

INNOVATION-DRIVEN ENTERPRISES INVESTMENT IN THAILAND AND POLICY RECOMMENDATIONS

Thailand 4.0 - representing the transformation to an innovation-driven economy - sets the vision for Thailand to achieve stability, prosperity, and sustainability and become a developed country by applying the principle of sufficiency economy philosophy. To make this change happen, reforming and enhancing of research and innovation system is necessary to leverage the country's competitiveness, improve people's quality of life, and subsequently drive sustainable economic growth. To actualize the reform and Thailand 4.0 vision, the 2020-2027 Higher Education, Science, Research and Innovation Policy and Strategy was formulated with goals and expected results defined for achieving an innovation-driven economy with sustainability. To this end, the goal is to increase the gross domestic expenditure on R&D (GERD) to 2% of GDP, add a thousand THB-1-billion-revenue innovation-driven enterprises (IDEs), and create five unicorn startups.

The key to an innovation-driven economy lies in innovation-driven enterprises (IDEs) – businesses that employ science, technology, innovation and creativity to achieve high growth and business sustainability. Such enterprises have potential to create high-paying jobs and generate substantial revenue to the economy, thus driving much needed economic growth and providing better quality of life to the people. Strong policy, regulatory reform, incentive measures and support systems represent key strategies to unlock the potential of IDEs.

Investment is identified as a critical factor to the growth of IDEs in all stages, from developing innovative goods and services, to bringing them to market and expanding globally. It is therefore vital to understand Thailand's current investment environment and design a conducive ecosystem to catalyze IDEs.

CURRENT STATUS AND CHALLENGES

Current IDEs Investment Landscape

From 2000 to the second quarter of 2021, IDEs in Thailand had raised a total of USD1.32 billion investment, equivalent to 0.3% of GDP. Based on this number, IDEs investment in Thailand is not as robust in comparison to other ASEAN member countries like Singapore (9.3% of GDP), Indonesia (1.5% of GDP), Vietnam (0.6% of GDP) and Malaysia (0.4% of GDP). During the same period, the top 30 most-funded IDEs in ASEAN had raised a combined fund of USD 41.335 billion, equivalent to 71% of total IDEs fund in the region. 60% of these well-funded companies are based in Singapore and 36% in Indonesia. Considering the ambitious goal of achieving GERD at 2% of GDP and a thousand THB-1-billion-revenue IDEs, the level of IDEs investment at 0.3% GDP and the number of well-funded IDEs in Thailand are far too low to bring the country close to the targets.

When looking at the breakdown of USD 1.32 billion investment raised by Thai IDEs, the top 5 most-funded sectors are logistics (44%), FinTech (15%), AdTech (8%), fashion (6%) and InsurTech (5%). The amount of fund flowing into those five sectors accounts for 78% of the total investment, whereas sectors representing Thailand's new S-curve – Biotech, AgriTech, HealthTech, FoodTech, TravelTech and EdTech – draw only 10%. This indicates that the investment is not yet directed to the government's target industries.

While 48% of Thai IDEs are in seed stage with only one round of fund raising and small revenue, 94% of total fund in the capital market were raised in series A and beyond. In addition, the top 20 well-funded Thai IDEs are not based on university research. This data demonstrates poor funding mechanisms and gaps in the capital market and implies that the government's funding for innovation does not match the interest of investors.

Prior to 2012, around 6 to 28 new IDEs were launched each year in Thailand. After 2012, more than 50 new IDEs were established each year with 2015 being the most active year with 72 new IDEs. This boost was the result of the government's strong policy towards IDEs. However, the number of new IDEs has dropped significantly since 2018 mainly due to the shift in government policy and the impact of the COVID-19 pandemic. Evidently, Thailand is faced with a monumental challenge to revitalize IDEs and draw foreign investment in order to drive the country out of the middle-income trap.

On the investor side, the top 20 foreign investors in Thai IDEs were mostly venture capital firms, based primarily in the US, Japan and China, and invested mainly in early and late stages. 500 Startups, SOSV and Sequoia Capital were the top investors in Thai IDEs. On the contrary, majority of Thai IDEs investors were corporate venture capitalists such as SCB 10X, InVent and Krungsri Finnovate and made investment in all stages from seed funding onward.

Root Causes of IDEs Investment Problems

As shown in the previous section, Thai IDEs do not have high success rate. To overcome this challenge, root causes of problems must be uncovered so that proper strategies and solutions can be devised accordingly. As success of IDEs depends in large part on three components: team, product-market fit and supports, causes associated with failure in these components are identified below.

1. **Team:** Quality of leadership and team plays a critical role in fundraising. Failure can be attributed to:
 - Lack of determination and inspiration to innovate
 - Lack of collaborative culture to foster innovation
 - Lack of focus, open mind, and global mindset
 - Lack of competitive drive to leave the comfort zone
2. **Product-Market Fit:** Creating products that meet the market need is a key to business success, thus attracting investment. Inability to do so can be caused by any of the following:
 - Lack of in-depth understanding of the market, e.g., products targeting unscalable market

- Lack of in-depth understanding of consumers' need, resulting in product's quality not meeting the market requirement
3. **Supports:** Despite competent team and good product-market fit, IDEs can still fail due to poor support systems, or the lack thereof. The reasons can be any of the following:
- Lack of funding continuity
 - Lack of a policy champion for Thailand innovation ecosystem
 - Lack of government's focus
 - Lack of successful IDEs to serve as a role model
 - Unconducive regulatory framework for IDEs

COMMON GOALS AND SUCCESS FACTORS

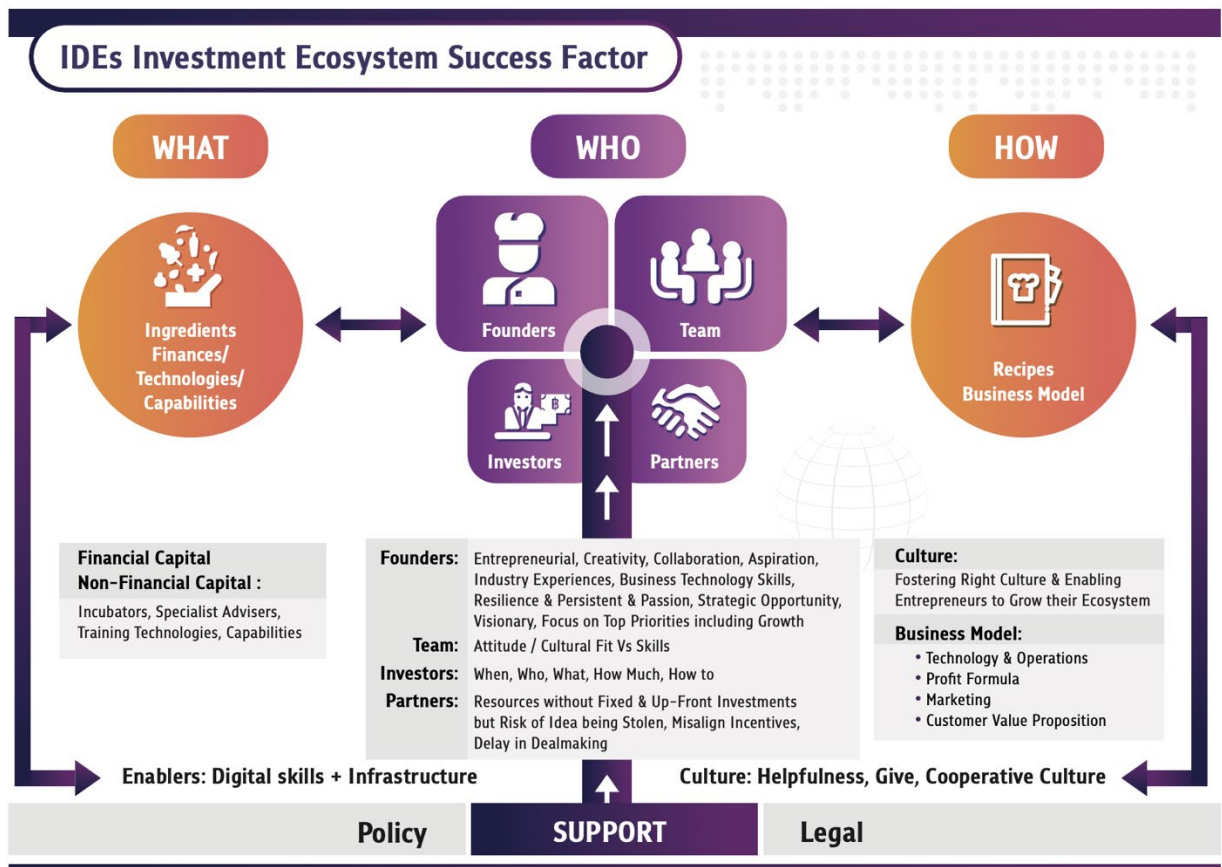
Common Goals & Expectations by Stakeholders

	Common Goals	Startup	VC	University	Government
WISH (Outcomes)	GDP Incomes Socio-Economic Impact	<ul style="list-style-type: none"> • Changing the world • Profit 	<ul style="list-style-type: none"> • Profit upon exit • Tax exemption 	<ul style="list-style-type: none"> • Fiscal stability • Research fund (upstream-downstream) • Changing the world 	<ul style="list-style-type: none"> • Economic stability • Job creation • Better quality of life for the people
WANT (Outputs)		<ul style="list-style-type: none"> • Fund • Talent • Knowledge • Customer/users • Network • infrastructure 	<ul style="list-style-type: none"> • Commitments from startups • High growth potential startups 	<ul style="list-style-type: none"> • Fund to drive research • Talent (lecturers, researchers, students) • Collaboration from government, industry, society, alumni, and stakeholders 	<ul style="list-style-type: none"> • Successful IDEs
GIVE	Finance Non-Finance (Knowledge, Network, Infrastructure)	<ul style="list-style-type: none"> • Solutions to the society • Jobs • National economic development 	<ul style="list-style-type: none"> • Fund • Knowledge • Network 	<ul style="list-style-type: none"> • Talent • Knowledge • Facility • Network • Seed funding • infrastructure 	<ul style="list-style-type: none"> • Fund • Conducive legal framework • Talent • Knowledge • Network • Infrastructure
FEAR	Bankruptcy Legal & Reputational Risk	<ul style="list-style-type: none"> • Bankruptcy • Mismatched investors 	<ul style="list-style-type: none"> • Making wrong investment decisions • No financial gain • Unspent fund • Undisciplined startups 	<ul style="list-style-type: none"> • Reputational risk • Legal risk • Exhaustion • Losing money • Failure 	<ul style="list-style-type: none"> • Uneven support allocation in term of size, sector, and stage • Legal risk • Reputational risk • Failed project

An IDEs investment ecosystem is made up of four players: IDEs, investors, universities, and the government. To encourage a robust ecosystem, all four components must share the following common goals:

- WISH & WANT: To increase GDP, boost income and make socio-economic impacts
- GIVE: To enrich the ecosystem by providing financial and non-financial capitals – e.g., knowledge, network, infrastructure, etc.
- FEAR: To establish proper rules, regulations and supports for stakeholders to overcome their own fears such as bankruptcy, legal and reputation risk and drive the system to a success

Success Factors & Opportunities



Success factors of IDEs can be described in three domains: WHO, WHAT and HOW.

The WHO consists of human capital, institutional capabilities, and key resource providers.

1. **Human capital.** An IDE founder needs to be entrepreneurial, passionate, persistent, resilient, visionary, and always look out for strategic opportunities. The founder can be viewed as a “chef”. All players in the IDE ecosystem – including entrepreneur, investor, academia, and team - must have clear vision and strong determination that goes beyond short-term gain.
2. **Institutional capabilities.** What successful IDE models like Silicon Valley (USA), Cambridge (UK) and Tel Aviv (Israel) have in common is an alignment of

technical capabilities accumulated over several years, coupling with market opportunities and entrepreneurial competencies to exploit new opportunities.

3. **Key resource providers.** An IDEs ecosystem cannot thrive without vital actors like customers, advisors, investors, and business matchmakers to provide inputs to improve products and business operation.

The WHAT represents “ingredients” which include financial and non-financial capital. Examples of non-financial capital include incubators, advisors, training, and venture capitals.

The HOW is equivalent to a “recipe” and is made up of culture and a business model. The right, enabling culture needs to be cultivated for entrepreneurs to successfully grow their businesses. To reach the success, IDEs need to exploit opportunity, create differentiation, and design a good business model which includes the following elements:

1. **Customer Value Proposition.** IDEs must show their customers that their goods and services offer more benefits than those of their competitors or beyond customers’ expectation.
2. **Technology & Operations.** Technologies are employed to build the business and improve management and operation.
3. **Revenue Model.** Plans to generate revenue must clearly identify revenue-generating channels, key activities, key partners, and cost structure.
4. **Marketing.** Marketing strategy must focus on creating opportunities and reaching out to customers.

SYSTEM DESIGN

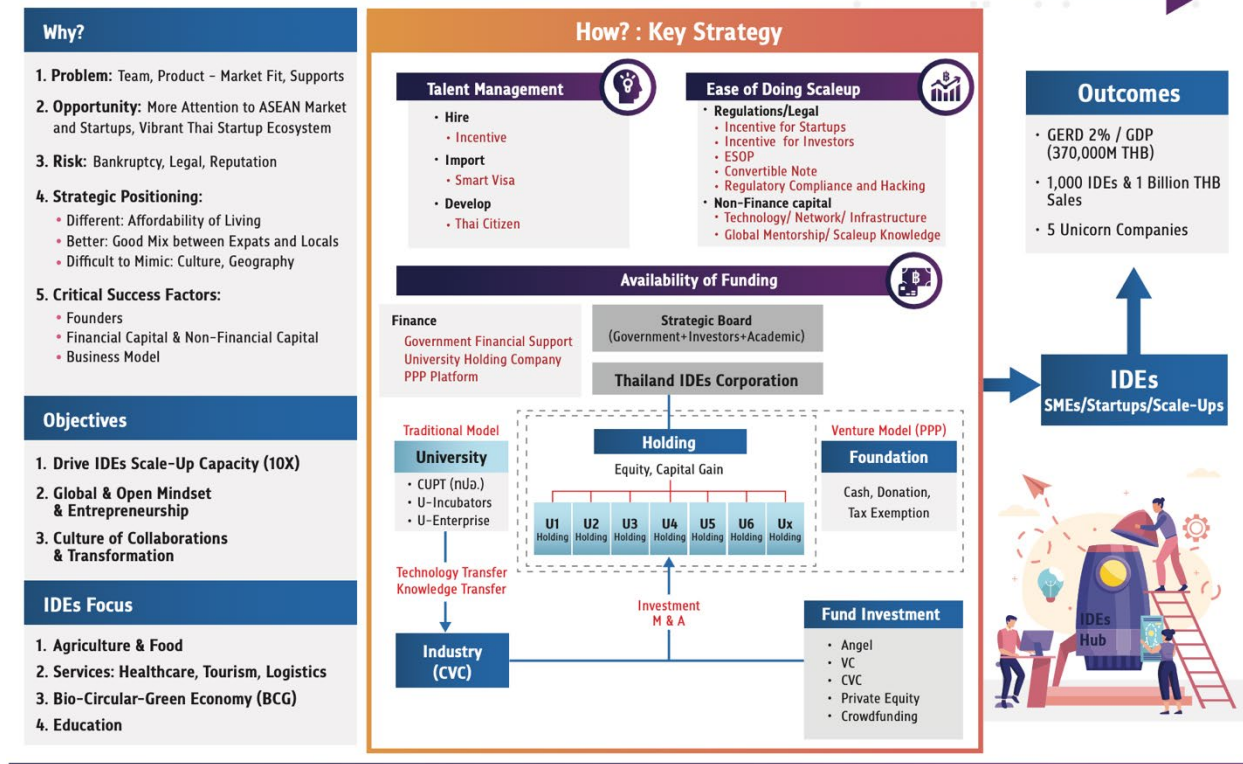
Mechanism

Thai IDEs investment is faced with formidable challenges in multiple fronts, from team quality to product-market fit and supports. Nevertheless, ASEAN is a lucrative market that garners attention of investors from all over the world, especially in innovation that has experienced high growth over the past two decades. This presents ample opportunity for Thailand to strengthen its IDEs and achieve Thailand 4.0 transformation.

Thailand Innovation-Driven Enterprise Hub (IDEs Hub) represents a public-private partnership model to drive a dynamic ecosystem for promoting IDEs investment in Thailand. The proposed model intends to:

1. Drive IDEs scale-up capacity,
2. Cultivate global and open mindset and entrepreneurship, and
3. Create culture of collaborations and transformation.

Thailand Innovation-Driven Enterprise Hub IDEs Hub



As a developing country with resource constraints, Thailand needs to put a focus on industries for driving Thailand IDEs Hub. Based on the country's strengths and advantages, emphasis should be placed on the following industries:

- Agriculture and Food.** Thailand is the world's leading producer of several farm commodities and food products.
- Services.** Thailand is well known for its tourism and wellness industry, whereas the country is geographically well positioned to build a strong logistic industry.
- Bio-Circular-Green Economy (BCG).** With fast natural resources depletion and rapid environmental degradation, BCG becomes a key strategy for the future of industries and global sustainability.
- Education.** Education industry is undergoing a major transformation driven by the change in labor market and the rise in digital technology. Moreover, education is a basic human right that empowers people to earn a living, have a good quality of life, and contribute to sustainable development.

Obstacles

To devise effective strategy and policy, obstacles have been identified in three strategic areas of IDEs investment as appear below.

- Talent.** Obstacles include the lack of high-skilled workers and unattractive salary to draw talent. As IDEs are dealing with advanced technologies and global markets, bringing in foreign experts becomes a normal practice. However,

companies applying for work permits for foreign workers must meet the requirement on the level of registered capitals. This stringent regulation puts the limit on the number of foreign workers an enterprise can employ, thus preventing IDEs to acquire sufficient foreign talent required to grow the business.

2. **Ease of Doing Scale-up.** Thailand's strict legal framework, unattractive investment incentives, complicated business processes and insufficient support system are among major obstacles.
3. **Availability of Funding.** Funding is necessary for IDEs to develop and launch innovative goods and services and branch out to other countries. Access to and availability of funds are cited as main obstacles for IDEs, especially deep tech.

POLICY RECOMMENDATIONS

To transform Thailand into an innovation-driven economy, the following are desired outcomes: 1) GERD is raised to 2% of GDP, 2) 1,000 IDEs with THB-1-billion revenue are created, and 3) at least 5 unicorn companies are launched. Strategies and policy recommendations have been crafted in the three major areas vital to the enrichment of IDEs investment ecosystem: talent, ease of doing scale-up, and finance.

Talent

To equip entrepreneurs with necessary skill and knowledge for running successful IDEs, policy interventions should be introduced in the areas of employment – supports for high-skilled employment and incentives attracting talent from overseas - and capacity building. Policy recommendations are:

1. **Global Talent Visa.** The main objective is to attract high skilled talent including investors from overseas to work in Thailand's target industries. The visa should come with benefits such as eligibility to set up businesses in Thailand, no limit on duration of stay as long as the visa is valid, and 1-to-5-year visa extension.
2. **Youth Entrepreneurship Program.** This recommendation seeks to develop young generation of entrepreneurs with an industry placement program that provides students with opportunity to leverage their business and technical skill and gain work experience, whereas the industry can improve the consulting skill of their employees and their recruitment process.
3. **Talent Development Grant.** This recommendation seeks to establish grant and rebate programs for enterprises to engage in workforce upskilling. Examples include grants awarded to companies to support their training activities or partial rebate on training costs.
4. **Lifelong Learning Passport.** Lifelong learning is a systematic strategy to increase the skill and competency level of people of all ages and occupations for supporting IDEs. Examples include a upskill/reskill/new skill voucher program for Thai citizens and grants for companies to support tuition fees for their employees.

Ease of Doing Scale-up

To encourage local and international venture capitals and corporate venture capitals to make investment in Thai IDEs, securities laws – particularly ones concerning employee stock option, preference share, bankruptcy, and business rehabilitation - must be modernized and when applicable, sandbox should be introduced. It should be noted that some progress has already been made. In 2020, the Securities and Exchange Commission of Thailand (SEC) enacted PP-SME regulations that enable SMEs and startups to raise funds in the capital markets by way of private placement for offering newly issued shares or convertible debentures. In addition to unlocking legal restrictions, other non-financial facilities should be established to create a nurturing environment for VC and CVC such as information dissemination, introduction of successful IDEs to serve as a role model, incubation programs dedicated to IDEs, consultancy services provided by world-class experts, and Public-Private Partnership (PPP) networking platforms. Policy recommendations are:

1. **Tax Exemption, Relief, Deduction for IDEs.** This type of measures will promote new IDEs, enable IDEs to expand globally and support the creation of innovative goods and services. Examples include tax exemption for new startups, tax deduction for international expansion and research and development tax relief.
2. **Tax Exemption, Relief, Deduction for Investors.** This recommendation aims at attracting more investors to enrich the ecosystem and enable startups to raise fund. Among the tools that can be implemented are income tax relief on initial investment, capital gain tax exemption and loss relief.
3. **ESOP Measures.** An employee stock ownership plan (ESOP) is an employee benefit plan that gives workers ownership interest in the company in the form of shares of stock and thus becomes an instrument to attract high potential talent to work for IDEs. Securities laws should be reviewed and revised to pave the pathway for ESOP to be properly implemented and make an impact on the IDEs ecosystem.
4. **IDEs Investment Ecosystem Database.** IDEs and investors can benefit greatly from a central database containing useful information – e.g., funding sources, fundraising strategies, and big data analytic tools for assessing business risk - to support the launch and growth of businesses.

Availability of Funding

Availability and continuity of funding are vital for IDEs, enabling them to create goods and services to gain traction. The strategy is to make funding available – whether from the government source alone or the partnership between the government and other sectors or even universities. Policy recommendations are:

1. **Enterprise Finance Guarantee Scheme.** The goal is to foster early-stage IDEs, with an example being a government procurement program dedicated to early-stage IDEs.
2. **IDEs Loan.** This recommendation aims at enabling IDEs to obtain seeding fund to start businesses by creating a loan guarantee scheme that does not require a loan security and that the government provides a guarantee.
3. **University Holding Company.** The scheme will promote the launch of IDEs based on research and innovation developed by universities.

4. **PPP Co-Investment Platform.** Public-Private Partnership (PPP) is an approach that the government can employ to encourage investment from the private sector to establish venture capital funds for IDEs. Such funds should target IDEs in focused industries, invest in all stages of IDEs from early- to late-stage, and provide capital gain tax exemption to investors.

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