Box Article

From Bytes to Bucks: The Economics of Data Centres in Malaysia

Summary

- Rising global demand for artificial intelligence (AI) and cloud computing is accelerating data centre growth. Malaysia is emerging as a key destination in Asia Pacific due to its strategic location, competitive costs and supportive digital ecosystem.
- Data centres present significant opportunities by attracting high-value foreign direct investment, enabling deeper and wider digitalisation across sectors, and contributing directly and indirectly to GDP and job creation. However, the surge in data centre investment also poses risks, particularly in terms of resource constraints and pressure on Malaysia's current account balance.
- Strategic policy interventions are therefore essential to ensure the country reaps the full benefits of data centre growth while effectively mitigating the associated challenges.

Malaysia's emergence as a key data centre hub

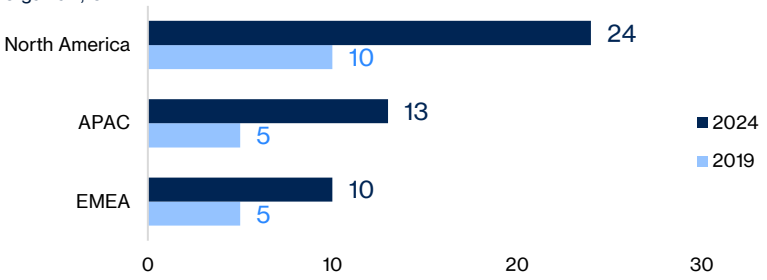
Global digital trends such as generative AI and cloud computing are driving demand for solutions to manage and process large amounts of data. Accordingly, data centres have become essential for storing data, hosting applications, and supporting AI development. While institutions traditionally stored data in-house, the growing need for scalable solutions has made third-party data centres (e.g. colocation, hyperscalers) a more cost-effective option.

In particular, data centres' usage of AI is expected to grow faster than traditional computing use amid the proliferation of AI tools. By 2027, estimates[1] suggest data centres' power usage globally will increasingly shift towards AI (to 27% of total data centre power use, from 14% as at Feb 2025) from storage (23% from 32%). The North American region has received the most data centre investments given the location of large technology companies, accounting for 41% of the global data centre market in 2024 (2023: 38%[2]). Data centre companies are diversifying their focus to emerging regions like the Asia Pacific – benefitting markets such as Singapore, Hong Kong, Indonesia and Malaysia (Chart 1).

The live capacity of data centres in Malaysia, or those in operation, has grown exponentially between 2019 and 3Q 2025 (Chart 2). These data centres serve both domestic and international markets, capturing demand from social media, AI and public cloud usage.

Chart 1: Global Data Centre Live Supply

Gigawatt, GW



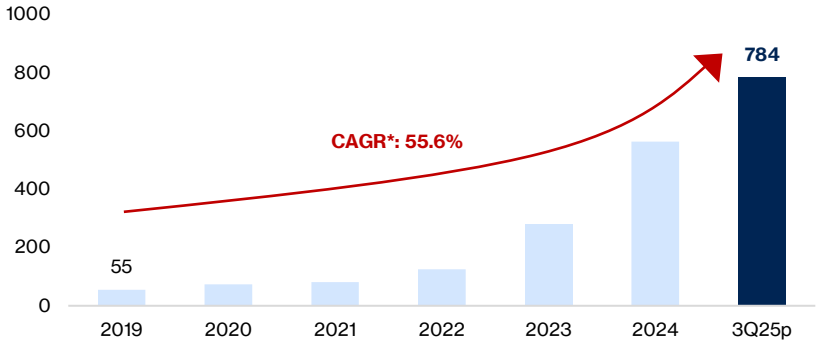
Note: APAC refers to Asia Pacific while EMEA refers to Europe, Middle East and Africa
Source: DC Byte

[1] Source: AI to drive 165% increase in data center power demand by 2030 | Goldman Sachs
[2] Source: Precedence Research, 2024: https://www.precedenceresearch.com/data-center-market, 2023: https://rss.globenewswire.com/news-release/2024/09/18/2948393/0/en/Data-Center-Market-Size-Expected-to-Reach-USD-775-73-Billion-by-2034.html

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Chart 2: Malaysia's Data Centre Cumulative Live Capacity
Megawatt, MW



p Preliminary data as of 10 November 2025
* CAGR: Compounded Annual Growth Rate
Source: DC Byte, Bank Negara Malaysia estimates

Diagram 1: Factors Attracting Investments

Strategic location given Malaysia's proximity to submarine cable landing points, facilitating high-speed connectivity

Resource availability such as energy, water supply and skilled labour, as well as speedy facilitation for power grid connectivity and competitive land prices

Favourable government policies supported by MIDA and MDEC incentives

Examples of Key FDI by Data Centres[3]

aws
RM29.2 bil
(2023–38)

Microsoft
RM10.5 bil
(2024–27)

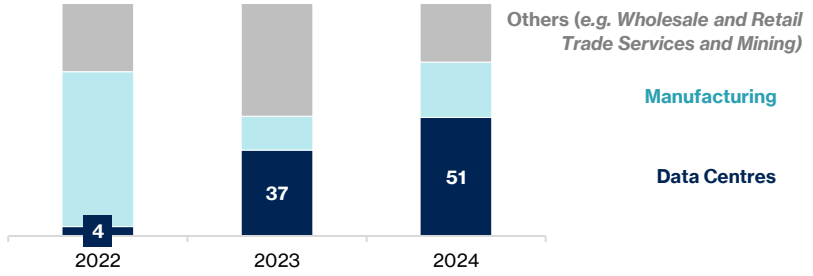
Google
RM9.4 bil
(2024–30)

[3] Based on publicly announced information by the data centre companies
Source: MIDA, MDEC and newsflows

Data centres have become a key source of foreign direct investments, supporting Malaysia's digitalisation ambitions

Malaysia's conducive investment ecosystem has been key to attracting data centre investments, especially by major cloud service providers (Diagram 1). Between 2021 and 1H 2025, approved data centre investment amounted to RM144.4 billion. This has changed the composition of foreign direct investment (FDI) into Malaysia, where the data centre investments overtook the manufacturing sector as the predominant beneficiary of FDI in recent years (Chart 3).

Chart 3: Malaysia's net FDI Inflows by Industry
% of total net FDI inflows



Source: Department of Statistics, Malaysia and Bank Negara Malaysia estimates

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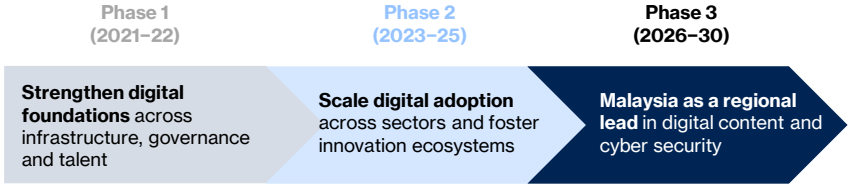
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These FDIs facilitate **the advancement of Malaysia's digitalisation initiatives.** In addition to supporting the goals under the Digital Economy Blueprint (2021–30) (Diagram 2), data centres will also play a key role towards achieving the New Industrial Master Plan (NIMP) targets (Diagram 3).

The presence of data centres in Malaysia also comes with several advantages compared to storing data abroad.

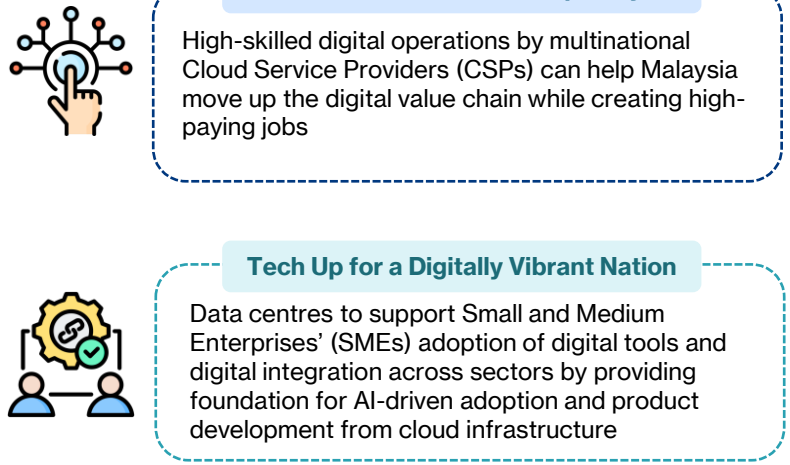
- **Reduced latency** improves speed and connectivity as data travels a shorter distance between the user and where it is being stored. For example, low-latency allows businesses to effectively implement and operate advanced technologies to enable real-time decision-making, precision control, and high-frequency data processing while online retailers would benefit from enhanced customer experience to improve sales.
- **Lower expenses** to businesses and consumers. This is due to reduced costs such as removing cross-border transfer fees and competitive resources (such as utilities) in Malaysia compared to abroad.
- **Data sovereignty** over regulatory challenges and privacy concerns. Malaysia will have greater oversight on how data is used and monetised. This will also ensure protection over critical information in banking, healthcare and government.

Diagram 2: Digital Economy Blueprint (2021-2030)



Source: Ministry of Economy

Diagram 3: Areas of Contribution by data centres to NIMP targets



Source: New Industrial Master Plan 2030, Ministry of Investment, Trade and Industry, Malaysia

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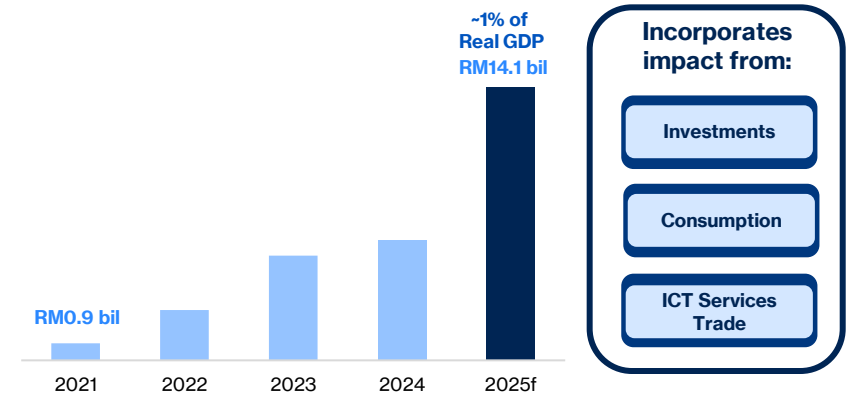
Data centre growth benefits industries across the supply chain while creating higher-paying jobs

1) Direct contribution to economic output

Data centres contribute directly to GDP through multiple channels. First, the economic impact begins at the early stage of data centre investments, including construction of the facilities, which can take up to 3 years.[4] In the pre-establishment phase, operators engage professional services for permits, planning and design. Subsequently, during the construction and setup phase, investment in building infrastructure and installing equipment contribute to gross fixed capital formation (GFCF). Second, via private consumption as the salaries paid to data centre employees – such as IT professionals, engineers, technicians and facility managers – are spent, further stimulating economic activity. Lastly, once in operation, through the trade channel from ICT services exports by serving international clients, as well as potentially reducing ICT services imports of domestic customers.

Staff's initial estimates suggest the direct impact of data centre operations contributed approximately RM0.9 billion to GDP in 2021 (Chart 4). This is estimated to be significantly higher in 2025, amounting to RM14.1 billion as more data centre projects commence construction and operations. These estimates reflect both the economic activity generated by data centre construction and operations as well as import substitution, as more services are now provided locally through domestic data centres. These estimates also account for the offsetting impact on GDP caused by substantial imports of specialised equipment due to the limited availability of locally-produced alternatives.

Chart 4: Data Centres' Direct Contribution to Real GDP
RM billion



f Forecast
Source: Bank Negara Malaysia estimates

2) Enhancing industries across the data centre supply chain

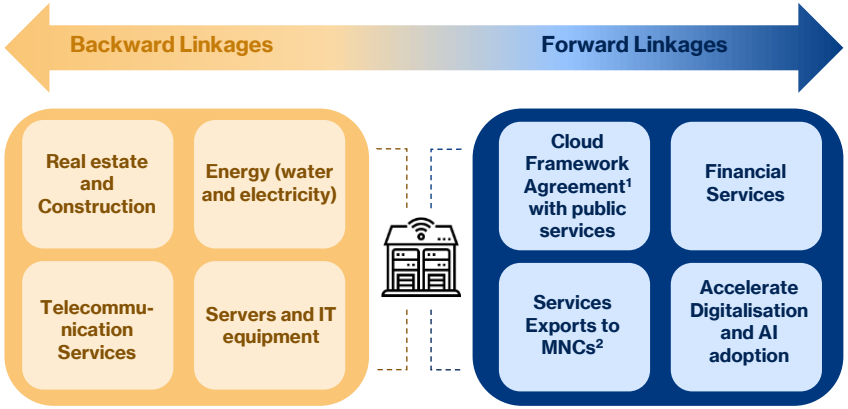
While the direct impact to GDP may be modest, the overall economic gains are significantly amplified when indirect benefits across the data centre supply chain are considered (Diagram 4). These indirect impact are realised through backward and forward linkages, as businesses across various industries benefit from the expansion of the data centre industry.

[4] Source: Bank Negara Malaysia engagements

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Diagram 4: Data Centre Ecosystem within the Economy



[1] Cloud Framework Agreement is a formal agreement between the Malaysian Government and selected Cloud Service Providers (CSPs) and Managed Service Providers (MSPs) to deliver cloud services to public sector agencies.
[2] MNCs refer to multinational corporations
Source: Adapted from MDEC, Copenhagen Economics 'Finland's Economic Opportunities from Data Centre Investment', Shimona Shodipo 'The Digital Value Chain: Risk and Unintended Consequences', Tech UK 'Data Centre: Engines of Growth' and Bank Negara Malaysia engagements

Backward linkages support upstream industries which provide the inputs to build and operate the data centres. This includes cement, steel and glass producers for the construction sector, while the boost in demand for utilities support suppliers of transformers and cables.

Forward linkages emerge once data centres are operational. Cloud service providers (CSPs) would collaborate with IT consulting firms, independent software providers, as well as companies providing IT, hardware and workforce professional training to offer digital services to their clients.

Data centres create economic gains through a crowding-in effect, attracting foreign equipment suppliers to set up manufacturing facilities in Malaysia. For example, the rapid growth in hyperscale data centres has attracted producers of server racks, pre-fabricated modular racks, and cooling distribution units into the country. Leveraging these networks of suppliers could present an opportunity for Malaysia to expand its manufacturing base.

These forward linkages also create opportunities for domestic businesses including SMEs to leverage cloud services and data centre capabilities to accelerate their digital and AI adoption. Businesses can access scalable computing power, secure data storage and advanced analytics tools, as experienced in markets with established data centre presence (Table 1). These services are also more cost-effective compared to subscribing to the same services if data centres were located abroad.

A strong local data centre industry is a critical enabler of digitalisation and AI adoption in Malaysia. Data centres deliver the computer power and storage capacity essential for deploying advanced AI solutions. Establishing these facilities locally not only attracts more global tech firms but also spur local AI start-ups and other digital economy spillovers while fostering innovation. This, in turn, unlocks productivity gains across sectors and could increase Malaysia's ICT services exports, reduce reliance on CSPs based abroad and ultimately support the creation of a digitally inclusive economy. In the long run, a robust local data centre ecosystem reinforces Malaysia's position as a regional technology hub, generating multiplier effects on innovation, talent development and economic growth.

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Table 1: Case Studies of SMEs' Utilising Data Centre Capabilities

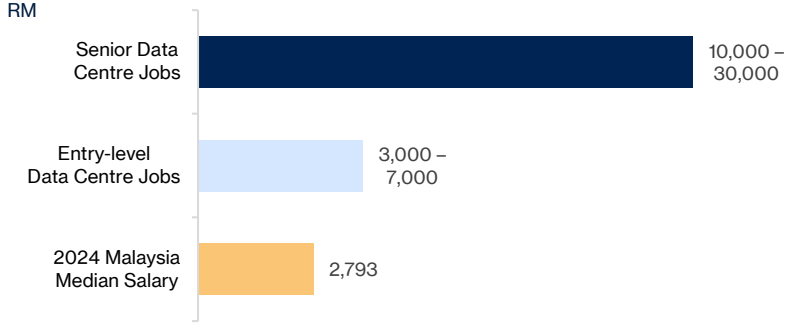
Industries	Challenges	Results
Advanced Mfg.	**Supply Chain Management**: Fluctuations in demand and lead times compromised stock management and profits	**Integrated AI-driven model to forecast sales**, reducing inventory costs while improving efficiency
	Operational efficiency: Manual data processing and analysis	**Adopted AI data analytics platform** to collect, process and analyse operational performance. This reduced manual tasks, allowing strategic resource reallocation
Retail	**Payment systems**: Labour intensive and prone to delays, especially during peak retail demand hours	**Leveraged cloud-based services** to centralise and automate payment processing across different outlets
	E-commerce Marketing: Difficulty in customer retention and targeting	**Utilised AI solution** to segment and prioritise customers, improving targeting of marketing campaigns
Services	**Work Environment:** Rigid office setups	**Cloud services** enable flexible remote works arrangements and improving access to job information
	Communication: Timely updates to caregivers to ensure client needs are met accurately	**Streamlined operations with cloud computing,** ensuring support for remote care while enhancing data security to comply with regulations

Source: Government agencies, company reports and newsflows

3) Expanding Malaysia's Labour Market with Higher Paying Jobs

Data centres contribute to job creation but typically generate fewer jobs compared to industries like manufacturing, due to automation and remote operations. However, these roles are highly-specialised, in-demand, and well-paid, even at entry-level positions (Chart 5).

Chart 5: Average Salary of Data Centre Jobs vs Malaysia Median Salary



Note: Entry-level data centre jobs refer to associate and junior-level roles in engineering or cloud specialists while senior data centre jobs refer to managerial positions such as facility manager and project director. These are approximations based on available information on Jobstreet.

Source: Department of Statistics, Malaysia, Jobstreeet and Bank Negara Malaysia engagements

Data centres employ professionals such as network specialists, cloud architects and data scientists. To meet growing demand for these roles, CSPs have introduced specialised certifications to upskill local talent and optimise their platforms' operations. This helps upskill the workforce and prepare them for industry needs while ensuring Malaysians are equipped with the right capabilities to take full advantage of the digital economy.

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Risks associated with data centres

High resource demand

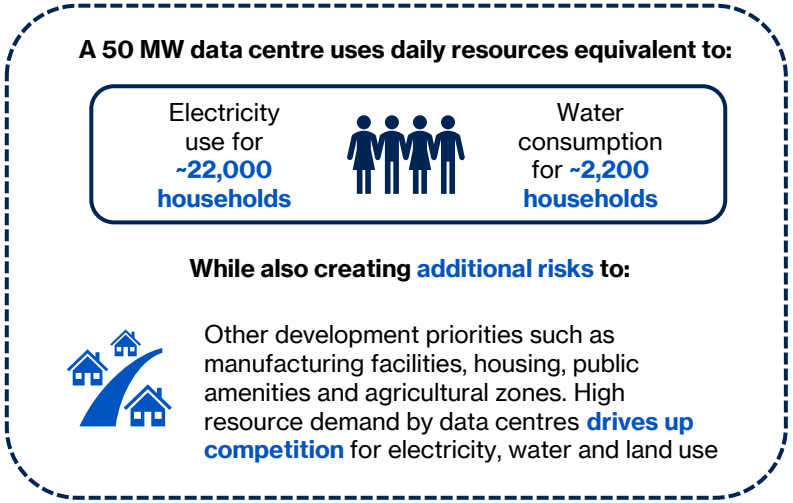
Data centre operations require large amounts of electricity and water to fuel their operations and to cool their equipment. For instance, a 50MW data centre would consume approximately the equivalent power and water usage for ~22,000[5] and ~2,200[6] households per day, respectively (Diagram 5).

Although data centres are increasingly adopting green practices - such as energy-efficient cooling systems – to reduce their environmental impact, these measures alone may not be sufficient. By continuing to rely heavily on brown electricity and not renewable energy, the growth in this industry could potentially derail Malaysia's target of achieving net-zero emissions by 2050.

Furthermore, unregulated data centre expansion can place a significant strain on domestic infrastructure, including electricity grids, water supply systems, and land use. Such pressures risk disrupting or displacing other development priorities such as industrial parks, housing, public amenities, and agricultural zones. Without coordinated and strategic planning, this could lead to utility bottlenecks, higher costs for other sectors, and undermine long-term urban planning.

Hence, it is crucial to implement proper resource governance, coordinated infrastructure planning and sustainability safeguards in ensuring the development and operations of data centres do not overburden local infrastructure and remain fully aligned with Malaysia's decarbonisation pathway.

Diagram 5: Sustainability Risks from Data Centre Activities



Source: Bank Negara Malaysia estimates

[5] Estimated by assuming a daily four-person household electricity usage of 54.6kWh/day (Source: Electric power consumption (kWh per capita) - Malaysia | Data)
[6] Calculated by approximating a daily four-person household water consumption of 1,160 litres per day (Source: SPAN: Perlis, Terengganu, Kedah record highest amount of domestic water use in Malaysia | Malay Mail) and water usage effectiveness of 2.2 m^3/MWh (Source: MIDA Guideline-for-Sustainable-Development-of-Data-Centre.pdf)

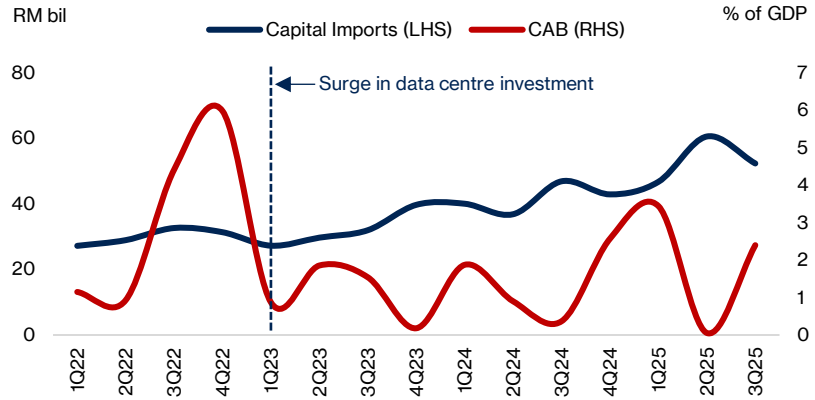
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Risks to external imbalances

Data centres import high volumes of specialised equipment such as server racks and cooling systems due to limited local manufacturing options. This has resulted in a surge of capital imports in recent years (average Jan–Sep 2025: RM17.8 bil; avg. 2024: RM13.9 bil; avg. 2022: RM10.7 bil), exerting pressure on Malaysia's current account balance (Chart 6). This pressure, to a certain degree, would be cushioned by ICT services exports once data centres begin their operations.

Chart 6: Malaysia's Overall Capital Imports and Current Account Balance (CAB)



Source: Department of Statistics, Malaysia

However, since these benefits will only materialise when data centres are completed and operational, the support from services exports would likely be marginal in the near term.

Of note, there are already tentative signs that data centres have started to contribute positively to ICT services exports. Between Jan–Sep 2025, ICT services exports grew 9% to RM16.8 bil, higher than the RM15.5 bil recorded in the same period last year.

Continued reliance on imports for critical and related parts and equipment also weakens data centres' backward linkages as it limits opportunities for local vendors, domestic value creation, and technology transfer. Therefore, development of Malaysia's domestic supply chain is necessary to capture the global demand for data centre technology.

Furthermore, similar to any other FDI, as foreign-owned data centre firms begin repatriating profits, Malaysia's primary income account could face pressure. These firms generate revenue from hosting and cloud services as well as services from leasing and cooling facilities to tenants, which would likely be returned abroad as dividends or retained earnings.

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Policy priorities to maximise data centre presence in Malaysia

Recognising the importance of the data centre industry, the Government has undertaken various initiatives to further promote the growth of its ecosystem. Central to this effort is the inter-agency Data Centre Task Force led by MITI and Kementerian Digital, which aims to drive sustainable growth and strengthen the ecosystem of the data centre industry.

To promote sustainability in Malaysia's growing data centre industry, the Government has introduced specific benchmarks for **Power Usage Effectiveness (PUE)** and **Water Usage Effectiveness (WUE).** These metrics are not only environmental standards but also form part of the eligibility criteria for incentives under schemes like the Digital Ecosystem Acceleration Scheme (DESAC), aligning industrial growth with Malaysia's net-zero ambitions**.**

Moreover, the Government is coming up with the Framework for Sustainable Data Centre Industry Development in Malaysia to ensure a coordinated approach to policies related to data centre development. This will cover various issues related to data centres, including data storage, security and integration. These measures are important steps to ensure sustainable growth of the data centre industry.

Successful strategies and policy execution will be key to maximising the opportunities from data centre investment while managing the risks, guided by the following key principles:

(I) Increasing economic spillovers through forward and backward linkages

Given the modest direct impact of data centre investments to the economy, it is important to strengthen the linkages of the data centre industry to boost the indirect impact to growth, supporting affiliated industries and jobs.

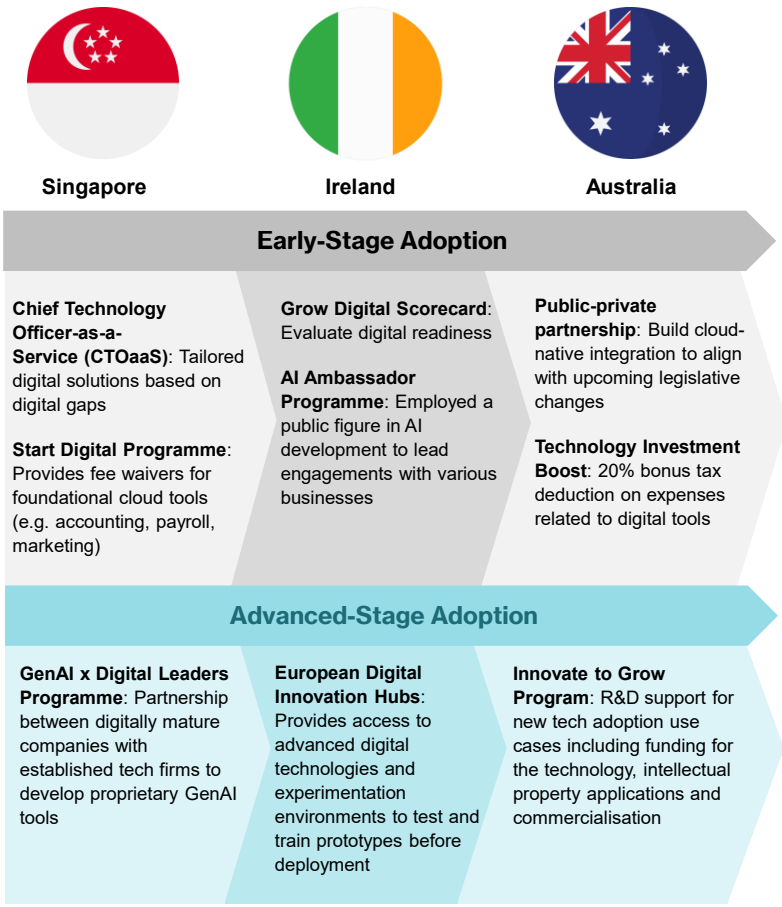
A database of local data centre supply chain companies could enhance the visibility of local firms involved, potentially improving the matching of data centre operators with local vendors. For the Government, it maps the capabilities and gaps within the domestic players to assist targeted policy intervention for the firms to move up the value chain and expand capacity.

Forward linkages can be strengthened by driving the adoption of and migrations by firms to cloud technology. This is to **leverage low-latency and cost competitive infrastructure as well as Cloud Service Provider (CSP) tools,** which will be key to improving productivity and output. Measures to achieve this can include early-stage focus on awareness and business support to adopt new digital tools and implement strategies for commercialisation (Diagram 6).

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Diagram 6: Selected Approaches to Accelerate Businesses' Digitalisation Adoption



Source: National agencies, newsflows

Addressing the development of affiliated industries will also boost data centres' forward linkages in Malaysia. Specifically, this can be achieved by creating a service-centric digital ecosystem around major data centres. This may include solution experts' technology services partners and software and application providers / CSP-related services (e.g. system integrators, IT consulting firms) that will create high-value jobs, enhance productivity and innovation, and boost local talent competitiveness.

(II) Managing negative externalities from data centres

Resource constraints and pressure to current account balance are some of the key and immediate risks posed by data centres on the economy. To manage these challenges, policy efforts should focus on **reducing import dependency and ensuring sustainable resource management**.

To ensure support to Malaysia's sustainable growth, tying fiscal incentives with PUE and WUE benchmarks is a commendable first step. Other measures can include mandating renewable energy adoption in line with the National Energy Transition Roadmap (NETR). Coordination with utilities authorities is critical to avoid grid and resource strain.

It is essential to attract quality investment projects that can improve local industries' capabilities and adopt sustainable technologies. Priority should be given to projects that can advance Malaysia's expertise in AI and machine learning, with the goal of further improving ICT services exports.

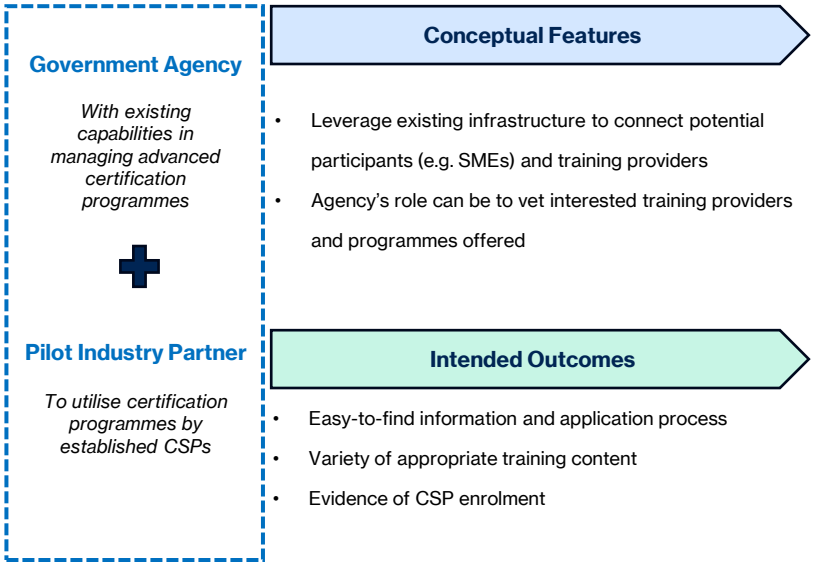
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(III) Developing future-ready talent to meet the demands of the growing industry

Bridging talent demand concerns (e.g. limited local talent) and talent supply issues (e.g. training mismatch with industry needs) **through industry-agency collaboration**. Initiatives should include enabling easier access to training provided by Cloud Service Providers, accredited Technical and Vocational Education and Training (TVET) programmes and self-learning courses tailored for local consumption.

Diagram 7: Conceptual Features for CSP Talent Development



Conclusion

Demand for data centres is set to remain strong in tandem with global and technological trends, particularly the growth of AI, expansion of cloud computing and digital transformation. Malaysia is well-positioned to harness this growth, leveraging its geographic location, digital infrastructure and skilled workforce to attract investment, boost economic growth and create higher-paying, knowledge-based jobs.

To fully realise these benefits, policy interventions should focus on developing the data centre ecosystem and strengthening the integration of the data centres with the broader economy, while managing against the risks. Specific attention should also be given to strengthen the forward linkages to accelerate digitalisation and AI adoption across industries.

References

Bank Negara Malaysia (2025). Digital Services Trade in Malaysia: Opportunities and Policy Imperatives

DCByte (2025). Global Data Centre Index 2025

Department of Statistics Malaysia (2025). Information and Communication Technology Satellite Account 2024

Oxford Economics (2023). Data Center Impacts

KPMG (2025). The economic impact of data centres to the Malaysian economy