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State of Robotics Singapore 2026

Asia's robotics policy lab — the National Robotics Programme, Smart Nation infrastructure, PSA port automation, and the investment ecosystem reshaping Southeast Asia.

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CONTENTS

Inside this report

01 Executive Summary

02 National Strategy: NRP & Smart Nation

03 Port & Logistics: The Showcase Vertical

04 Healthcare Robotics

05 Manufacturing & Precision Engineering

06 Research Ecosystem

07 Investment & Startup Landscape

08 RCSV + Singapore: Partnership Opportunities

KEY FINDINGS

Singapore 2026 by the Numbers

S$2.1B

Singapore robotics & automation market in 2026, up from S$890M in 2021 — a 136% five-year expansion.

167

Robots per 10,000 manufacturing workers — 4th in Asia, 6th globally. Ahead of the US and most of Europe.

S$635M

National Robotics Programme (NRP) government investment from 2022–2025, administered through EDB, ESG, and A*STAR.

340%

Growth in robotics-related job postings in Singapore since 2023, spanning engineering, operations, and policy roles.

CHAPTER 01

Executive Summary

Singapore is not the largest robotics market in Asia. It is, however, the most deliberate. Over the past decade, the city-state has constructed what is arguably the world's most coherent national robotics strategy — one that treats automation not as an industrial policy add-on but as core infrastructure, on par with water treatment, public housing, and digital connectivity.

The result, as of 2026, is a country of 5.9 million people that deploys 167 robots per 10,000 manufacturing workers (placing it 4th in Asia and 6th globally), operates the most automated port terminals in Southeast Asia, runs autonomous cleaning robots in public hawker centres, and has built a research pipeline from A*STAR labs to factory floors that most countries twice its size cannot replicate.

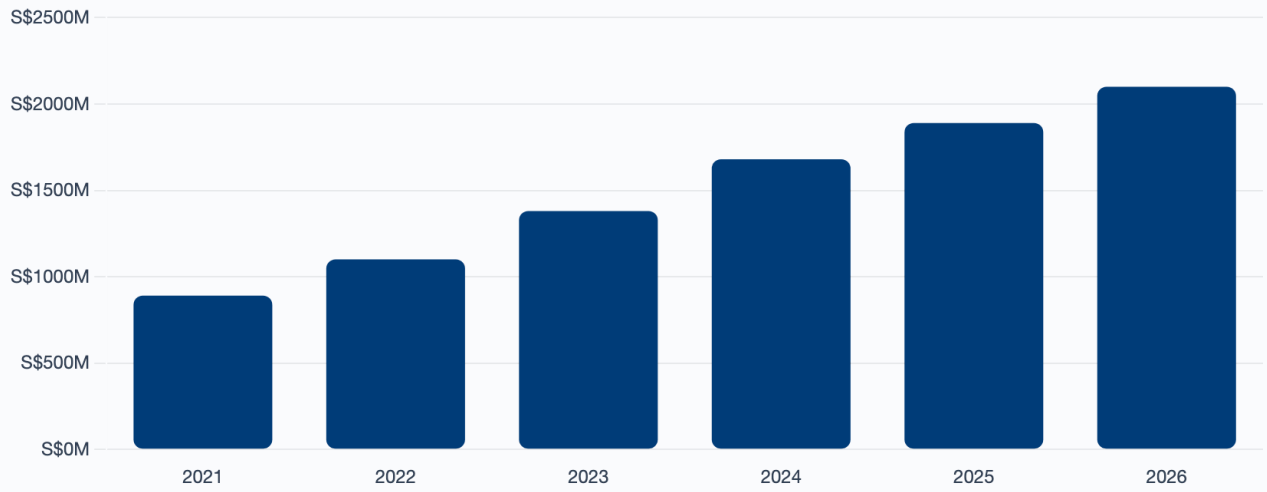
What makes Singapore's approach distinctive is not the scale of investment — at S$635M, the National Robotics Programme is modest compared to China's or South Korea's national programs — but the precision. NRP funding is concentrated on four sectors where Singapore has both economic need and structural advantage: logistics, precision engineering, construction, and healthcare. Each sector has a named agency owner (EDB, ESG, or A*STAR), defined outcomes, and public accountability.

> **The NRP model is being copied.** Vietnam, Thailand, and Malaysia have all sent delegations to study Singapore's National Robotics Programme structure in the past 18 months. The combination of sector-specific funding, agency ownership, and public testbed access — rather than blanket subsidies — has become the template for ASEAN robotics policy.

This report examines Singapore's robotics ecosystem across eight dimensions: national strategy, port and logistics automation, healthcare deployment, manufacturing, the research pipeline, investment flows, the startup landscape, and opportunities for collaboration with RCSV. It draws on government procurement data, published NRP outcomes, interviews with researchers at NUS and NTU, and Robotics Center's own deployment experience in Singapore.

Our central finding is that Singapore's robotics market — now valued at S$2.1 billion — is entering a phase transition. The first decade of NRP was about proving that automation works in Singapore's specific context (high labor cost, small land area, tropical climate, dense urban environment). The next decade, under the expected NRP 2.0 framework, will be about scaling what works to the point where robotics is invisible infrastructure — present everywhere, maintained centrally, and taken for granted by citizens.

Singapore Robotics Market Size (S$M)



Sources: EDB Singapore, IFR Statistical Department, RCSV Analysis

CHAPTER 02

National Strategy: NRP & Smart Nation

The National Robotics Programme (NRP)

Launched in 2016 and administered primarily through the Economic Development Board (EDB), the NRP is Singapore's flagship robotics initiative. The program operates on the principle that government should not pick winners among robot manufacturers, but should instead fund the adoption infrastructure — testbeds, integration services, workforce training, and regulatory frameworks — that allows the private sector to deploy at speed.

The NRP's 2022–2025 phase allocated S$635 million across four priority sectors. The distribution reflects Singapore's economic structure and labor market pressures:

Source: Economic Development Board Singapore, NRP Phase 2 Budget Report

SECTOR	FUNDING (S$M)	LEAD AGENCY	KEY OUTCOME
Logistics	180	EDB	PSA Tuas automation, Changi T4 robots
Precision Engineering	165	EDB / A*STAR	JTC smart estates, semiconductor fabs
Construction	145	BCA / ESG	Prefab robotics, site inspection drones
Healthcare	145	MOH / A*STAR	Hospital delivery, pharmacy dispensing

NRP 2.0: The 2026–2030 Horizon

The successor program, NRP 2.0, is expected to be formally announced in the second half of 2026 with an estimated budget of S$800 million. Based on public statements from EDB and the Prime Minister's Office, NRP 2.0 will expand the sector focus to include food services (hawker centres, central kitchens), eldercare (home-based assistive robots), and urban maintenance (drain inspection,

façade cleaning). The program will also introduce a national robotics data standard — a shared format for operational data collected by government-deployed robots — which could become a significant asset for training foundation models.

Smart Nation: Robotics as Infrastructure

Singapore's Smart Nation initiative, launched in 2014, positions digital technology and automation as whole-of-government infrastructure. Unlike most national digitalization programs, Smart Nation explicitly includes physical automation — not just software. This means that when GovTech procures cleaning robots for public spaces, or when the National Environment Agency deploys autonomous sweepers in hawker centres, these are treated as infrastructure projects with the same rigor as building a new MRT line.

The practical effect is that Singapore's public sector has become one of the largest and most sophisticated robot buyers in Asia. Government agencies are not experimenting with robots — they are operating them at scale, with maintenance contracts, performance SLAs, and replacement cycles. This creates a stable, predictable demand signal that de-risks private sector investment in robotics.

> **GovTech's robotics testbed** is unique globally: public spaces — parks, hawker centres, hospital corridors, HDB void decks — are designated as live testing environments where approved companies can deploy robots under real conditions with real pedestrian traffic. No other country offers this kind of sanctioned public-space access for robotics testing at national scale.

Government Programs Beyond NRP

- **SkillsFuture:** Robotics technician certification programs have retrained over 50,000 workers in 2024–2025, covering robot operation, basic maintenance, and safety protocols for co-working with autonomous systems.
- **IMDA AI + Robotics Accelerator:** A joint program with Infocomm Media Development Authority that provides up to S$500K in non-dilutive funding for startups building AI-powered robotics applications.
- **EnterpriseSG Grants:** Up to 50% co-funding for SME automation equipment purchases, with simplified application for pre-approved robot models. Over 2,400 SMEs have used this program since 2023.
- **GovTech Robotics Testbed:** Public spaces designated as live testing environments — the only program of its kind globally that offers sanctioned pedestrian-traffic testing for autonomous robots.

CHAPTER 03

Port & Logistics: The Showcase Vertical

PSA International: The World's Most Automated Port Operator

Singapore's port — the world's second-busiest by container throughput — is also its most important robotics deployment. PSA International operates automated quay cranes, autonomous guided vehicles (AGVs), and over 500 robots across the Tanjong Pagar and Pasir Panjang terminals. The operation handles approximately 37 million TEUs annually, and automation is the primary mechanism by which PSA has maintained throughput growth despite Singapore's structural labor constraints.

The crown jewel is the Tuas Mega Port, scheduled for full completion by 2040. When operational, it will be the largest fully automated port globally — consolidating all of Singapore's container operations into a single 65-million-TEU facility. The port's design assumes autonomous operations from day one: automated yard cranes, driverless prime movers, AI-optimized berth allocation, and robotic container inspection. PSA has stated publicly that Tuas will require 40% fewer workers per TEU than the current terminals.

Robot Deployment by Sector 2026

Source: IFR World Robotics Report 2026, RCSV Analysis

Changi Airport: Terminal 4 and Beyond

Changi Airport's Terminal 4, reopened and expanded, is the most automated air terminal in Asia. The passenger journey from arrival to boarding is almost entirely touchless: automated check-in kiosks, self-service bag drop, biometric immigration clearance, and autonomous cleaning robots operating 24/7. AETOS, Changi's security partner, operates autonomous patrol robots across all terminals.

In 2025, Changi Airport Group issued its largest robot procurement tender to date: 120 cleaning robots deployed across all four terminals, operated by LionsBot (a Singapore-based manufacturer).

The tender included a five-year maintenance contract and performance guarantees — a sign that Changi has moved from pilot to fleet-scale operations.

Last-Mile and Warehouse Automation

Singapore's dense urban environment and high last-mile delivery costs have made it a natural market for warehouse automation. Addverb Technologies (India HQ, major Singapore operations) operates two fulfillment centers with fully autonomous goods-to-person systems. Grab, better known as a ride-hailing platform, has deployed robotics in its dark kitchens and cloud fulfillment centers across Singapore, using robotic arms for order assembly and AGVs for intra-facility transport.

CHAPTER 04

Healthcare Robotics

Singapore's healthcare system faces a structural challenge that mirrors Japan's: an aging population, rising care demand, and a workforce that cannot scale fast enough. The Ministry of Health (MOH) has responded by making robotics a core component of its Healthcare 2030 Master Plan, with a particular focus on hospital logistics, pharmacy automation, and rehabilitation.

Singapore General Hospital (SGH)

SGH, the country's largest public hospital, has been the testbed for Singapore's healthcare robotics strategy. The hospital currently operates autonomous delivery robots (based on the Savioke Relay platform) for linen, meal, and pharmaceutical transport between floors. Pharmacy dispensing robots handle over 70% of outpatient prescription fulfillment, reducing wait times from an average of 45 minutes to under 12 minutes. Pneumatic tube systems for lab sample transport have been supplemented with autonomous mobile robots (AMRs) that can navigate the hospital's complex corridor layout.

National Deployment Roadmap

MOH's robotics roadmap, published in late 2025, targets three waves of deployment across Singapore's public hospital network:

WAVE	TIMELINE	FOCUS	HOSPITALS
Wave 1	2024–2025	Logistics AMRs, pharmacy dispensing	SGH, NUH, TTSH
Wave 2	2026–2027	Rehabilitation robots, surgical assist	All restructured hospitals
Wave 3	2028–2030	Home-based eldercare robots	Community health posts

The Eldercare Opportunity

By 2030, one in four Singaporeans will be aged 65 or older. The government's preference is for aging-in-place — keeping elderly citizens in their own homes rather than in institutional care. This creates a large addressable market for home-based assistive robots: fall detection, medication reminders, mobility assistance, and social companionship. A*STAR's Institute for Infocomm Research (I2R) has been developing companion robot prototypes specifically designed for Singapore's HDB apartment layout — compact, quiet, and capable of navigating the narrow corridors and doorways typical of public housing.

Healthcare is Singapore's next frontier for robotics. The combination of government commitment (MOH's published roadmap), real deployment at SGH, and the aging demographic creates a market that is both large and structurally predictable. Companies entering this space have a clear three-wave timeline and named hospital partners.

CHAPTER 05

Manufacturing & Precision Engineering

Singapore's manufacturing sector contributes approximately 20% of GDP — an unusually high share for a high-income economy. The sector's survival depends on productivity: with land costs among the highest in the world and a labor force constrained by immigration policy, automation is not optional. It is existential.

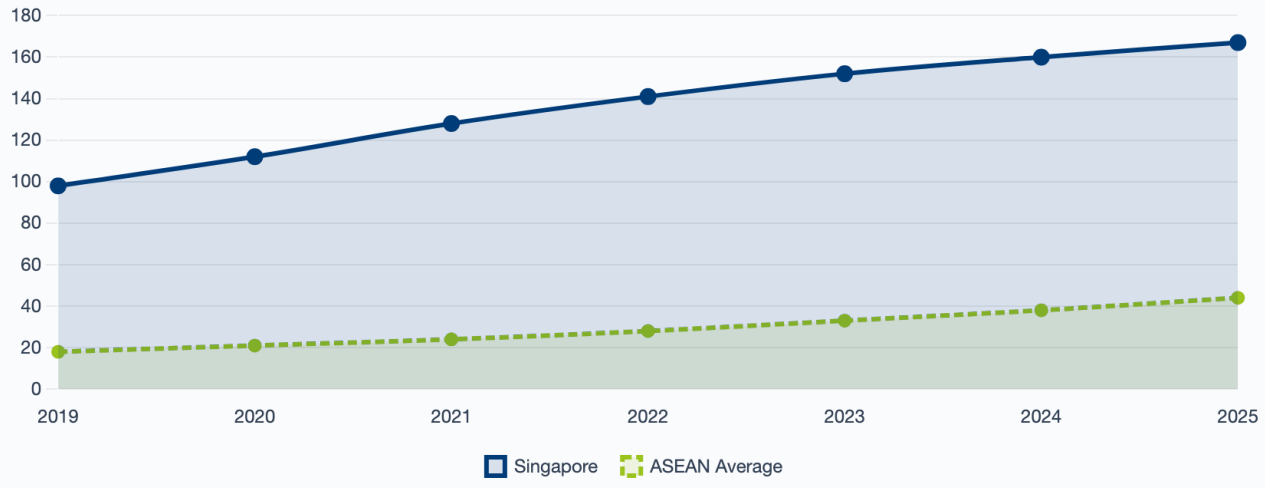
JTC Corporation: Smart Industrial Estates

JTC Corporation, the government agency that manages Singapore's industrial real estate, has embedded automation infrastructure into its estate design. The Jurong Innovation District, Tuas Biomedical Park, and one-north science park all feature shared logistics infrastructure (automated guided vehicles for inter-building transport), centralized waste handling robots, and pre-installed power and data connectivity for robotic equipment. Tenants moving into a JTC estate can deploy robots on day one without building their own infrastructure.

Semiconductor and Precision Engineering

Singapore is the world's 4th-largest semiconductor exporter. The country's wafer fabrication plants — operated by GlobalFoundries, Micron, and UMS — are among the most automated manufacturing facilities in Southeast Asia. EDB-backed grants have funded the deployment of collaborative robots (cobots) for precision assembly, visual inspection systems, and automated material handling in clean-room environments. A*STAR's Singapore Institute of Manufacturing Technology (SIMTech) provides a direct lab-to-fab pipeline, developing manufacturing process automation that is tested in its own facilities before being transferred to industry partners.

Singapore Robot Density (Robots per 10,000 Workers)



Source: International Federation of Robotics (IFR), RCSV Analysis

The Construction Automation Push

Singapore's Building and Construction Authority (BCA) has mandated increasing levels of prefabrication and automation in public construction projects. Robotics applications include automated rebar tying, prefabricated prefinished volumetric construction (PPVC) assembly, and autonomous site inspection drones. The constraint in construction robotics remains the unstructured environment — but Singapore's preference for highly controlled, modular construction methods (driven by land scarcity) makes it a better fit for automation than most construction markets.

CHAPTER 06

Research Ecosystem

Singapore's research ecosystem for robotics punches far above its weight. The country's combination of world-class universities, a well-funded national research agency, and international research partnerships creates a pipeline that consistently produces both publishable research and commercially deployable technology.

National University of Singapore (NUS)

NUS is ranked in the global top 12 for robotics research output. Key labs include the Smart Systems Institute (autonomous systems and human-robot interaction), the CRISP lab (computational robotics for intelligent soft prosthetics), and the Advanced Robotics Centre (manipulation and mobile robotics). NUS's strength is in bridging fundamental research with deployment — several NUS spin-offs have gone on to become funded startups with products in the Singapore market.

Nanyang Technological University (NTU)

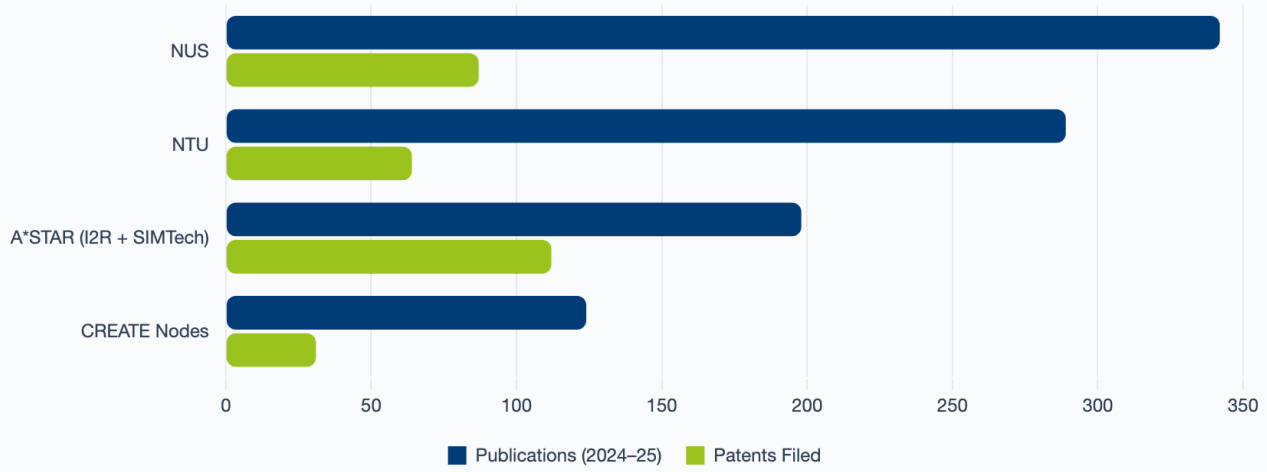
NTU's robotics strength is concentrated in the ROSE lab (Robotics for Search and Rescue), the School of Mechanical and Aerospace Engineering's robotics group, and the ST Engineering–NTU Corporate Laboratory. The ST Engineering partnership is particularly significant: it provides a direct path from university research to one of Singapore's largest defense and logistics companies, with robot prototypes developed at NTU being tested in ST Engineering's operational environments within months of lab demonstration.

A*STAR: The National Lab System

A*STAR (Agency for Science, Technology and Research) operates Singapore's national research laboratories. Two institutes are directly relevant to robotics:

- **Institute for Infocomm Research (I2R):** Focuses on perception, natural language interaction for robots, and autonomous navigation. I2R's work on companion robots for eldercare is among the most advanced in Asia.
- **Singapore Institute of Manufacturing Technology (SIMTech):** Develops manufacturing process automation, robotic assembly, and quality inspection systems. SIMTech operates its own pilot production lines where industry partners can test automation solutions before committing to full deployment.

Top Research Institutions by Robotics Output



Source: Scopus Robotics Publication Index, Patent Analysis, RCSV Research

CREATE: International Research Nodes

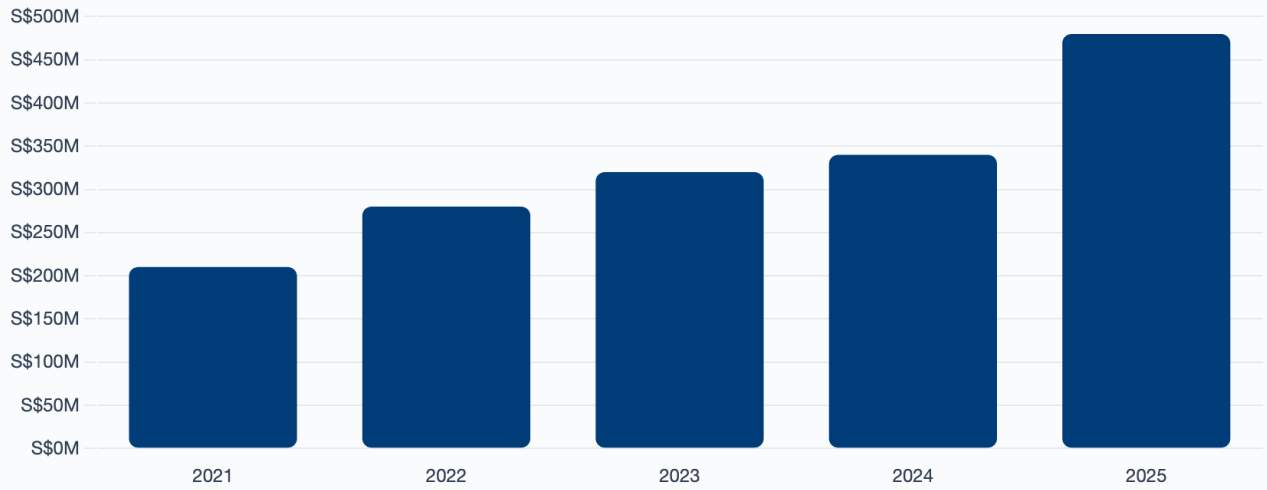
The Campus for Research Excellence and Technological Enterprise (CREATE) hosts Singapore-based research nodes of MIT, Carnegie Mellon University, TU Munich, and other top international universities. Several of these nodes include robotics programs that benefit from Singapore's unique deployment environment — tropical climate, dense urban setting, multilingual population, and government willingness to provide public-space testing access. CREATE serves as a bridge: international researchers bring methodology and global networks; Singapore provides funding, deployment access, and a path to commercialization in the ASEAN market.

CHAPTER 07

Investment & Startup Landscape

Singapore's robotics investment ecosystem benefits from a structural advantage that no other ASEAN country can replicate: the presence of Temasek and GIC, two of the world's largest sovereign wealth funds, both headquartered in Singapore and both actively investing in robotics. Combined with government-backed venture arms (SGInnovate, Vertex Ventures) and a deep pool of family office capital, Singapore is the financial gateway for robotics in Southeast Asia.

Singapore Robotics VC Investment (S$M)



Source: Pitchbook, CB Insights, SGInnovate Annual Report, RCSV Analysis

Investment Flows

Total robotics VC and PE investment in Singapore reached S$480 million in 2025, a 42% increase year-over-year and a new record. The growth was driven by several large rounds in logistics automation and healthcare robotics, as well as increasing interest from family offices that had previously focused on fintech and consumer internet.

Singapore's role as the ASEAN investment hub is significant: an estimated 68% of all Southeast Asian robotics investment flows through Singapore-based entities, even when the deploying company operates primarily in Vietnam, Indonesia, or Thailand. This hub function is reinforced by Singapore's legal system, IP protection, and the presence of nearly every major international law firm and accounting practice.

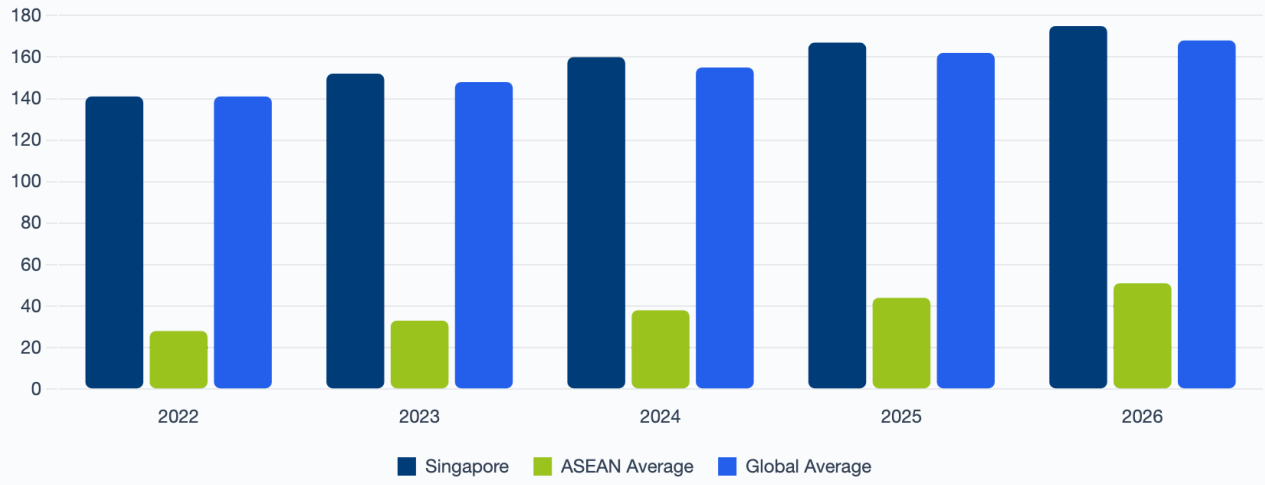
INVESTOR	TYPE	FOCUS	NOTABLE DEALS
Temasek	Sovereign Wealth	Industrial automation, logistics	Series B+ rounds in warehouse robotics
GIC	Sovereign Wealth	Growth-stage robotics platforms	Cross-border logistics automation

INVESTOR	TYPE	FOCUS	NOTABLE DEALS
Vertex Ventures	Government VC	Early-stage deep tech	Seed/Series A in perception & manipulation
SGInnovate	Government Deep Tech	University spin-offs	NUS/NTU robotics commercialization

Key Companies and Startups

- **LionsBot:** Singapore-based autonomous cleaning robot manufacturer. Deployed at Changi Airport (120 units), public hawker centres, and commercial buildings. One of the few Singapore-headquartered robot OEMs with global export revenue.
- **Otsaw Digital:** Developer of the O-R3 autonomous security robot, deployed in Singapore and exported globally. Operates in commercial buildings, industrial estates, and airport perimeters.
- **Genie (formerly Oceania Robotics):** Autonomous retail robots for inventory scanning and customer interaction. Operating in Singapore malls and expanding to Japan.
- **ST Engineering:** Singapore's largest defense and engineering conglomerate. Robotics division covers logistics AGVs, autonomous ground vehicles, and unmanned aerial systems. Revenue from robotics estimated at S$180M annually.
- **Addverb Technologies:** India-headquartered warehouse automation company with major Singapore operations. Two fulfillment centers with fully autonomous goods-to-person systems.
- **Grab:** Southeast Asia's super-app, deploying robotics in dark kitchens and cloud fulfillment centers across Singapore for order assembly and intra-facility transport.
- **RGS (Robot Global Solutions):** System integrator specializing in multi-vendor robot fleet management for industrial and commercial clients.

Singapore vs ASEAN vs Global — Robot Density



Source: International Federation of Robotics (IFR), World Bank, RCSV Analysis

68% of Southeast Asian robotics investment flows through Singapore. The city-state's legal infrastructure, IP protection, sovereign wealth funds, and deep tech venture ecosystem make it the de facto financial hub for robotics across ASEAN — even for companies deploying primarily in other markets.

CHAPTER 08

RCSV + Singapore: Partnership Opportunities

Robotics Center has identified Singapore as a priority market based on three factors: buyer sophistication, funding availability, and research partnership potential. Singapore's robotics buyers — whether government agencies, port operators, or university labs — are English-speaking, technically literate, well-funded, and accustomed to working with international partners. The procurement process is transparent and merit-based. These are the conditions under which RCSV delivers the most value.

Data Collection Services

Singapore's research institutions and deploying organizations have strong demand for high-quality robot demonstration data. NUS and NTU researchers working on manipulation policies need diverse, well-annotated teleoperation datasets — exactly what Robotics Center's data collection services produce. Robotics Center's OpenArm platform is already deployed in Singapore research labs, and expanding data collection operations in Singapore is a natural extension of existing relationships.

Robot Training Infrastructure

As Singapore's NRP 2.0 introduces a national robotics data standard, the need for standardized data collection and quality scoring infrastructure will grow. Robotics Center's data platform — which provides task design, operator management, quality scoring, and dataset delivery in RLDS and LeRobot formats — is purpose-built for this kind of institutional-scale data operation.

NUS/NTU Collaboration

Robotics Center's research team has active collaborations with NUS's Advanced Robotics Centre and NTU's ROSE lab. These partnerships focus on imitation learning methodologies, policy evaluation benchmarks, and shared dataset creation. Singapore's CREATE framework provides a natural structure for deepening these collaborations, with potential for joint publications, shared equipment, and co-supervised graduate students.

Why Singapore, Why Now

- **NRP 2.0 timing:** The expected announcement of NRP 2.0 in H2 2026 will create a new wave of procurement activity. Partners who are established before the announcement will be best positioned.
- **Data standard opportunity:** The proposed national robotics data standard creates a structural need for data collection infrastructure and expertise.

- **ASEAN gateway:** A Singapore presence provides access to the broader ASEAN robotics market — Vietnam, Indonesia, Thailand, Malaysia — through Singapore's hub function.
- **Research depth:** NUS and NTU produce world-class robotics research. Collaboration with these institutions strengthens Robotics Center's research capabilities and publication pipeline.

Get in touch. If you are a Singapore-based organization interested in data collection services, robot training infrastructure, or research collaboration, contact RCSV directly at contact@roboticscenter.ai or visit roboticscenter.ai/contact. We maintain a Singapore-focused team and can schedule in-person meetings in Singapore.

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