**Digital, Creative, and Startup Ecosystem**

September 2019

# Thailand's Burgeoning Digital Economy

The digital economy has had a profound impact on both the business landscape and the lives of ordinary people. At the global level, the number of internet users has grown exponentially due to a number of significant technological advancements. Southeast Asia is no exception to this trend. It is regarded as the world's fastest growing internet region, while ASEAN's digital economy has also been predicted to reach a value of USD 2 trillion by 2025.

With the market value of its digital economy considered the 2nd largest in ASEAN, Thailand has witnessed a digital revolution affecting processes, activities and transactions across almost every sector. Driven by the pursuit of the economic targets and vision contained within its Thailand 4.0 policy, Thailand is well on its way to achieving digital transformation. In 2018, it was estimated that approximately 17% of Thailand's Gross Domestic Product (GDP) was derived from the digital economy[1].

## Thailand 4.0 "Value-Based Economy"

**Innovation**

**Technology**

**Creativity**

## Digital Contribution

Estimated contribution to Thailand's GDP — **17%** — **2018**

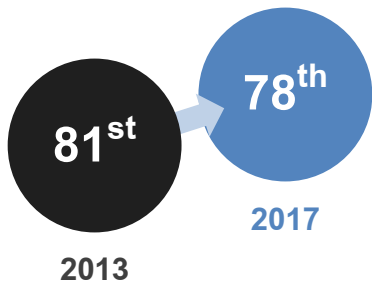Forecast contribution to Thailand GDP — **25%** — **2027**

As part of the country's drive towards achieving an economy that is propelled by digital and cutting-edge technologies, numerous steps have been taken to improve overall efficiency and economic growth. This approach has seen Thailand stand out as a digital leader within ASEAN, and is reflected in the country's improvements across a range of international rankings.
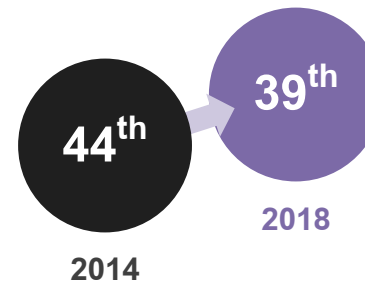
# Thailand's Digital Competitiveness

Since Thailand's creation of the Digital Economy and Society Development Plan in 2016, a number of positive strides have been taken towards achieving improved economic and social development. These developments have been captured across a range of different international rankings and indices.

## The ICT Development Index
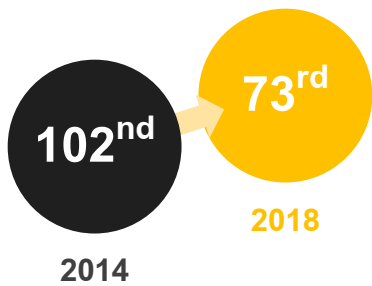
**81st** (2013) → **78th** (2017)

The ICT Development Index: Designed by the International Institute for International Telecommunication Union (ITU), which reflect progress in ICT development in both developed and developing countries.

## World Digital Competitiveness Index
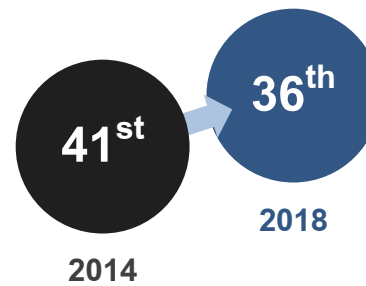
**44th** (2014) → **39th** (2018)

World Digital Competitiveness Index: Published by the International Institute for Management Development (IMD), this ranking determines countries' levels of digital competitiveness as scored against 50 indicators.

## e-Government Development Index

**102nd** (2014) → **73rd** (2018)

e-Government Development Index (EGDI): Issued by the United Nations, the EGDI assess the quality and capacity of e-government services in nations across the globe.

## World Competitiveness Ranking (Technology Infrastructure)

**41st** (2014) → **36th** (2018)

World Competitiveness Ranking (WCR): Launched by the International Institute for Management Development (IMD), the WCR measures the institutions, policies, and factors affecting the levels of economic prosperity. In 2018, Thailand **improved significantly in technology infrastructure**, jumping form 41st 2014, to 36th in 2018

# Why Thailand:

## Human resources

Thailand provides the necessary social and economic factors required for a strong and vibrant digital economy. These include human resources, digital infrastructure and supportive government policies.

Thailand's labor force has played a significant role in transforming the country into a digital economy. This progress has been fundamentally driven by a consistent stream of university graduates in a range of fields related to ICT. In 2018, there were approximately 31,000 people working in ICT-related fields in Thailand.
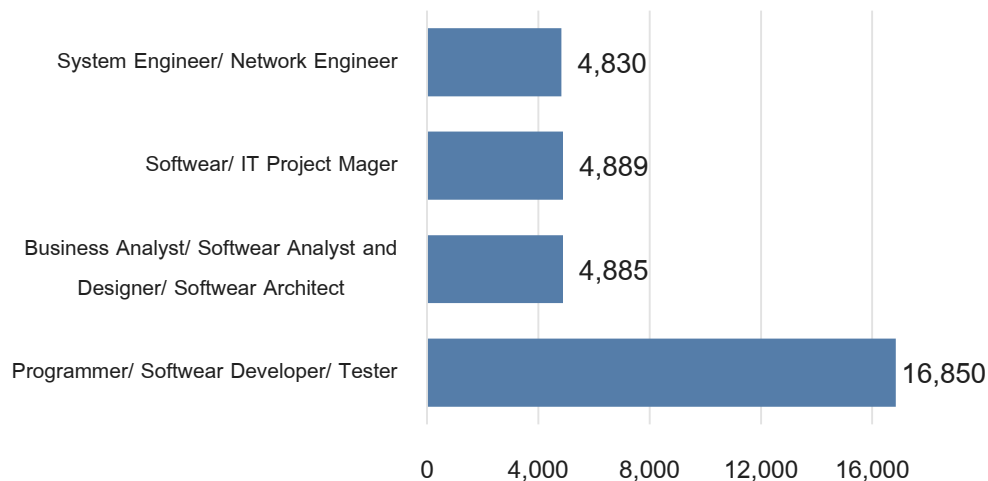
**Number of Universities Offering ICT Programs**

**122** Universities

**Thailand's Global Talent Competitiveness Index**

**4th** in ASEAN

## Estimated Number of ICT Workforce (2018)[1]

| Job | Number |
|-----|--------|
| System Engineer/ Network Engineer | 4,830 |
| Softwear/ IT Project Mager | 4,889 |
| Business Analyst/ Softwear Analyst and Designer/ Softwear Architect | 4,885 |
| Programmer/ Softwear Developer/ Tester | 16,850 |

(Chart axis: 0, 4,000, 8,000, 12,000, 16,000)

## Estimated New Graduate Salary by IT Jobs[2]

### (USD per Month)

| Job | Salary |
|-----|--------|
| Database Administrator | 536-788 |
| IT Application Support | 473-946 |
| IT Support | 568-788 |
| Programmer | 473-946 |
| Software Engineer | 568-788 |
| System Administrator | 473-788 |
| Data Scientist / Data Engineer | 1,104-1,261 |

Source: [1]Digital Economy Promotion Agency and [2]Adecco
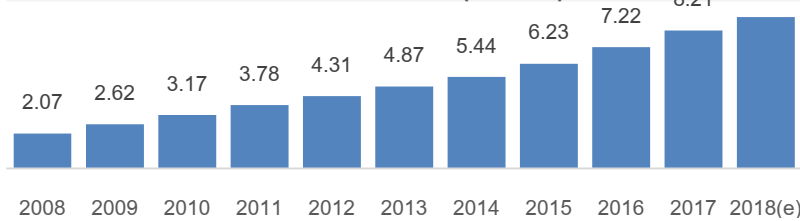
# Why Thailand:

## Digital Infrastructure

In 2016, the Thai government established the Ministry of Digital Economy and Society. This was followed up one year later with the announcement of a Thailand Digital Government Development Plan 2017-2021. Each of these steps was aimed at developing digital proficiencies across all sectors of Thai society, including tourism, education, finance, and public administration.

To drive genuine transformation and develop a digital infrastructure that is easily accessible, notable investment has been made across a range of areas. For hard infrastructure, the government has put emphasis on providing internet speed, internet connection, as well as the connection of submarine cables and clusters for digital industry.
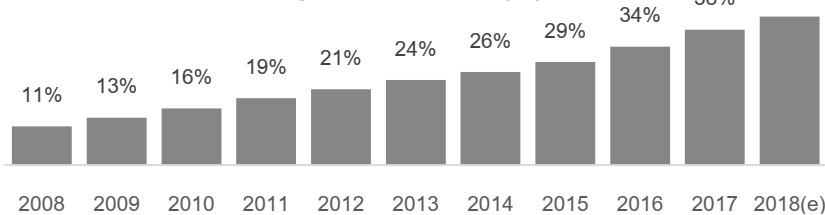
### Hard Infrastructure

#### Development of Access to Internet [1]

**Number of Broadband Subscribers (Million)**

| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018(e) |
|------|------|------|------|------|------|------|------|------|------|---------|
| 2.07 | 2.62 | 3.17 | 3.78 | 4.31 | 4.87 | 5.44 | 6.23 | 7.22 | 8.21 | 9.00 |

**Broadband Penetration per Household (%)**

| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018(e) |
|------|------|------|------|------|------|------|------|------|------|---------|
| 11% | 13% | 16% | 19% | 21% | 24% | 26% | 29% | 34% | 38% | 42% |

### Submarine Cable Network Connections [2]

**6**

**Submarine Networks**

Currently, there are 6 submarine cable systems provided by CAT Telecom, with another route currently under construction. This will strengthen network connection across different regions and support Thailand's goal of becoming an internet and communication hub of Asia.

### Digital Cluster

**Digital Park Thailand**

**Digital Park Thailand** is a new economic cluster strategically located in the Eastern Economic Corridor (EEC) as a destination for digital global players and digital business innovators.

**Core Infrastructure and Facilities**

- Ultra high speed broadband infrastructure
- International submarine cable station
- Data center
- Package of tax and non-tax incentives

Source: [1]The National Broadcasting and Telecommunications Commission and [2] Ministry of Digital Economy and Society

# Why Thailand:

## Digital Infrastructure

### Soft Infrastructure

Over the past few years, the Thai government has launched various new laws and regulations to support the implementation of its digital economy policy. Legal updates also include the Act on Digital Development for Economy and Society, which saw the establishment of the National Digital Economy and Society Committee chaired by the Prime Minister. The purpose of these new laws and regulations is to enhance convenience, reduce obstacles, and increase efficiency in online activities and transactions.

**Example of Thai laws and regulations**

- Electronic Transactions Act
- Computer Crime Act
- Digital Development for Economy and Society Act
- Data Privacy Act
- National Cyber Security Act

### Service Infrastructure

In order to move towards a cashless society, the **'National e-Payment Master Plan'** was introduced in 2017 to encourage the use of e-payments, such as PromptPay, Electronic Data Capture (EDC), and Quick Response (QR) Code.

**PromptPay พร้อมเพย์**

**39 Million IDs**

- Real-Time Fund Transfer System
- Facilitate e-Payment transactions among people, businesses and governments

**Digital Government Services**

- Platform

GIN2.0   e-CMS   G-Cloud Government Cloud Service

- Online Software

M@il.Go.th ระบบจดหมายอิเล็กทรอนิกส์กลาง เพื่อการสื่อสารในภาครัฐ   e-Saraban   GIN Conference ระบบประชุมทางไกลผ่านเครือข่ายภาครัฐ

# Why Thailand:

## Supporting Policies

Thailand's digital transformation is supported by a number of national policies, most notably **Digital Thailand,** which was announced in 2016. Comprising six strategies, the plan acts as a digital blueprint for revolutionizing current structures and operations. The ultimate goal of this plan is to leverage digital technology and strengthen the economy and society with sustainable growth.

## Status of Digital Thailand[1]

**Strategy 1:** Build country-wide high-capacity digital infrastructure

- Provide free WiFi for 24,000 villages through the "Net Pracharat" program
- Extend submarine cables across the region
- Encourage the establishment of a 5G Testbed in the EEC area

**Strategy 2:** Boost the economy with digital technology

- Develop a local e-commerce platform
- Establish the IoT institute to support R&D for the digital industry
- Conduct a Smart City pilot project in 7 provinces, including in the EEC

**Strategy 3:** Create a knowledge-driven digital society

- Increase people's awareness of digital literacy through the "Net Pracharat" network

**Strategy 4**: Transform into a digital government

- Develop a digital identity system (Digital ID platform)
- Encourage the use of Big Data Analytics to enhance government integration and develop data centers

**Strategy 5:** Develop a workforce for the digital era

- Establish 2,280 local digital centers
- Introduce the "Coding Thailand" and "Digital Startup" programs

**Strategy 6:** Build trust and confidence in the use of digital technology

- Issue laws relevant to digital security and data piracy such as the personal data protection law
- Establish the ASEAN-Japan Cybersecurity Capacity Building Centre

# Digital Industry Landscape

Just as in many parts of the world, the digital economy in Thailand has been growing at a rapid pace. In 2017, Thailand's digital economy grew by 20%, accounting for approximately 17% of the nation's GDP. In 2018, the value of the digital economy was expected to rise again and surpass 19% of GDP.

Main key drivers for such growth are the **high internet penetration** and **large number of social media users**.

## Mobile Users

**55.6** Million

**80%** of Population

## Internet Users

**57** Million

**82%** of Population

## Use of Social Media

**Active Social Media Users**

**51** Million

**Average daily time spent on social media via any device**

**3 H 10 M per person**
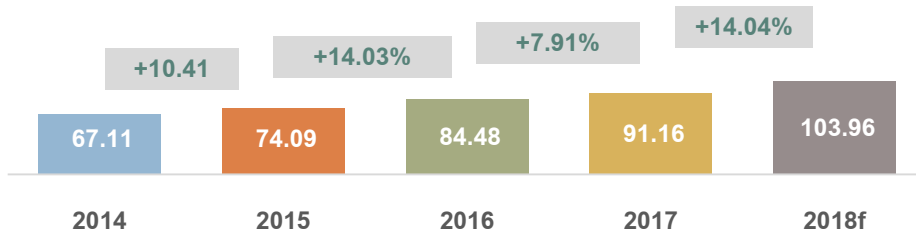
# Digital Industry Landscape:

## e-Commerce, Software and Data Center

### e-Commerce

Each year, a growing number of Thai citizens become smartphone users, with approximately 67% of the entire population now owning or having access to a smartphone on a regular basis. This trend, along with ever-increasing internet penetration rates, has contributed significantly to the rapid expansion of Thailand's vibrant e-commerce sector. Since 2014, the total value of the e-commerce market in Thailand has grown by approximately 10% each year, and in 2018 was valued at 103.6 billion USD.

**Value of e-Commerce[1]**

Unit: Billion USD

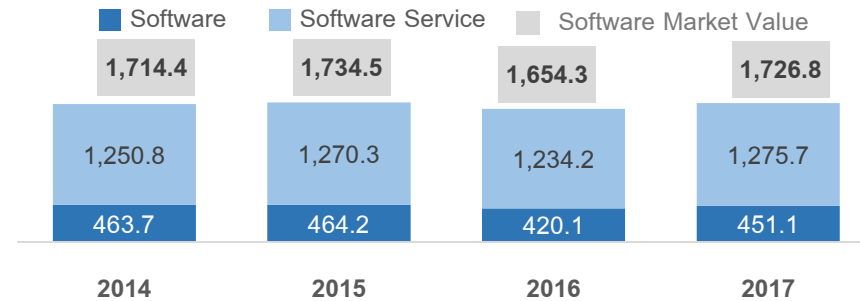| Year | Value | Growth |
|------|-------|--------|
| 2014 | 67.11 | +10.41 |
| 2015 | 74.09 | +14.03% |
| 2016 | 84.48 | +7.91% |
| 2017 | 91.16 | +14.04% |
| 2018f | 103.96 | |

### Software

Thailand's software industry has been consistently robust on the back of the country's excellent infrastructure, which is crucial to software production. This includes broadband internet, network security, a low rate of power outages, and sound production facilities.

**Value of Software Market[2]**

Unit: Million USD

| | Software | Software Service | Software Market Value |
|------|----------|------------------|----------------------|
| 2014 | 463.7 | 1,250.8 | 1,714.4 |
| 2015 | 464.2 | 1,270.3 | 1,734.5 |
| 2016 | 420.1 | 1,234.2 | 1,654.3 |
| 2017 | 451.1 | 1,275.7 | 1,726.8 |

### Data Center & Cloud

**Examples of Notable Providers**

PROEN    TCC TECHNOLOGY    trueIDC

NTT Communications Transform. Transcend.    CS LOXINFO One Stop ICT Service

Data centers and the cloud industry have flourished due to demand from organizations with an interest in digital transformation and AI adoption, especially in the banking sector. This trend has also gained popularity among SMEs and Startups looking to reduce costs and the risks of cyber threats. In 2017, Thailand's market grew by approximately 35%, compared to 12% for the global market. The value of data centers and the cloud market is approximately 0.88 billion USD[3].

Source: [1]Electronic Transactions Development Agency [2]Digital Economy Promotion Agency and [3]True Internet Data Center

# Creative Industry Landscape:

## Film Industry

In an attempt to expand beyond the traditional industries within the digital economy, the Thai government has in recent years made a concerted effort to direct additional support towards a range of creative sectors. With an abundance of talent in the country, Thailand's creative industry has the potential to grow significantly in the years to come.

Thailand has long been known within Southeast Asia as a hub for filmmaking. The industry's contribution to the Thai economy continues to increase significantly, with an approximate value of 0.78 billion USD[1]. There has been a corresponding growth in the number of foreign production companies entering the Thai market. One of the most notable entrants was South Korea's CJ Entertainment. Following an initial investment of 3.27 million USD, the group is expected to complete 10 feature-length films by the end of 2019.

Thai films are generally well received across the region, with a number, including **Laddaland, The Billionaire, Bangkok Traffic (Love) Story**, and **Bad Genius**, receiving notable recognition.



**Nakee 2** is a Thai fantasy / romance film that earned more than 1.64 million USD in revenue on its first day of release, making it the highest-grossing Thai film premiere in history. Nakee 2 is considered one of the most immersive computer-generated (CG) films made in Thailand, and is representative of the increasing ability of Thai production houses to achieve world-leading status. Following its release, Nakee 2 received countless positive reviews from film critics both within and outside Thailand. The movie was also released in cinemas in Laos, Cambodia and Vietnam.

Source: [1]Department of International Trade Promotion
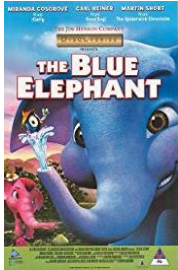
# Creative Industry Landscape:

## Animation

Since the early-mid 2000s, Thailand has developed a reputation for generating high-quality animation work whilst simultaneously offering a huge pool of creative talents. Coupled with relatively low overheads, this has enabled Thailand to produce and contribute to a range of local and international animations such as The Blue Elephant and Adventure Planet.
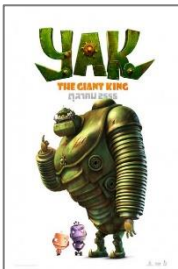
It is forecast that the value of the animation industry in Thailand will reach 131.62 million USD in 2019, a 4% increase from the previous year.

Many Thai studios are also chosen as outsourced service providers for world-leading animation developers. Visual effects and animation made by Thai studios are behind the success of well known animation films such as Rango, Journey to the West 2 and Frozen.

### Notable Animation by Thai Studios



**The Blue Elephant** was written and directed by Thai filmmakers and has gone on to be shown in cinemas and festivals across the world including Canada, the USA, Iceland and South Korea. The movie follows the adventures of a young elephant by the name of Khankluay, highlighting his experiences of personal growth along the way.



**Yak, or the Giant King**, gained critical acclaim from both local and international critics for its story telling, creative adaptation and the advanced technology used in the movie. It was shown in Russia and South Korea, while it was sold on DVD in New Zealand and Australia.



**The Legend of Muay Thai: 9 Satra** was released in 2018 to widespread acclaim from both domestic and international critics. Combining a beautiful story, with high-quality production and international-standard specials effects, it demonstrated the success of the Thai film industry on the global stage.

# Creative Industry Landscape:

## Gaming

The global gaming market is worth an estimated 46 billion USD per year. With Thailand playing host to 18.3 million self-declared gamers[1], it is no wonder that it is the fastest-growing video game market in Southeast Asia. A survey by the Digital Economy Promotion Agency reveals that the Thai gaming industry grew by 18% in 2018, up from 15% growth in 2016. It is forecast that the value of the industry will reach 0.75 billion USD in 2019.

### Thai Local Games for the Global Stage

| *Araya* | *Home Sweet Home* | *Candy Meleon* |
|---|---|---|



ARAYA is a first person horror game, developed by Thai-based company, MAD Virtual Reality Studio. The game involves gathering evidence in a hospital to discover the truth behind the mysterious murder case of Araya. ARAYA was developed to be optimized with the VR head set, creating another level of the horror game experience for players.

Home Sweet Home is a video game developed by the Yggdrazil Group, a Thai development team. Featuring horror elements drawn from Thai folklore, the game received positive comments from industry critics on the use of Thai mythological elements to create its frightening atmosphere. The game has gone on to achieve international success.

Candy Meleon is considered a masterpiece created by Thai game company LevelLoop in 2013. After it was selected by Apple to be featured on the App Store, the game achieved international renown and is in the top 50 downloaded games in many countries, including the USA, China and France.
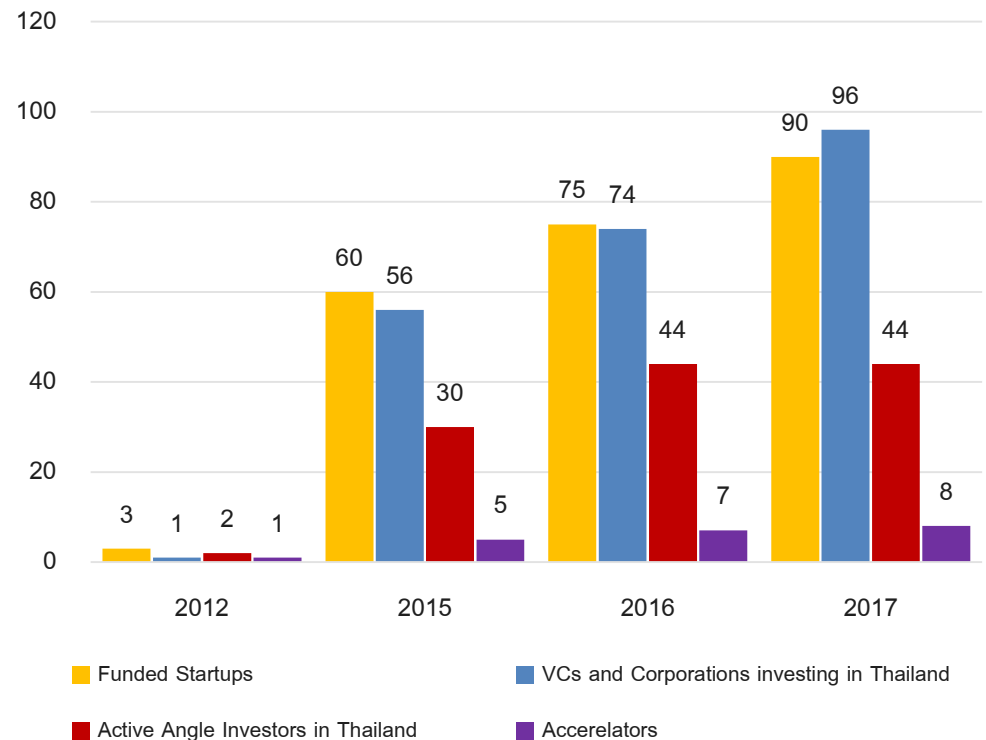
# Startup Ecosystem

Thailand's vibrant startup ecosystem is largely attributed to the availability of strong partnerships with creative companies, groundbreaking ICT entrepreneurs, and high customer demand. From 2012 to 2017, the number of startups funded by venture capital in Thailand increased from a mere 3 in 2012, to more than 90 companies in 2017. Funding for startups over the same period also increased at a rapid rate from 2.1 million USD in 2012 to 271.48 million USD in 2017.

The country provides a robust, well-functioning, and well-structured ecosystem to support various startup initiatives, ranging from venture investors, accelerators, and incubators, to government agencies and private firms.

## Thailand Startup Ecosystem Development[1]



## No. of Stakeholders in Thailand's Startup Ecosystem[2]



Legend:
- Funded Startups
- VCs and Corporations investing in Thailand
- Active Angle Investors in Thailand
- Accerelators

# Startup Ecosystem:

## Funding Opportunities and Successful Startups

With a growing number of startups operating in Thailand, the potential for forward growth is exciting. As such, there has been a range of funding commitments made by various government agencies including the 570 million USD venture fund made available in 2016 to support the startup ecosystem, and the 150 million USD 'angel fund' provided by the Digital Economy Promotion Agency under the Ministry of Digital Economy and Society.

In addition, a large number of corporate capital venture firms and Thai commercial banks have also mobilized funding in support of new startup initiatives. In total, venture capital firms supported more than 101 startups in 2018, up from only 1 in 2012 . In the same period, the number of venture capitalists and corporations investing in Thai startups grew accordingly, from 1 to 96.

## Successful Thai Startups

**Omise:** Launched in 2015, Omise is an online payment gateway that provides online stores with simple and cost-effective payment solutions. Within a short span of time, it has flourished as a large-scale enterprise in Asia.

**aCommerce:** With its headquarters in Thailand, this startup was established in 2013. Currently, aCommerce is known as one of the largest regional e-commerce enablers that provides end-to-end and a la carte e-commerce solutions for brands in Southeast Asia.

**Pomelo Fashion:** Pomelo originated from an online clothing store in Thailand. Funded by angel investors, this startup has grown with remarkable speed and, finally, stepped up to establish itself as a leading fashion brand for Asian customers.

# Startup Ecosystem:

## Startup Accelerators

Thailand's digital ecosystem continues to grow at a rapid pace. This is primarily due to the wide range of banks, telecommunications companies, and other leading businesses that have developed and implemented accelerator programs in recent years.

**Digital Ventures** is a subsidiary of Siam Commercial Bank with a primary focus on the financial and technology sectors. Successful startups have the chance to access a 300,000 THB (9,810 USD) grant and a subsequent 1,000,000 THB (32,700 USD) in seed funding. Some of their past successful startups include Chomchob (credit card exchange platform), OneStockhome (construction materials supplier) and PetInsure (insurance brokerage service).

The **AIS The Startup CONNECT program** allows startups to present ideas and projects for potential collaboration and partnership with AIS. Notable successful startups include Food Story (restaurant POS system provider), Stock Radar (stock application) and QueQ (restaurant reserving application).

**Dtac accelerate** has been funding startups for the past six years. Over this time, it has invested in 46 teams from 5 different batches of startups. Dtac has shown interest in all types of startups, including Agritech, Edtech and Deeptech. Previous successful Dtac accelerate startups include Claim Di (car accident claiming platform), Ricult (agriculturist credit scoring application), and Somjai Loan (home loan linker).

**True Incube** is an accelerator program from True Cooperation. The focus is on supporting creative startups with funding and tailored coaching. It provides an opportunity for businesses to partner with True Cooperation and to receive relevant marketing support. Some previous successful startups include ARINCARE (software system provider for pharmacies) and Sellsuki (stock and order management application).

**FinLab** is a business accelerator that primarily supports technology companies. Running since 2015, it is searching for tech companies that provide innovative solutions for SMEs. Previous alumni include Siam Express (travel solution service) and HelloGold (gold saving platform).

**ImpacTech** offers private acceleration programs and skills training for successful applicants. This training normally lasts for three months. Two of the most notable successful alumni include weeboon.com (donation platform) and ChiiWii (health consultation platform).

# Key Supporting Organizations

**Ministry of Digital Economy and Society**: oversees and implements relevant policies that support the growth of the technology sector and the digital economy.

## Privileges, Incentives and Offers

**Digital Economy Promotion Agency (Public Organization)**: supports the development of the digital industry through innovation and digital technology.

**DEPA Fund** including Digital Manpower Fund, Digital Manpower Executive, Digital Transformation Fund and Digital RDI Fund

**National Science and Technology Development Agency (NSTDA)**: a key driver of national science and technology capabilities providing support for R&D in five core areas, namely agriculture and food, energy and environment, health and medicines, bio-resources and communities, and manufacturing and service industries.

**Startup Voucher Program**
- Fund for Thai startups (with not less than 51 percent Thai shareholders)
- 2 periods of reimbursement for a maximum 75% of project costs (not exceeding 800,000 bath)

**National Electronics and Computer Technology Center (NECTEC)**: has the primary mandate to support research and development opportunities for electronics and computer technologies. It also provides a unique linkage between research communities and industries.

**NECTEC Research Unit and Laboratory**
- Artificial Intelligence Research Unit (AINRU)
- Communications and Networks Research Unit (CNWRU)

**National Innovation Agency (NIA) (Public Organization)**: operating under the auspices of the Ministry of Science and Technology, the NIA is mandated to conduct and promote activities that fast-track innovations in industry, business, and government sectors.

- Incentive program for innovation business development
- Innovation project development and funding
- Collaboration with True Digital Park to launch the Bangkok Cyber Tech District

# Investment Incentives

The BOI offers a wide range of incentives for investment projects that meet national development objectives. The tax incentives include the exemption of corporate income tax, together with the exemption of import duty on machinery required for the project and on raw or essential materials used in manufacturing exported products. As for the non-tax incentives, the BOI also grants the permission to bring in expatriates, the permission to take or remit foreign currency abroad, and the permission to own land for use in the project.

| Group | Activities | CIT exemption | Exemption of import duties on machinery |
|---|---|---|---|
| Software | | | |
| A1 | Embedded Software | 8 years | ✔ |
| A1 | High Value Added Software | 8 years | ✔ |
| A3 | Enterprise software and/or digital content | 5 years | ✔ |
| A3 | Digital Services | 5 years | ✔ |
| B2 | E-commerce | - | - |

## Technology and Innovation

| Activities | CIT exemption | Exemption of import duties on machinery |
|---|---|---|
| Targeted Core Technology Development | | |
| Digital Technology Development | 10 years | ✔ |

## Service and Public Utilities

| Group | Activities | CIT exemption | Exemption of import duties on machinery |
|---|---|---|---|
| Industrial Zone or Technology Industrial Zone | | | |
| A1 | Digital Park | 8 years | ✔ |
| A1 | Data center | 8 years | ✔ |
| A1 | Innovation Incubation Center | 8 years | ✔ |
| A1 | Cloud Service | 8 years | ✔ |
| Digital Infrastructure | | | |
| A2 | International High-speed Marine Communication Circuits | 8 years | ✔ |
| Industrial Zone or Technology Industrial Zone | | | |
| A3 | Maker Space or Fabrication Laboratory | 5 years | ✔ |
| B1 | Co-working Space | - | ✔ |

## Creative Industry

| Group | Activities | CIT exemption | Exemption of import duties on machinery |
|---|---|---|---|
| A3 | Industrial Zone for Motion Picture Production (Movie Town) | 5 years | ✔ |
| A3 | Thai Motion Picture Production | 5 years | ✔ |
| A3 | Motion Picture Support Services | 5 years | ✔ |