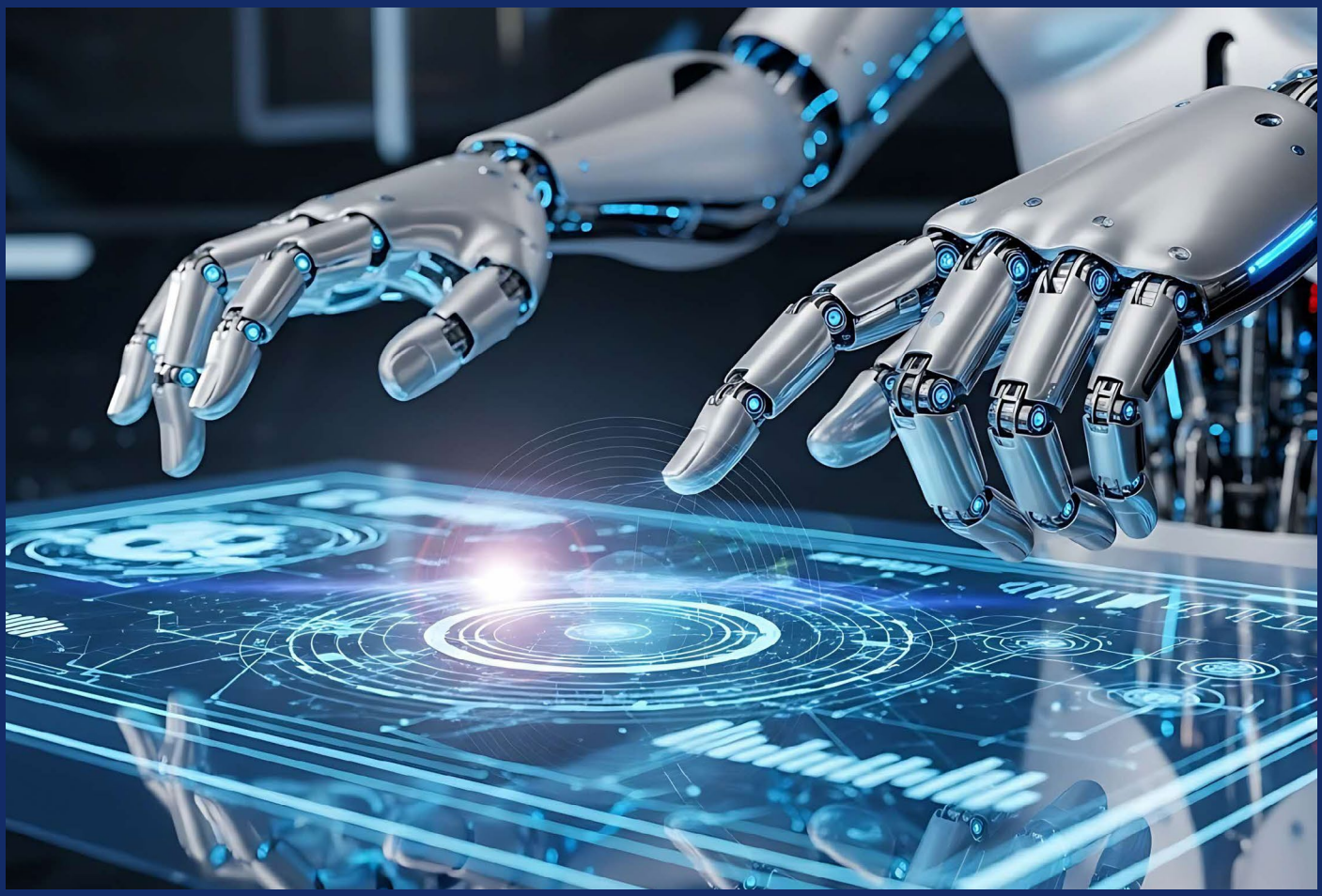
Why Robotics Companies Thrive in Singapore



EDB SINGAPORE

Contents

Foreword

The global robotics market is experiencing rapid growth, with Asia emerging as the centre of this transformation. Robotics is shifting from fixed, task-specific automation to embodied AI systems that can adapt, learn, and operate in dynamic environments.

As industries across manufacturing, services, and logistics embrace robotics to drive productivity and innovation, the economic opportunities are immense. This is especially evident across ASEAN[1], the world's fifth-largest economy today which is projected to become the fourth largest by 2030. Manufacturing already comprises approximately 22% of ASEAN's annual GDP, surpassing both Europe (15%) and North America (10%)[2], and the region continues to attract record levels of global investment as industries accelerate their adoption of advanced manufacturing technologies.

Singapore sits at the heart of this opportunity. Our ambition to be a leader in robotics adoption builds on our strong manufacturing base, underpinned by world-class infrastructure, connectivity to global markets, a strong talent pool, and a comprehensive innovation ecosystem. Singapore is ranked second globally in robot density[3] in 2023 and is home to seven WEF Lighthouse facilities[4] operated by Agilent, Coca-Cola, GlobalFoundries, HP Inc, Infineon, Micron, and Rockwell Automation. These position Singapore as a trusted hub for companies looking to develop and deploy high-value robotics solutions and expand across the region.

The Singapore Economic Development Board sees robotics as a key enabler for our future economy. This e-book showcases why robotics companies thrive in Singapore.

We invite you to partner with us – test new applications, scale proven solutions, and shape the next phase of robotics and embodied AI from Singapore.

— Cindy Koh
Executive Vice President
Singapore Economic Development Board

[1] ASEAN (Association of Southeast Asian Nations) is a regional bloc of 10 member states - Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam, with a combined population of over 680 million.

[2] AT Kearney and World Bank data

[3] International Federation of Robotics (Global Robot Density in Factories Doubled in Seven Years) (2024)

[4] The Global Lighthouse Network awards and showcases the most advanced operational sites in the world, including factories that have deployed cutting-edge technologies to drive significant improvements in productivity, efficiency, resilience, and sustainability.

Singapore's Robotics Industry and Our Vision

HP Inc's Singapore facility, which produces printheads and cartridges for industrial, commercial and 3D printers, earned WEF Lighthouse recognition in 2021 for transforming a traditionally labour-intensive operation into a fully digitised, automated, and data-driven production environment. The facility deploys robots and autonomous vehicles to relieve operators of repetitive and heavy tasks, while AI-enabled inspection systems detect print defects at a pixel level. As a result, HP Singapore recorded a reduction of over 30% in manufacturing costs and a 70% improvement in both productivity and quality.

Automation, AI, and Robotics are critical enablers for Singapore's competitiveness, resilience, and long-term growth. Over the past few decades, we have built a strong robotics industry across both industrial and services applications. Today, Singapore has over 300 robotics companies conducting R&D, applications development, and manufacturing activities.

As one of the world's leading robotics hubs, Singapore is also building leadership in Embodied AI that can independently navigate unstructured environments, make real-time decisions, and adapt to changing conditions. Embodied AI will help sustain Singapore's global competitiveness by raising productivity, augmenting healthcare, and positioning us at the frontier of industrial innovation.

Singapore's robotics and Embodied AI ambitions extend across diverse sectors, each offering distinct problem statements and deployment opportunities.

1. Advanced Manufacturing

Manufacturing is the second largest contributor to Singapore's GDP and employs around 12% of our workforce. Singapore's Manufacturing 2030 vision commits to growing the sector's value-add by 50% by 2030. The regional opportunity is equally compelling – ASEAN's manufacturing sector is large and growing, attracting US$44 billion in FDI in 2024 alone. As industries across Singapore and the wider region accelerate their shift towards best-in-class and sustainable operations, robotics is critical to achieving this transformation.

Singapore's Robotics Industry and Our Vision

Singapore is uniquely positioned to lead this transformation. Its technologically advanced manufacturing base demands specialised robotic capabilities for hard-to-automate tasks like materials handling, welding, and metal cutting. Leading companies across sectors spanning semiconductor and precision engineering represent sophisticated users who require advanced robotics partners, making Singapore an ideal environment for robotics companies to develop and test cutting-edge solutions.

HP Inc's Singapore facility, which produces printheads and cartridges for industrial, commercial and 3D printers, earned WEF Lighthouse recognition in 2021 for transforming a traditionally labour-intensive operation into a fully digitised, automated, and data-driven production environment. The facility deploys robots and autonomous vehicles to relieve operators of repetitive and heavy tasks, while AI-enabled inspection systems detect print defects at a pixel level. As a result, HP Singapore recorded a reduction of over 30% in manufacturing costs and a 70% improvement in both productivity and quality.

2. Healthcare

Healthcare systems across the region are under growing pressure to deliver better outcomes with constrained clinical resources, and robotics is increasingly part of how that gap is being addressed. Robotics-assisted surgery, for example, enables minimally invasive procedures, which translates to improved patient outcomes and lower healthcare costs. Local healthcare clusters have established themselves as key reference sites to support pilot testing and early adoption, as well as Regional Centres of Excellence for medical education.

Beyond the operating theatre, robotics has augmented rehabilitation and assistive technologies, laboratory automation, and autonomous medicine delivery, progressively reducing the logistical burden on clinical staff and returning their attention to patient care.

Singapore is well placed to support companies in their robotics ambitions. Our concentration of research institutions, clinical networks, and medical technology (MedTech) partnerships provides a conducive environment for developing and validating solutions, and our established relationships with international hospital systems and health authorities mean that solutions developed and validated here have a natural pathway to regional scale.

3. Hospitality

The working environments in Singapore's hospitality and food and beverage sectors are often highly dynamic and filled with tasks that require fine motor dexterity. In hotels, this includes polishing glassware, wrapping cutlery in cloth napkins, and sorting linen – delicate tasks that require visual recognition and careful handling. In food and beverage operations, there is increasing demand for AI-enabled cooking systems capable of real-time quality assessment, portioning, and adjustment to textural variations. Leading hospitality and retail players in Singapore are eager to partner with solution providers that can alleviate the labour crunch through scalable automation.

Singapore's Robotics Industry and Our Vision

4. Critical Infrastructure

As a major global aviation hub, Singapore offers robotics firms access to high-throughput, safety-critical operating environments. Airports are deploying robotics for airside inspection, cleaning automation, baggage handling, and autonomous terminal navigation. Security operators are adopting robotic systems for surveillance, perimeter patrol, and incident response to address manpower constraints while improving reliability and 24/7 operational capability. Singapore's Changi Airport and its upcoming Terminal 5 expansion will see the airport serving 140 million passengers annually.

Certis and FieldAI have partnered to deploy autonomous robots across large-scale, multi-site security operations. The collaboration integrates FieldAI's map-free autonomy technology with Certis' Mozart orchestration platform to coordinate robots and human teams across public infrastructure, transport hubs, and complex field environments.

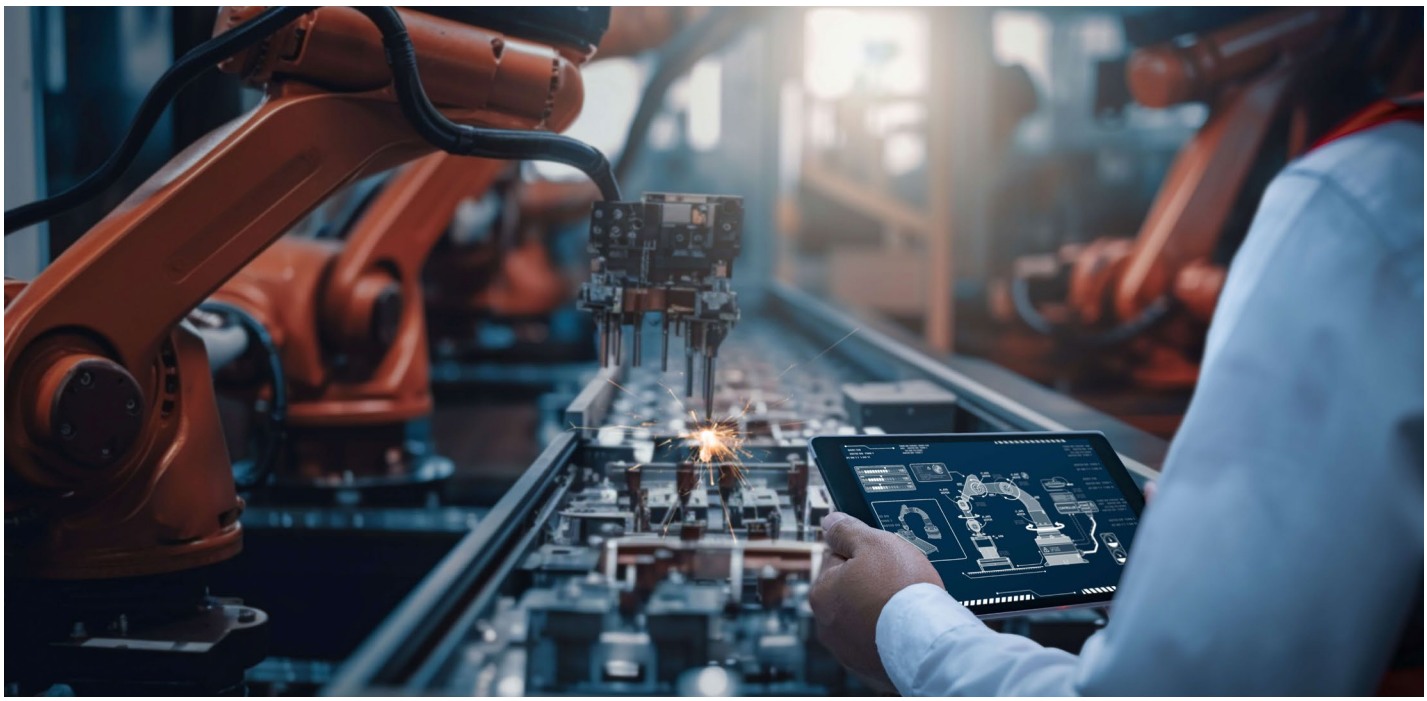
5. Logistics and Supply Chains

As a leading global logistics hub with over 650 logistics players, Singapore integrates robotics into warehouse operations, port systems, and supply chain orchestration.

The upcoming PSA Supply Chain Hub, spanning more than two million square feet, is designed with advanced robotics and automation embedded into its core infrastructure, signalling long-term commitment to intelligent logistics at scale.

Certis and FieldAI have partnered to deploy autonomous robots across large-scale, multi-site security operations. The collaboration integrates FieldAI's map-free autonomy technology with Certis' Mozart orchestration platform to coordinate robots and human teams across public infrastructure, transport hubs, and complex field environments.

Singapore as a Robotics Innovation Hub



Since its first National Technology Plan in 1991, Singapore has made steady, sustained investments in advanced manufacturing and engineering R&D. In robotics, Singapore launched the National Robotics Programme in 2016 to drive strategic research, end-to-end development, test bedding and deployment of robotics and automation solutions.

Robotics is also an area of focus under Singapore's Research, Innovation, and Enterprise (RIE) 2030 plan, where S$37 billion (~US$28.7 billion) has been set aside for a strategic roadmap that outlines the nation's key directions, priority areas[5] and programmes to further strengthen its research capabilities, drive impactful innovation, and grow a vibrant talent ecosystem. This includes the National Robotics Programme that brings together industry end-users, solution providers, and researchers to co-develop commercially viable robotic solutions.

These investments have already yielded results. Homegrown companies such as Lionsbot, Augmentus, and Eureka Robotics have scaled globally, supported in part through partnerships with local universities. International leaders including Google and FieldAI have also chosen Singapore as their regional base for advancing Embodied AI capabilities in areas such as robotics foundation models and large-scale simulation.

Singapore is now positioning itself as a global hub for open and interoperable robotics. Singapore hosted ROSCon 2025, the world's leading open-source robotics conference, where we announced comprehensive initiatives including shared testbeds, national interoperability standards, and expanded talent development programmes. The ROS-Industrial Consortium Asia Pacific, led by A*STAR Advanced Remanufacturing and Technology Centre, and SGInnovate has launched the ROS-Industrial Train-and-Place Programme, creating a direct pipeline from hands-on training to industry deployment.

These successes have created a collaborative environment where global corporations partner with local enterprises to drive innovation and growth across Asia. OMRON and Clemvision's partnership, for instance, integrates robotics and 3D vision technologies, delivering scalable solutions for logistics, agrifood, and healthcare markets across Asia.

[5] Singapore's RIE 2030 plan will focus on key domains such as manufacturing, trade and connectivity; human health and potential; urban solutions and sustainability; and the smart nation and digital economy.

Singapore as a Manufacturing Base for Asia

Beyond its innovation ecosystem, Singapore's established precision manufacturing ecosystem, comprehensive supply chain, and world-class trade connectivity makes it an ideal base for companies looking to manufacture and scale across Asia and beyond.

The country hosts a robust supplier network of over 2,800 companies providing complex components and equipment to sectors such as semiconductors, MedTech, and aerospace. These suppliers offer capabilities including plastic components, precision machining services, and advanced coatings and surface solutions. As a major semiconductor hub, Singapore can support robotics companies with semiconductor products needed for next-generation robots.

For companies looking to outsource manufacturing, Singapore is also home to leading Electronic Manufacturing Services (EMS) providers, such as Jabil, Flex, and Meiban.

These EMS companies offer a wide range of services across New Product Introduction, advanced PCB design and assembly, and box build assembly. This comprehensive suite of services allows companies to leverage Singapore's strategic advantages in trade and innovation while minimising capital deployment.

Singapore's global connectivity provides businesses with unparalleled access to regional and global markets. Within a four-hour flight radius of Singapore lies Southeast Asia, one of the world's most dynamic and fast-growing economic regions. Singapore has forged an extensive network of 29 Free Trade Agreements with global economies to facilitate preferential market access worldwide, while Free Trade Zones support efficient transhipment and entrepot trade.

suppliers providing complex components and equipment to support robotics companies

to access key cities in Southeast Asia, one of the world's most dynamic and fast-growing economic regions

with global economies to facilitate preferential market access worldwide

Conclusion

The robotics and embodied AI companies that will shape the next decade are being built now, and the most strategic among them understand that success is not just about having great technology. It is also about having the right environment to develop, test, and scale.

Singapore provides that environment: cutting-edge infrastructure and dedicated testbeds, a thriving ecosystem of industry and research partners, and connectivity to Asia-Pacific and global markets. We are here to win with you.

To find out more about establishing your robotics presence in Singapore, reach us at client_services@edb.gov.sg.

We also invite you to listen to our podcast on The Robot Report, featuring Singapore's Physical AI landscape and follow us on LinkedIn.

Legal Disclaimer

Thank you for reading "Why Robotics Companies Thrive in Singapore".

The Contents of this report are provided on an "as is" basis without warranties of any kind. To the fullest extent permitted by law, EDB does not warrant and hereby disclaims any warranty:

As to the accuracy, correctness, reliability, currentness, timeliness, non-infringement, title, merchantability or fitness for any particular purpose of the Contents of this report;

That the Contents available through this report or any functions associated therewith will be uninterrupted or error-free, or that defects will be corrected or that this report and the server is and will be free of all viruses and/or other harmful elements.

EDB shall also not be liable for any damage or loss of any kind, howsoever caused as a result (direct or indirect) of the use of the report, including but not limited to any damage or loss suffered as a result of reliance on the Contents contained in or available from this report.

The Contents in this report do not constitute financial or other professional advice. If financial or other professional advice is required, services of a competent professional should be sought.

EDB reserves the right to update or modify this report from time to time. EDB further reserves all rights to deny or restrict access to this report to any particular person, or to block access from a particular Internet address to this report, at any time, without ascribing any reasons whatsoever.

EDB is not responsible for the contents of any linked site or any link contained in a linked site.

The hypertext links provided herein are provided only for convenience and the inclusion of any link does not imply endorsement by EDB of the referenced site.

EDB SINGAPORE

Contact us

Singapore Economic Development Board
250 North Bridge Road
#28-00 Raffles City Tower
Singapore 179101

You may submit questions or comments via *client_services@edb.gov.sg*, or sign up *here* to receive the latest updates on the Southeast Asian business landscape.

All information is accurate as of June 2026.