

# Revealing the Path Forward with Sovereign LLMs

Early lessons and insights from the emergence of Generative AI (GenAI) and large language models (LLMs) are pointing to a new vision for how LLMs could be developed to cater to specific nations or regions. Termed a Sovereign LLM, national governments and private enterprise alike are exploring how to design, develop, operate, and refine the AI value chain in a way that reflects local languages and dialects, values, regulations, and laws. This vision is anchored in the notion that where Large Multinational Cloud Provider platforms come up short, local opportunity flourishes.

Cloud provider LLMs have some agility in catering to different language speakers in varied geographies, but the reality is that many platforms are often biased toward their country of origin across several dimensions, including legal frameworks, ethical and equity frameworks, language, and culture. Data owned by large organizations is not often attenuated to the nuances of a local geography, and that can be reflected in the accuracy, reliability, and applicability of LLM outputs.

Imagine an Indian retail business that seeks an LLM-enabled application for retrieving and summarizing requirements, complaints, and regulations that are recorded in dialects of Hindi, Kannada, Malayalam, Tamil and English. An LLM trained primarily on non-local English language will struggle to reliably and accurately derive an output from a mass of consumer data. Conversely, a Sovereign LLM trained on local dialects of major national languages could be well-suited to such a task.

Stakeholders in countries such as India, Singapore, Japan, Saudi Arabia, France, and elsewhere are already establishing visions for domestically owned and operated Sovereign LLMs trained on local languages and dialects and tuned to the cultures and priorities of the national or regional audience. In a range of applications, Sovereign LLMs could help revitalize and preserve endangered languages, empower underrepresented minorities that are not conversant in the official languages, power research that addresses a nation's specific needs, and foster public trust in AI because it is aligned with local needs, concerns, dialects, history, and cultural norms. In short, it could deliver an inclusive experience that multinational or foreign cloud provider platforms may not.

Meanwhile, there are inherent advantages for governing bodies. A Sovereign LLM can be designed to comply with local rules, to promote equity and inclusion as it relates to national or regional challenges, and to put national populations in charge of their own LLM destiny. Indeed, because they are trained on local data and can reflect legal frameworks in controllable borders, Sovereign LLMs can empower national or regional stakeholders to: align AI with domestic regulatory policies and industry sector standards; meet required Service Level Agreements and/or Operating Level Agreements for infrastructure, platforms and applications; and benefit from data protection and security measures across storage, network, and access.

For public or private activities that have limited commercial appeal to large cloud providers (such as conversing in local dialects or managing to local inclusion and equity norms), Sovereign LLMs can fill the gap and seize the rewards. While the vision for Sovereign LLMs is becoming clearer, the path to developing them in a commercially viable way is lined with a range of challenges that stretch far beyond the GenAI model itself. It is not simply a matter of acquiring GPUs and assembling a localized dataset. Thriving with a Sovereign LLM and competing against foreign players with massive capital and scale means creating a commercial structure, a go-to-market strategy, a competitive product suite, and roadmap for shifting from vision to reality.



## Readiness Factors for Sovereign LLMs

Creating a Sovereign LLM that has domestic application and can survive or thrive against multinational/foreign cloud provider solutions requires readiness across a variety of areas. Across the end-to-end AI value chain, consider these factors impacting technological, organizational, and commercial readiness.



### Purchasing

Large cloud providers have significant purchasing leverage in acquiring the latest GPUs, in some cases pricing other players out of the market. While acquiring older GPUs may suffice in the short term, over time, those GPUs may become outdated and unable to scale in a way required for Sovereign LLMs.



### Talent

Technology talent is rare and expensive. In a time when organizations are investing to become AI-fueled, the skilled workers needed to build and operate a Sovereign LLM may be in short supply, particularly in nations that are already facing technical talent shortfalls or face competition from multinationals who are offering locals desirable AI jobs. Few companies have knowledge and expertise across cloud and non-cloud providers, sectors, and geographies.



### Commerce

Commercial success depends on rapidly deriving value from the AI infrastructure across a network of industries, clients, and use cases. In the LLM marketplace, multinational cloud providers offer a range of competitively priced solutions that are easy to consume via Software-as-a-Service (SaaS) and Platform-as-a-Service (PaaS) offerings. A Sovereign LLM would need to offer solutions that are equally straightforward and easy deliver as-a-service. If not, local sectors and companies may be more likely to use multinational LLMs for most of their use cases.



### Salesforce

Most local service provider workforces are accustomed to selling infrastructure capacity as-a-service. Moving from VAR resold server instances to PaaS/SaaS and Model Marketplaces, there can be a steep learning curve, as the salesforce adapts from selling longer-term infrastructure contracts to consumption-based services.





### **Customer**

Multinational competitors have invested in educating the market on their products and services. New entrants also need to establish their business rationale and differentiators in the public square, preparing the customer base to use the Sovereign LLM and Sovereign GPU cloud capabilities.



### **Technology compatibility**

Successful GenAI-enabled use cases require a front-end user interface, integrations, backend data infrastructure and management, and all of the application infrastructure synchronized with the GenAI tech stack. A GPU cloud and LLM without the supporting data and infrastructure has limited value beyond short-term model training for niche use cases.



### **Cybersecurity**

Cyber threats to GenAI infrastructure are emerging and proliferating, from malicious code injection to intellectual property (IP) theft to legal and extra-legal competition from other geographies and corporate entities. For a Sovereign LLM to deliver value and earn end user trust, these cybersecurity risks need to be mitigated and managed.



### **Government & Regulations**

Public sector and local commercial organizations will require a range of information on the value, technical requirements, and expected outcomes from a Sovereign LLM, so as to determine public investment and law and rulemaking. Sovereign LLM providers will need to provide governing bodies with information on the concept, the impact on equity and inclusion, factors around data security and sovereignty, and the transformational potential for society as a means to help them differentiate.

From this perspective, the business proposition and potential for Sovereign LLMs to compete against multinational infrastructure and cloud provider solutions is not just a technical challenge. Preparing a country or region for a value-driving Sovereign LLM takes adjustments and investments that cut across society and sectors. The challenge is significant, and despite the goal of LLM independence, no one can go it alone.

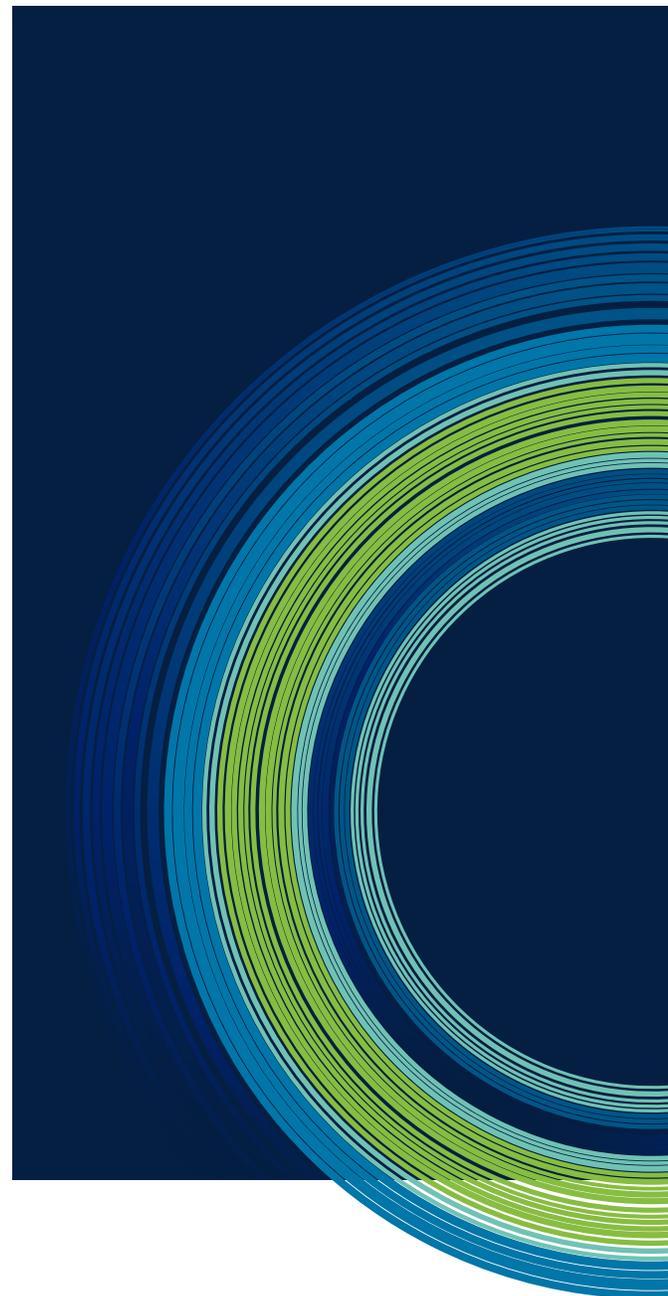


## Identifying capabilities for Sovereign LLM scale and value

A Sovereign LLM permits AI self-reliance, but collaboration remains crucial. GenAI models are maturing quickly, and the leading practices for responsibly and effectively building, using, and managing LLM applications are still being discovered—and when they are discovered, they may not be openly available for adoption. There are, however, areas where stakeholders can focus their efforts and identify where to turn and who to call on to turn the Sovereign LLM from vision into reality.

Establishing Sovereign AI capabilities requires the combination of strategy, governance, and technical controls. These in turn promote resilience, agility, autonomy, and compliance. As businesses and public sector authorities explore how to build the infrastructure, skills, processes, and commercial requirements for a value-driving Sovereign LLM, there are six areas where they can look to build capacity and excellence through investments and collaboration with AI and business leaders.

- 1. Managed services**  
Determine which aspects of the AI value chain should be acquired via a third-party provider, weighing factors like cost of compute, speed to value, and talent availability.
- 2. Product and service catalog**  
Assemble the solutions that will be competitive in the LLM market, taking into account the value of an LLM tuned to the local population as well as the simplicity and ease of use that makes cloud provider LLMs attractive.
- 3. Go-to-market strategy**  
In a marketplace with foreign and domestic stakeholders, determine the steps and tactics needed to educate consumers, scale products, and compete against global platforms.
- 4. Adjacent technology**  
Assess which data, AI, custom development, and other technologies are in place, which are needed, the solutions that align with financial and technological realities, and the options for bridging the gaps.
- 5. Financial and tax**  
Private and public stakeholders need to develop strategies and investments in a way that meets existing financial and tax obligations, as well as look ahead to future-proof plans for a commercially viable Sovereign LLM.
- 6. Cybersecurity and compliance**  
On the landscape of emerging GenAI-specific cyber threats, determine the security requirements that can guard sensitive data and IP and implement GenAI governance that enables compliance.



## The value of a Sovereign LLM is clear.

The next step is for national and regional stakeholders to collaborate on the investments and activities that will drive differentiated capabilities and deliver the cultural and linguistic agility, inclusiveness, and equity end users expect.



## Get in touch

---

### Steve Brown

Managing Director  
Deloitte Consulting LLP  
[stephenbrown3@deloitte.com](mailto:stephenbrown3@deloitte.com)

---

### Goutham Belliappa

Managing Director  
Deloitte Consulting LLP  
[gbelliappa@deloitte.com](mailto:gbelliappa@deloitte.com)

---

### David Pui Leung Ng

Director, AI & Data  
Deloitte Consulting LLP  
[davng@deloitte.com](mailto:davng@deloitte.com)

## Deloitte.

As used in this document, "Deloitte" means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see [www.deloitte.com/us/about](http://www.deloitte.com/us/about) for a detailed description of our legal structure. Certain services may not be available to attest clients under the rules and regulations of public accounting. This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.

Copyright © 2024 Deloitte Development LLC. All rights reserved.