

Capturing the growing opportunities of IoT Devices



Internet of Things Devices (IoT Devices)

Electronic devices that can connect to the internet, exchange data with other IoT devices, and enable remote control through an internet connection



Key Factors Driven The Development and Implementation of IoT Devices

1

The Functionality of IoT Devices

With the internet connection, IoT devices facilitate the seamless exchange of data and enable real-time remote control, thereby enhancing productivity and efficiency across various industries, including agriculture and manufacturing sectors.

2

A Rise in Consumer Demand

The adoption of smart home appliances worldwide is projected to grow at 9.2% per year between 2023 – 2030.

3

Reduction of Production Cost

The implementation of IoT devices for predictive maintenance in manufacturing factories could cut production costs by up to 40%.



Examples of The Implementation of IoT Devices in Key Industries

Smart Manufacturing



Predictive Maintenance

Having embedded sensors for collecting production performance data and providing maintenance notifications

Forklift Anti-Collision Sensors

Detecting worker movement and providing real-time alerts to avoid collisions

Smart Hospitals



MedTech Ambulance

Equipped with located sensors and onboard cameras to monitor patient's status

AR diagnosis glasses

Conducting fundamental diagnoses through the AR glasses

Smart Farming



Agricultural Drones

Remotely controlled for applying fertilizers and pesticides

Soil Moisture Sensors

Measuring soil moisture levels in real-time and determining the optimal level of irrigation

Consumer Electronics



Smart Speaker

Connecting with other smart home devices to enable voice commands and remote control

Smart Plug

Transforming normal consumer electronics into intelligence devices, enabling remote control through mobile applications, scheduling specific operating times, and data collection

Smart Cities



Smart Traffic Lights

Utilizing sensors and AI cameras to monitor pedestrians and adjust traffic flow automatically

Smart Bus Stop

Providing up-to-date bus arrival times and public WiFi along with surveillance camera services to enhance a safer environment

Global Market of IoT Devices

Number of IoT Devices Worldwide



The market for IoT devices worldwide is projected a significant growth at **12.8% per year** from 2021 – 2027,

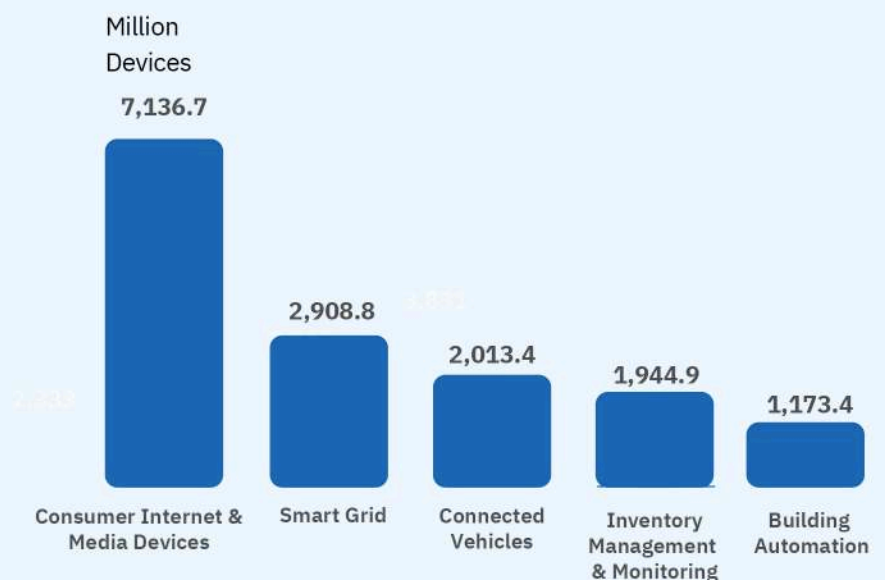
driven by the expansion of internet coverage, the higher efficiency of cloud computing platforms and the decline in the cost of sensors.



5G IoT devices is expected to experience the most substantial growth at 159% from 2021 – 2025.

By 2027, Consumer Internet & Media Devices industry will be the forefront adopters of IoT devices e.g. smart TVs, smart speakers or wearable devices.

Number of IoT Devices Worldwide by Use Case in 2027



Thailand's IoT Device Market

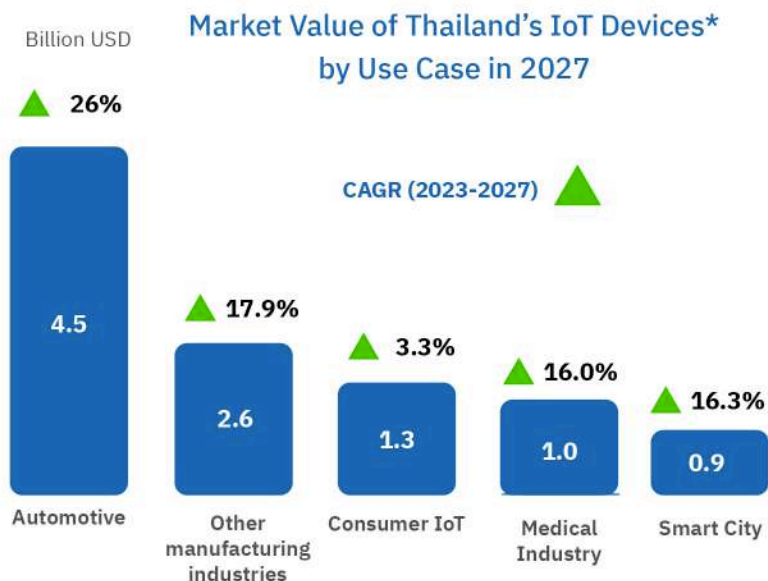


The adoption of IoT devices in Thailand is expected to grow at the rate of **15.8% per year,**

reaching

12.09 billion USD in 2027,

spurred by Thailand's 5G development and influx of demands from both consumers and manufacturing sectors.



By 2027, Thailand's automotive industry is expected to witness the highest number of IoT adoption,

hitting **4.5 billion USD**

and also showing the highest growth potential from 2023 – 2027, contributing by the rise in EV production.

Other manufacturing sectors, on the other hand, have comparatively lower IoT device deployment than the automotive industry, with 17.9% growth.

The consumer IoT and medical industry rank as the third and fourth largest segments in terms of IoT market size in Thailand.

Consumer IoT, however, shows the lowest potential growth at 3.3%.



Remark: * The market value of IoT in Thailand was derived from the total spending and investment in IoT.
Sources: Statista

Both private and public sectors in Thailand have a plan to expand the implementation of IoT devices to enhance customer's experience and improve efficiency.



Thonburi Healthcare Group is set to turn to Smart Hospital by adopting a higher number of advanced medical IoT devices.

Adopting **smart bedsheet** equipped with a pressure detector that can sense and automatically alert caregiver when the patients need to turn over.

Using an **automated dispensing cabinet** to sort medicines for each patient and automatically record the data to hospital's data center.

Utilizing **ToF Fall Management Sensors** to detect the movement of the patient's.

Implementing **patient's bedhead e-paper display** that shows all the patient's information from any medical devices in real-time

Thailand has an ongoing plan to build smart cities including 6 additional cities in March 2023, resulted in a total of 83 smart cities across 39 provinces in Thailand.

Technology Adoption

20.7%

Environment

18.8%

Living

14.3%

Mobility

Smart IoT Street Lighting : enabling remote control and 24/7 real-time monitoring of working conditions and energy usage

Smart Bus Stop: Providing up-to-date bus locations and predicting arrivals time together with public WiFi connection and EV chargers

The development and implantation of IoT devices is one of the core government's initiatives,

pursuing through investment attraction, adoption expansion, and infrastructure support.



Examples of Thailand's Government Supports on IoT Devices in 2023 - 2027

Attracting Investment and Start Ups

- BOI: Exemption of corporate income tax (CIT) at least 5 years and up to 8 years in case of conducting R&D
- Facilitating the growth of new startups, fostering enhanced cooperation, and facilitating the business matching with international customers

Improving Infrastructure

- Setting Thailand's standard protocol for smart home & smart appliance communication

Enhancing Technological Proficiency and Improving Technical Skills for Developer

- Developing smart electronics technology and innovation including the development of IoT devices
- Cooperating with academic sectors and private sectors to support researchers on smart electronics while providing grants for software engineering students

Expanding the Implementation of IoT Devices

- Offering financial incentives for manufacturing and services industries embracing IoT devices e.g. smart hospital, smart farming, food processing and smart factory & automation
- Promoting smart electronics enterprises to produce IoT devices e.g. smart appliance and smart devices

Increasing R&D in Technology and Innovation

- Allocating R&D funds to support the private sector on the smart electronics and AI research
- Incorporating extensive functionalities within the innovation lab and innovation testbed, while enhancing cooperation between enterprises, IoT designers and researchers

Key Challenges of the Development and Implementation of IoT Devices in Thailand



There is a limited availability of practical IoT devices in Thailand, relative to its competitors in ASEAN, resulting from the lower number of startups.



The global chip shortage, the ongoing of Russia-Ukraine war and global inflation affects the investment in IoT devices of both manufacturing and government sectors as well as affecting the customer demand.



Thailand's IoT safety standards are relatively unreliable, compounded by the absence of a designated authority responsible for addressing cyberattacks originating from IoT devices.



Users of IoT devices often lack awareness regarding data leaks from these devices and tend to overlook the safety settings, while many IoT device manufacturers pay little attention to the implementation of robust safety systems.

3 Growth Opportunities

for MICE on the Development and the Adoption of IoT Devices



1

The government supports for business matching between startups and international customers to foster the development of new IoT devices, serving customer demands of both manufacturing sector and consumers

2

An influx demand of IoT devices in manufacturing sectors and the expansion and development of smart city in Thailand

3

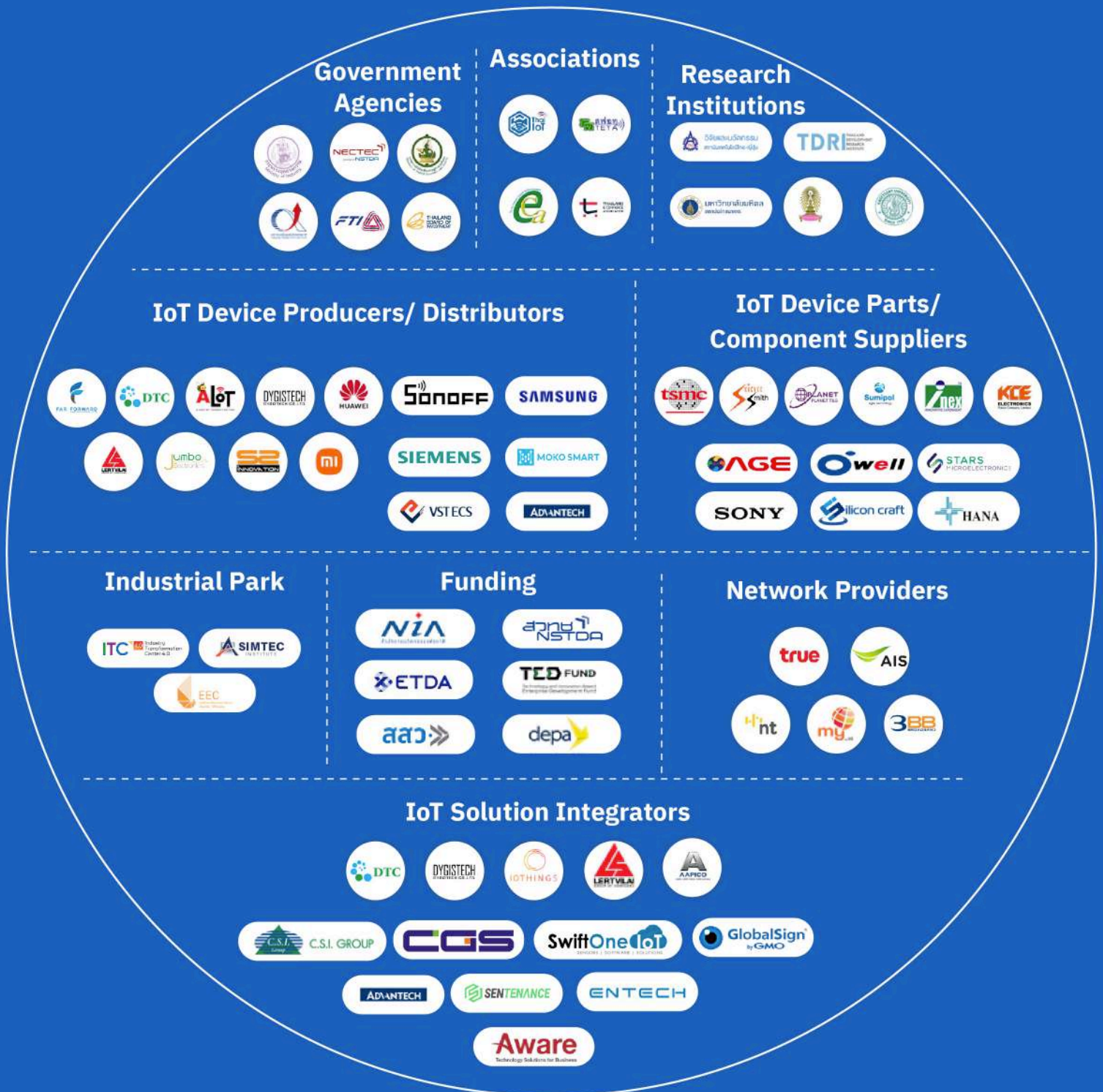
The roles and capabilities of MICE industries to driven the growth of Thailand's IoT devices

Business matching between **IoT system integrators + smart electronics component providers + Startups + Investors** to boost the development of IoT devices that align with the demand of customers and manufacturing sectors

Business matching between **IoT device providers + delegates from any industries** that require IoT devices to enhance their businesses

The facilitation of cooperation between **domestic and international government sectors** responsible for developing standards of IoT devices to promote a robust ecosystem and ensure the safety of such devices

Ecosystem of IoT Devices



Across ASEAN countries, Singapore, Malaysia and Vietnam are the major competitors of Thailand in term of developing and implementing IoT devices.

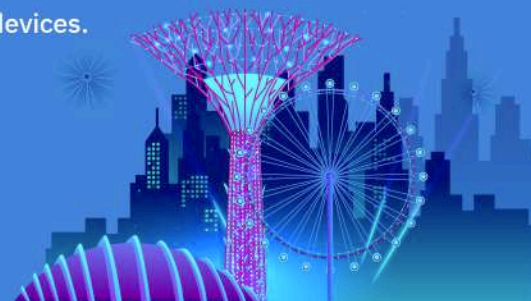
Global Innovation Index 2022



No. of Start Ups



Singapore stands out for its exceptional infrastructure supporting the adoption of IoT devices, the technological expertise of its workforce, and the extensive R&D in the field of IoT devices.



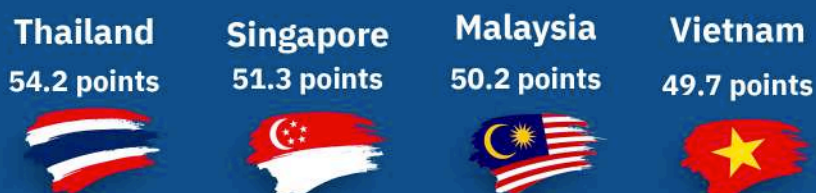
Thailand, on the other hand, outperforms other ASEAN countries regarding the surge of demand for IoT devices from the manufacturing and consumer sectors.

Thailand witnesses the highest growth among its ASEAN counterparts for adopting smart home devices (CAGR 2022 – 2027)



Thailand also shows the strongest potentials for the growth of manufacturing and services sectors, leading to the wider adoption of IoT devices.

Business Conditions of Manufacturing and Services Expansion*



* Referring to the forecast of Purchasing Managers Index (PMI) in 2023
Sources: Global Innovation Index, Trading Economics, Statista



Example of MICE Activities on IoT Devices



The exhibition is an annual event, scheduled to take place in 2023 at Singapore Expo in Singapore. This comprehensive exhibition includes a range of activities, such as conferences, an IoT showcase, and business matching opportunities.

In 2023, IoT Asia + will spotlight the integration of Blockchain, Artificial Intelligence and Augmented Reality with IoT devices focusing on the following sectors:

- Connected Consumer
- Transport & Logistics
- Energy
- Telecommunication



Exhibitors

IoT Solution System Integrators

e.g. IoT systems for consumer IoT, manufacturing and workplace

IoT Enabling System Integrator

e.g. Cloud and AI

Connected Transport & Logistics Providers

IoT Manufacturing Machine Providers

Connected Healthcare Providers

Connected Retail Providers

Connected Real Estate Providers

IoT Associations from various countries



Conference Program*

- Smart cities spotlight to showcase the latest developments in Asia
- Cybersecurity, data privacy, interoperability, cost & monetization of technology in daily businesses
- IoT Landscape and connectivity to provide an overview on trends, development and regional opportunities, Focused discussions on Connected Healthcare, Retail, Real state and Transport and Logistics

Recommendations on Organizing MICE Activities on IoT Devices

Segmentation



IoT system integrators
and IoT device providers

Targeting




IoT device providers specialized
in the automotive industry,
medical industry, manufacturing
sectors, and IoT devices
for consumers and smart city

Positioning



matching businesses
to spur the development
of new IoT devices and
encouraging the development
of extensive IoT ecosystem

Recommendation	Exhibitions	Conferences
MICE Activities 	<p>Arranging exhibitions prioritizing on business matching to develop new IoT devices and expand the adoption of IoT devices in other industries including automotive, medical and Thailand's smart city</p> <p>Exhibitors:</p> <ul style="list-style-type: none"> IoT solution Integrators Advanced technology solution integrators e.g. AI, cloud and blockchain IoT device providers in automotive, medical, manufacturing and farming sectors Providers of IoT devices for Smart City Startups IoT Institute/associations/government agencies supporting the development and implementation of IoT devices <p>Visitor Profiles:</p> <p>managers from automotive industry, executives and doctors from medical industry, agencies from construction sectors, smart city developers, government agencies, managers from the enterprise that offers consumer IoT devices, Investors and researchers</p>	<ul style="list-style-type: none"> Organizing conferences presenting on trends and opportunities on the adoption of IoT devices, particularly in the development of smart city, improving medical services as well as the importance of having international standards on the safety of IoT devices Promoting latest R&D on IoT devices and enhancing cooperation between government agencies, academic sectors and private sectors for practical development Enhancing the international cooperation to develop the global standard for the adoption of IoT devices
MICE PR Marketing	<ul style="list-style-type: none"> Promoting through relevant agencies and associations in IoT devices and MICE activities e.g. Thai IoT Association and TCEB Promoting via social media platform 	
Receiving Supports	<ul style="list-style-type: none"> Requesting sponsorships from agencies and association in technology and innovation industry, medical industry and MICE industry Cooperating with major IoT enterprises e.g. Huawei and Siemens 	



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