry and academia are further fostered with an integrated masterplan that brings together a business park, a university, and community facilities, in the north-eastern part of Singapore known as the Punggol Digital District.

Housing key growth sectors of the digital economy, including cybersecurity and Internet of Things next to Singapore's first applied learning university, the Singapore Institute of Technology (SIT), the district facilitates the cross-fertilisation of ideas and knowledge among students and industry professionals. New ideas can thus be prototyped, tested, and adopted with speed, leading to a higher rate of commercialisation success.





What Is Next For You

We hope that we have brought you one step closer to better understanding Singapore's tech ecosystem.

The conversation does not end here. At EDB, we partner you to make your Southeast Asia expansion plans a reality. Here are other resources that may be helpful to you:



Setting up Your Tech Startup in Singapore



For market insights, industry guides and exclusive events related to SEA's business landscape, subscribe to our monthly newsletter here.



Hiring Your Dream Tech Team in Singapore



If you are looking for partners to facilitate your setup in Singapore, you can connect with EDB's curated network of partners through the Connections Concierge.



Ready to take the next step and/or have questions? Reach out to us here.

Follow us on our social channels:







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All information is accurate as of March 2023.