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Medical and Healthcare Academia–Industry Partnership Ecosystems in Indonesia and Thailand

by

Economic Research Institute for ASEAN and East Asia (ERIA)

and

Corporate Directions, Inc. (CDI)

in Collaboration with medU-net Innovators' Basecamp



Medical and Healthcare Academia–Industry Partnership Ecosystems in Indonesia and Thailand

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List of Abbreviations

AIBI	Association of Indonesian Business Incubators
ASEAN	Association of Southeast Asian Nations
BRIN	Badan Riset dan Inovasi Nasional/National Research and Innovation Agency
CDI	Corporate Directions Inc.
CVC	Corporate Venture Capital
ERIA	Economic Research Institute for ASEAN and East Asia
GDP	Gross Domestic Product
JETRO	Japan External Trade Organization
KOLs	Key Opinion Leaders
PoC	Proof of Concept
R&D	Research and Development
SMEs	Small and Middle Enterprises
VCs	Venture Capitals
TCELS	Thailand Center of Excellence for Life Sciences

Glossary

Healthtech	Digital tools for healthcare, such as telemedicine (which increasingly expanded during the COVID-19 pandemic) and electric medical records in Indonesia, and preventive/workplace health initiatives in Thailand
Hub	The 'International Industry-Academia Collaboration Hub' model proposed in this report
Incubators/Accelerators	Entrepreneurial support entities/programmes particularly for seed to early-stage startups (office provision, mentoring, etc.)
Innovation seeds	Research outcomes accumulated in the university (such as medical materials and diagnostic technologies, etc.)
Life sciences	Collective domain encompassing 'Pharma & Diagnostics', 'Medical devices & infrastructures', 'Healthtech', and 'Agriculture'
Medical/healthcare Deep-tech	Advanced medical/healthcare technologies (genome editing, etc.)
medU-net Innovators' Basecamp	An industry-academia collaborative think tank run by the Institute of Science Tokyo
Startup ecosystem	A network of local economies where entrepreneurs, investors, and support institutions interact
Social implementation	Process of transferring academic research outcomes to industry

Executive Summary

General Startup Ecosystem

Indonesia, one of the largest markets in the Association of Southeast Asian Nations (ASEAN), has maintained steady economic growth in recent years, supporting the gradual development of its startup ecosystem, particularly in technology- and retail-related sectors. An estimated 600–900 startups currently operate in the country, supported by a growing network of venture capital firms, accelerators, and incubators, alongside increasingly comprehensive government policies.

Thailand, while also a major ASEAN economy, has experienced more modest economic growth in recent years. Startup financing is dominated by corporate venture capital (CVC) firms, which typically prioritise synergies with parent companies and near-term commercial viability. This financing structure constrains early-stage startups' access to capital and limits experimentation. As a result, ecosystem development has been concentrated in a narrow range of sectors – most notably retail – with the number of local startups estimated at approximately 200–300.

Medical and Healthcare Startup Ecosystem

In both Indonesia and Thailand, startup activity in the medical and healthcare sector remains limited. High commercialisation costs, regulatory complexity, and the need for specialised expertise raise entry barriers and constrain ecosystem development. Healthtech startups – where barriers to entry are relatively lower – are beginning to emerge, but overall activity remains at an early stage.

In Indonesia, examples include telemedicine platforms and electronic medical records, while in Thailand, startups are more concentrated in preventive care, pre-disease management, and corporate health services. In both countries, support institutions and policy frameworks specifically targeting medical and healthcare startups remain underdeveloped.

Industry–Academia Collaboration in Medical and Healthcare

Major universities in Indonesia and Thailand have established dedicated units for industry–academia collaboration, engaging in activities such as university spin-offs and research commercialisation through partnerships with private firms. In practice, licensing intellectual property to existing companies remains the dominant pathway for translating academic research into societal and commercial applications.

Despite these efforts, industry–academia collaboration remains limited in scale and largely concentrated in a small number of leading universities. Indonesia has taken steps to broaden participation through a nationwide industry–academia matching platform. Nevertheless, the medical and healthcare sector continues to face constraints related to weak academic, technological, and industrial clustering, as well as limited technological depth.

In Thailand, although a broader range of research – including deep-tech fields – is being undertaken, institutional frameworks and operational mechanisms for industry–academia collaboration remain underdeveloped. This has constrained the translation of academic research into practical healthcare solutions and commercial applications.

Discussion and Conclusions

The strategic priorities for strengthening medical and healthcare innovation differ between Indonesia and Thailand. Indonesia's primary challenge lies in reinforcing academic, technological, and industrial clusters, alongside upgrading foundational technological capabilities. Thailand, by contrast, faces a more pressing need to modernise institutional frameworks and operational mechanisms governing industry–academia collaboration.

Given the scale and complexity of these challenges, reliance on purely domestic efforts is likely to be slow. Cross-border collaboration – particularly with more advanced innovation ecosystems – therefore warrants active consideration. Effective innovation depends on close interaction amongst industry, academia, and government, with academia playing a role that extends beyond technology transfer to broader industrial promotion.

International experience offers relevant lessons. In Japan, universities are increasingly evolving from traditional research institutions into hubs for industrial promotion in the medical and healthcare sectors. This experience highlights the potential benefits of deeper collaboration amongst academic institutions in Indonesia, Thailand, and Japan.

This study explores possible Indonesia–Thailand–Japan collaboration initiatives to strengthen local medical and healthcare innovation ecosystems. Universities in Indonesia and Thailand could play expanded roles as gateways for Japanese firms seeking access to Southeast Asian markets. These roles could include facilitating partnerships between Japanese companies and local researchers, providing access to clinical and research infrastructure, and connecting firms with credible domestic stakeholders such as venture capital providers.

More broadly, strengthening industrial promotion infrastructure in Indonesia and modernising industry–academia collaboration frameworks in Thailand are both urgent priorities. In this context, the establishment of international industry–academia

collaboration hubs – jointly led by local and Japanese academic institutions – could provide an effective platform. Over the medium to long term, such hubs could help embed proven practices in industry–academia collaboration and industrial promotion, contributing to more sustainable, innovation-driven development in the medical and healthcare sectors.

Chapter 1

Introduction

Background

Upgrading medical and healthcare infrastructure is essential for national development. While effective public policies and adequate budgetary allocations are critical, the establishment and sustained functioning of a robust innovation ecosystem – encompassing industry, startups, and academia – are equally important (United Nations Conference on Trade and Development, 2022). Southeast Asian countries have experienced significant economic and social development in recent years, accompanied by steady improvements in healthcare standards (Si et al., 2025).

Despite these advances, there remains limited up-to-date research on healthcare startup ecosystems and industry–academia collaboration in the region. This study addresses this gap by examining the medical and healthcare startup ecosystem and industry–academia collaboration in Indonesia and Thailand, two of the largest markets in the Association of Southeast Asian Nations (ASEAN) (Figure 3.1).

Although both countries occupy prominent positions within the region in terms of market size, they differ markedly in their socioeconomic, demographic, and epidemiological contexts. Economically, Indonesia is experiencing dynamic growth and is currently benefiting from a demographic dividend, whereas Thailand is a more mature economy undergoing rapid population ageing (Itakura, 2017). From an epidemiological perspective, Indonesia continues to face challenges related to expanding primary healthcare infrastructure and managing the growing burden of non-communicable diseases (Republic of Indonesia, 2020). In contrast, Thailand's public health priorities are increasingly shaped by population ageing and its associated healthcare demands (Ministry of Public Health (MOPH) in Thailand, 2018).

Against this backdrop, this study examines the potential role of academia as a key actor in promoting medical and healthcare innovation in Indonesia and Thailand.

Objectives

This study aims to:

1. Examine the general startup ecosystems in Indonesia and Thailand;
2. Analyse the medical and healthcare startup ecosystems in both countries; and
3. Assess industry–academia collaboration ecosystems in the medical and healthcare sectors in Indonesia and Thailand.

Chapter 2

Methodology and Analytical Approach

Methodology

To examine the current state of startup ecosystems in Indonesia and Thailand, this study employed a mixed-methods research design combining desktop research, quantitative analysis, and qualitative interviews. Data collection included a review of startup ecosystem trends in both countries, as well as online and on-site interviews with key stakeholders. In addition, interviews were conducted with two Japanese companies to explore opportunities for international industry–academia collaboration involving Japan.

The quantitative analysis drew on multiple secondary data sources, including the CB Insights database, official statistics, market research reports, white papers, and academic journal articles. These sources were used to assess the scale, structure, and characteristics of the startup ecosystems in the two countries.

Quantitative Methods

CB Insights data and desktop research were used to develop an overall understanding of the startup ecosystems in Indonesia and Thailand. Specifically, the CB Insights database was used to analyse the number of startups by industry, total funding amounts, and the presence of incubators and accelerators in each country. Desktop research complemented this analysis by compiling macro-level indicators such as gross domestic product (GDP), population size, research and development (R&D) expenditure as a share of GDP, and university research output, measured by the number of academic publications.

It should be noted that the startup data may include non-viable or inactive companies. The CB Insights dataset covers firms that have raised at least US\$10,000, including companies that were no longer operational at the time of data extraction.

The distribution of healthcare-related startups observed in this study may also reflect temporary market conditions, particularly those associated with the COVID-19 pandemic between 2020 and 2023. Heightened demand for remote communication and digital health solutions during this period may have influenced the relative prominence of certain subsectors. These contextual factors should therefore be considered when interpreting the findings.

Qualitative Methods

Semi-structured interviews were conducted with stakeholders across the startup and industry–academia collaboration ecosystems. Interview themes were tailored to stakeholder type. For Indonesian and Thai stakeholders involved in startup activities, interviews focused on identifying recent trends in national startup ecosystems, with particular attention to sectoral clusters and the key challenges faced by startups within existing institutional and market environments.

For stakeholders engaged in industry–academia collaboration in the medical and healthcare sectors, interviews examined pathways for commercialising academic research. Topics included the rate of translation from research to commercial application, typical trajectories from laboratory research to market deployment, priority domains of collaboration, common collaboration modalities, institutional mechanisms supporting industry–academia engagement, and perceptions of opportunities for international cooperation, particularly with Japan.

Japanese stakeholders – primarily representatives of companies with prior collaborative experience in Indonesia and Thailand – were asked to describe the nature of their engagements with academic institutions in the two countries. Interviews also explored challenges encountered in these collaborations and identified key considerations for facilitating future international industry–academia partnerships.

All interviews were conducted between October 2024 and January 2025, both online and on site, and were carried out in English.

Data Analysis

The analysis for each country followed a two-step approach. Step 1 involved assessing the current state of startups and industry–academia collaboration in the medical and healthcare sectors, drawing on desktop research, interviews, and site visits (Chapter III: Current State of Startups and Industry–Academia Collaboration in Indonesia and Thailand). Step 2 focused on identifying directions for promoting medical and healthcare innovation, including the potential role of academia in advancing innovation across ASEAN, based on the survey findings (Chapter IV: Discussion and Conclusions).

This study focused on three core components of the innovation ecosystem:

1. Startups, including university-originated startups;
2. Universities and research institutions, particularly industry–academia collaboration units; and
3. Startup support entities, comprising incubators and accelerators (primarily supporting seed- to early-stage ventures), venture capital firms (supporting early- to later-stage ventures), and government and related agencies responsible for industrial promotion and innovation infrastructure development.

Chapter 3

Current State of Startups and Industry-Academia Collaboration in Indonesia and Thailand (Medical and Healthcare Sector)

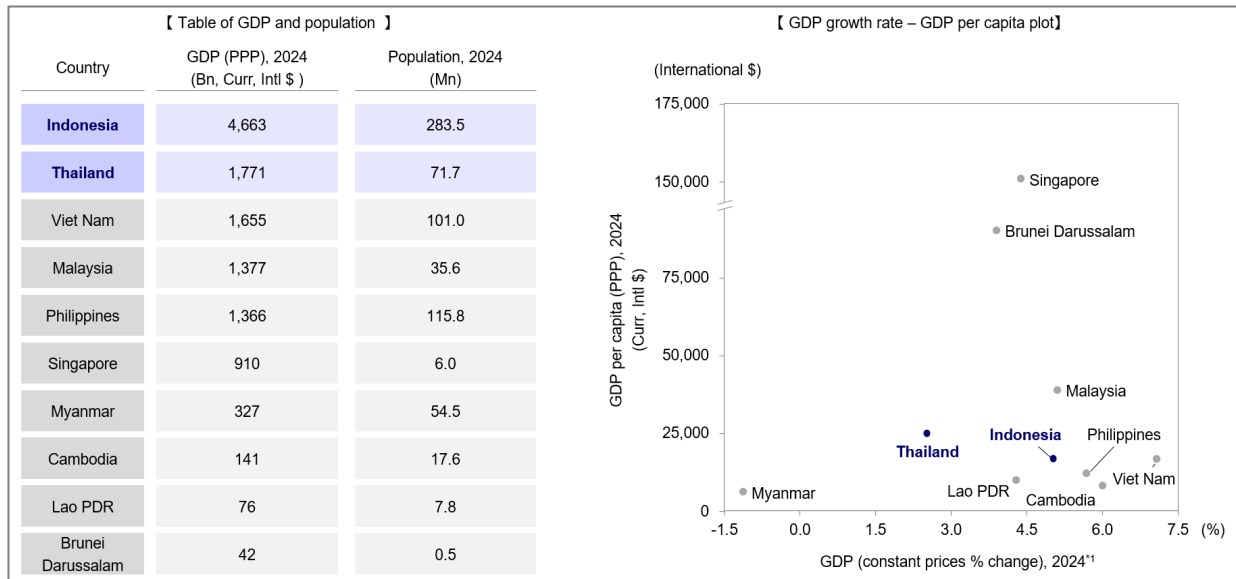
1. General Startup Ecosystem

Economic Context

As of 2024, Indonesia represents the largest market and population within the Association of Southeast Asian Nations (ASEAN). Although its gross domestic product (GDP) per capita remains relatively low, Indonesia has recorded steady economic growth in recent years, comparable to that of other fast-growing ASEAN economies such as the Philippines and Viet Nam. This sustained growth, combined with favourable demographic trends, has supported the gradual expansion of the country's startup ecosystem.

Thailand likewise constitutes a major market within ASEAN and maintains a significantly higher GDP per capita than Indonesia. However, economic growth in Thailand has been comparatively modest in recent years, particularly when contrasted with the more dynamic growth trajectories observed in Indonesia and other emerging ASEAN economies. This divergence in macroeconomic performance contributes to differing conditions for startup formation, investment appetite, and risk tolerance in the two countries.

Figure 3.1. Economic Situation in Association of Southeast Asian Nations (ASEAN) Countries



*1: Data reflect ASEAN Member States as of August 2025 with forecast values for Myanmar and Cambodia

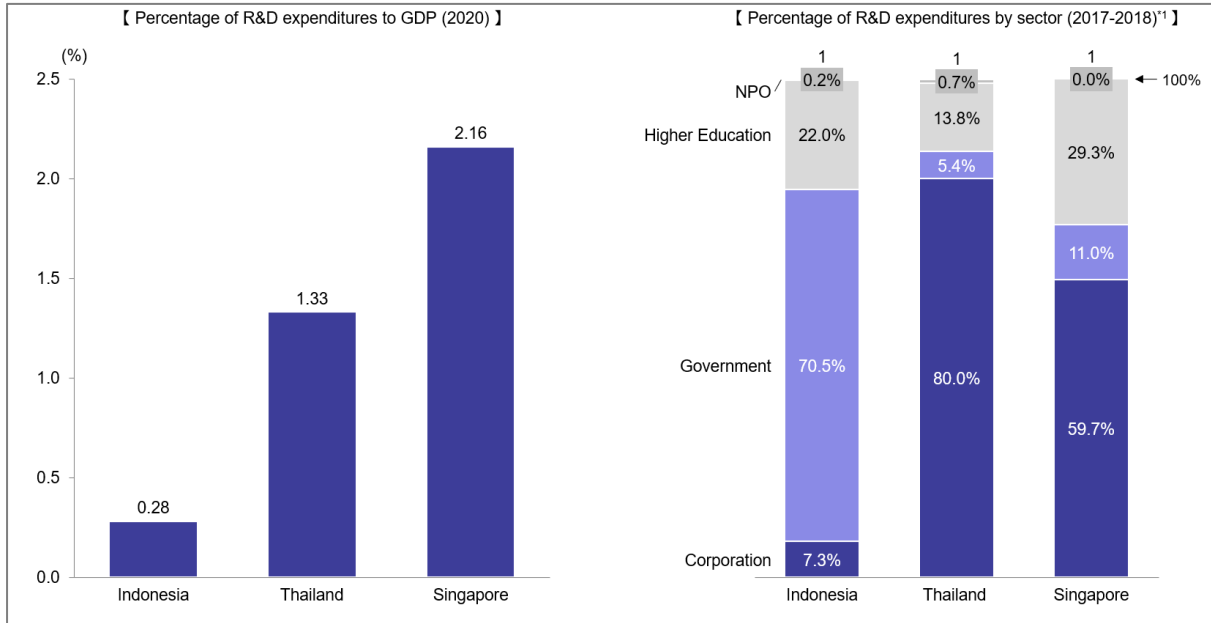
*2: Sources: Authors based on World Bank (2025) and International Monetary Fund (2025).

Research and Development Activities

Research and development (R&D) activity in Indonesia remains comparatively less advanced than in Thailand and Singapore (Figure 3.2). With R&D expenditure amounting to 0.28% of gross domestic product (GDP), Indonesia records the lowest ratio amongst the three countries. Moreover, the government accounts for the majority of R&D spending, indicating relatively limited private-sector research capacity.

Thailand occupies an intermediate position, with R&D expenditure reaching 1.33% of GDP (Figure 3.2). Notably, around 80% of Thailand's R&D spending is undertaken by private companies, reflecting stronger private-sector participation and a more developed R&D ecosystem.

Figure 3.2. R&D Activities in Indonesia, Thailand, and Singapore



*1: The data for Indonesia are from 2018, while the data for Thailand and Singapore are from 2017

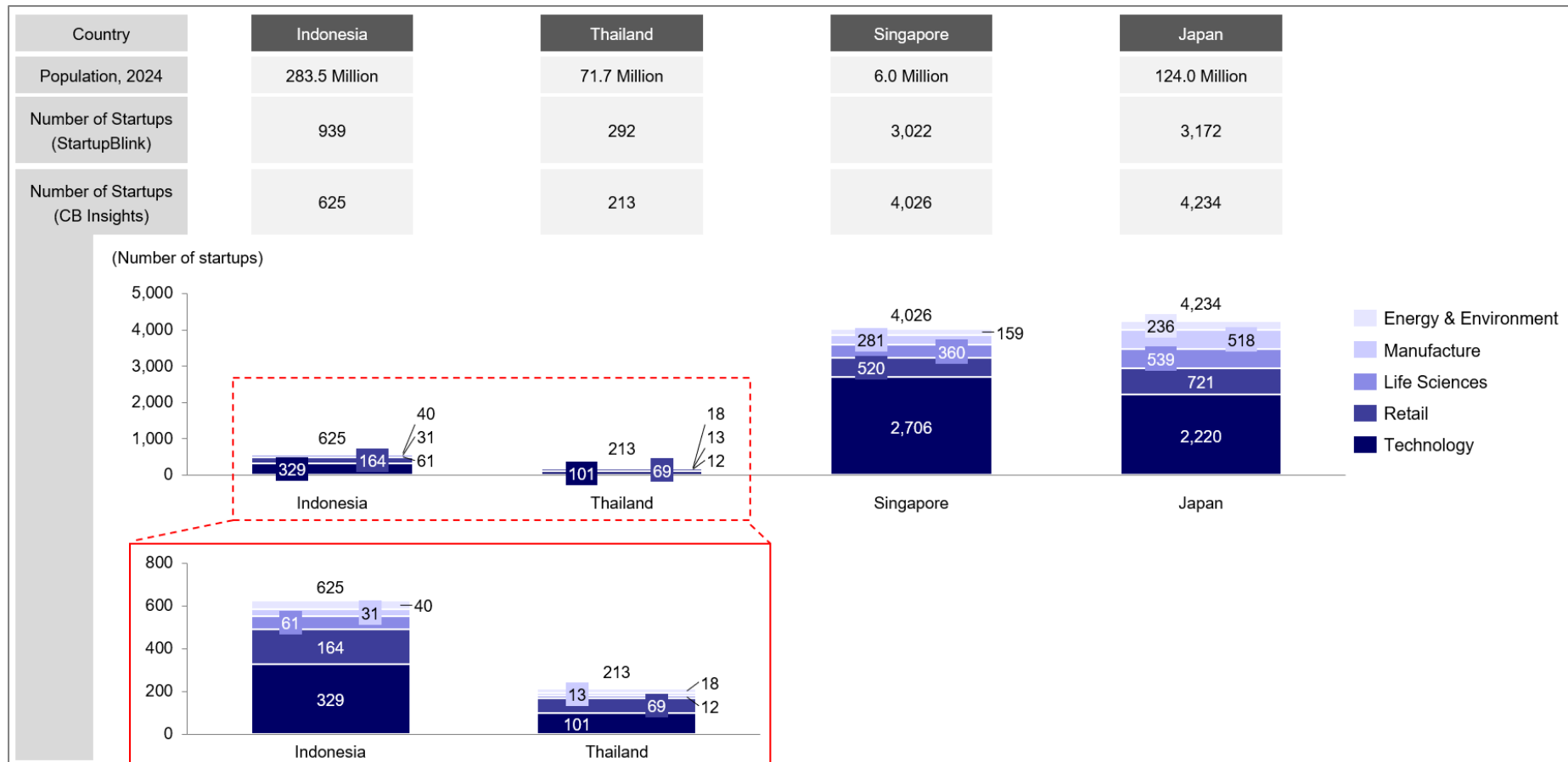
*2: Source: Authors based on CRDS (2024).

Startup Activities

Several databases track startup activity in Indonesia and Thailand, including StartupBlink and CB Insights (StartupBlink, 2024; CB Insights, 2024). However, the reliability of such databases is subject to limitations, notably the lack of a uniform definition of 'startups' and the high rate of firm entry and exit. To enable an indicative cross-country comparison, this study draws on data from both StartupBlink and CB Insights (Figure 3.3).

Based on these sources, Indonesia is estimated to host approximately 600–900 startups, with a substantial share operating in the technology sector. Thailand, by contrast, has a smaller startup ecosystem, with an estimated 200–300 startups, concentrated primarily in the technology and retail sectors.

Figure 3.3. Number of Startups by Selected Sector in Indonesia, Japan, Singapore, and Thailand



*1: Amongst the companies listed in CB Insights, those with a total funding amount exceeding \$10K were counted as startups. Industry segments were redefined by CDI (companies without defined industry segments in CB Insights were excluded from the count)

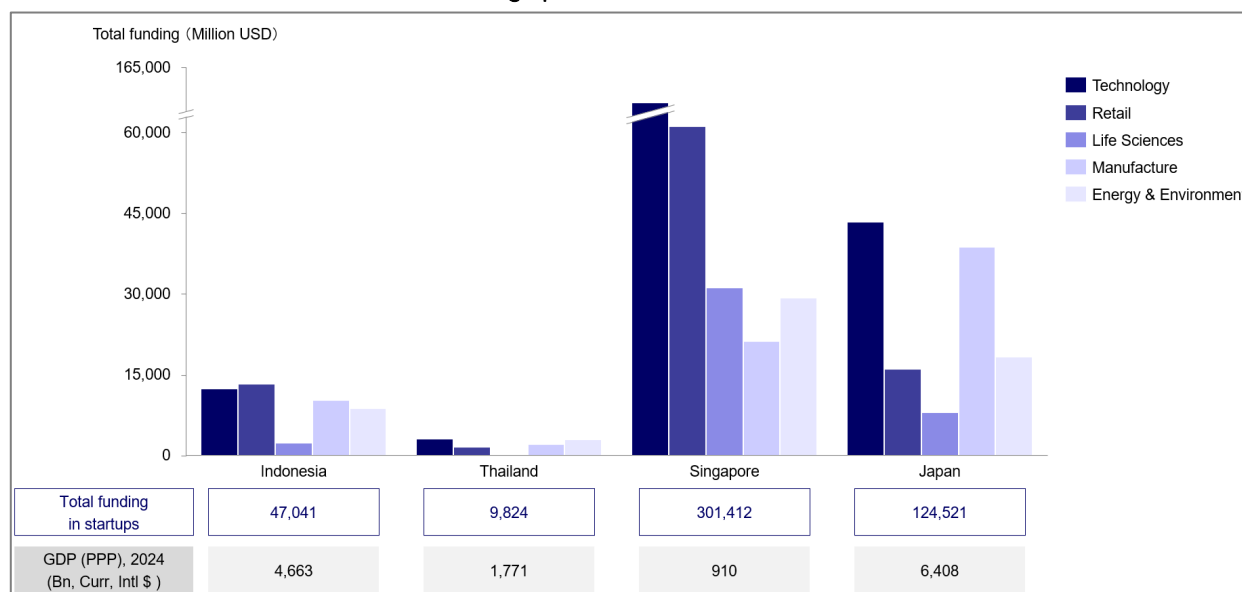
*2: Sources: Authors based on StartupBlink (2024), CB Insights (2024), and World Bank (2025).

Investment in Startups

Cumulative investment in Indonesian startups amounted to approximately US\$47 billion as of 2024, with a high concentration in the technology and retail sectors (Figure 3.4). In comparison, Thai startups have attracted around US\$9.8 billion in cumulative investment, primarily within the technology sector (CB Insights, 2024). Nevertheless, investment levels in both countries remain modest when compared with those of more mature ecosystems such as Singapore and Japan (Figure 3.4).

In recent years, Indonesia has experienced a sharp decline in late-stage fundraising and new fund formation, reflecting broader shifts in global venture capital markets. Thailand has also faced a downturn, although the contraction has been more gradual. Despite these trends, cumulative investment over the past decade indicates sustained growth in early- to growth-stage funding in both countries. The reported figures represent cumulative investment per startup.

Figure 3.4. Scale of Investment for Startups by Selected Sector in Indonesia, Japan, Singapore, and Thailand



1: Amongst the companies listed in CB Insights, those with a total funding amount exceeding \$10K were counted as startups. Industry segments were redefined by CDI (companies without defined industry segments in CB Insights were excluded from the count)

*2: This represents the total value of cumulative investments in each startup

*3: Sources: Authors based on CB Insights (2024) and World Bank (2025).

Overview of Accelerators, Incubators, and Venture Capital Firms

Although the number of startup support entities in Indonesia remains lower than in more mature ecosystems such as Japan and Singapore, the country maintains a substantial domestic presence of accelerators, incubators, and venture capital firms (Figure 3.5). Indonesia's startup ecosystem is gradually taking shape, supported by a growing range of local support organisations. This progress is particularly evident in sectors with relatively low commercialisation costs, such as technology, where the ecosystem has become increasingly robust.

At the same time, the quality of incubation support varies considerably. A national incubator association is actively working to improve and standardise incubation practices through knowledge-sharing initiatives, including mentoring methodologies, network-building support, and capacity development for incubator personnel.

'The startup ecosystem in Indonesia is gradually taking shape.

There are a certain number of entities supporting startups locally, including incubators, accelerators, and venture capital firms.'

(IR5, Local startup support entity)

'We have identified more than 100 incubators locally. Despite the presence of a considerable number of incubators, there is a significant variation in their support quality. We are engaged in activities to share knowledge amongst incubators such as sharing know-how on startup mentoring, support for network building, and development of incubator personnel.'

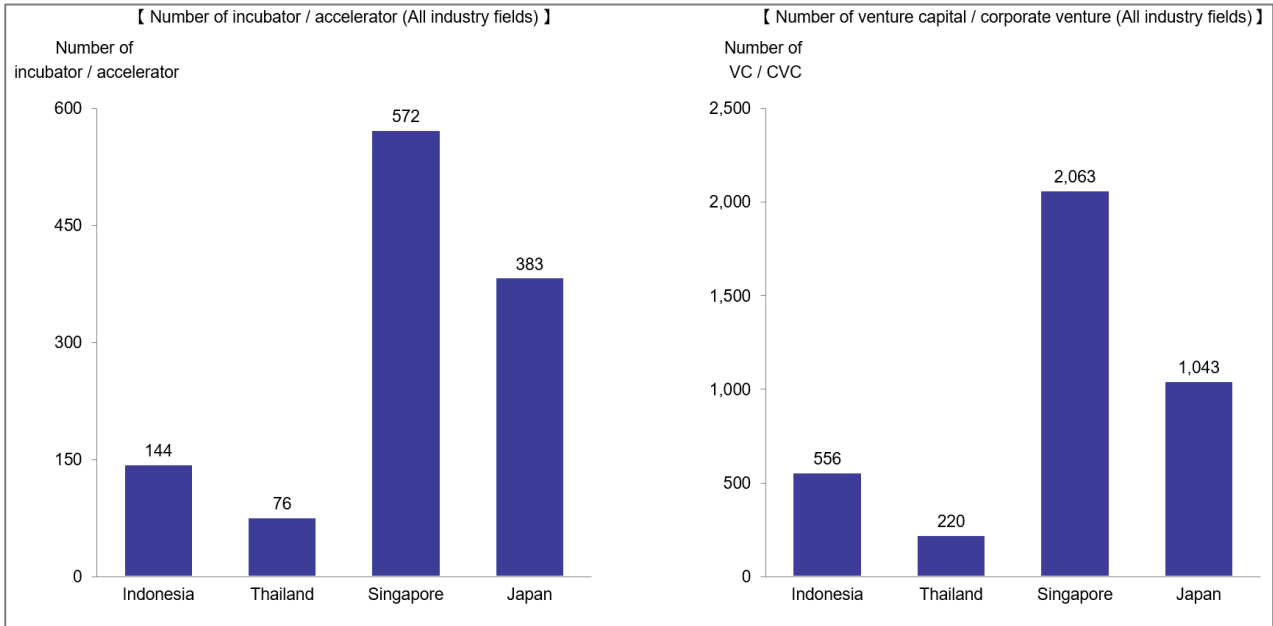
(IR1, Local startup support entity)

According to the Global Startup Ecosystem Ranking, which incorporates indicators such as the number of startups, unicorns, accelerators and incubators, and government support, Thailand ranks 53rd globally, compared with Indonesia's 45th position (StartupBlink, 2024). Thailand's venture capital landscape is characterised by the strong presence of corporate venture capital (CVC) firms. These CVCs tend to prioritise investments that align closely with their parent companies' strategic interests or demonstrate clear commercial viability, which can constrain access to funding for early-stage startups.

'Within the country, CVCs backed by conglomerates have a strong presence. Consequently, many startups, especially those in the early stages with lower commercialisation certainty, do not receive adequate support.'

(TR2, Local startup support entity)

Figure 3.5. Number of Startup Support Entities in Indonesia, Japan, Singapore, and Thailand



*1: Source: Authors based on CB Insights (2024), including international investment players.

Startup Promotion Policies

In Indonesia, several ministries implement startup promotion policies in collaboration with support entities such as investors (Figure 3.6). These initiatives typically include grant programmes, mentoring schemes, and pitch events aimed at facilitating early-stage startup development.

Similarly, multiple government agencies in Thailand operate programmes to support startups (Figure 3.7). However, in both countries, these public initiatives often appear insufficiently coordinated with private startup support entities, including incubators, accelerators, and venture capital firms (Figure 3.7). As a result, startups continue to face significant barriers to market entry and scaling, even after participating in government-led support programmes.

Figure 3.6. Examples of Startup Promotion Policies in Indonesia

Programme	Ministry	Start year	Target	Support Details
Perusahaan Pemula Berbasis Teknologi (PPBT) ^{*1}	Ministry of Education, Culture, Research and Technology ^{*1}	2013	<ul style="list-style-type: none"> Startups scaled up to Advanced Tech Based Startup Grant Programme (Perusahaan Lanjut Berbasis Teknologi [PLBT]) 	<ul style="list-style-type: none"> Funding of Rp100 million–Rp500 million provided through incubation programme for a maximum of 2 years to commercialize the products
Hub.ID	Ministry of Communication and Information Technology	2014	<ul style="list-style-type: none"> Startups to be matched with investors and connected with corporate and government partners 	<ul style="list-style-type: none"> Acceleration program to intensify growth <ul style="list-style-type: none"> 2-day summit to link with global venture capitalists and business partners ecosystem to collaborate and search for new opportunities
Calon Perusahaan Pemula Berbasis Teknologi (CPPBT) ^{*1}	Ministry of Education, Culture, Research and Technology ^{*1}	2016	<ul style="list-style-type: none"> Pre-startups scaled up to enter the PPBT programme 	<ul style="list-style-type: none"> Incubation consisting of team development and product development, 1 year
1000 Startups Digital Programme	Ministry of Communication and Information Technology	2016	<ul style="list-style-type: none"> Early-stage startups in agriculture, health, education, tourism, logistics, maritime 	<ul style="list-style-type: none"> Incubation for 3–6 months <ul style="list-style-type: none"> Discussion with stakeholders, Bootcamp to develop minimum viable product One-on-one mentoring
Baparekraf for Startup (BEKUP) Academy	Ministry of Tourism and Creative Economy/Tourism and Creative Economy Agency	2016	<ul style="list-style-type: none"> Early-stage startups that already have a minimum viable product 	<ul style="list-style-type: none"> Incubation programme <ul style="list-style-type: none"> 2-day bootcamp in several large cities to design products One-on-one mentoring Facilitating startups' pitching to stakeholders
E-Commerce Roadmap (Presidential Regulation 74/2017)	Ministry of Trade	2017	<ul style="list-style-type: none"> Ecommerce, SMEs, startups, and logistics 	<ul style="list-style-type: none"> A steering committee of various relevant ministries and technical assistance formulating government regulations and ministerial regulations for e-commerce
Startup4Industry Programme	Ministry of Industry	2018	<ul style="list-style-type: none"> Startups that already have a minimum viable product 	<ul style="list-style-type: none"> Problem-solving competition to curate startup participants Techlink matching activity (startups and larger businesses) Solution discussion by matching tech startups and problem owners and involving other stakeholders
Next Indonesian Unicorn	Ministry of Communication and Information Technology	2018	<ul style="list-style-type: none"> Later-stage startups in logistics, e-commerce, fintech, media and advertising, healthtech, edtech, SaaS 	<ul style="list-style-type: none"> Facilitate contacts between startups and Series B investors, both locally and internationally, through one-on-one meetings and networking dinners
Startup Studio Indonesia	Ministry of Communication and Information Technology	2020	<ul style="list-style-type: none"> Startups in agriculture, health, education, tourism, logistics, and maritime sectors that have reached product market-fit stage 	<ul style="list-style-type: none"> Intensive acceleration programme for around 1.5 months <ul style="list-style-type: none"> Business skills development and branding Facilitating access to seed/pre-series A/series A investors
Kedaireka	Ministry of Education, Culture, Research and Technology	2020	<ul style="list-style-type: none"> Lecturers and students in higher education collaborate with businesses registered on the Kedaireka platform 	<ul style="list-style-type: none"> Matching funds for collaborative projects with the business and upon approval of the submitted proposal by the Kedaireka board
BEKUP Mentor Training Programme	Ministry of Tourism and Creative Economy/Tourism and Creative Economy Agency	2021	<ul style="list-style-type: none"> Startup enthusiasts, founders, and tech and business experts with minimum 2 years of experience in a managerial position 	<ul style="list-style-type: none"> Upskilling individuals to act as mentors for startups through various activities such as workshops, consultations, and case simulations

*1: These programmes have been replaced by the Research-Based Company Funding Programme (Pendanaan Perusahaan Berbasis Riset/PPBR) at the end of 2021. PPBR is now provided through the National Research and Innovation Agency.

*2: Source: Authors based on Bachtiar et al. (2023).

Figure 3.7. Examples of Startup Promotion Policies in Thailand

Government programme	Relevant agency	Programme overview
Capital tax gain exemption	Revenue Department	<ul style="list-style-type: none"> 10 years capital tax gain exemption for investors (i.e., individual investors, VCs, CVCs) investing in Thai startups in target sectors
DEPA Digital Startup Fund	DEPA	<ul style="list-style-type: none"> Fund launched by DEPA to provide grants to entrepreneurs, and to invest in early and growth stage startups in the form of grants and direct investments
DEPA Venture programme	DEPA	<ul style="list-style-type: none"> Programme where DEPA works with VC firms to select startups from their portfolio and invest in the form of equity The 8 focus industries are mainly in technology innovation
NSTDA co-investment programme	NSTDA	<ul style="list-style-type: none"> Co-investment programme between NSTDA and private sector to invest in science and technology businesses that have started commercial operations
NSTDA startup programme	NSTDA	<ul style="list-style-type: none"> Programme that allows partnerships between NSTDA research projects and private companies to develop innovative businesses NSTDA might also invest in the startups established through NSTDA Startup programme
NSTDA startup investment via PE Trust Fund	NSTDA	<ul style="list-style-type: none"> NSTDA invests in SMEs and startups with high growth potential via PE trust fund
NSTDA Holding co-investment programme	NSTDA	<ul style="list-style-type: none"> Holding company set up by NSTDA to co-invest/jointly invest in advanced technology businesses
InnoSpace fund	NSTDA, DEPA, Ministry of Industry, SET, GSB, etc.	<ul style="list-style-type: none"> InnoSpace is a partnership between public and private sectors set up to support the development of startups in Thailand Using money raised from the investors, InnoSpace has launched several funds with different focus areas to invest in startups in various sectors
BOI startup support programme (via competitiveness enhancement act)	BOI	<ul style="list-style-type: none"> BOI provides financial support to startups in the target sectors Funding provided is limited to being used for paying for technology and employees
Smart Visa programme	BOI	<ul style="list-style-type: none"> Visa programme set up to attract foreign skilled talent to work in specific S-curve industries Benefits of the visa include 4-year permission of stay, yearly immigration reports, the exempt from work permit requirement, etc.
TED Market Scaling Up Fund	Technology and Innovation-based Enterprise Development Fund (TED Fund)	<ul style="list-style-type: none"> Grant provided to startups to support their market expansion Grant covers costs associated with market expansion, e.g., product development cost, market testing cost, marketing cost
NIA Open Innovation Grant	NIA	<ul style="list-style-type: none"> Grant launched by NIA to support startups in the focused sectors
Thai Startup Act (Draft Act – not yet presented to the parliament)	Office of National Higher Education Science Research and Innovation Policy Council	<ul style="list-style-type: none"> Draft Act created with the aim to promote the development of Thailand's startup ecosystem Contents of the act include the definition of startup, the direction to support the startups, details of the National Startup Committee, etc. The act provides privileges to startups similar to BOI privileges (e.g., tax incentives, visa and work permit for expats, etc.) Act also provides funding to startups via Startup Development and Promotion Fund. This fund will be allowed to hold shares or provide loans directly to startups

Source: Authors based on Deloitte Thailand (2023).

2. The Medical and Healthcare Startup Ecosystem

Medical and Healthcare Industries

In Indonesia, startup activity in the medical and healthcare sector is concentrated primarily in healthtech, particularly digital platforms such as telemedicine services and electronic medical record systems (Figure 3.8). By contrast, innovation related to medical materials – largely accumulated within academia – is typically transferred to existing local companies rather than developed through independent startups.

In Thailand, startup initiatives are also concentrated in healthtech, while research and technological seeds related to medical materials are predominantly generated within academia. Due to the high commercialisation costs associated with medical materials, these innovations are most often brought to market through corporate mechanisms, such as intellectual property (IP) licensing, joint ventures, or corporate spin-offs.

Healthtech Sector

In Indonesia, the healthtech sector expanded rapidly during the COVID-19 pandemic, driven by the widespread adoption of telemedicine services. At its peak, the Ministry of Health partnered with 17 telemedicine platforms to provide free consultations and medication delivery (Iuska, 2024). Since then, the market has undergone consolidation, with leading platforms such as Alodokter and Halodoc emerging as dominant players. Many providers have also diversified beyond core telemedicine services into adjacent activities, including pharmaceutical promotion, physician-targeted digital content, and electronic medical record systems (Taufik, 2023). Despite this evolution, the healthtech sector remains at a relatively early stage of development compared to more mature startup sectors such as technology and retail.

In Thailand, healthtech is comparatively more compatible with startup activity in the medical and healthcare domain due to lower commercialisation costs. Emerging areas include preventive care, pre-symptomatic health management, and corporate health services. Nevertheless, as the sector remains in its early stages, overall startup activity and the availability of specialised startup support entities are still limited.

Pharmaceuticals and Medical Devices

In Indonesia, demand for high-end medical devices and supplies remains limited, reflecting the still-developing level of domestic medical standards. Although academic research in pharmaceuticals and medical devices exists, field findings suggest that academic, technological, and industrial clustering in this domain remains weak. In contrast, Thailand exhibits a stronger accumulation of academic and technological capabilities, with

early signs of corresponding industrial capability also beginning to emerge.

Indonesia has seen growing demand for innovations related to infectious disease control and diagnostics. Some technological and business innovations in these areas have been commercialised through IP licensing to local companies. However, while adoption is somewhat more active than in the high-end medical device segment, the overall number of firms willing to commercialise such innovations remains limited.

'In the current medical field, the main challenge is the elimination of medical service disparities. Therefore, there is a need for solutions that can easily and remotely detect diseases.'

(IR1, Local startup support entity)

'In the local medical field, addressing infectious diseases such as dengue fever and tuberculosis remains a significant challenge. Following the Covid-19 pandemic, efforts to implement infectious disease-related seeds into society have intensified.'

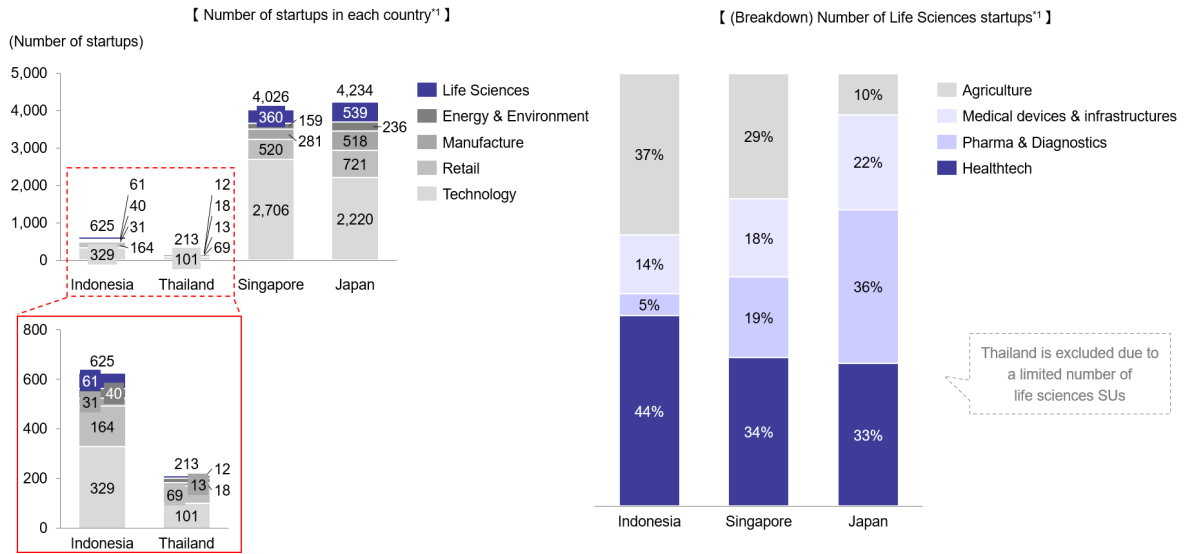
(Industry-academia collaboration department at Universitas Indonesia)

Thailand's ageing population has generated increasing demand for eldercare services and rehabilitation technologies. While medical and engineering faculties at universities have developed relevant academic and technological expertise, the domestic eldercare and rehabilitation services industry remains nascent, with limited industrial development. Moreover, similar to the high-end medical supplies sector, there are no proven business models or established pathways for translating academic innovations into commercially viable enterprises.

Status of Startup Activities

In Indonesia, the number of startups operating in the medical and healthcare sectors remains limited, with most activity concentrated in healthtech. Likewise, Thailand has very few startups specifically focused on medical and healthcare applications.

Figure 3.8. Number of Startups by Selected Sector in Indonesia, Japan, Singapore, and Thailand



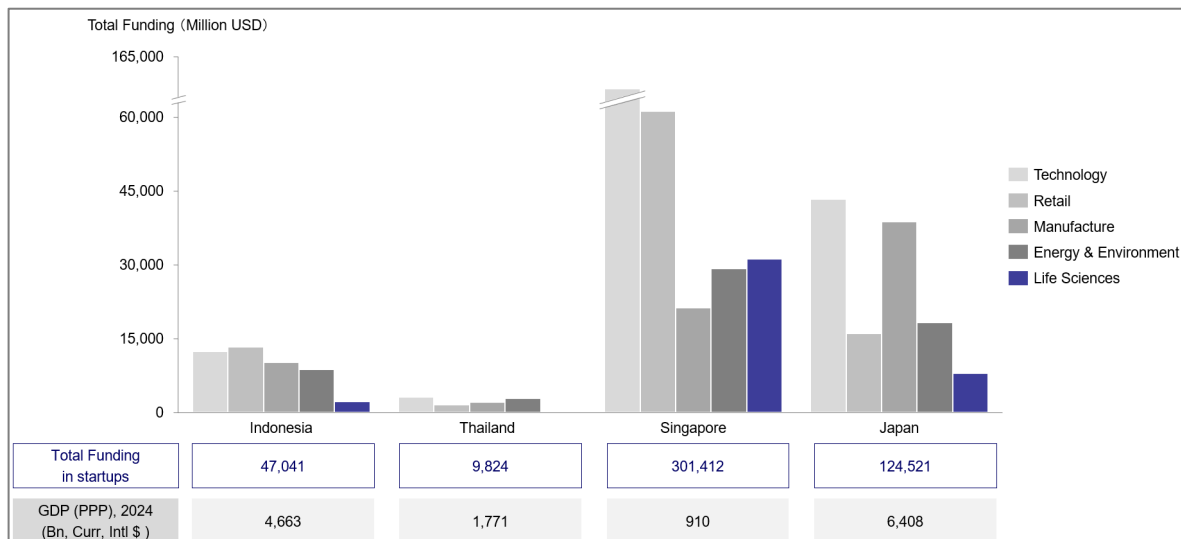
*1: Amongst the companies listed in CB Insights, those with a total funding amount exceeding \$10K were counted as startups. Industry segments were redefined by CDI (companies without defined industry segments in CB Insights were excluded from the count)

*2: Source: Authors based on CB Insights (2024).

Status of Investment in Startups

As Figure 3.9 illustrates, investments in medical and healthcare-related startups remain small in Indonesia. The situation is similar in Thailand.

Figure 3.9. Scale of Investment for Startups by Selected Sector in Indonesia, Japan, Singapore, and Thailand



*1: Amongst the companies listed in CB Insights, those with a total funding amount exceeding \$10K were counted as startups. Industry segments were redefined by CDI (companies without defined industry segments in CB Insights were excluded from the count)

*2: This represents the total value of cumulative investments in each startup

*3: Sources: Authors based on CB Insights (2024) and World Bank (2025).

Accelerators, Incubators, and Venture Capital Firms

Startup support entities in medical and healthcare sectors are limited in Indonesia.

'There are only a few professionals with expertise in medical and healthcare sector in startup support entities. Consequently, activities of startup support entities in medical and healthcare sector are quite limited.'

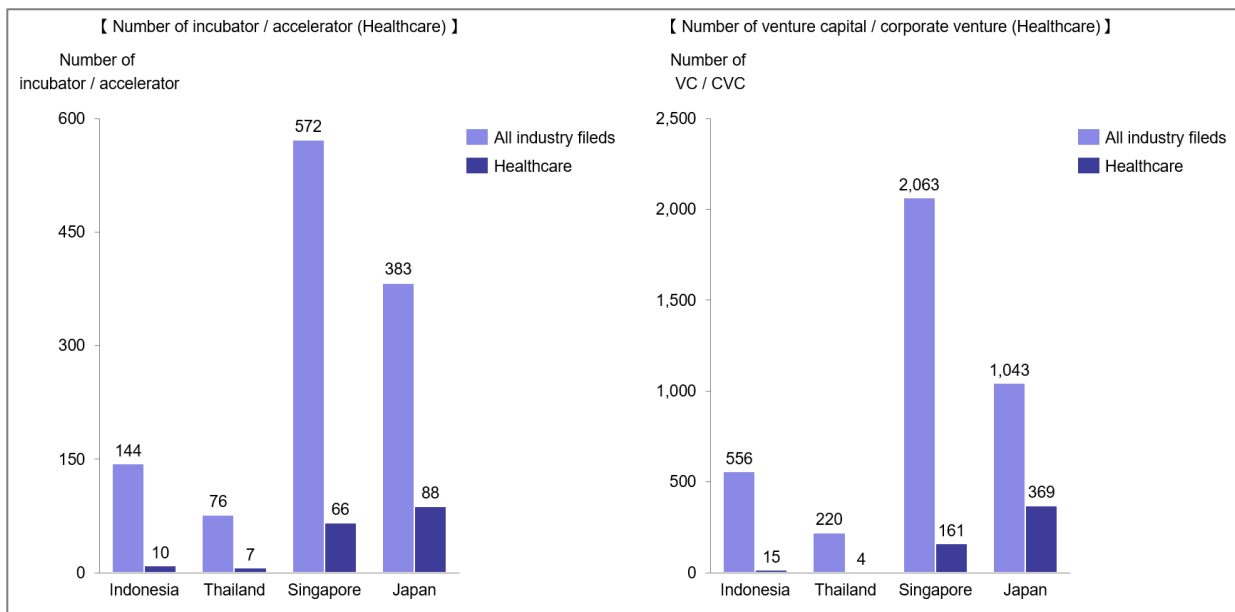
(IR1, Local startup support entity)

Similarly, the number of entities supporting medical and healthcare-related startups in Thailand is limited.

'We collaborate with private startup support entities (such as venture capital firms). However, since support for startups in the medical and healthcare sectors has only recently begun, many of these support entities lack sufficient expertise and know-how in these sectors.'

(TR7, Local university)

Figure 3.10. Number of Startup Support Entities in Indonesia, Japan, Singapore, and Thailand (Healthcare)



*1: The definition of 'Healthcare' in this chart follows that of CB Insights

*2: Source: Authors based on CB Insights (2024), including international investment players.

Startup Promotion Policies

In Indonesia, startup promotion policies remain fragmented, with only a limited number specifically targeting the medical and healthcare sectors. Most initiatives are sector-agnostic and do not adequately address the high regulatory, technological, and capital barriers characteristic of medical and healthcare startups.

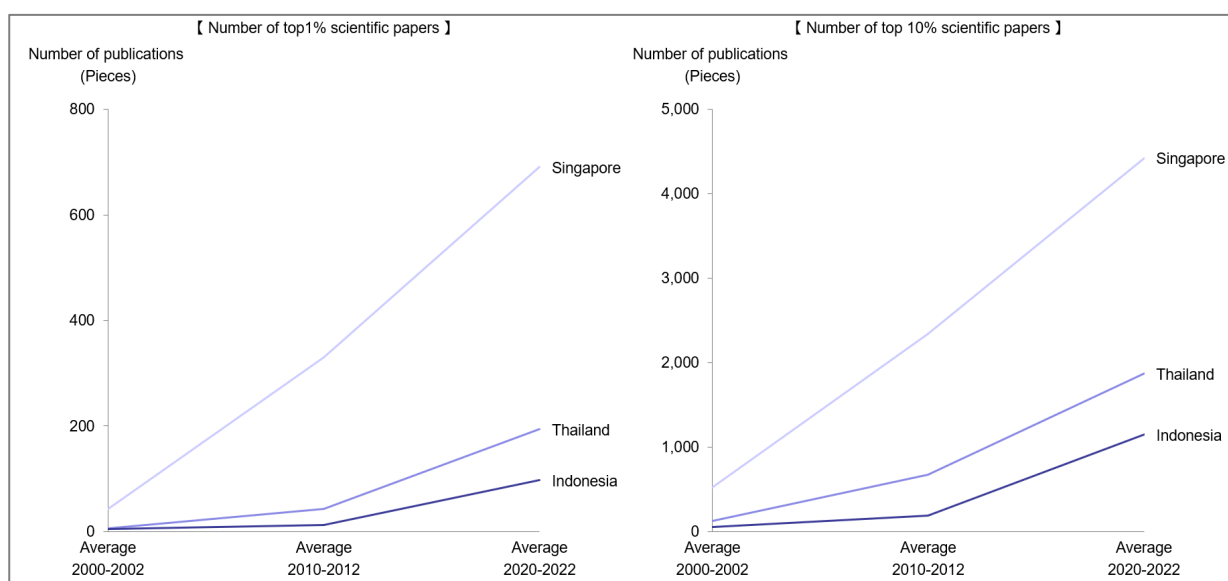
In contrast, Thailand has established more focused policy support through the Thailand Center of Excellence for Life Sciences (TCELS), which promotes startup development specifically within the medical and healthcare sectors. Established in 2004, TCELS serves as a dedicated intermediary for industry–academia collaboration, with an emphasis on open innovation. Its activities include infrastructure development for collaborative research, support for joint R&D projects, and human resource development, thereby providing a more structured ecosystem for medical and healthcare startups.

3. Industry–Academia Collaboration Ecosystem in Medical and Healthcare Sectors

Academic R&D Capabilities in Indonesia

Based on academic publication data, Indonesia's academic R&D capabilities remain behind those of Thailand and Singapore. While the data cover all research fields rather than being limited to medical and healthcare, they nevertheless indicate relatively weaker overall research output and capacity within Indonesia's academic sector (Figure 3.11).

Figure 3.11. Number of Academic Papers Published in Indonesia, Singapore, and Thailand



*1: Source: Authors based on CRDS (2024).

Industry–Academia Collaboration Initiatives in Leading Universities

Several leading universities in Indonesia have established dedicated units to support industry–academia collaboration. These units typically lead collaboration activities across multiple fields – including, but not limited to, medical and healthcare – and work with external stakeholders such as venture capital firms. At Universitas Indonesia, for example, industry–academia collaboration is supported through entities such as the *Directorate of Research and Development* and the *Innovation and Science Techno Park*. Similarly, the Bandung Institute of Technology (ITB) operates dedicated industry–academia collaboration units.

These collaboration support units are often managed by university researchers. Notably, ITB's *Directorate of Science and Technology Area* accepts and trains industry–academia collaboration personnel from other Indonesian universities, with the aim of strengthening collaboration capacity nationwide.

Due to the high costs and long timelines associated with commercialisation in medical and healthcare fields, universities in Indonesia face significant challenges in independently commercialising related innovation seeds. As a result, intellectual property (IP) licensing is typically the primary exit option for industry–academia collaboration, although the number of private firms capable of absorbing such IP remains limited. Our study identified only a small number of university-originated startups in Indonesia, most of which operate in the healthtech segment.

'The internal industry-academia collaboration department supports activities ranging from basic research (before clinical proof of concept acquisition) to commercialisation. Multiple external venture capital firms are involved in industry-academia collaboration activities, such as mentoring and business feasibility assessments for individual projects.'

(Industry-academia collaboration department at the Universitas Indonesia)

'The internal industry-academia collaboration department supports activities from basic research to commercialisation preparation. For the commercialisation stage, support is provided by a spin-off organisation from the university. Additionally, the university is committed to raising the overall level of industry-academia collaboration in Indonesia by inviting personnel from other universities and providing on-the-job training (OJT). Also, some external organisations are involved in activities like mentoring and pitch events.'

(Industry-academia collaboration department at Bandung Institute of Technology)

Similar to Indonesia, major universities in Thailand have established dedicated units to support industry–academia collaboration and work closely with external actors such as venture capital firms. One leading public university has a specialised collaboration unit focused specifically on medical and healthcare fields. This university operates multiple industry–academia collaboration entities, including medical innovation centres, university innovation hubs, and intellectual property management offices. These entities respectively support collaboration within medical schools and affiliated hospitals, facilitate the creation of university spin-off startups, and manage and utilise intellectual property across the institution.

Another leading public university in Thailand maintains industry–academia collaboration units focused on technology and innovation, alongside a university-affiliated spin-off venture capital firm. In medical and healthcare fields, these entities support the commercialisation of academic innovation seeds through both corporate spin-offs (e.g. IP licensing) and university spin-off startups. In areas with particularly high commercialisation costs – such as pharmaceuticals and medical devices – corporate spin-offs are more commonly pursued.

Despite these efforts, Thailand currently lacks well-established and consistently successful models for the social implementation of university innovations, whether through corporate spin-offs or university spin-off startups. In the case of corporate spin-offs, including IP licensing, public–private partnerships, and joint ventures, a key challenge is the mismatch between university-generated innovations and the needs of private firms. Academic innovations are often insufficiently refined with commercialisation in mind, limiting their practical usability. For university spin-off startups, the principal constraint lies in the limited availability of startup support entities nationwide. Although initiatives such as the establishment of university-affiliated venture capital firms signal progress, providing sustained and comprehensive support for university spin-offs remains difficult.

'While there are many cases of university-originated startups being established with the support from us, the success of these startups often depends on the nature of each project. Additionally, for corporate spin-offs, including IP licensing-out, public-private partnerships, and joint ventures, model cases are still being explored.'

(TR7, Local university)

'The internal industry–academia collaboration department supports activities ranging from basic research – prior to clinical proof-of-concept acquisition – to commercialisation. Multiple external venture capital firms are involved in activities such as mentoring and business feasibility assessments for individual projects.'

(Industry-academia collaboration department, Universitas Indonesia)

'The internal industry-academia collaboration department supports activities from basic research through to commercialisation preparation. At the commercialisation stage, support is provided by a university spin-off organisation. The university is also committed to enhancing industry-academia collaboration nationwide by inviting personnel from other universities and providing on-the-job training (OJT). External organisations additionally contribute through mentoring and pitch events.'

(Industry-academia collaboration department, Bandung Institute of Technology)

'While there are many cases of university-originated startups being established with our support, their success often depends on project-specific factors. For corporate spin-offs – including IP licensing-out, public-private partnerships, and joint ventures – successful model cases are still being explored.'

(TR7, Local university)

Industry-Academia Collaboration Support Entities in Indonesia: Kedaireka

Kedaireka is a government-led industry-academia matching platform designed to promote collaboration between universities and industry in Indonesia. The platform supports collaboration through multiple mechanisms, including the formation of joint projects between academic and industry partners, government-corporate matching funds, and the dissemination of best practices in industry-academia collaboration.

Despite these efforts, legal and institutional constraints related to intellectual property (IP) have historically weakened researchers' incentives to commercialise technological and business innovations. Under Kedaireka's earlier framework, researchers did not retain ownership of the IP generated through supported projects. In accordance with prevailing regulations at the time, IP rights were automatically transferred to the government or public institutions once research funding was received.

However, as of November 2025, the Kedaireka system has been revised and the policy on IP management has been updated. IP generated by researchers is no longer automatically attributed to the government or public institutions; instead, ownership and management arrangements are now determined on a case-by-case basis through consultation with the researchers involved. This policy shift represents a potentially important step toward strengthening incentives for commercialisation and industry engagement, although its practical impact remains to be seen.

'In small universities in Indonesia, there are generally no industry-academia collaboration departments or personnel.'

(IR7, Local government)

Key Examples of the Industry–Academia Collaboration Promotion Policies in Thailand

Government agencies such as Thailand’s National Innovation Agency (NIA) provide the primary budgetary support for industry–academia collaboration projects. However, this funding alone has been insufficient to effectively promote the commercial implementation of university innovations. In response, recent initiatives have moved beyond financial support to include active coordination of industry–academia collaboration – such as project formation and implementation support – exemplified by the initiatives led by TCELS discussed above.

Chapter 4

Discussion and Conclusions



Discussion

1. Overview of the Survey on Startups and Industry–Academia Collaboration in Indonesia and Thailand

Across Indonesia's industrial landscape, the startup ecosystem is gradually developing, likely supported by sustained economic growth (Bachtiar et al., 2023). However, the academic, technological, and industrial clusters that underpin effective industrial promotion remain limited in this rapidly expanding economy (Damuri, Aswicahyono, and Christian, 2018). In the medical and healthcare sectors in particular, startup activity and industry–academia collaboration remain constrained by high commercialisation costs and the insufficient maturity of supporting academic, technological, and industrial ecosystems.

In contrast, Thailand's startup ecosystem development initiatives have been concentrated in a limited number of sectors, such as retail. This pattern may reflect the country's more mature economic structure and the dominance of corporate venture capital (CVC) firms amongst startup support entities (Fingerle et al., 2023). Nevertheless, compared with many ASEAN peers, Thailand has relatively well-developed academic, technological, and industrial clusters that provide a stronger foundation for industrial promotion. Even so, in the medical and healthcare sectors, the startup and industry–academia collaboration ecosystem remains underdeveloped, despite the presence of dispersed innovation seeds within academia

Figure 4.1. Overview of the Startup and Industry–Academia Collaboration Ecosystems in Indonesia and Thailand

	Point.1	Point.2	Point.3		Overview
	Academic technology clusters (Innovation potential)	Industry clusters (Market potential)	Medical and Healthcare innovation ecosystem		Startup and Industry-academia collaboration ecosystem
			Startup (Healthtech, etc.)	Corporate out-licensing (Medical supplies, etc.)	
Indonesia 	<ul style="list-style-type: none"> ■ Innovation seeds exist mainly in the field of basic medical supplies (Diagnostics, etc.) ■ Academic technology clusters are limited 	<ul style="list-style-type: none"> ■ Large market and growing rapidly ■ Medical/healthcare industrial clusters are limited 	<ul style="list-style-type: none"> ■ Startups with telemedicine/simple diagnostics) are emerging ■ Startup support entities are gathering in Indonesia (including foreign players) 	<ul style="list-style-type: none"> ■ Support function of university for out-licensing academic seeds is forming ■ The number of companies for out-licensing is limited 	<ul style="list-style-type: none"> ✓ Innovation ecosystem is gradually taking shape ✓ Academic technology, industrial clusters remain limited ✓ Medical and Healthcare Industrial promotion is constrained by lack of foundations (Academic technology, industrial clusters)
Thailand 	<ul style="list-style-type: none"> ■ A certain number of innovation seeds exist (including deep-tech) ■ Academic technology clusters are relatively fulfilling among ASEAN countries 	<ul style="list-style-type: none"> ■ Becoming mature with an aging population ■ Degree of medical and healthcare industrial clusters exist (including deep-tech) 	<ul style="list-style-type: none"> ■ Startups with disease prevention are emerging ■ Startup support entities have a limited function (both in terms of quality and quantity) 	<ul style="list-style-type: none"> ■ Support function of university for out-licensing academic seeds is forming ■ Gap exists between academic seeds and corporate needs 	<ul style="list-style-type: none"> ✓ Innovation ecosystem is not fully developed yet ✓ Academic technology, industrial clusters are at relatively high level in ASEAN countries ✓ Medical and Healthcare innovation is scarce due to immature innovation ecosystem

Source: Authors (2025).

2. Characteristics (Strengths and Weaknesses) of the Startup and Industry–Academia Collaboration Ecosystems in Indonesia and Thailand

Figure 4.2. Characteristics Comparison of the Startup and Industry–Academia Collaboration Ecosystems between Indonesia and Thailand

	Indonesia 	Thailand 
Strengths	<ul style="list-style-type: none"> ■ New industrial promotion activities are likely to continue, such as the entry of foreign investors and companies. ■ The industrial clusters (including startups) are expected to grow 	<ul style="list-style-type: none"> ■ High level of academic, technological, and industrial clusters within ASEAN countries. ■ Certain number of medical and healthcare innovation seeds within local academia, and private companies capable of receiving these seeds
Weaknesses	<ul style="list-style-type: none"> ■ Insufficient number of academic, technological, and industrial clusters ■ In healthcare sector, building these clusters independently will take time, and until they mature, major barriers to innovation will remain. 	<ul style="list-style-type: none"> ■ CVCs, the primary source of funding for startups in Thailand, prioritize synergies with their parent companies and the speed/certainty of commercialization. As a result, they are not highly compatible with startups in the medical/healthcare sector because of their high commercialization hurdles ■ Local academia possesses medical and healthcare innovation seeds, these have not been sufficiently refined for commercialization, resulting in limited collaboration with capable private companies

Source: Authors (2025).

3. Broader Implications for Promoting Medical and Healthcare Innovations in Indonesia and Thailand

This research identifies several key challenges shaping the development of medical and healthcare startups in Indonesia and Thailand. In Indonesia, ensuring equitable access to medical and healthcare services – particularly for communicable diseases – remains an urgent priority (JETRO Jakarta Office, 2017). In contrast, Thailand faces growing pressures associated with a rapidly ageing population (Department of Older Persons, 2024).

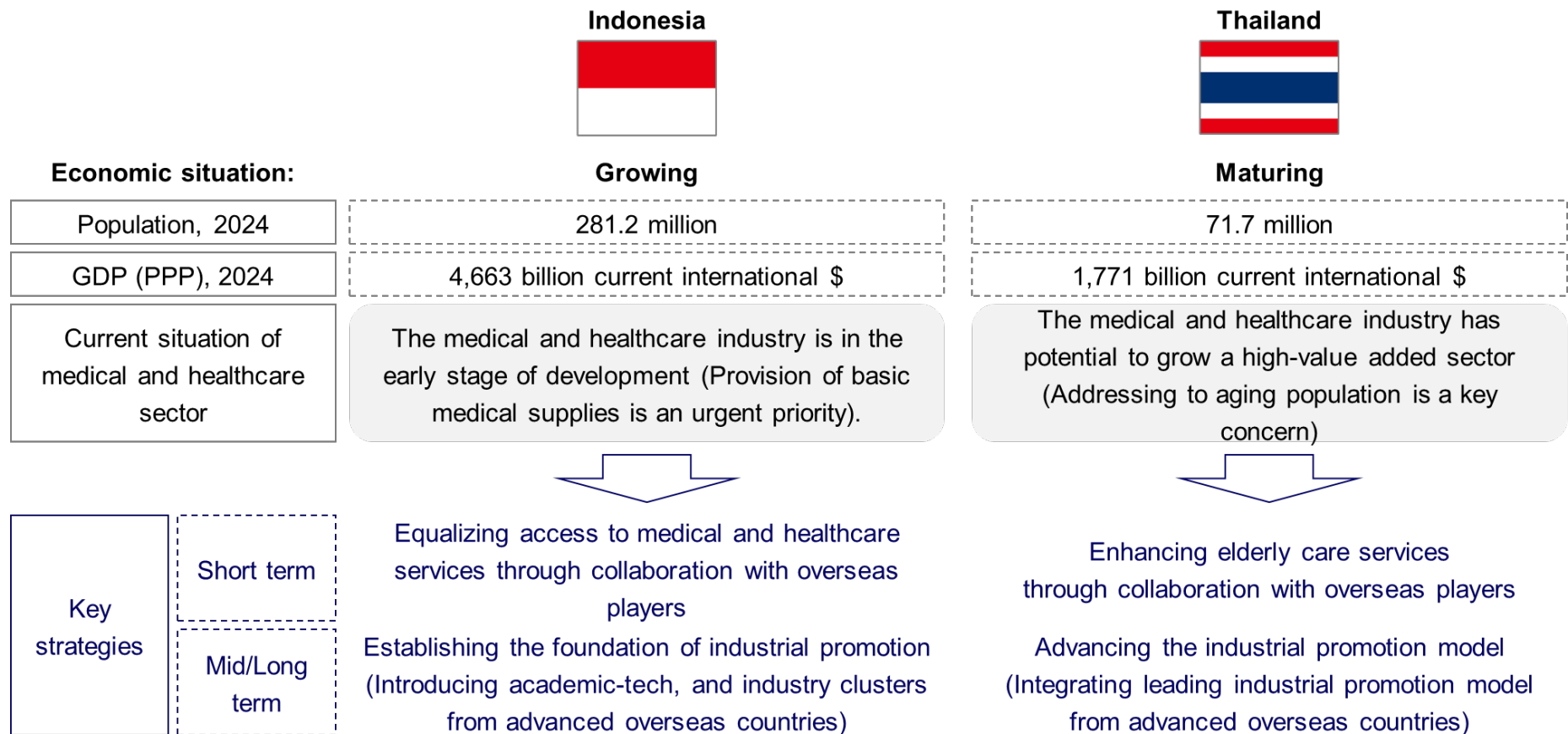
Addressing these country-specific challenges requires coordinated action amongst relevant stakeholders to identify medium- to long-term priorities for promoting medical and healthcare innovation. In this study, such innovation is understood as the social implementation of research outcomes through startup creation and technology transfer (e.g. spin-offs), supported by a robust industrial promotion framework and its associated ecosystem.

For Indonesia, strengthening the country's technological base and deepening academic, technological, and industrial clusters is critical to advancing medical and healthcare industrial development. The findings highlight that Indonesia's medical and healthcare industries remain at an early stage, particularly in segments related to basic medical supplies and healthtech, including simple diagnostic technologies.

For Thailand, the priority lies in further advancing industrial promotion models, notably industry–academia collaboration and the broader startup ecosystem. This study suggests that Thailand's medical and healthcare industries have strong potential to evolve into high value-added sectors, particularly in deep-tech, senior care, and preventive health-related healthtech.

Despite differences in immediate priorities and development stages, the fundamental pathways for promoting medical and healthcare innovation in Indonesia and Thailand are broadly similar. A shared enabling factor for both countries is the need to update and strengthen their innovation ecosystems through cross-border collaboration. The following chapter explores this recommendation in greater detail, with a particular focus on the role of academia as a key driver of innovation.

Figure 4.3. Issues in Innovation Promotion in Indonesia and Thailand (Medical and Healthcare)



Sources: Authors based on survey findings and World Bank (2025).

Recommendations

1. The Potential of Academia to Promote Medical and Healthcare Innovation in Indonesia and Thailand (and the Significance of Engagement with Academia in Japan and Other Advanced ASEAN Economies Such as Singapore)

In industrial promotion – particularly through startup creation – technology transfer from academia plays a pivotal role (O’Shea, Chugh, and Allen, 2008; Jensen, 2016). However, in many countries, including Indonesia and Thailand, industrial promotion strategies are often planned and implemented primarily by governments and private companies, with limited systematic engagement of academia. This approach overlooks academia’s distinctive capacity not only to generate technological innovation but also to contribute to the development of innovation infrastructure through collaboration with industry, government, and international partners.

Academia can function as a catalyst within innovation ecosystems by supporting early-stage research translation, fostering talent development, and facilitating linkages between startups, established firms, and policymakers. Accordingly, greater emphasis on academia-led or academia-anchored industrial promotion initiatives could significantly enhance the effectiveness of medical and healthcare innovation strategies in Indonesia and Thailand.

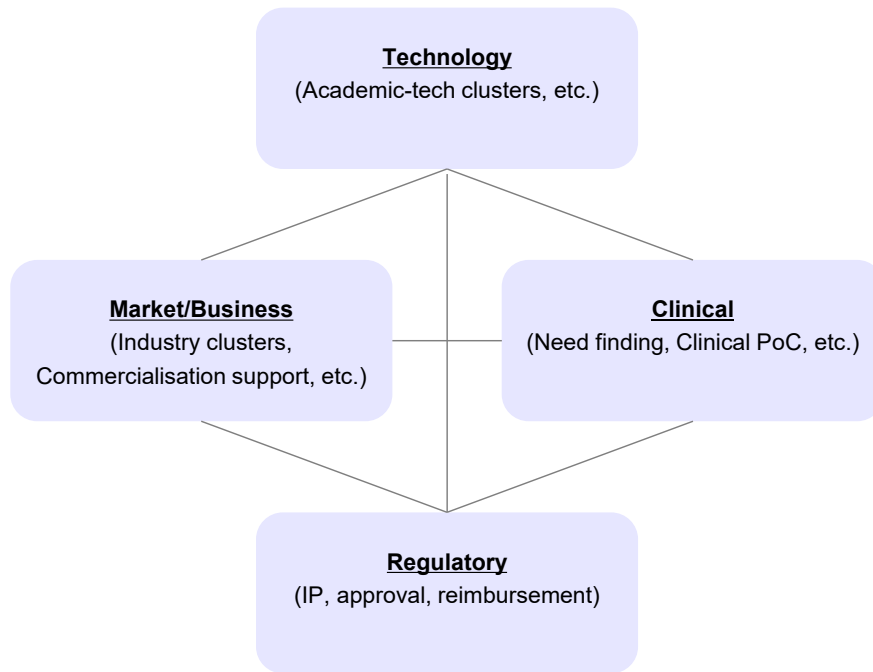
Moreover, collaboration with more industrialised economies represents a critical pathway for accelerating medical and healthcare innovation in both countries. In this context, partnerships with academic institutions in advanced Asian economies – such as Japan and Singapore – offer particular value. In Japan, for example, several leading universities have expanded beyond their traditional research roles to operate as hubs for industrial promotion through structured industry–academia collaboration frameworks.

Building on these experiences, this report explores potential initiatives to promote medical and healthcare innovation in Indonesia and Thailand, beginning with strengthened academic collaboration with Japan. Such partnerships could provide access to proven models of industry–academia collaboration, support ecosystem development, and accelerate the social implementation of academic research outcomes.

Figure 4.4. Insight Into the Potential of Academia in Medical and Healthcare Innovations in ASEAN

Key factor in medical and healthcare innovation*

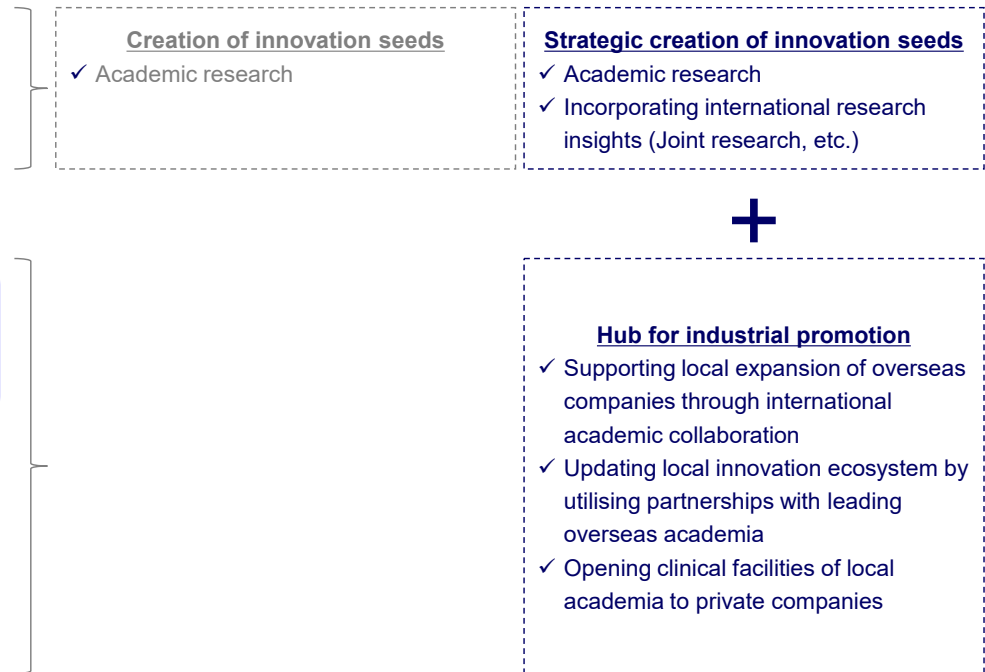
Technology as innovation origin
 Market/Business, Clinical, and Regulatory are as innovation infrastructure



Potential of academia to promote medical and healthcare innovation in ASEAN

**Local academia
 as innovation originator**
 (Current role)

**Local (and overseas) academia
 as innovation promoter**
 (Possible role)



*Source: Authors based on EIT Health (n.d.).

2. Directions for Promoting Medical and Healthcare Innovation Through Collaboration Amongst Indonesian, Thai, and Japanese Academia

To promote medical and healthcare innovation in Indonesia and Thailand through collaboration between local and Japanese academia, two complementary strategic directions can be considered.

Direction A: Introducing Japanese Medical and Healthcare Industries Through Academia as a Gateway

As of 2025, a growing number of Japanese medical and healthcare companies and startups are expanding – or planning to expand – their operations in Indonesia and Thailand. In Indonesia, a key healthcare challenge lies in the standardisation and quality improvement of medical services, while in Thailand, population ageing is driving increasing demand for elder care, rehabilitation, and preventive healthcare solutions. The entry of Japanese companies into these markets therefore presents significant opportunities to address pressing healthcare needs while creating high-value business prospects.

Rather than relying on a conventional export-oriented approach, collaboration with local academic and clinical institutions can enable Japanese companies to co-develop solutions tailored to local needs, regulatory environments, and clinical practices. Such co-creation not only enhances the relevance and effectiveness of medical and healthcare solutions, but also contributes to the strengthening of local academic, technological, and clinical clusters, thereby reinforcing the domestic innovation base in both countries.

Direction B: Updating Industry–Academia Collaboration and Industrial Promotion Frameworks by Leveraging Japanese Best Practices

Updating the frameworks for industry–academia collaboration and industrial promotion is essential for both Indonesia and Thailand, albeit for different reasons. In Indonesia, integrating advanced overseas technological capabilities remains critical, particularly given the relatively early stage of development of its medical and healthcare industries. This integration could be facilitated through open innovation frameworks initiated by collaboration between Indonesian and international academic institutions.

In Thailand, while academic and technological capabilities in medical and healthcare fields are comparatively strong, the institutional frameworks governing industry–academia collaboration and industrial promotion remain underdeveloped. In this context, incorporating proven models and operational know-how from industrialised countries is crucial for upgrading the local innovation ecosystem.

For both countries, the introduction of best practices drawn from Japan's advanced industry–academia collaboration models – where universities increasingly function as hubs for industrial promotion – could provide a viable and scalable solution.

Direction A (Detailed): Introducing Japanese Medical and Healthcare Industries Through Academia as a Gateway

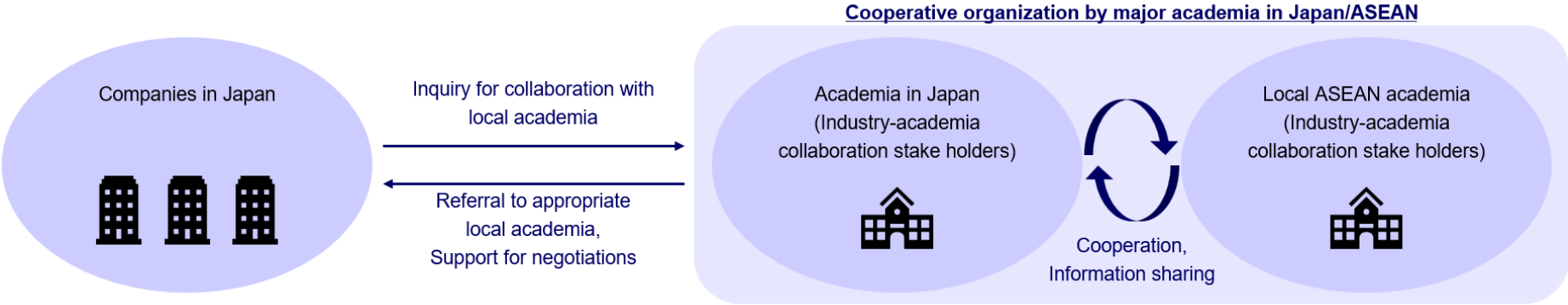
Considering the challenges faced by Japanese companies and startups in the medical and healthcare sectors when entering the Indonesian and Thai markets, initiatives under Direction A can be broadly divided into two components.

Establishing a Coordination Function for Collaboration Between Local Academia and Japanese Companies

In the medical and healthcare sectors, obtaining local clinical proof of concept (PoC) and securing the support of key opinion leaders (KOLs) are essential for successful market entry. This requires close collaboration with leading local medical and academic institutions. However, Japanese companies – particularly small and medium-sized enterprises (SMEs) and startups – often face significant difficulties in initiating such partnerships. In many cases, outreach efforts to local academic or clinical institutions receive limited or no response, reflecting institutional barriers and information asymmetries.

Given these challenges, it would be highly valuable for leading academic institutions in Indonesia, Thailand, and Japan to jointly establish a coordination function dedicated to facilitating international industry–academia collaboration. Such a function could act as an intermediary, matching Japanese companies with appropriate local academic and clinical partners, supporting project formation, and lowering transaction costs associated with cross-border collaboration

Figure 4.5. Potential Role of Academia to Coordinate Collaboration between Local Academia and Japanese Companies



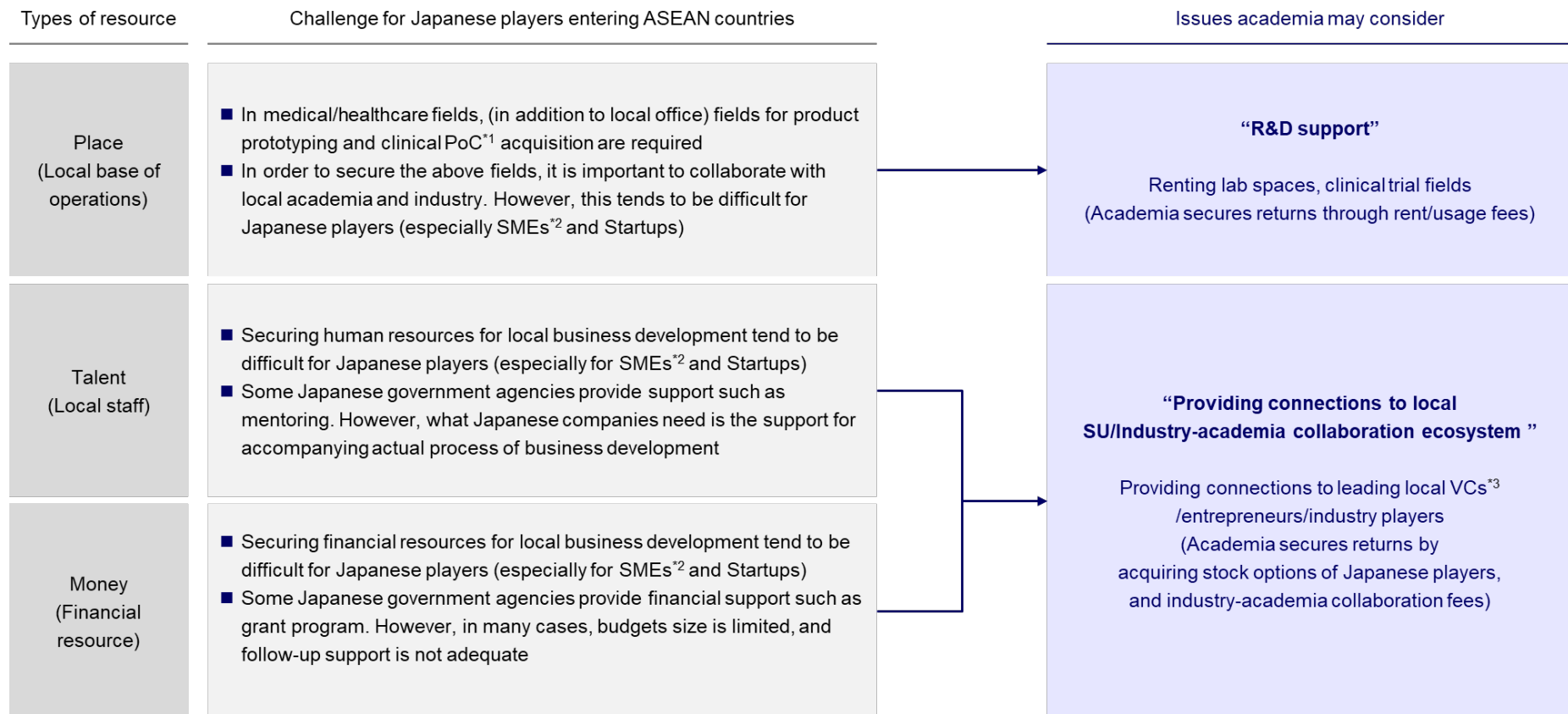
Source: Authors (2025).

Establishing an academia-led resource support system for Japanese companies entering local markets

Japanese companies – particularly small and medium-sized enterprises (SMEs) – often face significant constraints in human, material, and financial resources when expanding into Indonesian and Thai markets. Common challenges include difficulty securing operational funding due to limited access to local investors, as well as obstacles in demonstrating the clinical applicability and usability of their products within local healthcare settings. As a result, many Japanese firms struggle to progress beyond the initial market entry stage.

To date, responses to these challenges have been driven primarily by government programmes and private sector initiatives. However, there is considerable untapped potential for academia to play a more proactive role in addressing these barriers. By leveraging their institutional credibility, access to clinical environments, and networks across industry and government, academic institutions could lead the establishment of a resource support system that facilitates market entry for Japanese companies. In doing so, academia could function not only as a research partner, but also as a strategic gateway connecting foreign companies with local industrial, financial, and clinical ecosystems.

Figure 4.6. Potential Role of Academia to Resource Support for Japanese Companies Entering the Local Market



*1: PoC stands for 'Proof of Concept'

*2: SME stands for 'Small and Medium-sized Enterprises'

*3: VCs stands for 'Venture Capitals'

Source: Authors (2025).

While academia has the potential to support the entry of Japanese players into local markets, the number of Japanese companies actively seeking to expand into Indonesia and Thailand remains limited, largely due to market scale and perceived commercial risks. As a result, such support initiatives are likely to begin on a relatively small scale and will require sustained medium- to long-term commitment to generate meaningful impact. Nevertheless, in Thailand – where a foundational industrial promotion ecosystem is already in place – there is greater potential to scale these initiatives. In particular, forming consortia around clearly defined themes, such as **addressing the needs of an aging population**, an area in which Japan possesses substantial research and business expertise, could enable these activities to evolve into more advanced and impactful collaborations.

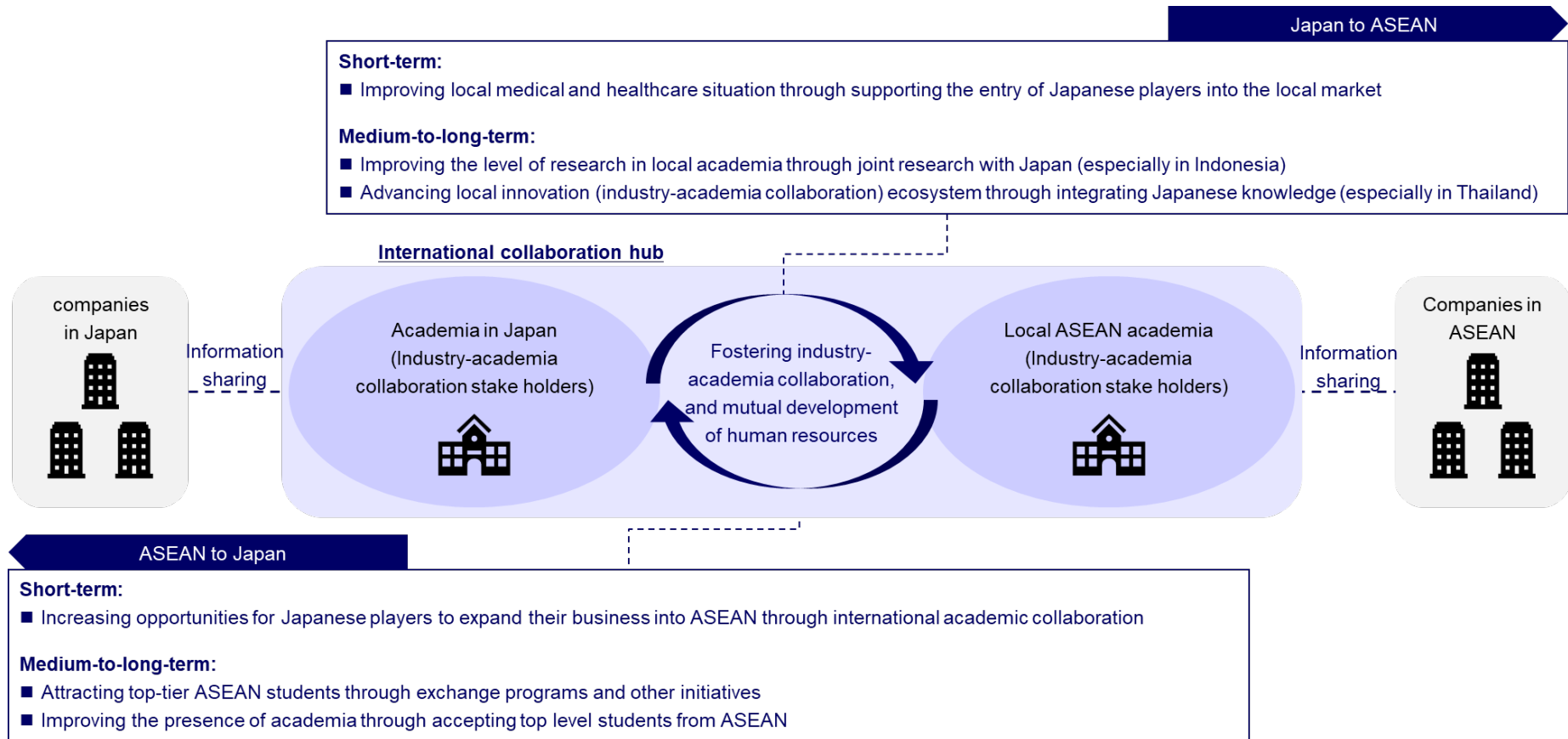
Direction B: Updating Frameworks for Industry–Academia Collaboration and Industrial Promotion by Leveraging Japanese Best Practices

The key enabling factors for effective industry–academia collaboration and industrial promotion differ between Indonesia and Thailand. In Indonesia, the primary strategy for advancing medical and healthcare innovation lies in introducing overseas technologies and industrial actors to strengthen the country's technological base and industrial clusters. In Thailand, by contrast, the emphasis is on upgrading existing industry–academia collaboration frameworks by incorporating advanced international knowledge and operational practices. In this context, sharing Japanese best practices with Thai academic institutions is particularly relevant.

Despite these contextual differences, the core action underpinning collaboration between local and Japanese academia is essentially the same: **the establishment of an international collaboration hub jointly coordinated by local and Japanese academic institutions**. In the short term, such a hub would focus on addressing pressing local healthcare challenges by facilitating the entry of Japanese companies into local markets, as outlined under Direction A. In the medium to long term, it would serve as a mechanism for upgrading local innovation ecosystems by embedding Japanese models of industry–academia collaboration and industrial promotion.

This approach is especially promising in Thailand, where a basic industrial promotion foundation already exists. Concentrating collaborative efforts on priority themes – such as aging and elderly care – could allow the collaboration hub to operate at a more advanced level. Potential activities include coordinated partnerships between local academia and Japanese companies, joint research programmes involving academic institutions in Indonesia, Thailand, and Japan, and the co-development of scalable innovation models tailored to regional healthcare needs.

Figure 4.7. Industrial Promotion Model Initiated by International Collaboration of Academia



Source: Authors (2025).

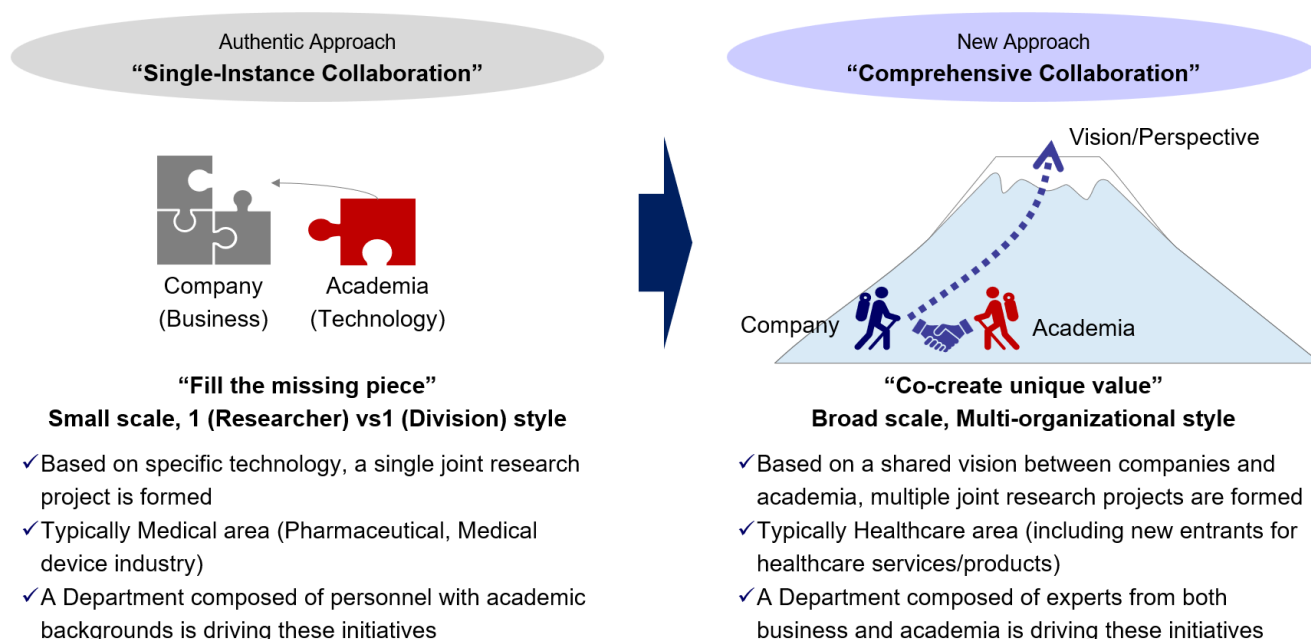
Interaction and collaboration amongst industry, academia, and government are widely recognised as essential drivers of innovation (Etzkowitz and Leydesdorff, 2000). Moreover, academia's contribution to industry extends beyond technology transfer to encompass a broader range of direct and indirect roles in industrial promotion, including knowledge co-creation, human capital development, and ecosystem building (Perkmann et al., 2013).

In the context of updating Thailand's industry-academia collaboration model, it is instructive to examine the '**comprehensive collaboration**' approach currently implemented by the Institute of Science Tokyo. Traditional industry-academia collaboration models typically centre on discrete joint research projects, which are initiated only when academic expertise closely aligns with a firm's predefined technological needs. By contrast, a comprehensive collaboration is initiated at a much earlier stage – during a company's business planning phase.

Under this model, companies and academic institutions jointly formulate shared visions and business strategies. These efforts are supported by interdisciplinary academic researchers, internal corporate specialists (including business development, regulatory affairs, and intellectual property), as well as relevant external partners. Based on this shared strategic foundation, multiple research projects and related activities are subsequently developed and managed under a project management committee, in which senior leaders from both the company and academia provide strategic oversight across all initiatives.

This comprehensive collaboration approach helps bridge persistent gaps between academic research capabilities and corporate commercialisation needs, while simultaneously enhancing business viability and social impact. As such, the model offers a potentially valuable pathway for Thailand to deepen industry-academia linkages and modernise its collaborative framework in the medical and healthcare sectors.

Figure 4.8. New Industry-Academia Collaboration Model in Institute of Science Tokyo



Source: Authors (2025).

Conclusion

In Indonesia, where the startup ecosystem has gained traction, the technology and retail sectors have been particularly dynamic due to their relatively low barriers to commercialisation. In contrast, Thailand has experienced more limited momentum in startup ecosystem development. This is partly attributable to the dominance of corporate venture capital (CVC) firms, which tend to prioritise strategic alignment with parent companies, thereby constraining access to funding and support for early-stage startups.

In the medical and healthcare sectors – where commercialisation costs are high and specialised expertise is required – startup ecosystems in both countries remain underdeveloped. Although there are some successful cases of healthtech startups, which face comparatively lower entry barriers, these initiatives are still at an early stage in both Indonesia and Thailand.

With respect to industry–academia collaboration, several public universities in both countries have established dedicated support units, and in Thailand one leading public university hosts a specialised centre focused on medical and healthcare collaboration. Nevertheless, intellectual property (IP) licensing remains the dominant pathway for commercialising academic research in both countries, while the number of university-originated startups remains limited.

The constraints on advancing medical and healthcare innovation through industry–academia collaboration differ between the two countries. In Indonesia, the primary bottleneck lies in the absence of strong academic, technological, and industrial clustering, alongside limited technological infrastructure. In Thailand, by contrast, such clusters and research capabilities are more developed, but weak collaboration frameworks between academia and the private sector hinder effective commercialisation.

This study underscores the potential for academia to act as a catalyst for medical and healthcare innovation, particularly through international collaboration. It highlights strategic opportunities arising from partnerships amongst academic institutions in Indonesia, Thailand, and Japan, where universities are increasingly assuming a dual role as centres of research and hubs for industrial promotion.

Two complementary strategic directions emerge from these trilateral collaborations. The first involves supporting Japanese companies seeking to enter local medical and healthcare markets. While such firms are increasingly interested in addressing context-specific challenges – such as healthcare equity in Indonesia and population ageing in Thailand – they often face difficulties in engaging local academic institutions and accessing essential business development resources. Academic institutions could therefore play a pivotal role by coordinating partnerships, facilitating access to clinical and research assets, and connecting companies with venture capital and other local support entities.

The second direction centres on establishing international industry–academia collaboration hubs anchored in local and Japanese academia. In the short term, these hubs could serve as gateways for Japanese firms entering Southeast Asian markets. Over the medium to long term, they could contribute to embedding Japanese models of industry–academia collaboration and industrial promotion within local innovation ecosystems, thereby supporting more sustainable, innovation-driven development in the medical and healthcare sectors.

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