

## Client Alert

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### For more information, please contact:

Ken Chia  
+65 6434 2558  
[ken.chia@bakermckenzie.com](mailto:ken.chia@bakermckenzie.com)

Anne Petterd  
+65 6434 2573  
[anne.petterd@bakermckenzie.com](mailto:anne.petterd@bakermckenzie.com)

Stephanie Magnus  
+65 6434 2672  
[Stephanie.Magnus@bakermckenzie.com](mailto:Stephanie.Magnus@bakermckenzie.com)

Alex Toh  
+65 6434 2783  
[alex.toh@bakermckenzie.com](mailto:alex.toh@bakermckenzie.com)

Daryl Seetoh  
+65 6434 2257  
[daryl.seetoh@bakermckenzie.com](mailto:daryl.seetoh@bakermckenzie.com)

## Consultation on Singapore Model AI Governance Framework and adoption of FEAT Principles

On 23 January 2019, the Personal Data Protection Commission (**PDPC**) released the [Model Artificial Intelligence \(AI\) Governance Framework \(Model Framework\)](#) for pilot adoption now and public consultation and feedback by 30 June 2019 at [corporate@pdpc.gov.sg](mailto:corporate@pdpc.gov.sg). The Model Framework aims to provide a common approach to AI governance and proposes practical measures for organisations operating in any sector to adopt.

The Model Framework has been adapted from a discussion paper issued by the PDPC in June 2018 (**Discussion Paper**) and develops on the considerations and measures set out there. A copy of our client alert on the Discussion Paper may be found [here](#).

The Model Framework is an important document as organisations seek to understand what is permitted and where are the boundaries for use of AI in relation to personal data.

### Relationship with MAS FEAT Principles for the financial sector

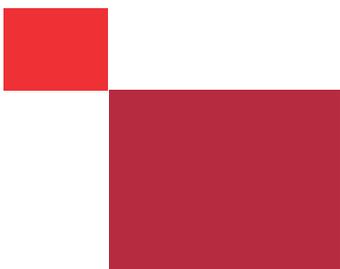
Do note that the Model Framework will not be the only AI guidance to look at. Firms operating in the financial sector should be aware of the [Principles to Promote Fairness, Ethics, Accountability and Transparency in the Use of Artificial Intelligence and Data Analytics in Singapore's Financial Sector \(FEAT Principles\)](#) released by the Monetary Authority of Singapore (**MAS**) on 12 November 2018.

The FEAT Principles were co-developed by MAS and both the PDPC and Infocomm Media Development Authority (**IMDA**) with input from the financial industry and other relevant stakeholders. Released before the Model Framework, FEAT Principles generally aligns with, and complements, the Discussion Paper, the precursor to the Model Framework.

This Alert discusses the Model Framework, meant to be technology and sector agnostic, and notes additional FEAT Principles specifically applicable now to all entities supervised by MAS.

### Who is affected by the Model Framework and FEAT Principles?

While the Model Framework does not currently impose any binding requirements, it provides a framework for adoption by organisations who adopt and deploy AI solutions in their operations (e.g. backroom operations, front-of-house services, or the sale and distribution of devices that provide AI-powered features). It also gives insight into potential regulatory touchpoints and considerations.





Financial firms using AI and data analytics (AIDA) to assist or replace human decision-making in their provision of products and services should additionally note that MAS expects these firms to apply the illustrations and guidance set out in the FEAT Principles to achieve the following objectives:

- for firms to use as foundational principles to consider when using AIDA in decision-making
- to assist firms in contextualising and operationalising governance of use of AIDA in their own business models and structures; and
- to promote public confidence and trust in the use of AIDA.

## Key proposals in the Model Framework and FEAT Principles

Proposals in the Model Framework broadly fall into the following key areas:

- internal governance structures and measures;
- risk management in autonomous decision-making;
- operations management; and
- customer relationship management.

We summarise measures proposed under each of the Model Framework key areas and where different from, or qualified by, the FEAT Principles, we highlight the difference:

Key areas	Model Framework proposed measures and FEAT Principles
Internal governance	<ol style="list-style-type: none"><li>1. <b>Allocation of responsibility.</b> Allocate responsibility for and oversight of the various stages and activities involved in AI deployment to the appropriate personnel and/or departments.</li><li>2. <b>Training and resources.</b> Provide training and adequate resources and guidance for personnel to discharge internal AI governance functions.</li><li>3. <b>Adequate datasets.</b> Use reasonable efforts to ensure that the datasets used for AI model training are adequate, unbiased, and accurate for the intended purpose.</li><li>4. <b>Monitoring and reporting systems:</b><ol style="list-style-type: none"><li>a. Model Framework: Establish monitoring and reporting systems to ensure that the appropriate level of management is aware of the performance of the deployed AI.</li></ol></li></ol>



	<ul style="list-style-type: none"><li>b. FEAT Principles: Periodic update to the Board of Directors on the use of AIDA so that that the Board maintains a central view of all material AIDA-driven decisions.</li></ul> <p>5. <b>Knowledge transfer.</b> Ensure proper knowledge transfer whenever there are changes in key personnel involved in AI activities.</p> <p>6. <b>Review of internal governance structure:</b></p> <ul style="list-style-type: none"><li>a. Model Framework: Review and refresh internal governance structure periodically and when significant changes to organisational structure and key personnel are made.</li><li>b. FEAT Principles:<ul style="list-style-type: none"><li>i. Review triggers to include unexpected changes that invalidate basic model assumptions (for example, an unexpected court decision on debt default might trigger a review of credit risk parameters); and</li><li>ii. Calibrate internal governance frameworks based on the materiality of AIDA-driven decisions.</li></ul></li></ul>
Risk management in autonomous decision-making	<p>1. <b>Weighing commercial objectives and risks of AI.</b> Before deploying AI solutions, organisations should weigh their commercial objectives of using AI against the risks of using AI with the differences in societal norms and values as well as the organisation's corporate values in mind.</p> <p>2. <b>Risk assessment:</b></p> <ul style="list-style-type: none"><li>a. Model Framework: Organisations should continually identify and review risks relevant to their technology solutions, mitigate those risks, and maintain a response plan should mitigation fail. This process should be documented and periodically reviewed through a risk impact assessment.</li><li>b. FEAT Principles: MAS will hold firms accountable for both internally developed and externally sourced AIDA models.</li></ul> <p>3. Organisations should continually identify and review risks relevant to their technology solutions, mitigate those risks, and maintain a response plan should mitigation fail. This</p>



	<p>process should be documented and periodically reviewed through a risk impact assessment.</p> <p>4. <b>Probability and severity of harm.</b> In determining the level of human oversight in an organisation's decision-making process involving AI, the organisation should consider the impact of these decisions on the probability and severity of harm caused to the individual.</p>
Operations management	<p>1. <b>Understanding the lineage of data.</b> Understanding the origin of the data and its use and movement throughout the organisation (e.g. mode of collection, how data is combined, changed and updated) by, for example, keeping a data provenance record.</p> <p>2. <b>Ensuring data quality.</b> Understanding and addressing factors that may affect the quality of the data (e.g. usability, completeness, accuracy, human interventions, credibility, time of compilation, relevance, and integrity of data).</p> <p>3. <b>Minimising inherent bias:</b></p> <ul style="list-style-type: none"><li>a. Model Framework: Develop awareness and mitigation steps to minimize inherent biases that may lead to undesired outcomes. (e.g. mitigating selection bias or measurement bias by having a heterogeneous dataset).</li><li>b. FEAT Principles: Frequency of testing for errors or unintentional biases depends on the materiality of the decision and the complexity of the model (e.g. particularly material and complex deep learning models requires more frequent validation and testing).</li></ul> <p>4. <b>Maintaining different datasets.</b> Where possible, splitting large datasets into subsets for training, testing, and validation.</p> <p>5. <b>Keeping datasets up-to-date.</b> Periodically reviewing and updating datasets with new input data obtained from actual use of the AI models deployed in production.</p>



## Conclusion

The PDPC encourages organisations to use the Model Framework for internal discussion and implementation. Professional and industry groups are also encouraged to use the Model Framework for discussion and adapt it for their own use. The PDPC expects the use of AI by businesses to continue to evolve, and intends to adapt the Model Framework accordingly.

Compliance with the Model Framework does not absolve organisations from compliance with current laws and regulations.

Please contact us should you have any further queries regarding the Model Framework and what it may mean for AI activities for your organisation.

[www.bakermckenzie.com](http://www.bakermckenzie.com)

Baker McKenzie Wong & Leow  
8 Marina Boulevard  
#05-01 Marina Bay Financial  
Centre Tower 1  
Singapore 018981

Tel: +65 6338 1888  
Fax: +65 6337 5100

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