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Google in Thailand

Google Data Center and Cloud Impact in Thailand

2024

Overview

Google's commitment to Thailand is intended to help empower the nation's digital future. With its new data center and cloud region, Google is not just investing in technology; it is also helping to foster innovation, strengthen infrastructure, and cultivate a skilled workforce, all of which supports Thailand's strategic goals and help it thrive in the digital age.

Building upon Google's technical infrastructure investments and services to cloud clients, Google expects to invest ~USD 1 billion (THB ~36 billion) to open its Thailand data center and cloud region.

This report quantifies the potential impact of Google's investment in Thailand.

Here's a quick snapshot of what that impact would look like...

Economic

Accelerating Economic Growth

Projected economic benefits of the construction and operations of the data center, and productivity gains from the cloud region in Thailand (2025-2029):

- GDP[1]: **THB ~29,060 Million / Year (incl. THB ~22,880 Million / Year from Cloud Productivity Gains)**
- Jobs[1]: **~14,090 / Year**
- Labor Income[1]: **THB ~1,880 Million / Year**

Sustainability

Innovating Sustainable Solutions

Investments in new technologies and partnerships to **generate more clean energy** aligned with Google's 24/7 carbon-free energy goal by 2030 and collaboration with local organizations to support **water restoration projects** and Google's goal to replenish 120% of the freshwater it consumes by 2030.

Social

Supporting An Innovation-Driven Society

Building upon **Google's prior community investments in Asia Pacific,** Google's presence in Thailand can help support small- to medium-sized businesses, as well as help prepare the next generation of STEM leaders, with prior investments in other Asia Pacific countries[2] generating a **THB ~10–130 estimated social benefit[3] for every Google THB invested.**

1. Impacts reflect the average annual contribution (direct + indirect + induced effects) for five years (2025-2029) of the data center construction, operations, and productivity increase due to the cloud region. GDP and labor income have been rounded-off to the nearest 10 million while the jobs value has been rounded-off to the nearest 10th. 2. Asia Pacific countries includes Taiwan, Japan, and Singapore. 3. Social benefit is based on estimated long-term impacts to employment (see Assumptions for more details).

Driving a Digital Transformation

The 21st century digital economy has many benefits that are not always visible – from increasing energy efficiency, to cost savings for businesses, to more equitable access to digital services.

Google's data centers and cloud regions are helping to rapidly grow the digital economy, and with it, jobs and the broader economy. That means businesses and the public sector can reach customers and constituents more effectively while also achieving productivity gains.

Google's Impact in Thailand

In 2018, Thailand developed its Vision 2037 (2018-2037), the country's goal for sustainable national development, which includes six sub-strategies. Google's economic, sustainability, and social investments in Thailand connect to a majority of these sub-strategies. For example:

- The direct, indirect, and induced economic contributions that Google's data center and cloud region will have on Thailand's broader digital economy, infrastructure, and job markets reflects Thailand's National Competitiveness Enhancement strategy by bolstering growth engine industries including the digital, data, and AI industries.
- Google's development of a cloud region will deliver high-performance and low-latency services to large enterprises, startups, and public sector organizations, all while helping to create a safer, more secure digital world, in connection to Thailand's strategy for National Security and its goal for digital transformation by 2027.
- Google has ambitious sustainability goals, such as running on 24/7 carbon-free energy by 2030 and replenishing 120% of the freshwater that it consumes by 2030. Google's goals are consistent with Thailand's Eco-Friendly Development and Growth strategy.
- Google invests in the communities in which it operates in – whether that be through job readiness programs to help develop a skilled workforce or to empower small and medium sized businesses. Its efforts will contribute toward Thailand's Human Capital Development and Strengthening and Social Cohesion and Just Society strategies.

Accelerating Economic Growth through Data Center Construction & Operations

Google's investment in Thailand is expected to generate substantial economic benefit for the country, which will have direct, indirect, and induced benefits to Gross Domestic Product (GDP), jobs, and labor income.

Direct Effects measure the changes in the employment and expenditures due to the operation of the development itself. Direct impacts include employment, construction, infrastructure improvements, property taxes, etc.

Indirect Effects measure the changes in inter-industry purchases as they respond to the demands of the directly affected industries. Indirect impacts include business-to-business purchases arising from local spending for goods and services.

Induced Effects measure the effects on all local industries caused by the expenditures of household income generated by the direct and indirect impacts.

Projected impacts to Thailand from Google's investments from data center construction and operations (2025-2029)[1]:

THB ~6,180M	annual average GDP contribution
~14,090	annual jobs generated
THB ~1,880M	annual average labor income

This equates to a cumulative impact from 2025-2029 of THB ~30,900M in GDP contribution and THB ~9,400M in labor income.

The estimated THB ~6,180M total annual average GDP from the data center construction and operations includes THB ~2,000M direct, THB ~2,920M indirect, and THB ~1,270M induced annual average impacts.

Construction services are projected to be the primary drivers of both economic growth and job creation from 2025 to 2029, followed by wholesale and retail trade and the agriculture and forestry sector. The data center, once fully operational, will directly create about 100 jobs, including plant engineers and operations managers.

Google's investments in Thailand will reinforce Thailand's National Competitiveness Enhancement Strategy by bolstering growth engine industries, such as in e-commerce, banking, or the public sector.

1. Impact calculations based on input-output model, see Assumptions for more details.

Accelerating Economic Growth through Cloud Productivity

In addition to data center construction and operational investments associated with the new data center, Google's Thailand cloud region will drive substantial impact, with an expected average annual contribution to GDP of THB ~22,880M per year (2025-2029) and THB ~37,450M–56,180M by 2029[1], impacting industries including financial services, retail, telecommunications, media and gaming, manufacturing and industrial, and the public sector. These impacts will be even greater with the incorporation of AI and associated productivity gains.

In addition, transitioning from on-premise data centers to the cloud region can improve energy efficiency by 78% for enterprises and organizations, as the cloud is five times more energy efficient than on-premise data centers in Asia Pacific countries, on average.

To date, Google is already supporting Thailand's cloud region expansion, while helping to create a safer, more secure digital world in connection to Thailand's strategy for National Security and its goal for digital transformation by 2027:

- **TOURISM SPOTLIGHT:** Airports of Thailand Public Company Ltd (AOT) uses Google Cloud to enhance its database management services, allowing it to deliver real-time airport and flight information to millions of passengers across its six international airports. It also leverages Google Cloud's dynamic autoscaling capabilities for its IT services, allowing AOT to automatically scale up and down resources to reduce costs.
- **AGRICULTURE SPOTLIGHT:** Hive Ventures uses a microservices architecture on Google Kubernetes Engine to connect suppliers, customers, and restaurants through its food ecosystem platform, as well as provide tools and insights to support efficient operations and identify opportunities for growth. "By meeting strong privacy standards such as ISO, Google Cloud gives our enterprise customers and consumers the confidence that we're keeping their data safe and protected." – Sutthipong Jantarang, CTO, Hive Ventures

> "Google Cloud's global network has been playing an integral role in Krungthai Bank's adoption of advanced data analytics, cybersecurity, AI, and open banking capabilities to earn and retain the trust of the 40 million Thais who use our digital services to meet their daily financing needs. This new cloud region...will help accelerate our continuous digital reinvention and sustainable growth strategy... allowing us to reach and serve Thais at all levels."
>
> *-Payong Srivanich, CEO, Krungthai Bank*

1. Cloud region GDP impact is measured for a range based on comparable market share assumptions

Innovating Sustainable Solutions

Google continuously strives to drive positive environmental resilience and catalyze the development of low-carbon infrastructure and supply chain operations, especially by harnessing technology and AI.

Google's efforts will help drive progress toward Thailand's carbon neutrality by 2050 goal. **Already, Google is making progress in Asia Pacific, including:**

- In Japan, Google signed Power Purchase Agreements (PPAs) for 60 MW of new solar energy with Itochu's partner Clean Energy Connect and Shizen Energy
- In partnership with BlackRock's Climate Infrastructure business, Google will help support the creation of a 1 GW pipeline of new solar capacity in Taiwan. Google will procure solar energy from projects in this pipeline and may offer some of the clean energy to its semiconductor suppliers and manufacturers within its supply chain
- In Singapore, being awarded the Singapore's Water Efficiency Award in 2024 for its water efficient operations, including using recycled water for cooling and live monitoring and sensor controls to alert staff of atypical water usage

New technologies and local engagement:

Google finds creative ways to support the communities and regions in which it operates. For example, in Singapore, Google will receive renewable energy from PacificLight Energy generated from RExus' Waste Wood-to-Energy (WWtE) Plant.

RExus' WWtE plant uses waste wood from horticultural or logistics activities and turns it into energy – with an estimated 10% higher efficiency than conventional waste to energy plants in Singapore. The plant will also have a pilot-scale carbon capture system for downstream utilizations.

In 2023, Google's Data Centers average Power Usage Effectiveness (PUE) was

1.10

...compared to industry average of 1.58

Supporting an Innovation-Driven Society

Google invests in its people – including prioritization of employee health, competitive compensation, and educational reimbursement – as well as the people in communities where it operates.

In Asian Pacific countries[1], the Google data center team has invested THB ~67.2M[2] in 2022 and 2023, creating approximately a THB ~10–130 estimated social benefit for every Google THB invested, based on select STEM[3] educational programs for students.

Within Thailand, Google has already:

- Trained 100,000 small-to-medium sized businesses through the Saphan Digital Program, which provides digital tools and knowledge, as well as hands-on experiences to help bridge the digital gap. At the end of the program, 83% of businesses created or updated their online presence, 65% saw increased customer engagement, and 75% said that Google helped with keeping their businesses running during COVID-19.
- Trained over 15,000 individuals through Google Cloud Skills Boost which offers on-demand training and skill development in Google Cloud technologies. This is a 10-course learning path that provides fundamentals of Generative AI from Google Cloud experts.
- Trained over 20,000 teachers in Thailand through Gemini Academy, a Google initiative designed to upskill teachers on how to safely and responsibly use Gemini and other generative AI tools, helping them increase creativity and productivity in the classroom.

In Thailand, Google would strive to support local communities – and seeks to align its goals with the priorities of Thailand's Human Capital Development and Strengthening and Social Cohesion and Just Society strategies, such as for social and human capital development, technology hubs, or enhancing the livelihoods of the elderly.

The Samart Skills offers Google Career Certifications for on-demand digital skills. To date, there are:

13,000+ Samart Skills Graduates of Cybersecurity, Data Analytics, and more in Thailand[4]

85% Reported Positive Career Outcome within Six Months of Completion[5]

1. Asia Pacific countries include Japan, Taiwan, and Singapore
2. This is not inclusive of other Google.org and Grow with Google investments.
3. STEM stands for science, technology, engineering, and mathematics
4. Based on Google internal data, August 2024.
5. Based on the program graduates survey, Thailand 2023. Positive career outcome could include a new job, promotion, or raise

Assumptions

Methodology Used for Data Center Construction Investments:

To calculate economic impacts, this report leverages an input-output model approach using IMPLAN. IMPLAN defines input-output analysis as "A means of examining inter-industry relationships within an economy. It captures all monetary market transactions between industries in a given time period. The resulting mathematical formulae allow for examinations of the effects of a change in one or several economic activities on an entire economy (impact analysis)." For more information on IMPLAN, and assumptions made as part of the input-output model, refer to the articles on Input-Output Analysis and Assumptions and Detailed Key Assumptions of IMPLAN & Input-Output Analysis.

Assumptions for Data Center Construction Investments:

- Project Investment: USD $1B from 2025 – 2029 starting in 2025
- Investment Categories included costs associated with construction, machine (servers), electricity, and payroll, as well as costs associated with the new Google cloud region
- Exchange Rate: 1 USD = 36 THB

Methodology Used for Cloud Productivity Calculations:

To calculate GDP impact from Cloud productivity, assumptions were used based on public sources (e.g., total cloud market) and private sources (e.g., forecasted Google market share), as well as the OECD parameter for productivity growth based on Gal et. al. (2019).

Methodology Used to Calculate Social Benefit:

Estimated benefit was calculated using grant size provided by Google, total number of participants impacted provided by Google, and a series of factors leveraged from publicly available sources to estimate the value attributable to Google.

For additional information or any questions please reach out to:

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