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Financial Sector to Expect Generative AI Risk Framework

Introduction

Artificial intelligence has been widely employed to enhance productivity, services and products, and customer experiences by financial institutions ("FIs"), and FIs are no doubt familiar with the Monetary Authority of Singapore ("MAS")'s Fairness, Ethics, Accountability and Transparency ("FEAT") Principles concerning the responsible use of Artificial Intelligence and Data Analytics ("AIDA"). With the entrance of accessible generative artificial intelligence ("GenAI") products and services since 2022, the AIDA landscape has been drastically transformed. GenAI is both transformative and disruptive to the financial sector. GenAI helps FIs be more efficient, provides more personalised customer experiences, and generates content and ideas for products and services. Alongside these benefits, come the risks, including more sophisticated cybercrime tactics, copyright infringement, data risk and biases.

Specifically, GenAI systems pose risks that go beyond those of "traditional" AI and potentially extend beyond the scope of the current FEAT Principles. To address this, MAS, financial industry participants and technology partners ("**consortium**") have collaborated on Project MindForge to develop a risk framework for the responsible use of GenAI for the financial sector. MAS announced on 15 November 2023 that Phase One of the project has successfully concluded with the development of a comprehensive GenAI risk framework as well as a platform-agnostic GenAI reference architecture. The full Whitepaper detailing the GenAI risk framework is expected to be shared in January 2024. The Executive Summary of the Whitepaper is available [here](#).

This Update highlights the key aspects of the GenAI risk framework that FIs and players in the technology sector should look to incorporate in their policies, procedures, and frameworks for the responsible use of AI, along with our comments and how Rajah & Tann can help you successfully navigate the myriad of issues concerning GenAI within the legal, regulatory and technical risk frameworks to meet your business' needs. You may also find helpful our Client Update on the risks associated with GenAI models and the new GenAI Evaluation Sandbox by the Infocomm Media Development Authority (IMDA) and the AI Verify Foundation, available [here](#).

Key Aspects of the GenAI Risk Framework

Currently, relevant documents that provide guidance and regulation to mitigate the risks of GenAI include the FEAT Principles, Veritas Methodology, The Association of Banks in Singapore (ABS) Cloud Computing Implementation Guide, MAS Guidelines on Technology Risk Management (2021), and MAS Guidelines on Outsourcing. These references continue to apply to GenAI use cases, but as

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pointed out earlier, require refinement and updating to cater to new and amplified risks from the use of GenAI technology. Among other things, GenAI brings with it novel governance challenges - for instance, its potential to create content that infringes the IP rights of third parties, its vulnerability to new kinds of attacks, and its need for increased monitoring for unexpected behaviour. For example, FIs may face greater obstacles in meeting the FEAT principles :

- "Fairness" – It has become more challenging to identify and respond to bias or prejudice in the inputs and outputs characteristic of GenAI systems.
- "Ethics" – GenAI has the potential to create content that contravenes the values of an organisation or the norms and laws of society.
- "Accountability" – GenAI, by its nature, is expected to encourage a greater dependence on a growing number of third-party providers of large foundation models. This, no doubt, compounds the challenge of implementing existing principles of "Accountability".
- "Transparency" – It is harder to attain transparency due to the large volumes of unstructured, openly sourced data that is used to develop the models.

In their governance frameworks, FIs should look to evaluate and mitigate these risks at different stages of the lifecycle of a GenAI system, and mapping several major risks across seven dimensions of risk. The Whitepaper detailing the GenAI risk framework (expected to be shared in January 2024) will cover:

- Key decisions about architecture and infrastructure that an FI needs to consider in the adoption of GenAI. For instance, there must be sufficiently robust enterprise-level IT capabilities across the seven dimensions¹ of technology consideration, as well as a continuous feedback loop of improvement throughout the lifecycle of a system.
- A platform-agnostic Gen AI reference architecture for FIs, underpinned by the seven dimensions, and will provide a list of the building blocks and components that organisations can use to create robust enterprise-level GenAI technology capabilities.
- Use cases to help the industry better understand GenAI's impact on cybersecurity, sustainability, business, society and other human factors. These use cases will be mapped against the risk framework to identify relevant use case-level risks. These risks are then

¹ These dimensions are: 1. Foundation Model & Infrastructure: Foundation model selection, accessibility and model hosting infrastructure. 2. Data Architecture: Appropriately managing data and providing the foundation model with data access. 3. Orchestration & Integration: Connecting the model to existing enterprise systems. 4. Operations & Industrialised Development: Operating generative AI systems at scale through streamlined development, deployment management, continuous monitoring, and analysis and improvement. 5. Enterprise Readiness & Security: Standards on scalability, security and compliance. 6. Environmental & Sustainability Impact: Considering the environmental impact of generative AI adoption. 7. RAI Components: Adopting responsible AI practices across the enterprise.

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assessed using the current Veritas Methodology, to highlight risks which are not adequately covered in the current framework. The Whitepaper will assess the risk impact of GenAI-powered applications.

Table 1: Summary of risk dimensions and select major risks²

Risk Dimensions for GenAI	Select Major Risks Specific to Each Dimension
<p>Fairness and Bias: Setting fairness objectives to help identify and address unintentional bias and discrimination.</p>	<ul style="list-style-type: none"> • Unrepresentative, under-representative or biased data inputs, especially data sourced from the Internet for foundation models. • Adverse or inappropriate impact on individuals and groups.
<p>Ethics and Impact: Ensuring responsible and ethical outcomes in the use of AI against clearly defined core values and practices.</p>	<ul style="list-style-type: none"> • Value misalignment. • Environmental sustainability impact. • Dark patterns, deceiving or manipulating users into certain behaviours. • Toxic and offensive outputs.
<p>Accountability and governance: Enabling accountability and governance for the outcomes and impact of data and AI systems.</p>	<ul style="list-style-type: none"> • Lack of awareness of GenAI risks. • Unclear or unenforceable third-party accountability. • Lack of use case and model governance. • Inadequate human oversight.
<p>Transparency and Explainability: Enabling human awareness, explainability, interpretability, and auditability of data and AI systems.</p>	<ul style="list-style-type: none"> • Unclear output accuracy level. • Unclear origin of training or test data, leading to potential ingestion of low-quality data. • Lack of explainability. • Anthropomorphism, deceiving or misleading users. • Inadequate feedback and recourse mechanisms.
<p>Legal and Regulatory: Identifying any legal or regulatory obligations that need to be met or may be breached by the use of AI,</p>	<ul style="list-style-type: none"> • Data sovereignty: Inability to ensure location compliance for model hosting as well as data access and processing. • Unclear data ownership. • Unauthorised data transfer and storage.

² Reproduced from the [Executive Summary of the Whitepaper](#).

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Risk Dimensions for GenAI	Select Major Risks Specific to Each Dimension
including issues with compliance, data protection and privacy rules, or related to equality laws.	<ul style="list-style-type: none"> • Breach or misalignment to regulatory or organisational standards. • Intellectual Property ("IP") issues: IP infringement and unavailability of IP protection. • Inadequate privacy protection. • Record keeping: Inability to appropriately retain or delete data associated with training and use of GenAI systems, in line with applicable regulations.
<p>Monitoring and stability: Ensuring robustness and operational stability of the model or service and its infrastructure.</p>	<ul style="list-style-type: none"> • Hallucination / Fabrication / False memories, leading to inaccurate or misleading outputs. • Overconfidence, leading to misinterpretation of outputs. • Training data or inputs not fit for intended purpose. • Lack of monitoring. • Insufficient data quality. • Model staleness, causing untimely outputs. • Insufficient model accuracy or soundness. • Model degradation, leading to undesirable behaviours. • Inadequate operational resilience. • Unmet architectural requirements, limiting robustness and leading to inadequate governance.
<p>Cyber and Data Security: Protecting data and AI systems from cyberattack, unauthorised access, data loss, and misuse or adversarial model manipulation by malicious actors.</p>	<ul style="list-style-type: none"> • Inappropriate or illegal use. • Data poisoning, leading to malicious outputs. • Adversarial model manipulation. • Re-identification of personally identifiable data. • Data leakages. • Model inference attacks, revealing sensitive information.

Our Comments

As GenAI continues to evolve and permeate the financial sector, it is crucial for industry players to develop and refine robust risk frameworks to harness the technology's transformative potential while mitigating potential risks. The GenAI risk framework is a proactive step by MAS and the industry players to provide a structured approach to embed responsible GenAI practices into the fabric of FIs. By embracing transparency, fairness, and robust data security measures, FIs can leverage GenAI to

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drive innovation, enhance customer experiences, and strengthen their competitive edge while maintaining trust and upholding ethical standards.

The next phase of Project MindForge will see the consortium explore developing strong industry use cases which can benefit from the application of GenAI and other AI technologies. This includes using GenAI to manage complex compliance tasks and identify hidden, interconnected financial risks. The consortium will also expand its scope to involve FIs from the insurance and asset management industries, refining the GenAI risk framework and extending it to the entire financial industry. The consortium will also explore the use of GenAI in areas such as anti-money laundering, sustainability, and cybersecurity.

As highlighted in this Update, the risks and concerns arising from the use of GenAI are multi-faceted and cut across numerous legal and compliance areas, including ethics, cybersecurity, data protection, intellectual property and privacy rules, among others. Our specialist teams are well-poised to help you with these. The multi-disciplinary approach of our [Data and Digital Economy](#) model allows our Rajah & Tann lawyers across multiple specialist practices to prepare clients for the legal challenges of using GenAI models. Apart from assisting clients in navigating regulatory and legal frameworks relevant to the use of AI models, our lawyers can also provide greater value-added legal services in collaboration with technical specialists in our [R&T Technologies](#) and [R&T Cybersecurity](#) team to offer multi-disciplinary and multi-legal solutions to address the legal, regulatory and technical compliance requirements of this GenAI risk framework.

Please feel free to contact our team below for a fuller discussion.

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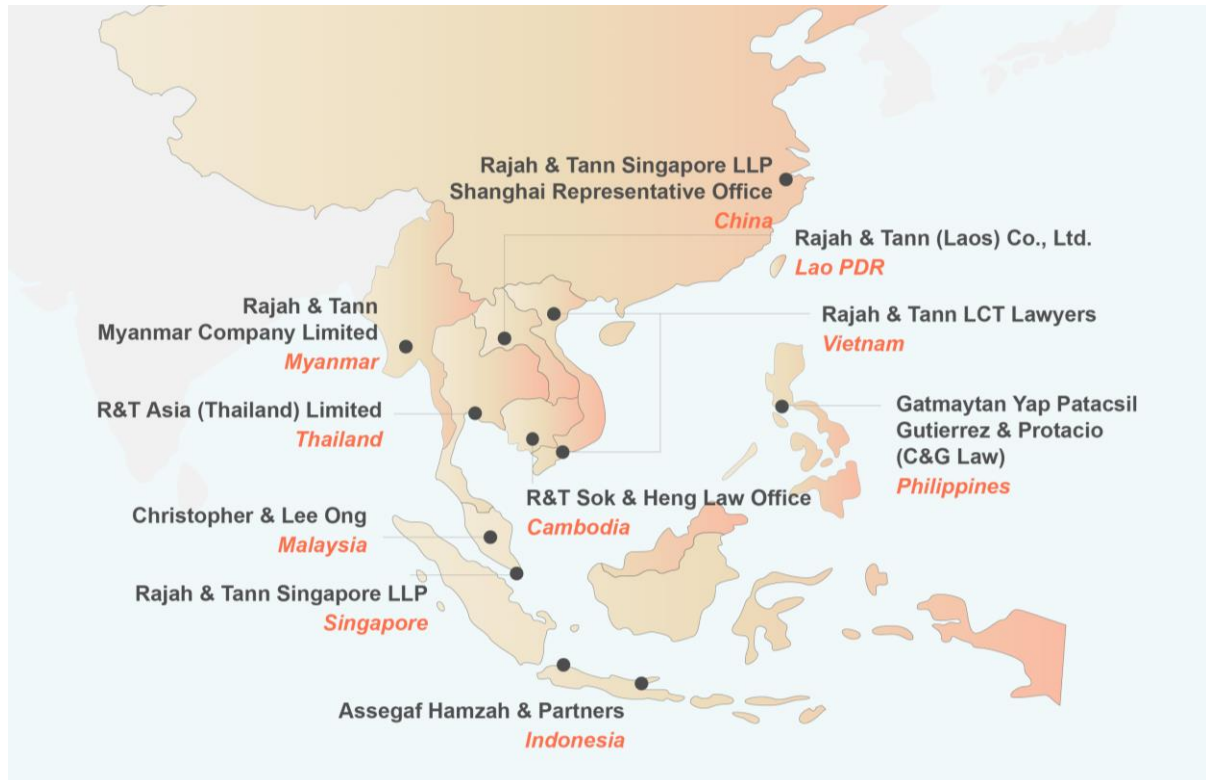
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