Building a Leading Sovereign AI Nation

Defining Sovereign AI: Insights from Dell Technologies Global Chief Technology Officer and Chief AI Officer, John Roese

Sovereign AI is an increasingly prominent term in global technology discourse. At its core, Sovereign AI refers to the ability of nations to maintain control over critical AI infrastructure, algorithms, and data to ensure security, innovation, while aligning with local values.

This concept manifests in several strategic approaches, including:

Government for Government: Governments develop national infrastructure and AI models exclusively for government use, leveraging proprietary country-specific data. While often considered the dominant model for Sovereign AI, this approach may become less prevalent as more collaborative models emerge.

Government for Industry: This approach involves governments creating national infrastructure to serve both the public sector and private industry. By providing access to large-scale computing power and resources, it fosters industrial growth while maintaining national control over critical assets.

Government with Industry: This collaborative approach, seen in nations like Singapore and increasingly in the U.S., emphasizes co-designing strategies with private industry. Rather than building standalone infrastructure, governments create end-to-end ecosystems that enable private sector innovation, modernization, and leadership in AI.

The rise of Sovereign AI reflects a growing recognition of the need to balance control over AI ecosystems with the imperative to foster local innovation. In an era of heightened focus on data security, ethical considerations, and national competitiveness, Sovereign AI provides the flexibility to address unique priorities and challenges.

At Dell Technologies, we are committed to providing solutions and services that support Sovereign AI objectives for nations. Through scalable, secure infrastructure and collaborative partnerships, we help governments and industries achieve their strategic goals, driving innovation while fostering global collaboration.

TABLE OF CONTENTS

LIST OF FIGURES

Introduction

Asia/Pacific governments are moving beyond experimentation of artificial intelligence (AI), into a new era of building an AI-fueled economy. In September 2024, IDC released new research quantifying the significant impact of AI on a nation's economy, through direct and indirect channels. In the report "The Global Impact of Artificial Intelligence on the Economy and Jobs"[1], IDC predicts that AI will have a cumulative economic impact of a staggering $5 trillion through 2030 across Asia/Pacific, at which point IDC estimates that it will account for 3.5% of GDP.

Given the scale of this opportunity, governments across Asia/Pacific are committing to AI investments as part of strategic economic stimulus efforts, recognizing the technology's potential to drive productivity, innovation, enhanced public services, job creation, and long-term economic growth. However, this surge in AI investment has also heightened concerns about technological dependency and data sovereignty. As a result, Sovereign AI has become a strategic priority for Asia/Pacific governments to maintain domestic control over AI infrastructure and models.

What is Sovereign AI?

While Sovereign AI can be applied at an organizational level, increasingly it is framed in the context of a nation's ability to secure and control its own AI value chain.

Sovereign AI is defined as:

A nation's capabilities to **produce and secure AI using its own infrastructure, data, algorithms, workforce, and business networks.** It provides an explicit framework based on the security and innovation principles of the nation, and alignment with its local values and regulatory frameworks, with private industry also playing a key role in supporting Sovereign AI objectives.

While major economies are leading the charge, Sovereign AI investments must extend beyond the world's largest economies to unlock the full global potential of this generation-defining technology. Countries stand to benefit enormously from Sovereign AI, particularly in areas critical to the digital economy such as healthcare, agriculture, and education. According to the United Nations[2] and the G7, significant investment in digital infrastructure is necessary to close the AI divide between developed and developing nations. Without this infrastructure, Sovereign AI ecosystems will remain unattainable for many governments.

[1] https://www.idc.com/getdoc.jsp?containerId=prUS52600524

[2] https://www.un.org/sites/un2.un.org/files/governing_ai_for_humanity_final_report_en.pdf

The Strategic Role of Sovereign AI in the Economy

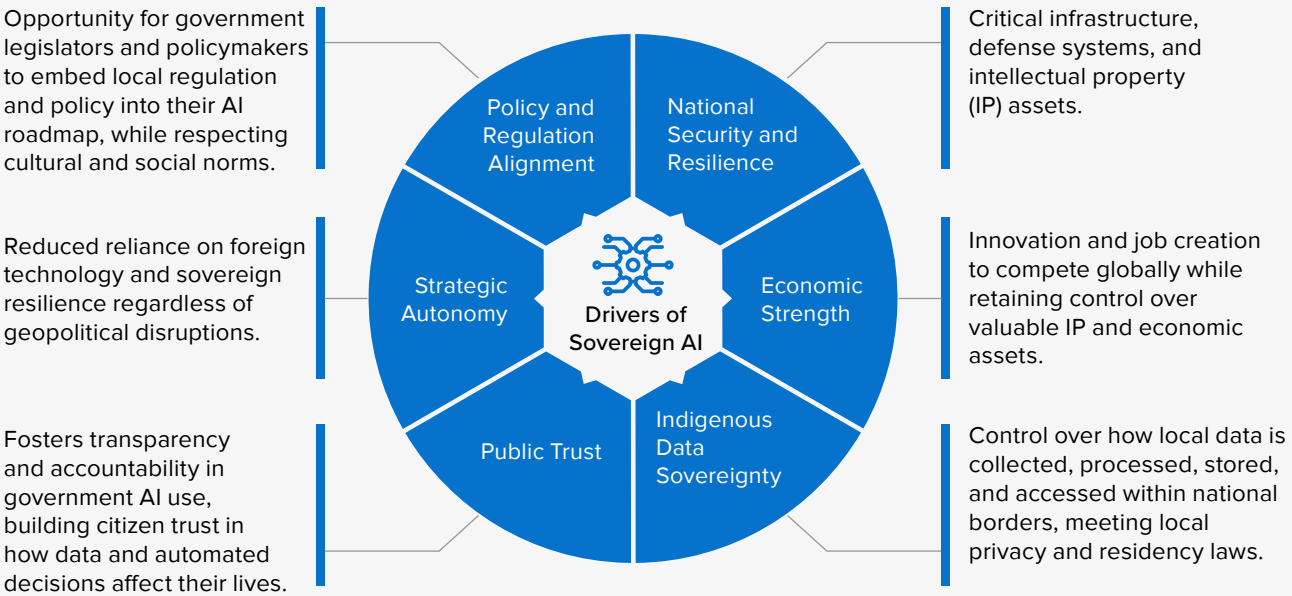
AI's role as a catalyst in realizing enormous economic and social benefits is motivating Asia/Pacific governments to fast-track Sovereign AI investments and accelerate the realization of these benefits. Sovereign AI provides the levers necessary for a government to harness the full potential of AI. Specifically, it can boost national productivity, help governments defend assets of critical national importance, and enhance a nation's competitive standing in the digital economy.

At the same time, Sovereign AI creates an opportunity to mitigate fears of job displacement through AI, by cultivating a skilled and self-sufficient AI-driven workforce. As a result, Sovereign AI is quickly becoming a central pillar of government leaders' AI roadmaps while serving as a key lever for effective policymaking by regulators.

This research has revealed that these, and other dynamics, will shape each government's approach to Sovereign AI (Figure 1) influenced by the economic benefits specific to a country's aspirations within the digital economy.

Figure 1

Dynamics Driving Sovereign AI Roadmaps in Asia/Pacific Governments



Source: IDC, Asia/Pacific Public Sector Survey, October 2024, Government = 345; IDC Asia/Pacific Government Interviews Oct/Nov 2024.

Key Takeaways: Major Strategic Approaches to Sovereign AI

Sovereign AI enables nations to maintain control over AI infrastructure, data, and algorithms, ensuring security, innovation, and alignment with local values. While the motivations and readiness for adopting Sovereign AI vary between Asia/Pacific governments, each one faces a similar set of factors that will determine the path to Sovereign AI. These dynamics include technological proficiency, economic capacity, leadership prioritization, and the role of AI in its digital economy roadmap.

In this research four approaches have emerged to define each government's approach to Sovereign AI in Asia/Pacific.

- **Sovereign AI-Led:** These governments are taking a risk averse approach to AI investment with a strategic pivot toward Sovereign AI. This enables a government to build domestic capabilities while maintaining national data security and technological self-sufficiency.

- **Sovereign AI as an Accelerator:** These governments strategically invest in homegrown AI technologies to enhance their technological autonomy, strengthen national security, and drive industry innovation in critical sectors.

- **Focused Sovereign AI:** In these governments Sovereign AI is applied to critical sectors like defense, cybersecurity, and critical infrastructure where self-reliance is paramount.

- **Public AI-First, Sovereign AI-Selective:** In these governments the primary focus is on public AI adoption while acknowledging a limited or secondary Sovereign AI role.

Across each of these approaches a government faces the choice of how to apply Sovereign AI for their nation, based on their economic and political objectives. Some governments will prioritize domestic infrastructure sovereignty, where data security and control are critical, while other governments will focus on more complex models such as local large language models (LLMs), particularly when aiming for AI-innovation leadership and market competitiveness.

The optimal model will be a balanced Sovereign AI approach, where a government enhances domestic infrastructure while developing smaller use cases or function-specific LLMs in critical areas such as national infrastructure and industries of strategic importance.

This report explores these options and how a government can contextualize their approach to Sovereign AI based on their economic, security, and digital economy objectives.

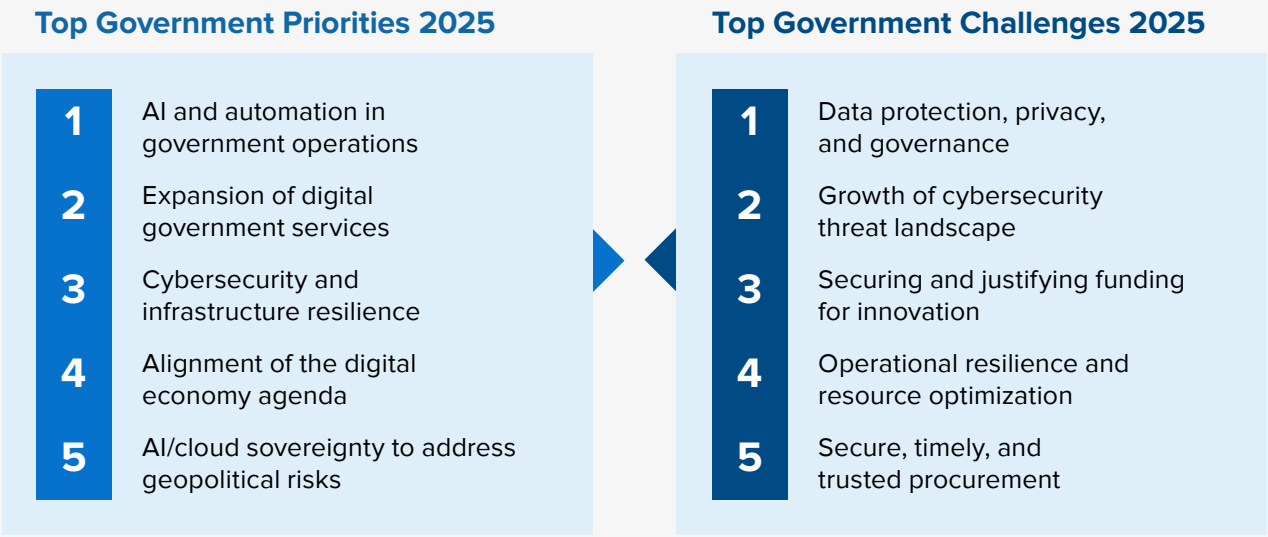
Setting the Scene: Creating the Foundations for Sovereign AI

A government's path to implementing a Sovereign AI approach is aligned to the evolution of the government's priorities, tempered by the disruptive challenges that can stymie change. In 2025, AI and automation will be the top operational priority for leaders within Asia/Pacific governments, ahead of digital government service expansion and cybersecurity (Figure 2). There is also a growing focus on technical sovereignty as governments face an increasingly precarious geopolitical landscape.

As governments focus on these priorities, the profile of the challenges they face is also changing with an underlying theme of reducing risk and vulnerabilities associated with the drive for building an AI-fueled economy. Data protection and the expanding cybersecurity threat landscape are the biggest headwinds governments now face. But rising in importance are new areas that will benefit and accelerate the push toward developing a Sovereign AI model such as justifying the substantial investments planned for AI and other emerging technologies of national importance.

Figure 2

Government Priorities Buffeted by Headwinds



Source: IDC, Asia/Pacific Public Sector Survey, 2024, Government = 345

Therefore, a government's approach to building a Sovereign AI-Led nation reflects a complex interplay of dynamics, unique to each country. This requires a holistic and responsible approach to embedding Sovereign AI, within its AI strategy, governance and data frameworks, infrastructure, and workforce. To build a Sovereign AI foundation, a government must consider the following factors:

- The readiness and proficiency of a government and its local partners in Sovereign AI technologies, as well as the willingness and preparedness to adopt the model.
- The importance placed on Sovereign AI, as the foundation of the nation's digital economy, by government leaders and policymakers.
- The economic capability to provide the scale of investment required to build Sovereign AI infrastructure to meet national security standards.
- Workforce empowerment through Sovereign AI skills development, unlocking new job opportunities and driving economic growth.
- Cybersecurity maturity and perceived threats of a non-sovereign approach such as security of critical infrastructure and assets of national importance.
- The rigor and advancement of AI regulatory posture and policy mechanisms.
- The state of data readiness, accessibility, and governance across agencies, emphasizing the role of data sovereignty.
- Plans to build the nation as a center of excellence for AI-enabled innovation, R&D, and investment.

Responsible AI is at a Critical Juncture

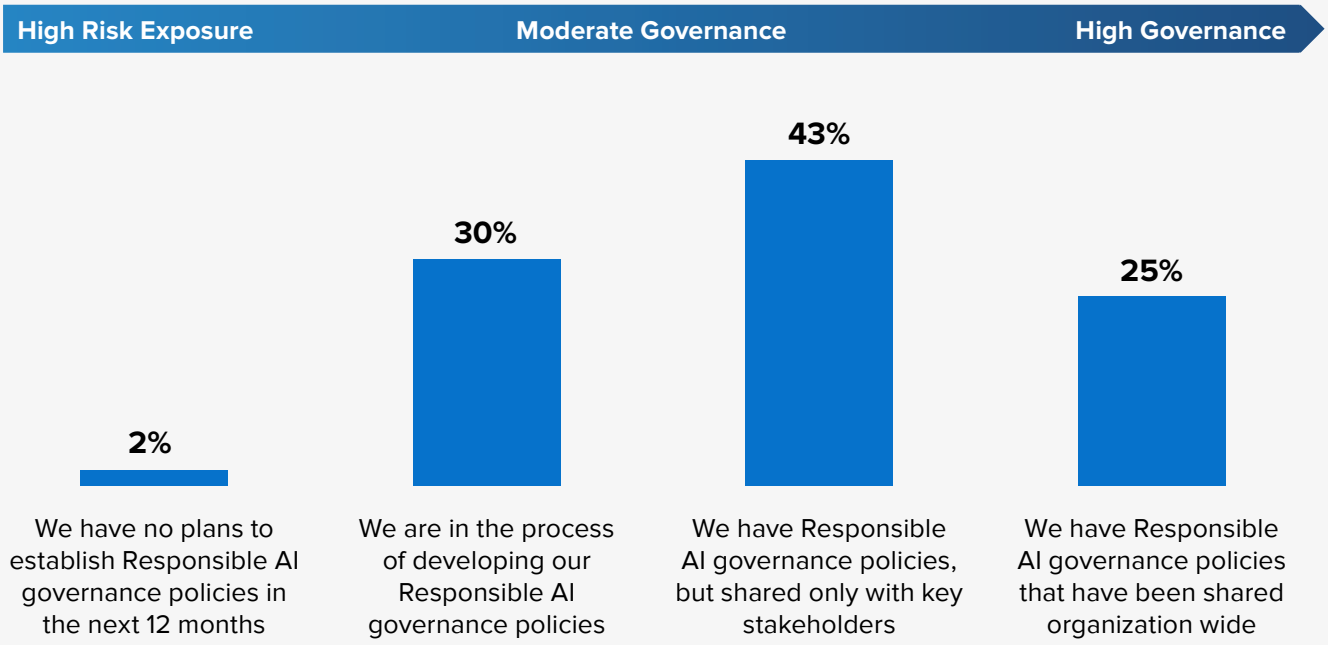
Another cornerstone of Sovereign AI is the establishment of a robust Responsible AI policy and framework. IDC defines Responsible AI as "the practice of designing, developing, and deploying AI in a way that ensures fairness, reliability and safety, privacy and security, inclusiveness, transparency, and accountability." This is critical not only for building trust in the government's use of AI but also for ensuring alignment with globally recognized Responsible AI standards, including privacy and data security.

As shown in Figure 3, many government agencies are not meeting the requirements of Responsible AI with only 25% applying agency-wide governance policies. This means that three quarters of agencies are in a less-than-ideal state and a third are in a vulnerable position with no existing policy.

Figure 3

Responsible AI Approach in Asia/Pacific Governments

Q. Which of the following best characterizes your organization's approach to Responsible AI management?



Source: IDC, Asia/Pacific Public Sector Survey, 2024, Government = 345

Sovereign AI enables governments to establish and enforce Responsible AI practices through ethical frameworks and governance standards tailored to their specific social, cultural, and legal contexts. This localized approach fosters public trust by ensuring AI is applied responsibly in government services and that data is protected in compliance with local regulations.

The State of Sovereign AI in Asia/Pacific Governments

To gain an understanding of the factors shaping government Sovereign AI strategies, IDC conducted an in-depth analysis across six countries in Asia/Pacific: Australia, India, Japan, Malaysia, Singapore, and South Korea. This analysis consisted of a web-based survey with 345 government decision-makers, augmented by in-depth interviews with government leaders in each country. These interviews provided contextual insights into survey responses and deeper perspectives on the relevance of Sovereign AI within each government.

Government Priorities Shaping Sovereign AI

The path to becoming a Sovereign AI-Led nation is aligned to each government's priorities, tempered by the challenges that can stymie change. In 2025, AI and automation will be the top priority for Asia/Pacific governments. However, the research also highlighted growing concerns about reliance on AI foundations developed and controlled by foreign jurisdictions, especially as governments navigate an increasingly precarious geopolitical landscape. As a result, many are exploring ways to mitigate risks and vulnerabilities associated with the expanding use of AI.

This has led to several key considerations for government agencies:

- AI becomes natively embedded within government services and aligned to the digital economy objectives.
- A sovereign approach is already a priority for all government agencies interviewed, especially in national security sectors such as defense. Agencies also emphasize the need to safeguard innovative developments and IP, as one agency leader put it, "before it is let out of the box."
- A coordinated and deliberate cross-agency approach is essential to gain the best outcomes from a national Sovereign AI deployment. However, many agencies interviewed highlight this as one of the most significant challenges, given the complexities of aligning diverse priorities and resources.
- While the ambition to create a national Sovereign AI model is high, major obstacles are the costs and integration with legacy infrastructure.
- A national Sovereign AI model must be designed to protect national interests without stifling innovation. However, the drive for control can sometimes conflict with the need for open innovation. To strike the right balance, heterogeneity is essential — ensuring diverse datasets, cultural perspectives, and talent pools to mitigate biases that may arise from over-reliance on domestic resources.

As AI Investments Accelerate, Sovereign AI Rises in Importance

While many government agencies interviewed in this study still see a lot of hype around AI and Generative AI (GenAI), most of those interviewed for this research emphasized that the technologies are now an imperative for transforming government services. As a result, investment is being driven from the highest levels of government, with outcomes now a key KPI for agency leaders.

Across Asia/Pacific 46% of government agencies surveyed for this research indicated that they are already using or trialing AI and GenAI applications and 26% identified these technologies as their top priority for 2025.

Sovereign AI Investments are on the Rise

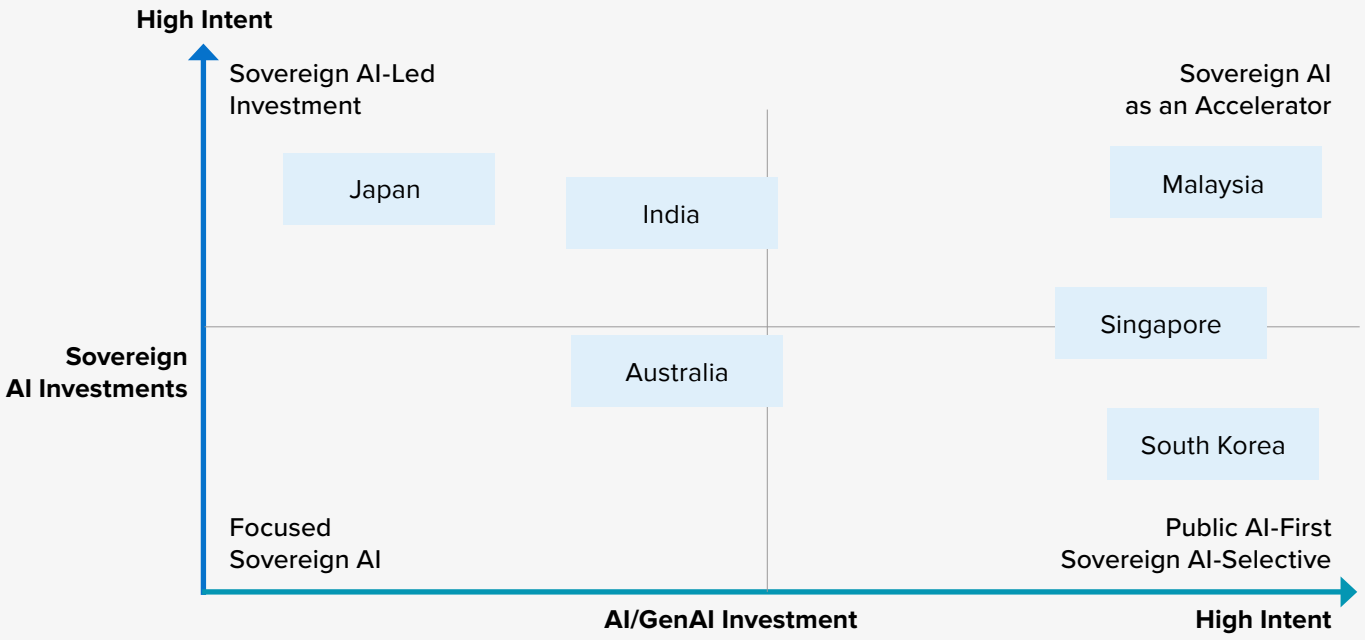
In conjunction with the acceleration in AI investment, Asia/Pacific government agencies now have Sovereign AI on their investment agenda. As a result, 33% of AI investments are now allocated to Sovereign AI.

However, as shown in Figure 4, the relationship between the intent of agencies to invest in AI versus Sovereign AI differs between countries. Based on this classification, four categories have emerged to define each government's approach to Sovereign AI:

- **Sovereign AI-Led:** These governments are adopting a risk-averse approach to AI investment, strategically shifting toward Sovereign AI to strengthen domestic capabilities, safeguard national data security, and achieve technological self-sufficiency.
- **Sovereign AI as an Accelerator:** Strategically investing in homegrown AI technologies to enhance their technological autonomy, strengthen national security, and drive innovation in critical sectors.
- **Focused Sovereign AI:** Sovereign AI is applied to critical sectors like defense, cybersecurity, and critical infrastructure where self-reliance is paramount.
- **Public AI-First, Sovereign AI-Selective:** The primary focus is on public AI adoption while acknowledging a limited or secondary Sovereign AI role.

Figure 4

Asia/Pacific Government Agencies: AI Versus Sovereign AI Investment Intent



Source: IDC, Asia/Pacific Public Sector Survey, 2024, Government = 345
Note: The intent to invest does not reflect the scale of investment.

Overcoming the Barriers Slowing Down Sovereign AI Deployment

While Sovereign AI is rising in importance, government agencies interviewed identified five key areas of concern that need to be addressed to move ahead with deployment plans:

1. **Build Costs for Sovereign AI:** 43% of agencies rank this as the biggest concern, particularly in Asia/Pacific's smaller or developing economies, due to the costs associated with initial investments for Sovereign AI infrastructure and workforce capabilities.

2. **Sustainability Concerns:** 43% ranked this as a top concern. These include rising greenhouse gas emissions associated with the immense processing power required to support a Sovereign AI model and energy-intensive GenAI workloads. However, 44% of the agencies surveyed also indicate that AI will be an enabler of sustainability, so for many it is a balancing act.

3. **Potential for Security Gaps:** 42% of Asia/Pacific agencies surveyed identified the need to protect AI and Sovereign AI systems from potential threats and

vulnerabilities and improve security posture in 2025. The bespoke nature and the complexities of maintaining a secure, independent infrastructure are considered a challenge, particularly for sensitive national data (defense, citizen records).

4. **Inadequate Access to Skills and Capabilities:** For 41% one of the big concerns is the specialized expertise and capabilities required for Sovereign AI.

5. **The Lack of a Strategic Sovereign AI Roadmap:** 36% of government agencies surveyed identified this as a barrier to adoption. Interviews across countries revealed a common concern: the lack of consistency in strategy and direction between agencies, state governments, and the national government.

At a country level the challenges vary and add to the complexity of factors holding back deployments. For example, almost half of the agencies in Australia, South Korea, and Singapore, highlighted challenges with interoperability across different ministries' systems. This was raised in many of the interviews, with one Asia/Pacific government leader saying, "It is difficult to coordinate a nationwide strategy across multiple ministries, each launching their own AI projects. There are subtle conflicts of interest in the government, and it is not easy for (data) scientists to coordinate them."

Another observation, highlighted in the interviews, was that the biggest hurdle IT leaders faced was not a lack of intent, but rather restrictions around what solutions could and could not be used due to incompatibility with data sovereignty regulations.

Addressing the Data and Interoperability Challenge

IDC's research has revealed that many government agencies are unprepared for meeting data readiness and interoperability challenges. In examining the underlying reasons for this unpreparedness, data governance and skills were identified as the biggest challenges to meeting this requirement by 2025.

One of the government leaders interviewed summed up this challenge saying, in relation to roadblocks for accessing data across government systems, "We don't have a common data set because it's scattered to the winds in private and public sector." Another leader said, "I would challenge the assumption that governments sit on large treasure troves of usable data to transform the nation."

Solving this puzzle is crucial to advancing Sovereign AI plans in governments across Asia/Pacific.

Processes and Use Cases Shaping Sovereign AI Deployment

This research revealed that early deployments of AI are dominated by three key government processes: digital marketing and government communications with citizens and communities, application developer tools, and procurement processes such as request for proposal (RFP) or contract process applications. It is unsurprising that these processes are top priorities given that each one was identified as a key priority (marketing and citizen experience as digital services and programs are expanded), or challenge (procurement processes) for government agencies in the region.

Sovereign AI plays a particularly significant role in enabling each of these processes, but one stands out: procurement processes. IDC predicts that by 2027, 60% of national governments, in Asia/Pacific, will embed sovereignty requirements in AI procurement to enhance data compliance, operational assurance and resilience, and reduce risks of technical lock-in[3].

Therefore, Sovereign AI evaluation must include metrics for data governance and residency, with an assessment of control requirements that are embedded in the AI stack. Additionally, Sovereign AI will be embedded into the processes involving cooperative purchasing agreements and complex regulatory requirements such as sovereignty compliance.

Mapping AI Use Cases to Sovereign AI Capabilities

AI deployment across Asia/Pacific governments can be evaluated in the context of how Sovereign AI influences outcomes (Figure 5). The priority is for use cases that are aligned with areas of immediate impact, particularly in the sphere of facilitating digital trade (such as compliance with global partners ESG standards) and automation of IT (including faster and more effective software development and testing).

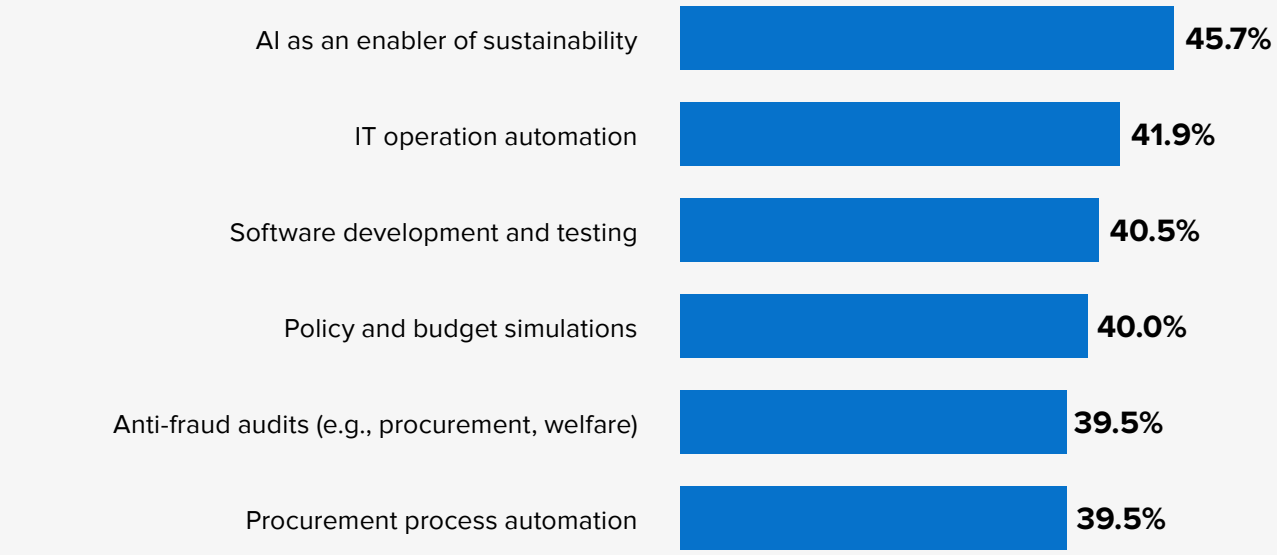
As seen in this study many concerns have been raised about the growing environmental footprint of Sovereign AI models such as energy consumption in datacenters. However, it is also recognized by Asia/Pacific governments as a key pathway to meeting sustainability objectives. This is a particularly important use case in Singapore (67% identified it as the top use case), Australia (56%), and South Korea (50%).

Examples of how Sovereign AI could be applied to sustainability challenges include environmental monitoring, climate scenario modeling, and complex reporting, providing governments with greater control, accuracy, and strategic capability. However, many government leaders remain cautious about the risk of AI-driven greenwashing in the sustainability space. A rigorous approach is essential when applying Sovereign AI to sustainability, as sustainability outcomes are increasingly becoming a regulatory obligation for government agencies in terms of reporting and disclosure.

Source: [3] IDC FutureScape: Worldwide National Government 2025 Predictions, Asia/Pacific Implications, December 2024.

Figure 5

AI Use Cases Where Sovereign AI Will Apply



Source: IDC, Asia/Pacific Public Sector Survey, 2024, Government = 345

The inclusion of policy and budget simulations provides an insight into Sovereign AI's future 'role' in government. Through this application, real-time data is extracted to compute economic variables, enabling faster decision-making for digital economy investments. This includes AI-enhanced scenario forecasting, economic risk assessments, and advanced modeling for policymakers.

Each of these use cases can significantly benefit from Sovereign AI by enhancing security, accuracy, and national control over sensitive data that will be used. Beyond the enhanced security of data, Sovereign AI allows the development of customized models trained on country and context-specific datasets.

Building Best-Practice Sovereign AI Models in Asia/Pacific Governments

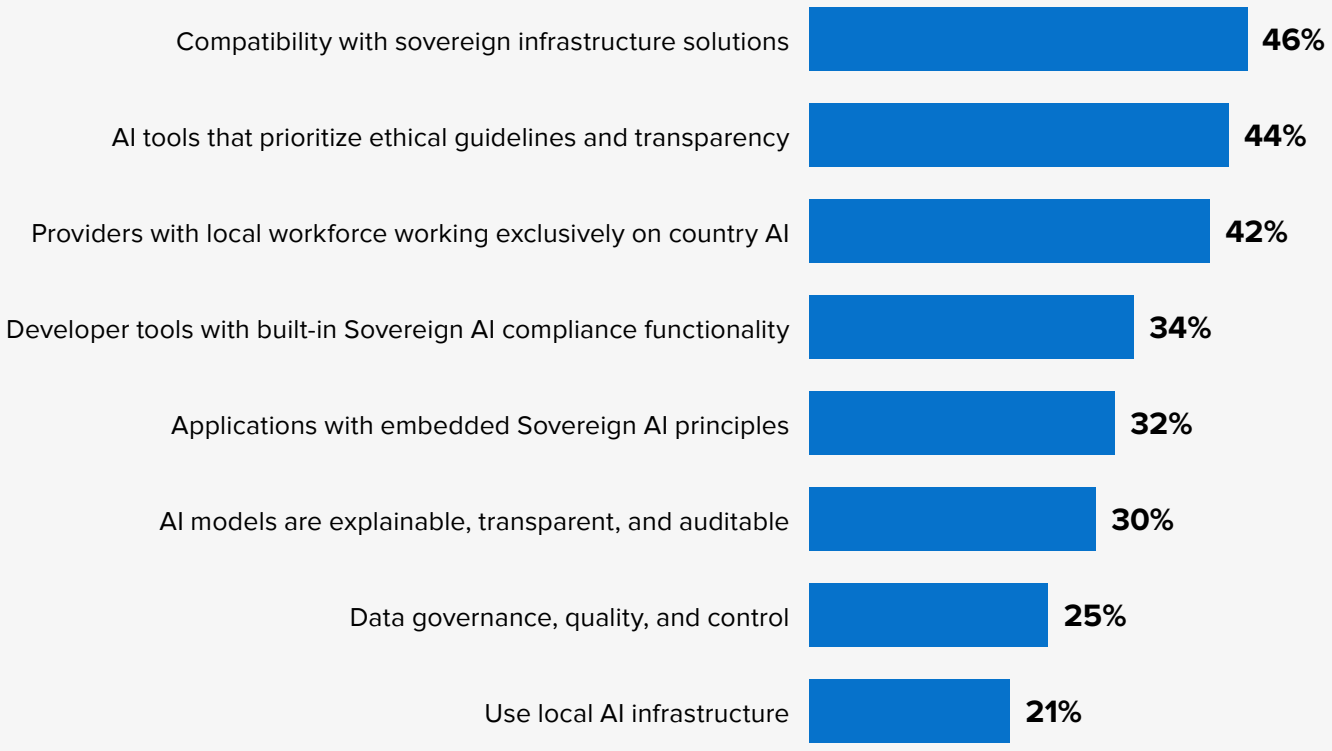
Given the complexities and obstacles highlighted in this research, building a best-practice Sovereign AI model is essential for successful outcomes.

The Architecture of a Well-Designed Sovereign AI Model

The success of a Sovereign AI approach depends on the suitability and security of its underlying foundation, which must be specifically designed to meet national, Sovereign AI objectives. In other words, without a strong fit for purpose foundation, the potential benefits of Sovereign AI will be undermined. For Asia/Pacific governments this shift is seen in the consideration that sovereign-specific solutions serve as the primary approach (Figure 6). Almost half of the agencies interviewed said compatibility and integration with sovereign cloud solutions, and one in three (32%) said applications with Sovereign AI principles embedded, were especially important.

Figure 6

Elements Considered Most Critical for Best-Practice AI Sovereignty



Source: IDC, Asia/Pacific Public Sector Survey, 2024, Government = 345

Linking to the Drivers Behind Sovereign AI Adoption

The basis of these best practice considerations correlates to the drivers for Asia/Pacific governments adopting Sovereign AI, described earlier in this report.

- **National Security and Resilience:** There must be compatibility with sovereign infrastructure and local AI infrastructure, including local LLMs. When asked about the most important application of Sovereign AI, national security and defense emerged as the top priority for governments, emphasizing the need to adopt best practices and standards.

- **Economic Strength:** Several areas apply here to incorporate into best practice standards including a local workforce, local infrastructure, and explainable AI. Best practice requires scalable talent development with investment in national AI training programs to meet the specific needs of the nation's Sovereign AI model.

- **Local (Indigenous) Data Sovereignty:** These are local sovereign LLMs built for a country to store and process sensitive data within national borders with strict encryption protocols. Other standards encompass data governance and ethical guidelines, aligned with local regulations.

- **Public Trust:** Trust is the underlying theme across multiple best-practice standards, particularly around auditability and transparency.

- **Strategic Autonomy:** Many of the agencies interviewed highlighted the importance of domestic infrastructure for autonomy and resilience in times of geopolitical instability. Independence provided by a Sovereign AI model is viewed as a strength.

- **Policy and Regulation Alignment:** 30% of agencies said that a stable regulatory environment was important for a country to attract AI investors. Several of the areas highlighted above apply to this area including Sovereign AI compliance, compatibility, and transparent governance. This requires the establishment of clear regulatory frameworks for accountability, fairness, and public oversight.

- **Multilingual AI Models:** In countries not well served by LLMs developed in the West, such as Malaysia and India, Sovereign AI is viewed as an opportunity to develop an AI model trained on diverse Asian languages and underrepresented dialects. For instance, a Sovereign AI model developed in India could effectively manage the linguistic diversity within Hindi by distinguishing regional variations such as Khari Boli (Standard Hindi) spoken in Delhi, Awadhi in Uttar Pradesh, and Bhojpuri in Bihar.

Should the Focus be on Domestic Infrastructure or Local LLMs?

Governments are at a critical juncture for architecting a global best-practice model for Sovereign AI leadership. Almost one in ten government agencies indicated that building local sovereign LLMs built for their country, is a critical element in ensuring AI sovereignty. This was particularly high in Australia where one in five agencies identified this as a critical area for a best-practice approach to Sovereign AI.

However, given the challenges for most Asia/Pacific governments such as upfront costs and skills shortages, AI sovereignty goes beyond building LLM models, whether for the nation or at a large agency level (think defense or social services LLMs). While building a country-specific LLM is one approach under consideration, the primary focus is on strengthening domestic AI infrastructure resilience.

Therefore, a government pursuing Sovereign AI should prioritize a balanced approach between LLM development and domestic infrastructure resilience, as both play critical but distinct roles in achieving long-term autonomy and security. To navigate this effectively, governments can consider the following key strategies:

- **Domestic Infrastructure Resilience and Ownership:** This applies to governments whose focus is on best practice data sovereignty, security, and control.

- **Local LLMs:** While more complex, this applies to a government seeking specific outcomes such as AI-innovation leadership, industry advances, and competitiveness.

- **Balanced Sovereign AI:** This applies to governments aiming to strengthen domestic infrastructure resilience while simultaneously developing smaller use cases or function-specific LLMs in critical areas such as national infrastructure and industries of national importance.

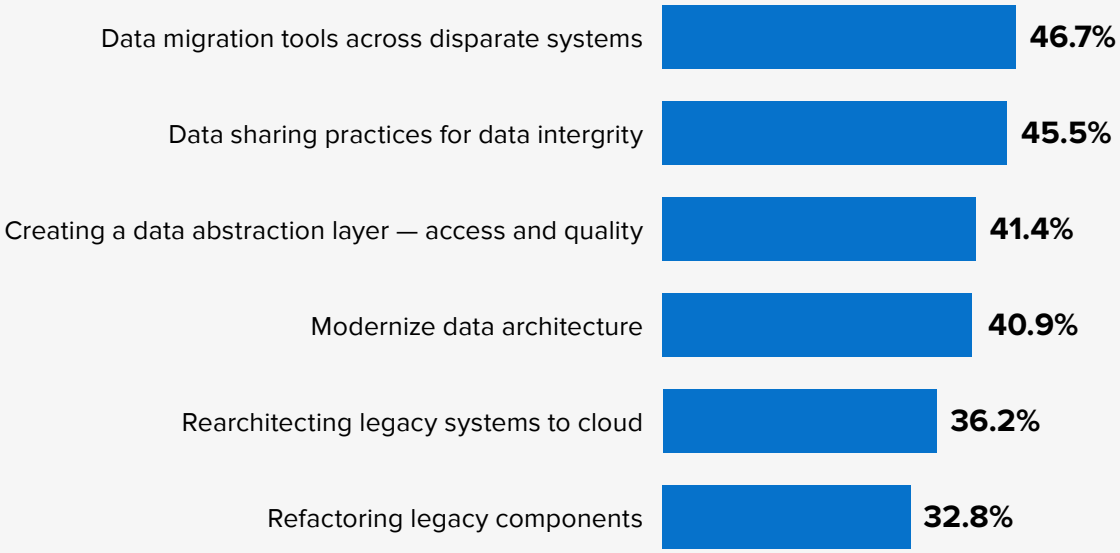
Best-Practice Data Readiness and Availability for Interoperability

Data readiness, its sprawl and residence in inflexible systems was highlighted in this research as one of the biggest underlying challenges faced by otherwise mature countries planning to adopt a unified Sovereign AI model.

To move toward successful Sovereign AI deployments, a multipronged approach is needed to improve data quality and access across the disparate systems that are inherent in the public sector. This is already in motion in governments across Asia/Pacific, as shown in Figure 7. Agencies are implementing at least two to three different actions to address, from data migration tools to refactoring and rearchitecting legacy components.

Figure 7

Creating Data Interoperability for Sovereign AI



Source: IDC, Asia/Pacific Public Sector Survey, 2024, Government = 345

Cultivating a National Sovereign AI Ecosystem

When Asia/Pacific government agencies were asked about the support that would be required to achieve Sovereign AI objectives, many highlighted the importance of partnerships and a strong Sovereign AI ecosystem. While the responses varied between countries, many common themes emerged:

- The entire Sovereign AI ecosystem must work together, from local start-ups, infrastructure, computing resources, applications, to domain-specific tech vendors. All parties in the value chain need to participate to build Sovereign AI.
- Governments must collaborate and form partnerships with other governments to advance AI safety and sovereignty, emphasizing nuanced cultural understanding and attracting global enterprises.
- To support a national Sovereign AI strategy, infrastructure partners are especially important, particularly when a country is building AI at scale, as are partners that support security, ethical governance, and other technological frameworks.

Strengthening Sovereign AI Through Local Start-Up Collaboration

Local start-ups are often at the forefront of innovation with specialized expertise in language models, contextual understanding of local norms, knowledge and experience with local regulatory obligations when developing AI solutions that global providers may overlook. By fostering partnerships and promoting the development of a Sovereign AI ecosystem with these innovators, governments can generate public trust through the development of AI models that reflect national values, address local challenges, and ensure digital inclusivity. The most important outcomes of developing a local Sovereign AI ecosystem that includes local start-ups are the ability to address the challenges highlighted in this research, including:

- Collaboration with start-ups promotes technology and IP protection. This addresses one of the big concerns for 40% of the agency leaders, the loss of control and risks associated with IP.

- 36% of the agencies said that two of the criteria used to select a partner for Sovereign AI are local training and a commitment to knowledge transfer processes. A local ecosystem would facilitate the growth of a self-sustaining domestic AI industry and retention of strategically important knowledge.

- Enhances economic resilience by reducing dependence on foreign AI models and infrastructure, ensuring that critical technologies remain under national control while stimulating job creation and digital entrepreneurship.

Conclusion: Essential Guidance

Nations deploying Sovereign AI must implement an AI governance structure to ensure that the proper policies, practices, and processes are followed by the government agencies deploying this technology. This is essential to ensure the responsible development, deployment, and use of AI systems at three distinct levels to underpin the application of Sovereign AI for national ecosystems:

Government for Government: Sovereign AI governance models built exclusively for government use, leveraging proprietary, country-specific data.

Government for Industry: Sovereign AI governance models for national infrastructure to serve both the public sector and private industry.

Government with Industry: This collaborative approach requires rigorous governance applied to co-designing strategies with private industry.

Application of a robust governance structure within a Sovereign AI approach can address the ethical, legal, and social implications of AI, while enabling the goal of promoting trustworthy, transparent, and accountable AI systems.

Seven Steps to Building a Resilient Sovereign AI Roadmap

Building a resilient and successful Sovereign AI roadmap relies on more than a deployment strategy with integrated Sovereign AI capabilities. There are seven fundamental areas that need to be addressed.

1. **Building Sovereign AI Proficiency and Leadership.** Building a Sovereign AI platform is complicated, and several obstacles can slow the pace of change. Most government agencies have indicated they do not have the highly specialized expertise required for Sovereign AI deployments. Governments must lead the collaboration across the wider ecosystem to develop local proficiencies essential to successful Sovereign AI.

2. **Take a Balanced Sovereign AI Approach.** This study reveals that those nations moving forward and doing Sovereign AI well are not taking an all-or-nothing approach. Instead, the customary practice is a balancing act, taking the best principles of Sovereign AI to attract investment into the digital economy.

3. **Build Diversity into the Nation's Sovereign AI Ecosystem.** Governments should build their Sovereign AI ecosystems to reflect their unique national priorities while incorporating a broad spectrum of expertise. This approach requires assembling a diverse talent pool with the skills necessary to navigate the complexities of building a best-practice Sovereign AI value chain.

4. **Focus on Use Cases of National Strategic Importance.** The strongest business case for Sovereign AI is in protecting critical national and digital infrastructure. However, the scale and complexity of these areas requires collaboration with skilled providers and partners who can integrate components and ensure effective cross-agency and national cooperation.

5. **Address Weaknesses in Data Governance and Interoperability.** Effective data governance and interoperability are critical for successful Sovereign AI deployment. Many nations face challenges integrating widely distributed, inaccessible data across both legacy and future systems. Agencies overcoming this have partnered with data management experts, recognizing that those who manage, transform, and mobilize data play a pivotal role in building a resilient Sovereign AI foundation.

6. **Map Sovereign AI to Policy and Regulation Frameworks.** Regulatory frameworks play a crucial role in the development of a Sovereign AI roadmap. These frameworks set the direction, guardrails, and stability that give confidence to agencies, investors, and vendors alike to move toward integrating Sovereign AI into the foundation of the national AI model.

7. **Building a National Sovereign AI Ecosystem of Capable Partners.** Partners have consistently emerged, in this research, as the key success factor in Sovereign AI deployments. Several of the agencies interviewed shared the view that governments play an essential role in cultivating and supporting the national Sovereign AI ecosystem — encompassing local start-ups, infrastructure providers, computing resources, application developers, and domain-specific tech vendors. All parties in the value chain need to participate to build Sovereign AI, not just Sovereign AI vendors.

Appendices: Sovereign AI — Country Profiles

This section provides an in-depth profile of the six countries included in this analysis: Australia, India, Japan, Malaysia, Singapore, and South Korea.

Australia

Approach: Focused Sovereign AI

Australia's government is a pragmatic Sovereign AI adopter. Careful due diligence and pilots will take place before applying Sovereign AI to specific functions such as defense and critical infrastructure. Australia aspires to become a leading AI Nation as part of its vision of making Australia a leading digital economy by 2030, and there are already indications that Sovereign AI will play a significant role in enabling digital trade. As a result, 46% of the Australian government agencies surveyed said that they will invest in AI embedded with sovereign capabilities.

Factors Holding Back Sovereign AI Nation Ambitions

The top three factors holding back progression on Sovereign AI initiatives are: interoperability with legacy or future systems (48%), a lack of strategic plans and clear business use cases (44%), and the potential loss of control associated with IP (44%).

Government Processes and Use Cases

60% of the Australian government agencies surveyed identified the enhancement of application developer tools as the top government process where AI and Sovereign AI will be applied. This reflects the feedback received, during the interviews, indicating the need to develop or acquire software development skills, specific to Sovereign AI, combined with a 'privacy and security' by design approach.

Best Practice Factors for AI and Sovereign AI

Australia's government agency leaders are focusing on compatibility and integration with sovereign infrastructure solutions (48%). There is also an emphasis on AI tools that prioritize ethical guidelines and transparency (48%), and many are working with providers with a local workforce working exclusively on AI solutions and systems (42%).

Selecting a Sovereign AI Partner

Building an ecosystem of the right Sovereign AI partners was highlighted as critical by the agency leaders interviewed for this research. The top criteria used by agencies to select partners are prioritizing price competitiveness (48%), infrastructure ecosystem partnerships with AI expertise (46%), and AI IP knowledge transfer (46%). Strategic decision-makers view partnerships as essential to mitigating the risk of significant investments in uncertain solutions. This requires selecting partners who not only understand the government's needs but also how Sovereign AI can effectively help achieve those objectives. This includes finding a Sovereign AI specialist to effectively manage the transition, and partners who can provide training to maximize the value of Sovereign AI deployments.

India

Approach: Sovereign AI-Led Investment

India's government is exhibiting low adoption rates (38%) of AI solutions, with a greater preference for GenAI solutions — nearly two-thirds of government agency leaders say they are using the technology within their agency. In contrast, 44% indicate they are already using Sovereign AI.

India's AI ambitions are pinned to the government's focus on becoming a center of technology innovation. The government's goal is to make the country a $1 trillion digital economy by 2027. This places enormous stress on local resources and there is a perception that care needs to be taken when applying a sovereign approach to avoid hampering innovation and avoid cost premiums.

Factors Holding Back Sovereign AI Ambitions

Three factors are equally problematic, holding back progression on AI and Sovereign AI initiatives in the Indian government agencies surveyed. Firstly, almost half of the agency leaders surveyed said that the upfront investment costs combined with the expected costs of ongoing maintenance (46%) would remain a big obstacle. Secondly, the potential loss of control and risks associated with IP are a big concern (46%), particularly as India strives to establish itself as an AI-innovation hub. Lastly, uncertainty about keeping up with evolving AI regulatory requirements (46%) remains a major challenge.

Government Processes and Use Cases

Two significant processes are the focus of India's government agencies. The first key priority is digital marketing and communication tools, identified by 68% of agencies. This emphasis is driven by the need to communicate effectively across multiple languages. This is also a factor driving up the adoption of GenAI, with many agencies referring to this as one of the reasons for selecting it over AI. The other most common process was application developer tools, where 62% said that innovation is a primary driver for this capability. The top three use cases that came up during interviews with agency leaders were anti-fraud audits in public procurement, tax, and welfare processes (50%). Other applications of interest include policy and budget simulations (42%) and HR process automation (42%).

Critical Success Factors for AI and Sovereign AI

The most critical success factor for agencies developing a Sovereign AI platform is the ability to integrate solutions with sovereign cloud infrastructure solutions (50%). Also important is selecting partners with a local workforce working exclusively on the country's Sovereign AI initiatives (42%) and using developer tools with built-in Sovereign AI compliance functionality (40%).

Criteria to Select a Partner

The interviews revealed that India's government is taking a collaborative approach to Sovereign AI. Selecting the right partners and ecosystem was highlighted in both the survey and agency interviews conducted in India's government agencies. In summary, the top three criteria used are access to AI and Sovereign AI talent (52%), price competitiveness (44%), and government industry expertise and knowledge (44%), particularly as it applies to Sovereign AI.

Japan

Approach: Sovereign AI-Led

In Japan, the government agencies reported the lowest rates of AI and GenAI adoption (30% and 40% respectively) motivated by a policy-first approach to adopting the technologies. At the same time, those agencies reported the highest rates of Sovereign AI adoption with 50% saying they had already taken that approach, one of the highest in the region.

Additionally, 30% of government agencies indicated that Sovereign AI is their top strategic investment priority, over quadruple the average rate of government agencies across Asia/Pacific. Several underlying factors and activities in Japan's government have created this tipping point including an emphasis on Sovereign AI in the government's 2024 announcement that Japan would be investing over $740 million in AI infrastructure partners, including NVIDIA and local providers.

Factors Holding Back Sovereign AI Ambitions

Ethical concerns pose the biggest hurdle to Sovereign AI adoption among Japanese government agencies. 55% of the agencies surveyed said ethical concerns were the primary factors holding back progress, the highest rate of concern across Asia/Pacific. Another significant factor is the concern that a Sovereign AI model may be developed that is incompatible with yet-to-be defined international standards and guidelines (50%), reflecting Japan's emphasis on AI for global economic opportunities.

Government Processes and Use Cases

The Japanese government's acceleration toward an AI-driven economy requires comprehensive communication across agencies and with constituents. As a result, the biggest process area agencies are focusing on are digital marketing tools. At 70%, this is the highest rate across Asia/Pacific. The other two areas receiving the most attention are a focus on RFP/contract process applications (55%) and application developer tools (55%) as the government focuses on building Japan's economy as an AI-innovation hub. The top use cases identified by those answering the survey revolved around financial applications such as finance automation (60%), and policy or budget simulations (55%). Other applications of interest included the creation of synthetic data (55%), which could be a response to the ethical concerns around using data in AI models.

Critical Success Factors for AI and Sovereign AI

The Japanese government has emphasized social and ethical principles as central pillars in their approach to AI investment decisions and roadmaps. Reflecting an earlier observation that ethical concerns would be a barrier to AI adoption in Japan's government agencies, it is unsurprising to see that the most critical success factors for an AI sovereign platform are AI tools that prioritize ethical guidelines and transparency — with 55% of those surveyed identifying this as a critical success factor. This is reinforced by the second highest criteria: AI models that are explainable, transparent, and auditable (45%), alongside compatibility and integration with sovereign cloud infrastructure solutions (45%).

Criteria to Select a Partner Centered on Trust

Given the emphasis on data governance, it is unsurprising that the top criteria, used by 70% of agencies surveyed, to select an AI partner are the partner's data governance and management capabilities. This is twice the rate as compared to other Asia/Pacific government agencies. The importance of international data governance has been emphasized by Japan's government leaders, particularly the advocacy for the Data Free Flow with Trust (DFFT) and endorsement of international data governance initiatives under the G7's Institutional Arrangement for Partnership (IAP). Reinforcing this viewpoint, the other top criteria are also about developing trust such as a partner's AI security capabilities (60%) and the maturity of their Responsible AI code of practice (45%).

Areas Where Assistance is Required

Japanese government agencies are focused on an accelerated path to becoming a Sovereign AI Nation, but workforce and skills shortages are the most acute challenges faced in this race to the future. Specifically, the three key areas where assistance will be sought by the agencies are: designing or architecting the solution fit for the needs of the agency (20%), keeping up with the latest update on AI solutions and tools (18%), and accessing specialists that understand government (14%).

Malaysia

Approach: Sovereign AI as an Accelerator

The Malaysian government is making significant long-term investments in AI and GenAI, with projections indicating that AI-powered products and solutions could generate $55 billion in economic benefits for Malaysian businesses by 2030. As a result, Malaysia's government has reported high rates of AI adoption with 67% saying that they are using AI and 57% are using GenAI.

Sovereign AI Adoption is Accelerating

In 2024, the adoption of Sovereign AI sat at the lower end of the scale in Malaysia (30% adopted) compared to other countries in Asia/Pacific. Nonetheless, Sovereign AI remains a key part of the national AI strategy, and there are signs it will rapidly become a priority area for investment over the next two years. 57% of agency respondents to the survey said that Sovereign AI will be a key area of investment in the next two years, one of the highest rates of growth in the region.

Factors Impacting Sovereign AI Deployments

Regulatory factors are influencing 53% of agencies, becoming the biggest challenge holding back progression on Sovereign AI initiatives. Keeping up with regulatory requirements and evolving policy ranks higher in Malaysia than in any other Asia/Pacific country. These concerns were reinforced by the second biggest barrier identified in the survey — privacy concerns, including data sovereignty, which is equally important to 53% of agencies. The third biggest challenge is the costs associated with adopting Sovereign AI.

Government Processes and Use Cases

As with India, Malaysia's government agencies have a huge focus on the use of AI for citizen communication, with 73% stating that the biggest focus is on digital marketing and communication tools. 53% identified application developer tools, with innovation as a primary driver for this capability, followed by product lifecycle management (PLM) and product design applications (40%). Both are important in meeting the biggest priority identified in the survey, the expansion of digital government services and programs. The top three use cases identified are based on financial objectives such as policy and budget simulations (57%), anti-fraud audits (50%), and procurement process automation (50%).

Critical Success Factors for AI and Sovereign AI

The most critical success factors for Sovereign AI in the government agencies include a local workforce for Sovereign AI (47%), AI tools that prioritize ethical guidelines and transparency (40%), compatibility/integration with sovereign infrastructure solutions (33%), and applications with Sovereign AI principles embedded (33%). These factors are shaped by the initiatives of the Malaysian government to build Sovereign AI capability. For example, the government launched the National AI Office (NAIO) in December 2024, as a central authority driving Malaysia's AI agenda.

Criteria to Select a Partner

The interviews conducted in this research provided insights that elaborated on Malaysia's ambition to become a global AI powerhouse. Government agency leaders described how Malaysia was positioning itself as a hub for GenAI, with investments from technology partners playing a critical role in building a secure digital infrastructure. When prioritizing partners, preference is given to infrastructure providers capable of storing and managing large volumes of data, followed by data management and platform providers, along with service and application vendors that offer Sovereign AI capabilities. In the survey, the top three criteria identified by agencies were AI security capabilities (57%), cloud infrastructure ecosystem partnerships with AI expertise (50%), and AI roadmap advisory expertise (47%).

Areas Where Assistance is Required

When selecting a partner, Malaysian agencies will primarily seek assistance in accessing specialist expertise, particularly from partners with a deep understanding of Sovereign AI in a government context (20%). This is to ensure that partners have the capability to design or architect the right solution for Malaysia's National AI ambitions (18%), and that those partners have the resources to provide local training to get the most out of innovative technologies (15%).

Singapore

Approach: Balanced Sovereign AI

Singapore is an AI powerhouse, exemplifying best practices in taking a balanced approach to Sovereign AI deployment. This strategy allows the country to harness the benefits of Sovereign AI while ensuring innovation remains unhindered.

Singapore National AI Strategy (NAIS 2.0) seeks to position Singapore as a global leader in AI for public good. To support this goal, the country plans to invest more than $1 billion over the next five years in AI computing, talent development, and industry growth, focusing on three systems: activity drivers, people and communities, and infrastructure. As a result, Singapore's government places an extremely high strategic importance on AI technologies, with 40% of government agencies placing AI and GenAI as the technologies that are critical investment areas. It has a moderate rate of broad AI usage (43%), but it has fully embraced GenAI with 73% of agencies saying they are already using the technology. This is only going to increase by 2026 — 60% plan to invest in new GenAI initiatives or upgrades by 2026, while 53% plan to invest further in broad AI.

Fit for Purpose Sovereign AI Adoption

The adoption of Sovereign AI in Singapore remains modest (33% adopted and 33% plan to invest by 2026) compared to other countries in Asia/Pacific. Interviews with government agencies provide an insight into this trend, revealing that Singapore's government recognizes its limitations due to the country's size, but is increasingly encouraging the development of internal capabilities. This is exemplified by its SEA-LION model — an open-source family of LLMs developed by AI Singapore to better understand Southeast Asia's diverse contexts, languages, and cultures.

Singapore's approach to Sovereign AI focuses on areas that are easier to develop while remaining open to collaboration with larger models like OpenAI. Currently, there is no industry-specific approach to Sovereign AI, except for the use of the NVIDIA-developed multimodal AI model named Eagle, which is used for trusted applications. High-risk sectors like healthcare may benefit from Sovereign AI in the future.

Factors Holding Back Sovereign AI Ambitions

Sustainability challenges were identified as the biggest barrier to advancing Sovereign AI initiatives, cited by 50% of agencies. Key concerns include the

carbon footprint of widespread AI deployment in Singapore and the high energy consumption associated with its use. Other factors include the loss of control and risks associated with IP (50%), which is the foundation of Singapore's digital economy, while for 47% it is the lack of strategic plans and clear business cases for the adoption and development of Sovereign AI.

Government Processes and Use Cases

The Singapore government's focus to become a global hub for AI innovation is reflected in its key focus areas. Application developer tools emerged as the top priority, identified by 77% of agencies, driven by the demand for innovation. Procurement processes follow closely at 70%, while digital marketing tools rank third at 57%. The top use cases tie back to the concerns about sustainability, with many agencies also seeing AI as an enabler of sustainability to meet the energy consumption challenges (67%). Beyond these use cases the focus is on efficiency such as finance process automation to improve productivity (47%) and procurement process automation (43%). As with Japan, there is also a strong investment in creating synthetic data to overcome a deficit of high-quality data and reduce reliance on foreign LLMs (43%).

Critical Success Factors for Sovereign AI

The most critical success factors for a Sovereign AI platform include compatibility/integration with sovereign infrastructure solutions (57%), applications with Sovereign AI principles embedded (47%), providers with a local workforce working exclusively on the country's AI solutions, and AI tools that prioritize ethical guidelines and transparency (47%). Responsible AI is a big focus of the Singapore government, so it is unsurprising to see this as a metric for success.

Criteria to Select a Partner

Singapore actively collaborates with technology providers to provide training and resources to empower start-ups, small and medium-sized enterprises (SMEs), and educational institutions to build a holistic AI ecosystem. In line with its emphasis on Responsible AI and ethics, a key criterion for selecting partners is the presence of an adequate and articulated Responsible AI code of practice, with 50% of agencies identifying this as a top quality sought in their partners. The other important criteria were price competitiveness (50%) and how a partner engages and participates in government outcomes realization (47%).

Areas Where Assistance is Required

Singapore agencies are self-sufficient but there are areas where assistance is sought from external sources. One thing in common across agencies is that this assistance is driven by the need to maximize the value of the technologies and stay in a leadership position with emerging technologies. The three key areas where assistance will be sought by Singapore agencies are: integrating various parts of the solutions (17%), training to get the most out of innovative technologies (17%), and keeping up with the latest update on the solutions/tools (13%).

South Korea

Approach: Public AI-First, Sovereign AI-Selective

Like Singapore, the South Korean government demonstrates the characteristics for becoming an AI-led nation. During agency interviews, there was a consensus that AI is a crucial component of the Presidential mandate for economic growth and was identified as one of the top three national strategic industry policies in 2024. As a result, South Korea's government agencies assign high strategic importance to AI technologies, with 23% of agencies identifying AI and GenAI as critical to maintaining their government's leadership.

South Korean government agencies place equal importance on broad AI (60%) and GenAI (67%), with a strong adoption rate for both. Investment in both areas is expected to remain strong through 2026, with 50% planning to invest in new GenAI initiatives or upgrades, while 43% intend to further invest in broad AI.

Sovereign AI Adoption is Used Judiciously

The adoption of Sovereign AI in South Korea was moderate in 2024 (27%), but the number of government agencies investing is expected to double by 2026. The agencies interviewed said that there was hesitancy with respect to the unintended consequences of Sovereign AI (such as hampering innovation) and that had held back many from investing up to 2024. But more recently, attention has shifted to Sovereign AI — not only to drive an innovation-led economy but also to ensure that the country's cultural diversity and values are reflected in AI models. Additionally, there is growing interest in how Sovereign AI can enhance security and mitigate geopolitical risks.

Factors Holding Back Sovereign AI Ambitions

Costs are the biggest hurdle for South Korean agencies, with 50% identifying it as the primary factor holding back progress on AI and Sovereign AI. The other biggest factor is the challenge of interoperability with legacy or future systems (47%). Uncertainty around interoperability also arose in the interviews conducted as part of this study. One agency reflected how difficult it was to coordinate a nation-wide approach across multiple ministries, which are now launching AI projects independently without a unified approach. At a leadership level there are subtle conflicts of interest in the government, and it is not easy to coordinate initiatives, so this is an obstacle that must be overcome by investors to get the greatest benefits from a Sovereign AI approach.

Government Processes and Use Cases

The South Korean government's commitment to building an AI-powered economy is evident in its strong focus on communication, with 63% of agencies prioritizing digital marketing tools. The other two areas receiving the most attention are a focus on RFP/contract process applications (53%) and application developer tools (47%), as the government focuses on building AI application development competencies. The top use cases identified are AI as an enabler of sustainability to address energy consumption challenges (53%), software development and testing (53%), and anti-fraud auditing (43%).

Critical Success Factors for AI and Sovereign AI

The most critical success factors for a Sovereign AI platform include AI tools that prioritize ethical guidelines and transparency (53%), providers with a dedicated local workforce focused exclusively on national AI initiatives (40%), and in-country cloud infrastructure to ensure data sovereignty (37%).

Criteria to Select a Partner

One of the agency leaders interviewed summed up the importance of partners and the ecosystem for success, saying, "We need the entire ecosystem to work together — infrastructure, computing resources, applications, and domain-specific tech vendors. I mean, you name it. We need all parties in the value chain to build Sovereign AI." Using this as a backdrop, the top criteria which were identified by agencies as critical when selecting partners include Sovereign AI frameworks that align with regulatory compliance, both current and future (53%), cloud ecosystem partnerships with AI expertise (50%), and access to AI and Sovereign AI talent (47%).

Areas Where Assistance is Required

South Korean government agencies are self-sufficient but there are areas where assistance is sought from external sources, including access to government AI and Sovereign AI specialists. The three key areas where assistance is sought by South Korean agencies are: accessing specialists that understand how AI is applied in government (17%), integrating components of the solutions (16%), and keeping up with the latest update on the solutions/tools (16%).

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