

Artificial Intelligence Regulation in Pakistan: Lessons from Australia's Risk-Based Approach and Germany's EU AI Act Compliance for Developing a Contextually Adaptive Legal Architecture

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Abstract

The rapid proliferation of artificial intelligence (AI) technologies presents both unprecedented opportunities and significant regulatory challenges for developing nations. Pakistan, having recently adopted its National AI Policy 2025, stands at a critical juncture in formulating a legal architecture that balances innovation with citizen protection. This article examines two contrasting yet complementary regulatory paradigms: Australia's evolving risk-based approach to AI governance and Germany's implementation of the European Union's AI Act. Through comparative analysis, it explores how Pakistan can develop a contextually adaptive legal framework that acknowledges its unique socio-economic realities, technological infrastructure, and institutional capacities. The article argues that Pakistan should adopt a phased, risk-based regulatory model that leverages existing data protection frameworks, establishes dedicated oversight mechanisms, and prioritises human-centred AI governance while avoiding the regulatory rigidity that may stifle innovation. Drawing from Australia's voluntary-to-mandatory transition and Germany's institutional adaptation to EU requirements, this analysis offers actionable recommendations for Pakistan's emerging AI regulatory architecture.

Keywords: Artificial Intelligence Regulation, Pakistan National AI Policy 2025, EU AI Act, Risk-Based Regulation

Introduction

Artificial intelligence has emerged as one of the most transformative technologies of the twenty-first century, reshaping economies, governance

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structures, and social interactions across the globe. As AI systems become increasingly integrated into critical decision-making processes—from healthcare diagnostics and financial services to criminal justice and public administration—the imperative for robust regulatory frameworks has intensified. The challenge is particularly acute for developing nations like Pakistan, which must navigate the dual imperatives of fostering technological innovation and protecting citizen rights within resource-constrained institutional environments.

The global regulatory landscape for AI is characterised by significant divergence. The European Union's AI Act, which entered into force on 1 August 2024, represents the world's first comprehensive legal framework for AI governance, establishing a risk-based classification system with corresponding obligations (European Union, 2024). This prescriptive approach has influenced regulatory thinking worldwide, with jurisdictions from Australia to Brazil drawing inspiration from its architecture (SIA Partners, 2024). However, the translation of such frameworks to developing country contexts requires careful consideration of local capacities, legal traditions, and developmental priorities.

Pakistan's engagement with AI regulation has gained momentum through the adoption of the National AI Policy 2025 (NAIP 2025), approved by the federal cabinet in July 2025 (Government of Pakistan, 2025). This policy sets ambitious targets, including training one million AI professionals by 2030 and producing 1,000 indigenous AI products within five years (Associated Press of Pakistan, 2025; Arab News PK, 2025). It also establishes institutional mechanisms such as the AI Council and AI Directorate to coordinate implementation (Islam, 2025). However, significant gaps remain between policy aspirations and legal implementation, as no domestic legislation has yet been enacted to operationalise the policy's objectives (Paul Hastings LLP, 2026).

This article examines how Pakistan can learn from the regulatory experiences of Australia and Germany to develop a contextually adaptive legal architecture. Australia's approach—characterised by a transition from voluntary ethical principles to proposed mandatory guardrails for high-risk AI—offers insights into managing regulatory evolution while maintaining flexibility (Weatherall et al., 2024). Germany's implementation of the EU AI Act demonstrates how existing institutional frameworks can be repurposed to meet new regulatory demands, with the Federal Network Agency (Bundesnetzagentur) designated as the central market

surveillance authority (DLA Piper, 2025). Together, these case studies provide valuable lessons for Pakistan as it moves from policy formulation to legislative implementation.

Conceptual Framework: Understanding the Title

The title "Artificial Intelligence Regulation in Pakistan: Lessons from Australia's Risk-Based Approach and Germany's EU AI Act Compliance for Developing a Contextually Adaptive Legal Architecture" encapsulates three interconnected conceptual dimensions:

❖ The Concept of "Contextually Adaptive Legal Architecture"

A contextually adaptive legal architecture refers to a regulatory framework that is intentionally designed to respond to the specific socio-economic, institutional, and technological conditions of a jurisdiction. For Pakistan, this means moving beyond mere transplantation of foreign regulatory models toward the development of a bespoke framework that considers:

Institutional Capacity: The framework must be enforceable given Pakistan's existing regulatory infrastructure, which may lack the technical expertise and resources for intensive AI oversight.

Developmental Priorities: Regulation should not impede Pakistan's digital transformation goals or its aspiration to become a regional AI hub.

Legal Tradition: The framework must integrate with Pakistan's common law heritage and existing legal structures, including the Personal Data Protection Act and the Pakistan Cloud First Policy (Institute of Strategic Studies Islamabad, 2025).

Socio-Cultural Context: Considerations of linguistic diversity, digital literacy rates, and varying levels of technological access across urban and rural populations must inform regulatory design.

❖ The Risk-Based Approach as a Regulatory Philosophy

The risk-based approach, central to both the EU AI Act and Australia's proposed framework, classifies AI systems according to their potential for harm and imposes graduated regulatory obligations accordingly (Yusoff, 2025). This philosophy is particularly attractive for developing nations because it enables regulators to focus limited enforcement resources on the most consequential AI applications while allowing lower-risk innovations to flourish with minimal bureaucratic burden. The Australian proposals for defining high-risk AI through both principles-based and list-based methodologies offer Pakistan a spectrum of options for adapting this approach (O'Brien et al., 2024).

❖ Regulatory Learning Through Comparative Analysis

The comparative analysis of Australia and Germany serves two distinct pedagogical functions. Australia represents a jurisdiction in transition—moving from non-binding guidance toward potential legislation—which mirrors Pakistan's current policy-to-legislation journey. Germany illustrates how existing regulatory institutions can be repurposed to implement comprehensive AI governance without creating entirely new bureaucratic structures, a lesson of particular relevance to Pakistan's resource constraints. Together, these case studies demonstrate that effective AI regulation does not require reinventing institutional wheels but rather creatively adapting existing mechanisms to new technological challenges (Yusoff, 2025).

Discussion and Analysis

❖ Pakistan's National AI Policy 2025: Current Status and Regulatory Gaps

Pakistan's National AI Policy 2025, approved by the federal cabinet on 30 July 2025, represents a significant political commitment to AI development and governance (Government of Pakistan, 2025). The policy encompasses six strategic pillars, including intellectual property law reform, skills development, and institutional capacity building (Islam, 2025). Its implementation targets are notably ambitious: training one million AI professionals, producing 1,000 indigenous AI products, launching 50,000 civic projects, and offering 3,000 annual scholarships (Arab News

PK, 2025; Associated Press of Pakistan, 2025). The policy also establishes an AI Innovation Fund to support startups and venture capital investment in the AI sector (The Express Tribune, 2025).

From a governance perspective, the NAIP 2025 envisages a multi-tiered institutional architecture. The AI Directorate is to be established by 2026 under the National Commission for Data Protection to oversee the ethical use of AI (Islam, 2025). Centers of Excellence in AI are planned for major cities to facilitate research and development (Institute of Strategic Studies Islamabad, 2025). A designated AI Council, supported by a Master Plan and Action Matrix, will supervise implementation (Associated Press of Pakistan, 2025). The policy also introduces intellectual property reforms to protect AI-driven innovations, with a target of annually patenting 400 AI-driven innovations through the Pakistan Intellectual Property Organization (IPO-Pakistan) (Islam, 2025).

Despite these institutional commitments, significant regulatory gaps persist. Most critically, "no domestic legislation has been enacted to implement the objectives set out in the policy" (Paul Hastings LLP, 2026, p. 1). The policy remains a high-level framework rather than a binding legal instrument. This gap between policy aspiration and legal implementation presents both risks and opportunities. The risk is that without legislative backing, the policy's institutional mechanisms may lack enforcement authority and accountability. The opportunity, however, is that Pakistan can learn from other jurisdictions' legislative experiences before enacting its own AI law.

Recent developments suggest movement toward more concrete governance. In July 2026, Pakistan introduced a governance framework under the National Data Governance Policy requiring government departments using AI or automated decision-making systems in high-impact or rights-related matters to comply with stricter transparency, accountability, and human oversight standards (CW Pakistan, 2026). This framework mandates that government agencies ensure AI systems are "explainable and auditable," carry out risk assessments before deployment, and maintain records of system functions (CW Pakistan, 2026, para. 4). Citizens affected by significant automated decisions are entitled to "meaningful human review where appropriate" (CW Pakistan, 2026, para. 5). This framework also introduces mandatory registration of high-risk AI systems before deployment in government

services (CW Pakistan, 2026). While this applies only to the public sector, it represents an important step toward operationalising AI governance principles.

❖ **Australia's Risk-Based Approach: From Voluntary Principles to Mandatory Guardrails**

Australia's regulatory journey offers Pakistan valuable insights into the incremental development of AI governance. Since 2019, Australia has maintained voluntary AI Ethics Principles designed to ensure AI is safe, secure, and reliable (Weatherall et al., 2024). However, recent consultations and reform proposals indicate a shift toward a dual strategy: targeted obligations for high-risk AI combined with a light voluntary approach for low-risk applications (O'Brien et al., 2024).

The Australian government's January 2024 interim response to the Safe and Responsible AI consultation drew heavily from the EU AI Act's architecture (SIA Partners, 2024). The government recognised gaps in existing laws and signalled intention to introduce regulations establishing "safety guardrails for high-risk AI use cases" centred on testing and audit, transparency, and accountability (Weatherall et al., 2024, p. 3). This recognition of regulatory gaps, even in a developed economy with robust existing legal infrastructure, underscores the need for AI-specific interventions that Pakistan would be wise to heed.

The Proposals Paper for Safe and Responsible AI in Australia, released in September 2024, outlined ten mandatory guardrails for organisations developing or deploying high-risk AI systems (Weatherall et al., 2024). These guardrails encompass accountability processes, risk management, data governance, testing and monitoring, human oversight, transparency, challenge mechanisms, supply chain transparency, record-keeping, and conformity assessments (Weatherall et al., 2024). Notably, the Australian Human Rights Commission has supported these developments, calling for an Australian AI Act while emphasising that "a human rights risk-based approach to AI is essential for regulation" (Australian Human Rights Commission, 2024, p. 5). The Commission specifically recommended that some AI uses posing "unacceptable risk to human rights should be prohibited," drawing explicit parallels to the EU AI Act's prohibited practices category (Australian Human Rights Commission, 2024, p. 8).

However, Australia's regulatory trajectory has not been linear. In October 2025, the government published new Guidance for AI Adoption (GfAA), which condensed the ten voluntary guardrails into six essential practices and superseded the existing Voluntary AI Safety Standard (White & Case LLP, 2025). This development, occurring only twelve months after the standard's release, was framed as "a response to rapid shifts in technology and the governance landscape" (White & Case LLP, 2025, para. 6). The fate of the proposed mandatory guardrails remains uncertain, with industry voices cautioning that technology-specific legislation could have a "chilling effect on innovation and the economy" (White & Case LLP, 2025, para. 9). Heading into 2026, it appears "unlikely that Australia will introduce technology-specific legislation regulating the development and deployment of AI" (White & Case LLP, 2025, para. 11).

For Pakistan, the Australian experience offers several crucial lessons. First, regulatory evolution is dynamic, and jurisdictions may shift between voluntary and mandatory approaches as technological and political contexts change. Second, the definition of high-risk AI is contested, with Australia exploring both principles-based approaches (requiring organisations to assess risk) and list-based approaches (identifying specific high-risk domains) (O'Brien et al., 2024). Pakistan should consider which approach best fits its institutional capacity—a principles-based approach may be more flexible but requires greater regulatory sophistication, while a list-based approach offers clarity but risks becoming outdated as technology evolves. Third, stakeholder engagement and industry feedback have significantly shaped Australia's regulatory trajectory, suggesting that Pakistan should institutionalise multi-stakeholder consultation in its regulatory development process.

❖ **Germany's Implementation of the EU AI Act: Institutional Adaptation and Practical Lessons**

Germany's implementation of the EU AI Act provides a valuable case study in how existing regulatory institutions can be repurposed to meet new governance challenges. While Germany missed the 2 August 2025 deadline for national implementation, its draft implementation act, the "KI-Marktüberwachungsgesetz- und Innovationsförderungsgesetz (KI-MIG)," designates the Federal Network Agency (Bundesnetzagentur, BNetzA) as the main market surveillance authority (DLA Piper, 2025; Technology's Legal Edge, 2026).

This institutional choice is significant. BNetzA already serves as Germany's Digital Services Coordinator under the EU's Digital Services Act, providing it with relevant expertise in digital governance (DLA Piper, 2025). The ministry emphasised that "with the Federal Network Agency as the central supervisory authority, we use existing expertise and ensure legal clarity and fast processes" (DLA Piper, 2025, para. 12). However, BNetzA's role is not exclusive—sector authorities retain competence in their respective fields, and the Federal Financial Supervisory Authority (BaFin) serves as the competent authority for high-risk AI systems in regulated financial activities (Technology's Legal Edge, 2026).

The German approach acknowledges that AI governance cannot be siloed within a single agency but must be integrated across existing regulatory domains. This insight is particularly relevant for Pakistan, where creating entirely new regulatory bodies may be institutionally and financially challenging. The German model suggests that Pakistan could designate existing regulators—such as the Pakistan Telecommunication Authority, the Securities and Exchange Commission of Pakistan, or the National Database and Registration Authority—to oversee AI applications within their respective domains, while establishing a coordinating body to ensure consistency across sectors.

The draft German implementation act also establishes a "Koordinierungs- und Kompetenzzentrum (KoKIVO)" within BNetzA to support other competent authorities with their tasks under the EU AI Act (Technology's Legal Edge, 2026). This centralised support function could be replicated in Pakistan through the proposed AI Directorate, which would provide technical expertise and guidance to sector-specific regulators. Germany has also launched a "KI-Service Desk" to support organisations in complying with the EU AI Act, even before the implementation legislation is finalised (DLA Piper, 2025). This proactive approach to compliance support offers a model for Pakistan's AI Directorate to follow.

Furthermore, Germany's adoption of a hybrid supervisory model—no new agency, but a strong central authority supplemented by sector-specific regulators—demonstrates a pragmatic approach that Pakistan could emulate (Technology's Legal Edge, 2026). The creation of an independent three-member chamber within BNetzA for sensitive high-risk AI systems (e.g., biometric AI, law enforcement, migration, justice) further illustrates how institutional design can address specific

governance challenges without creating entirely new bureaucratic structures (Technology's Legal Edge, 2026).

❖ **Developing Pakistan's Contextually Adaptive Legal Architecture**

Drawing from the preceding analysis, this section outlines the contours of a contextually adaptive legal architecture for Pakistan's AI regulation.

First, a phased regulatory approach. Pakistan should adopt a phased approach that begins with mandatory requirements for government use of AI, building on the July 2026 framework under the National Data Governance Policy (CW Pakistan, 2026). The Australian experience demonstrates that a "dual strategy" of targeted obligations for high-risk AI and voluntary guidance for low-risk applications can be effective (O'Brien et al., 2024). Pakistan should initially focus regulatory attention on AI systems in government decision-making, law enforcement, and essential service provision, where the risks to citizen rights are most acute. The policy's requirement for "meaningful human review" and "mandatory registration of high-risk AI systems" in government services (CW Pakistan, 2026) provides a foundation that can be extended to the private sector as institutional capacity develops.

Second, institutional capacity building. Rather than creating an entirely new regulatory apparatus, Pakistan should build on existing institutions while investing in specialised AI expertise. The AI Directorate, if adequately resourced, could serve a coordinating function similar to BNetzA's role in Germany, providing guidance to sector-specific regulators (Technology's Legal Edge, 2026). The Centers of Excellence in AI could support this function by developing technical expertise and conducting research that informs regulatory approaches (Institute of Strategic Studies Islamabad, 2025). Pakistan should also consider establishing an AI Service Desk, similar to Germany's initiative, to support organisations in understanding and complying with regulatory requirements (DLA Piper, 2025).

Third, contextually appropriate definitions of high-risk AI. Pakistan should develop definitions of high-risk AI that reflect local realities and priorities. The Australian proposals paper offers two approaches: a principles-based approach that requires organisations to assess risk based on potential adverse impacts, and a list-based approach that identifies specific high-risk domains (Weatherall et al., 2024). For Pakistan, a hybrid approach may be most appropriate: starting with a list of high-

risk applications in government and essential services, while developing principles-based guidance for emerging use cases. This approach provides clarity while maintaining flexibility.

Fourth, integration with existing legal frameworks. Pakistan's AI regulatory architecture should integrate with and build upon existing legal instruments, including the Personal Data Protection Act, the Pakistan Cloud First Policy, and the Digital Pakistan Policy initiatives (Institute of Strategic Studies Islamabad, 2025). This integration aligns with the Australian approach of "dovetailing AI considerations into existing legislation" (Yusoff, 2025, p. 162) and the German approach of leveraging existing regulatory institutions. AI regulation should not exist as a standalone legal island but should be embedded within Pakistan's broader digital governance ecosystem.

Fifth, international alignment and interoperability. The NAIP 2025 envisages "aligning local standards with global AI regulations" (Government of Pakistan, 2025, p. 15), and Pakistan should pursue this objective strategically. Australia's engagement with the EU's risk-based approach, despite not being subject to the EU AI Act, demonstrates the benefits of alignment for international business operations and standardisation (SIA Partners, 2024). However, alignment should not mean uncritical adoption of foreign frameworks. Pakistan should actively participate in international AI governance discussions, including the Bletchley Declaration process, to ensure its interests are represented in global standard-setting.

Sixth, enforcement and accountability. The German approach of designating specific authorities for enforcement, with graduated penalties for non-compliance, offers a model for Pakistan (Technology's Legal Edge, 2026). The Australian proposals emphasise "conformity assessments to demonstrate and certify compliance with guardrails" (Weatherall et al., 2024, p. 12), a mechanism that could be adapted for Pakistan's high-risk AI applications. However, enforcement mechanisms must be proportionate to institutional capacity—starting with administrative sanctions and gradually introducing more stringent penalties as capacity develops.

Conclusion

Pakistan's National AI Policy 2025 represents an ambitious commitment to harnessing the potential of artificial intelligence while managing its risks. As the country moves from policy formulation to legislative implementation, it has the opportunity to develop a regulatory architecture that learns from international experience while adapting to local conditions. The Australian experience demonstrates that a phased, risk-based approach—beginning with government AI use and extending to high-risk private sector applications—can balance innovation with citizen protection. The German experience illustrates how existing institutions can be repurposed to meet new regulatory demands, a lesson of particular relevance to Pakistan's resource constraints.

The development of Pakistan's AI regulatory architecture should be guided by several principles: proportionate regulation that focuses on high-risk applications, institutional adaptation that builds on existing capacity, stakeholder engagement that incorporates diverse perspectives, and international alignment that facilitates global participation. The goal is not to create the world's most comprehensive AI law but to develop a contextually adaptive framework that advances Pakistan's developmental priorities while protecting citizen rights.

As AI technologies continue to evolve, Pakistan's regulatory architecture must remain flexible and responsive. The Australian trajectory—shifting from voluntary standards to proposed mandatory guardrails and back to refined guidance—underscores the need for regulatory agility. Pakistan should institutionalise mechanisms for periodic review and revision, ensuring that its AI governance framework can adapt to technological change, emerging risks, and evolving international norms. With thoughtful design and committed implementation, Pakistan can develop a regulatory architecture that fosters innovation, protects rights, and contributes to the global conversation on responsible AI governance.

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