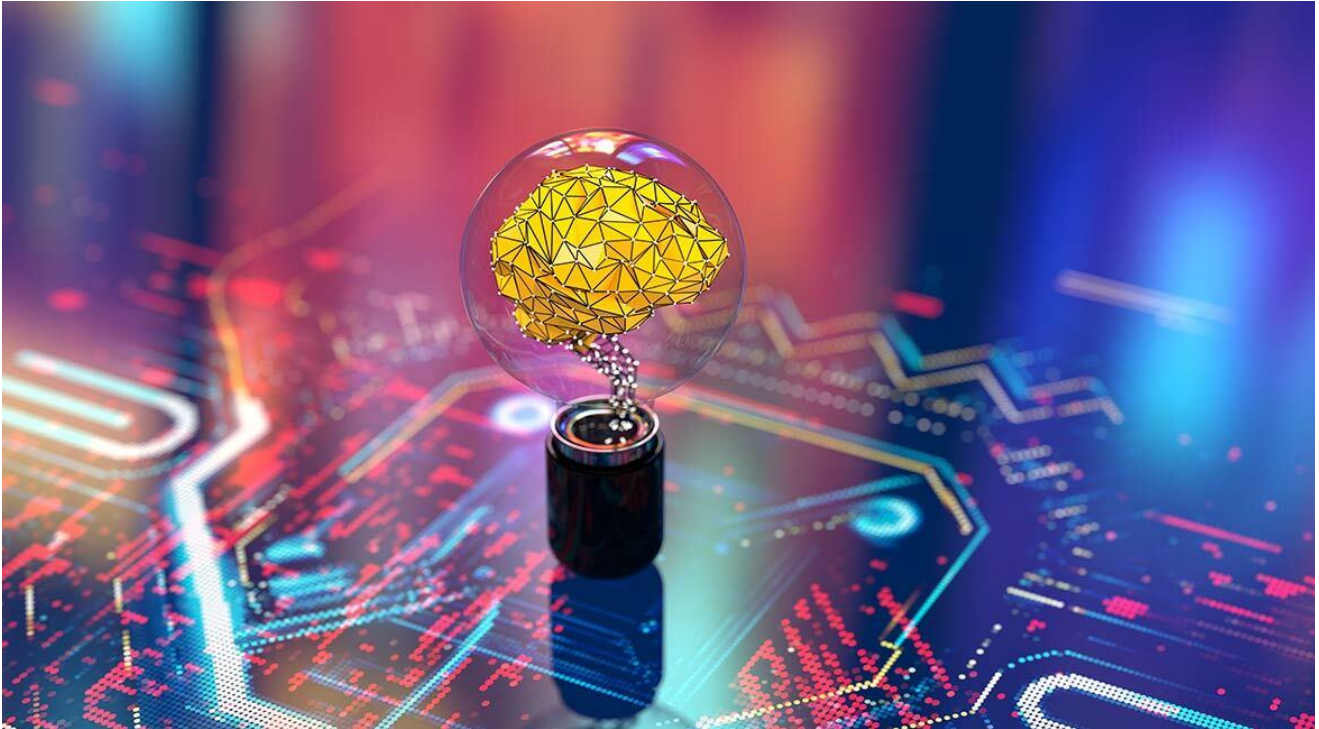


DISCUSSION PAPER

# Geopolitics of Responsible AI Governance: The Need for a Mission-Oriented Approach



- To effectively scale the benefits of AI for development, several critical enablers, such as the availability of computing power, talent, access to high-quality machine-readable data (HQMRD), and robust governance are required. However, these enablers that support the development and deployment of AI are unevenly distributed across the globe, leading to a concentration of power and influence among a few leading countries and firms.
- Current disparities in AI enablers show that over 80% of the world's population who reside in the Global majority have little access to resources critical to unlocking AI capabilities as seen elsewhere. Addressing these deep disparities should be a top priority for transitioning towards more equitable and inclusive AI development globally.
- This discussion paper delves into the intricacies of responsible AI governance within the geopolitical sphere, highlighting the significance of adopting a mission-oriented perspective. Through ambitious goal-setting and cross-sector collaboration, this approach aims to tackle ethical, privacy, and geopolitical challenges inherent in AI governance and the broader data-driven economy.

## What's the issue?

In the era of rapid technological advancements, data-driven frontier technologies such as artificial intelligence (AI) have emerged as a potentially transformative force (Vinueza et al., 2020).

However, there is increasing evidence that if developed and deployed irresponsibly, AI can create new forms of harm or perpetuate current multidimensional structural inequities that exist across the globe (PNAI, 2023). The responsible development and deployment of AI technologies are crucial to ensure positive socioeconomic impacts from the ubiquitous use of AI while minimising its associated existential risks (Ahmed et al., 2023; UNCTAD, 2021).

However, AI for development hinges on several critical factors, particularly the availability of computing power, talent, access to high-quality machine-readable data (HQMRD), and governance. Given the widening multidimensional inequalities and the rapid advancement of AI technologies, discussions on governance have gained prominence in global policy agendas and underscore the urgency of addressing the geopolitics of AI governance.

This paper is based on a dialogue organised by the Florence School of Transnational Governance (STG), that took place at the European University Institute (EUI), in May 2024, where speakers explored how a mission-oriented approach to responsible global AI governance can facilitate more inclusive, ethical, and sustainable transnational AI ecosystems (EUI, 2024).

## The Geopolitics of AI

The effective scaling of AI for development hinges on several critical factors, particularly the availability of computing power, talent, access to high-quality machine-readable data (HQMRD), and governance. However, Table 1 shows that the development and deployment of AI are unevenly distributed across the globe, leading to a concentration of power and influence among a few leading countries and firms (UNCTAD, 2021). Addressing the potential bottlenecks, as shown in Table 1, through international cooperation and inclusive policies can help mitigate inequalities in the global AI landscape. By fostering a collaborative environment among leading countries and organisations involved in these domains, stakeholders can work towards maximising the benefits of AI technologies for development.

**Table 1: The Geopolitics of AI**

Building Block	Potential Bottleneck	Leading Countries	Leading Firms / Organizations
<b>Computing Power</b> Soft and hard ICT infrastructure are essential for AI development and deployment e.g semiconductors, data centres, software, stable energy, networks etc	High	US, Taiwan, Japan, South Korea, Netherlands	Semiconductor players (NVIDIA, TSMC, etc.), cloud computing companies (Amazon Web Services, Azure, Google Cloud)
<b>Human Capital/Talent</b> The talent shortage affects all aspects of AI development, from the technical expertise and diversity equity and inclusion (DEI) required to develop and implement responsible AI solutions to the industry-specific knowledge	High	US, China, Europe, India	Various Universities and research centers, Google DeepMind, OpenAI, Anthropic, etc
<b>High Quality Machine Readable Data (HQMRD)</b> HQMRD availability is vital to leverage data innovations such as AI but may be limited in scope	Medium	China, India, US, Indonesia, non-state multinationals actors	Leading global technology players GAFAM*, ByteDance, Amazon, financial institutions
<b>Governance</b> Enabling policy and regulatory environment for investments, ethical innovation, international cooperation, risk mitigation etc.	High	UK, EU, US, China	Leading global technology players GAFAM, multilaterals (UN, OECD, G20), international standard setting organisations ISO, IEEE

Source: Authors own from various sources

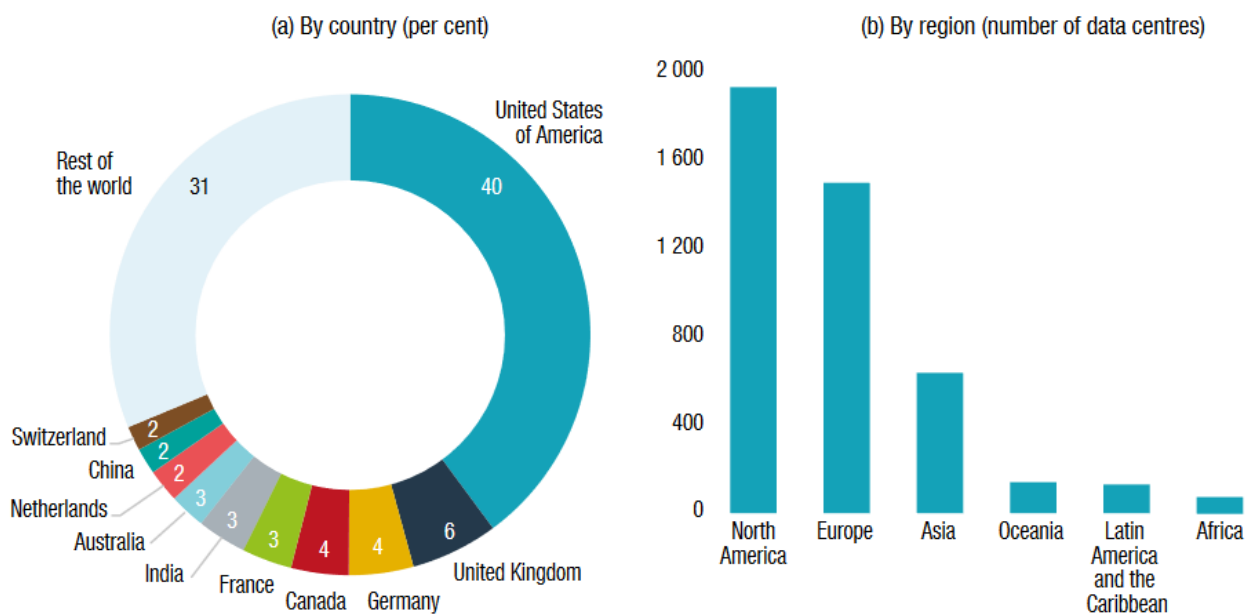
**Computing Power:** Countries like the United States of America (US), Taiwan, Japan, and South Korea dominate the semiconductor industry, which is essential for AI development.

The production of advanced microchips and GPUs (graphics processing units) forms the backbone of AI systems, enabling complex computations and data processing and reveals the international distribution of AI related infrastructure (Mckinsey, 2021).

Major players include semiconductor manufacturers like NVIDIA and TSMC, as well as cloud computing giants such as Amazon Web Services, Microsoft Azure, and Google Cloud. As demand for AI capabilities grows, ensuring access to adequate computing power becomes increasingly important to prevent bottlenecks that could stifle innovation (Lehavi, 2024). Figure 1 highlights how the Geographical distribution of colocation data centres supports the increasing need for computing power (UNCTAD, 2019).

Furthermore, a robust and sustainable Internet ecosystem is vital for facilitating effective data storage, retrieval, and computing power necessary for AI applications while minimising carbon emissions. The dominance of these countries and firms in computing power is crucial because AI algorithms require substantial computational resources for training and deployment.

**Figure 1: Geographical distribution of colocation data centres, 2019**



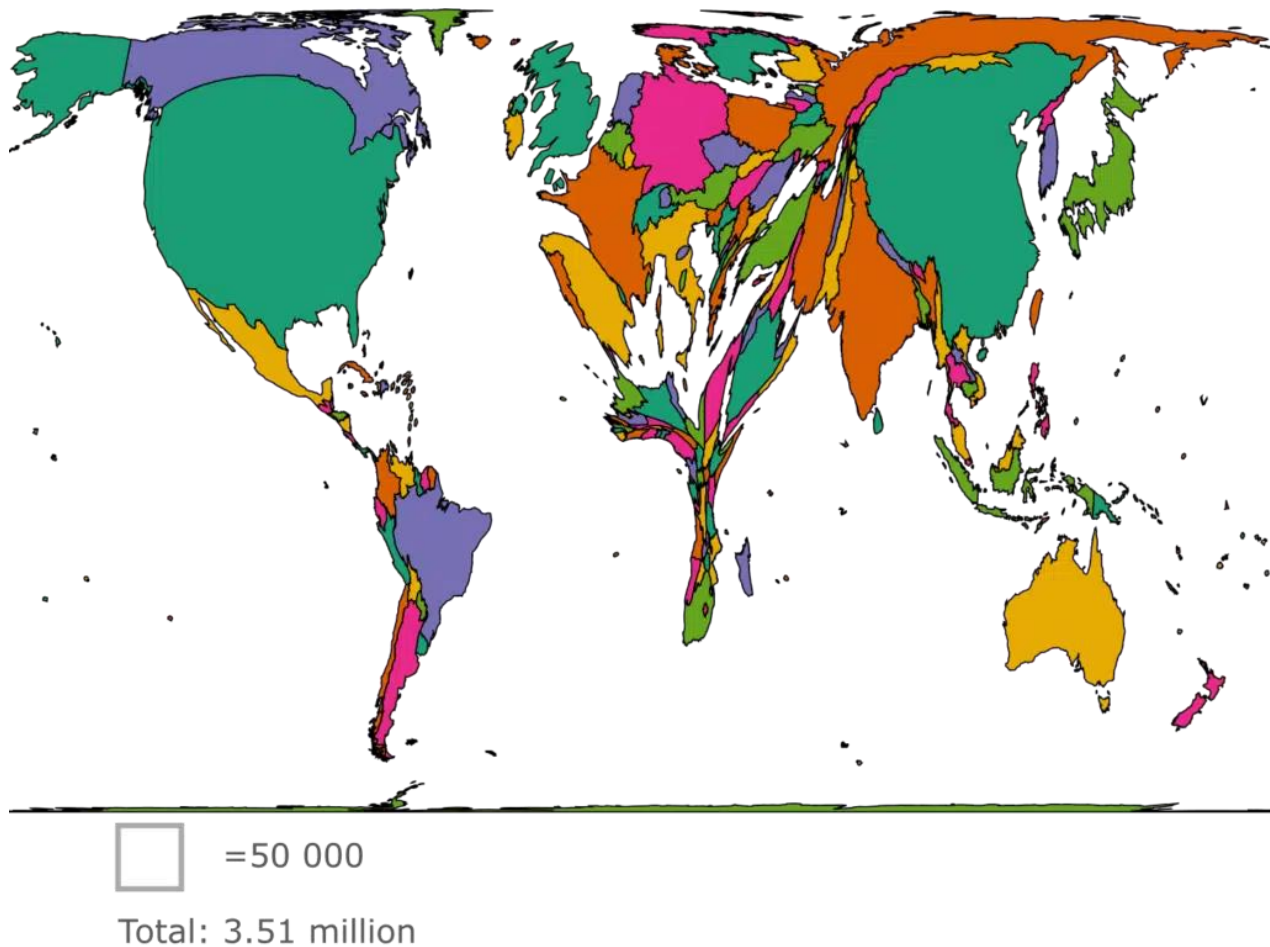
Source: UNCTAD, 2019

**Talent:** The US, China, Europe, and India boast significant concentrations of AI talent, with leading universities, research centres, and companies. Figure 2 visualises the global landscape of AI research from 2014-2023 based on academic publication outputs from countries around the world.

The US remains the top destination for AI researchers, accounting for approximately 30% of talent globally by academic paper production; China also remains a major leader in AI-related academic papers produced at 12%. Africa, South America and most Asian nations appear to have largely untapped AI potential with less than a 5% collective contribution, while countries like India are emerging as key players by not only exporting talent but also increasingly retaining it as their domestic tech sectors grow (Digital Science, 2024).

Developing a robust local talent pool through education and training initiatives can empower countries in the Global Majority to participate more fully in the AI revolution.

**Figure 2: Distribution of AI research publications, 2024**

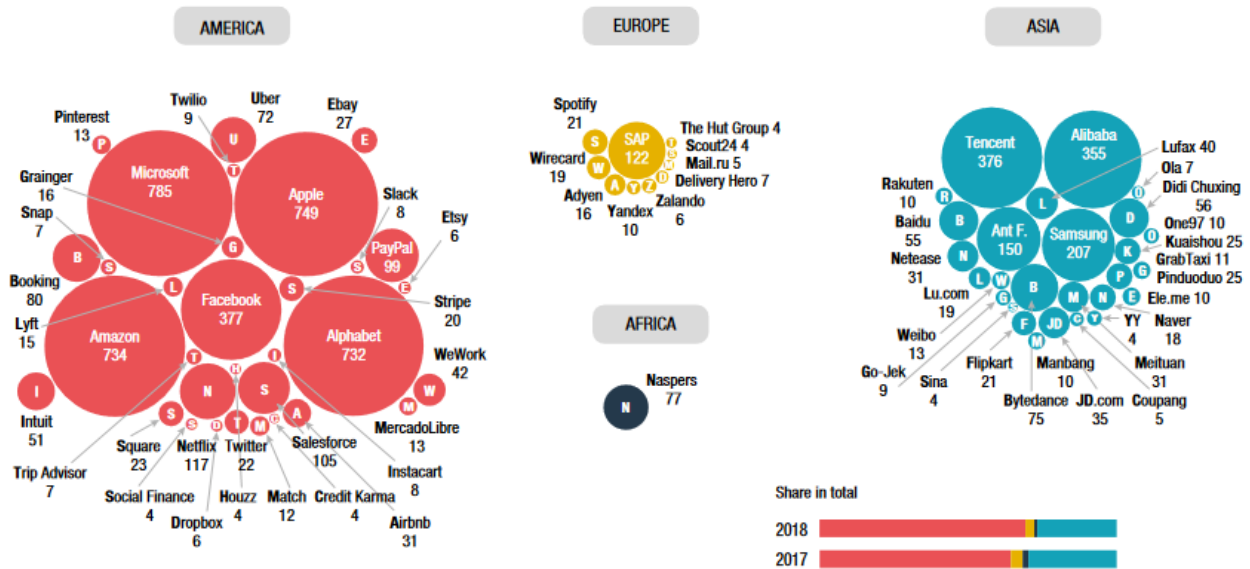


Source: Digital Science, 2024

**High-Quality Machine-Readable Data (HQMRD):** While data availability is essential for AI development, access to HQMRD is often limited, particularly in the Global Majority (Ahmed, 2024). Using the geographical distribution of the dominant global platforms, Figure 3 reveals that the US and China (driven by various non-state multinational actors are key players in data generation and utilisation) (UNCTAD, 2019). The disparity in access to HQMRD can exacerbate existing inequalities as those with better data access can develop more advanced AI systems.

The OECD reports that countries with strong data governance frameworks are better positioned to leverage AI technologies effectively (OECD, 2023). To bridge this gap, initiatives that promote open data sharing and collaboration between developed and developing nations are essential for ensuring equitable access to data resources.

**Figure 3: Geographical distribution of the dominant global platforms**

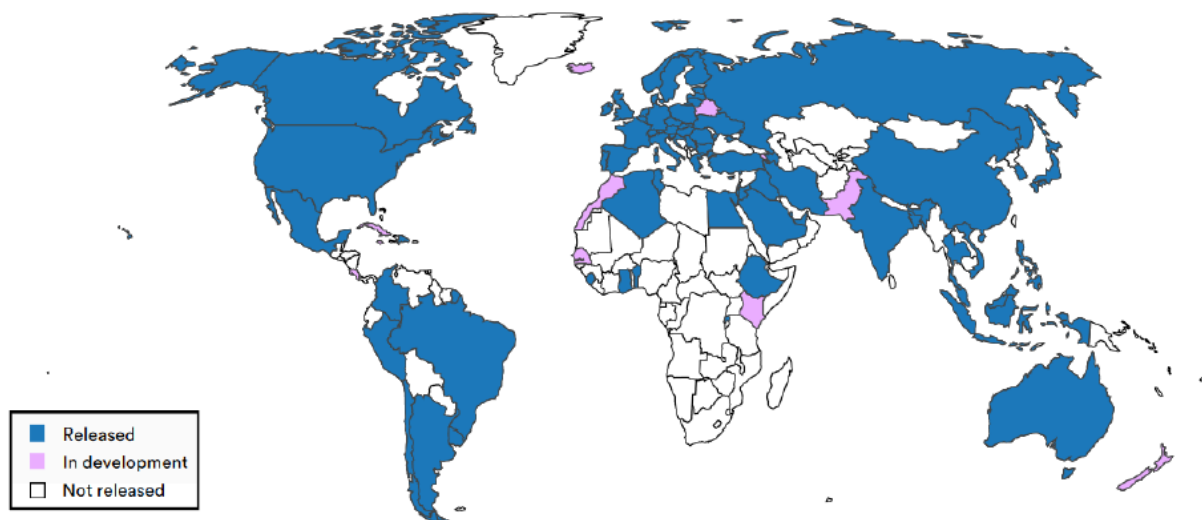


Source: UNCTAD, 2019

**AI Governance:**

AI governance refers to a set of principles, policies, regulations, and practices that govern the development, deployment, and use of AI technologies. An enabling policy and regulatory environment is necessary for fostering investments in ethical innovation and international cooperation while mitigating risks associated with AI deployment. Figure 4 shows that The UK, EU member states, the US, and China are leading efforts in establishing governance frameworks for AI. Key players include GAFAM companies as well as international organisations such as the UN, OECD, G20, and standard-setting bodies like ISO and IEEE.

**Figure 4: Countries with a national strategy on AI, 2023**



Source: Stanford, 2024

The previous figures reveal the current disparities in AI enablers show that over 80% of the world's

population who reside on the Global Majority have little access to resources critical to unlocking AI capabilities as seen elsewhere. Addressing these deep disparities should be a top priority for transitioning towards more equitable and inclusive AI development globally.

The uneven distribution of AI capabilities computing power, talent, access to HQMRD, and governance raises concerns about potential inequalities and power imbalances in the global AI landscape (Ahmed et al., 2023). A mission-oriented approach to RAI governance can help address these challenges by promoting international cooperation, inclusivity, and equitable access to AI benefits.

## **Responsible AI and Global Governance**

Responsible AI (RAI) encompasses a range of considerations, including ethical standards, guardrails, accountability mechanisms, transparency requirements, legal frameworks, and societal impacts, aimed at ensuring that AI systems are developed and deployed in a safe, fair, and beneficial manner, that respects human rights (IBM, 2023). RAI goes beyond mere regulation and considers various factors, including existing socioeconomic challenges, to ensure that AI systems are developed and deployed ethically and responsibly, and involves collaboration among various stakeholders, including policymakers, industry leaders, researchers, civil society organisations, and the public, to establish norms and guidelines that promote the ethical and responsible use of AI while maximising its potential benefits for people and the planet (Ahmed et. al., 2023).

The global governance of AI technologies is heavily influenced by Western perspectives and interests, which can lead to solutions that do not align with the realities faced by the Global Majority (Ahmed et al., 2023). There is a need for a profound transformation in how global governance approaches AI, through a model that genuinely engages with and uplifts communities in the Global Majority rather than imposing external solutions without context or understanding.

## **Why a Mission-Oriented Approach to RAI Governance?**

A mission-oriented approach (MOA) (Mazzucato, 2018) provides a framework for addressing complex societal grand challenges, such as those posed by AI. By establishing a clear mission, setting specific objectives, mobilising resources, promoting innovation, and monitoring progress, stakeholders can work collaboratively to ensure that AI development aligns with societal values and benefits all communities. Below are expanded details on each component of the MOA, along with relevant examples.

- 1. Defining a bold and inspirational mission:** Establishing a mission that resonates with societal values is crucial for guiding the development and deployment of AI technologies. This mission should aim to promote responsible and equitable AI practices globally. A well-defined mission can inspire stakeholders across sectors to align their efforts toward common goals, fostering collaboration and innovation. For instance, initiatives like UNESCO's Recommendations on the Ethics of AI advocate for AI that promotes and protects human rights, human dignity, and environmental sustainability. Adopted in November 2021 by 193 member states, this landmark framework emphasises the need for ethical guidelines to govern AI technologies, ensuring they contribute positively to society while minimising potential harms (UNESCO, 2023).
- 2. Establishing clear objectives and targets:** Objectives should be specific, measurable, achievable, relevant, and time-bound (SMART) but still flexible enough to align to the realities

of different contexts, guiding the implementation of the mission, preventing duplication of efforts, and could help track progress and ensure accountability among stakeholders.

3. For instance, to address the lack of diversity, equity, and inclusion (DEI) in many global AI governance discussions (GPAI, 2023) an initiative aimed at increasing DEI in AI development might set a target to increase the representation of women and people from marginalised groups in tech-related roles by 30% within five years. This goal is specific (increase representation), measurable (by percentage), achievable (based on current trends), relevant (to address diversity issues), and time-bound (within five years).
4. **Mobilising resources and fostering partnerships:** Governments, international organisations, the private sector, and civil society need to collaborate and pool resources to achieve an MOA, the complexities of AI technologies necessitate a coordinated effort among various stakeholders to ensure that AI is developed and deployed responsibly. The PNAI exemplifies this collaborative spirit by bringing together a diverse range of participants, including data governance experts, policymakers, industry leaders, and civil society representatives. This multistakeholder framework allows for the sharing of knowledge, resources, and best practices, which is crucial for addressing the multifaceted challenges posed by AI. A key objective of the PNAI is to widen the inclusion of voices from the Global South in AI governance discussions. By prioritising these perspectives, the network aims to ensure that policies are not only globally relevant but also culturally sensitive and contextually appropriate (IGF, 2023).
5. **Promoting innovation and risk-taking:** Creating a supportive environment that fosters experimentation and learning is essential for the development of responsible and innovative AI solutions. Encouraging innovation contextualised to local context requires not only a willingness to explore new ideas but also the establishment of frameworks that allow for calculated risk-taking. One notable initiative is the InkubaLM model created by Lelapa AI, which focuses on enhancing low-resource African languages such as Swahili, Yoruba, isiXhosa, Hausa, and isiZulu. The model is designed not only to support these languages but also to empower local communities by providing tools for translation, transcription, and natural language processing (NLP) that align with their linguistic and cultural contexts. This approach not only enhances the functionality of AI in underrepresented languages but also encourages further research and development in the field of NLP. InkubaLM exemplifies how local innovations and a culture of experimentation can lead to significant advancements in AI solutions that resonate with local users and can address specific needs while promoting responsible AI practices without the fear of immediate repercussions or failure.
6. **Monitoring progress and adapting strategies:** Regular evaluation and feedback mechanisms are essential for ensuring the effectiveness of the MOA and adapting strategies as needed. One example is the Translational Evaluation of Healthcare AI (TEHAI) framework, which was developed to assess the implementation and impact of AI systems in healthcare settings.

TEHAI focuses on three main components: capability, utility, and adoption, allowing stakeholders to evaluate AI systems at various stages of their development and deployment (PMC, 2021). The TEHAI framework promotes an iterative process where insights gained from monitoring efforts lead to adaptive strategies in governance practices.

By identifying areas for improvement based on real-world performance data, stakeholders can refine their approaches to AI governance, ensuring that they remain responsive to emerging challenges and opportunities in the rapidly evolving landscape of AI technologies. This adaptability is crucial for fostering a culture of continuous improvement in RAI governance and ensuring that AI solutions are both effective and aligned with societal value

## Challenges and Considerations

While a mission-oriented approach (MOA) presents promising opportunities for Responsible AI (RAI) governance, several challenges and considerations must be addressed, particularly in the context of the Global Majority. These challenges can hinder the effective development and deployment of AI technologies and must be carefully navigated to ensure equitable outcomes.

**Capacity constraints:** Many countries, especially in the Global Majority, lack the necessary infrastructure, expertise, and resources to effectively govern AI development and deployment. For instance, a report by the United Nations indicates that many developing nations struggle with limited access to advanced technologies and skilled personnel, which hampers their ability to implement robust AI governance frameworks (UN, 2023).

**Contextual differences:** AI governance strategies need to be tailored to specific contexts, considering cultural norms, societal values, and economic realities. A one-size-fits-all approach is unlikely to be effective. For example, the European Union's General Data Protection Regulation (GDPR) emphasises strict data privacy standards that may not align with the economic priorities of developing countries seeking rapid technological advancement (REF). This mismatch can lead to resistance or non-compliance among local stakeholders, who may prioritise economic growth over stringent regulatory compliance.

**Coordination challenges:** Effective coordination among diverse stakeholders—including governments, international organisations, and the private sector—is crucial for a successful MOA. The lack of cohesive strategies can result in fragmented efforts that undermine collective goals. For instance, the varying regulatory approaches taken by countries such as the US, EU, and China illustrate how differences in governance can complicate international cooperation on AI standards (World Economic Forum, 2023). Without effective communication and collaboration among these entities, achieving a unified approach to AI governance becomes increasingly difficult (Ahmed et al., 2023).

**Sustainability concerns:** Ensuring the long-term sustainability of RAI initiatives requires ongoing financial and political commitment from all stakeholders involved. Many AI projects are funded through short-term grants or initiatives that may not provide lasting support. For example, while several African nations have launched AI initiatives with initial funding from international donors, sustaining these projects often proves challenging as funding dwindles. Without sustained investment in governance frameworks and capacity building, initiatives may struggle to maintain momentum or adapt to evolving technological landscapes.

**Equity considerations:** Addressing existing inequalities and ensuring that the benefits of AI are shared equitably is paramount for fostering inclusive growth. The rapid advancement of AI technologies risks exacerbating existing disparities between developed and developing nations. The

UN panel has highlighted that without deliberate efforts to include marginalised voices in decision-making processes, disparities may worsen (UN, 2021). For instance, if AI solutions are primarily developed with input from wealthy nations or corporations, they may not adequately address the needs of communities in lower-income regions

## **Conclusion**

The geopolitical landscape of AI necessitates a collaborative and mission-oriented approach to RAI governance. By embracing RAI principles, setting clear goals, fostering partnerships, and addressing the challenges outlined above, the international community can harness the transformative potential of AI while mitigating its risks and ensuring its benefits are distributed equitably.

The need for a renewed global governance framework is highlighted by UN Secretary-General António Guterres, who emphasises the limitations of outdated institutions in addressing contemporary challenges which underscores the urgency of developing new mechanisms for global cooperation, particularly in the realm of RAI governance. By failing to incorporate local voices and prioritise systemic change, these frameworks hinder meaningful progress in AI development and its potential benefits for all communities. A shift towards more inclusive and equitable governance is essential to ensure that AI technologies serve as tools for empowerment rather than instruments of further marginalisation.

## **Recommendations**

The uneven distribution of computing power, talent, governance, and data access raises significant concerns about potential inequalities and power imbalances in the global AI landscape. A mission-oriented approach to responsible global AI governance can help address these challenges by promoting the following:

### **Build Local Capacity**

Investing in local expertise is crucial for sustainable AI governance. This includes developing training programs tailored to regional needs, enhancing digital infrastructure, and funding local research initiatives. Empowering local professionals reduces reliance on external expertise and enables countries to create governance frameworks suited to their unique contexts.

### **Foster Collaborative Ecosystems**

Creating platforms for multistakeholder collaboration ensures diverse voices are included in AI governance. Governments, private sector actors, civil society, and academia can co-create ethical policies and share best practices. Joint initiatives and knowledge-sharing mechanisms promote inclusivity and improve policy effectiveness.

### **Ensure Equity in AI Deployment**

Equity assessments, active engagement of marginalised communities, and inclusive policies are vital to ensure all groups benefit from AI advancements. Subsidies and targeted programs can address disparities, fostering a more balanced technological landscape.

### **Adopt Sustainable Funding Models**

Diversifying funding sources through public-private partnerships, philanthropic contributions, and long-term government commitments ensures the sustainability of RAI initiatives. These strategies help mitigate risks and maintain project viability over time.

### **Establish Robust Monitoring and Evaluation**

Standardised evaluation frameworks and feedback mechanisms are essential for assessing the impact of RAI initiatives. Regular monitoring and adaptation based on findings allow stakeholders to address challenges proactively and refine their strategies for maximum societal benefit.

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