

AI, Ethics and Banking: Navigating Compliance Challenges

SHCOG Securities Houses
Compliance Officers Group

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Karen Poole – Senior Manager Compliance

Chris Purves – Co-Head of Group Emerging Technology

Luke Vilain - Data Ethics and GenAI risk specialist



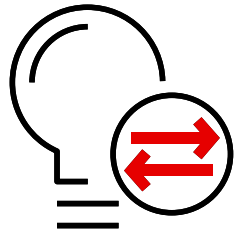
AI, Ethics and Banking: Navigating Compliance Challenges

Securities Houses Compliance Officers Group
April 2024

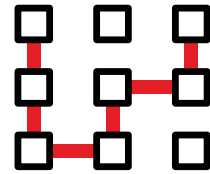


Increasing use of AI in financial services

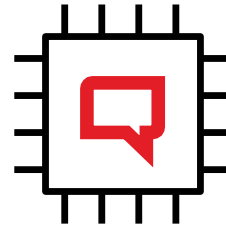
AI has been used in Financial Services for many years and is set to grow with the development of Generative AI



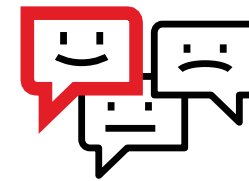
*Reinforcement learning
in Order Routing*



*Pattern recognition for
exception management*



*AI powered chatbots for
bank employees*



*Sentiment analysis of news
headlines / articles*



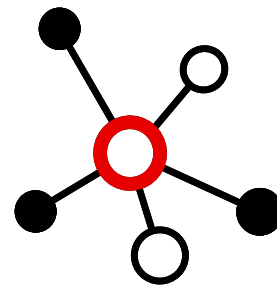
*Recommending the right
content to clients*



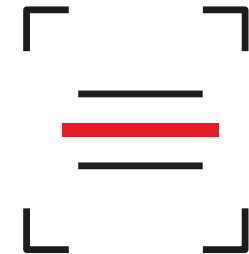
*Predictive analytics for
Settlements Fails*



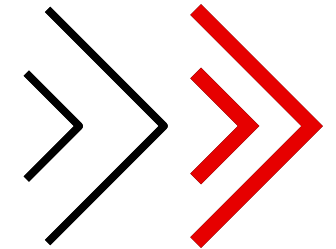
*Voice transcription for
audio surveillance*



*Graph databases to
simplify booking models*

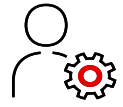


*OCR for digitising contracts
& agreements*



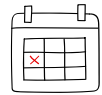
*Enabling automation of
manual processes*

Data Ethics and Responsible Use of AI - Overview

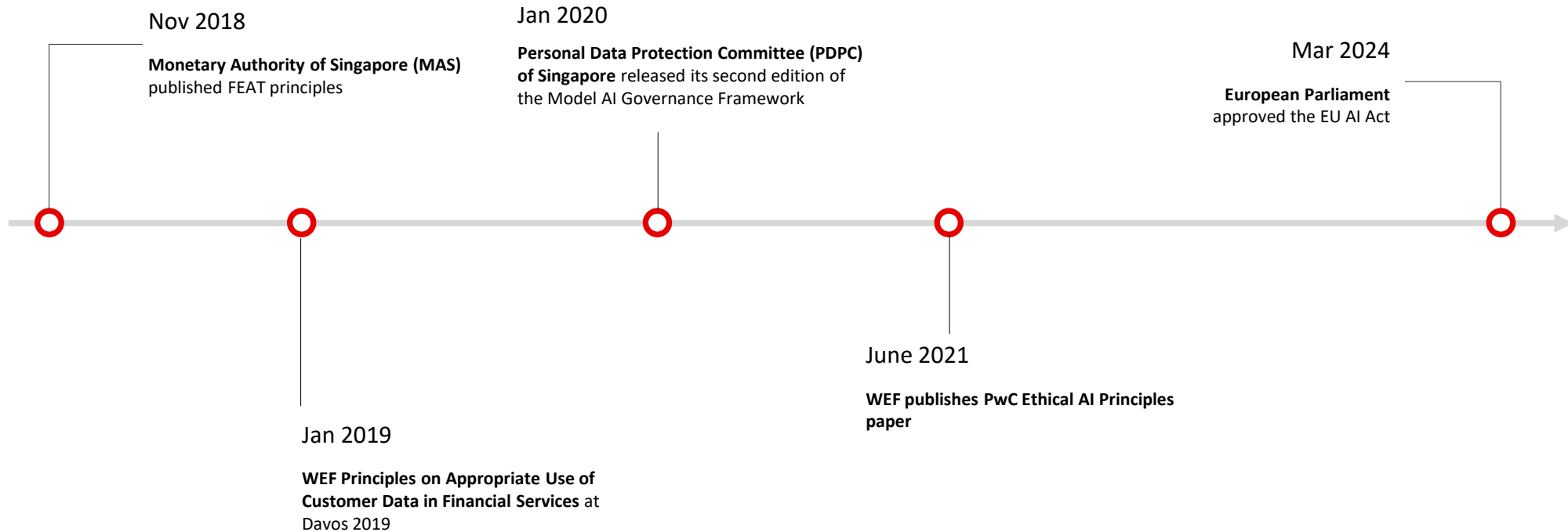


Why?

Increasingly, regulators focus is on the use of AI and Data Analytics. Regulators and clients are expecting organizations to have in place a control framework to protect customer data and ensure data is used responsibly.



Key Developments



AI Regulatory Developments – Highlights from Key Jurisdictions

The nature and increasing use of AI heightens the risk of systematic misuse. There are existing guidelines and **emerging rules and regulations** on the horizon.



EU

- On March 13th 2024, the European Parliament approved the EU AI Act.
- Final reviews remain on-going and the law is yet to be formally endorsed by the EU Council.
- The Act will enter into force twenty days after publication in the Journal.
- Implementation timeframes for individual requirements vary from 6-36 months.



Switzerland

- Federal Department of Economic Affairs, Education and Research set up an interdepartmental working group that published 'Challenges of AI' report in 2019.
- Based on that report, in 2020 the working group published 'Guidelines on Artificial Intelligence for the Confederation'.
- The Federal Council adopted these guidelines in November 2020, which provide a general frame of reference for federal agencies and external partners entrusted with governmental tasks.



UK

- On March 29, 2023, the UK government published a white paper on artificial intelligence entitled "A pro-innovation approach to AI regulation."
- The white paper sets out a new "flexible" approach to regulating AI.
- Over the next 12 months, regulators are expected to issue practical guidance, as well as other tools and resources such as risk assessment templates, detailing how to implement the principles in their sectors



Singapore

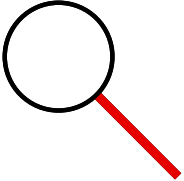
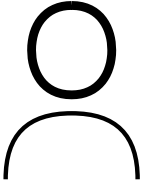
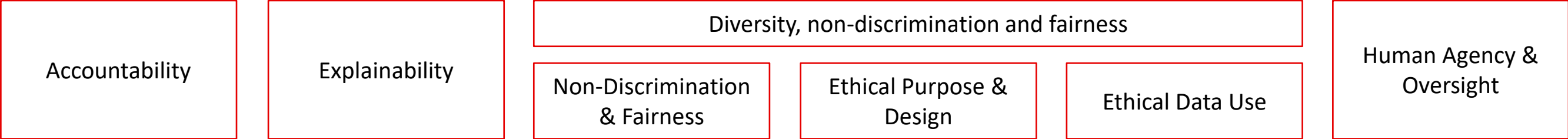
- On November 12, 2018, the Monetary Authority of Singapore ('MAS') released guidelines (FEAT Principles) for financial services firms to consider when they make decisions related to artificial intelligence and data analytics.
- On January 21, 2020, the Personal Data Protection Committee (PDPC) released its second edition of the Model AI Governance Framework (Model Framework) for broader consultation, adoption and feedback.



US

- On February 3, 2022, U.S. Democratic lawmakers introduced in both the Senate and the House of Representatives a bill titled the "Algorithmic Accountability Act of 2022".
- The act did not get the support needed to become law. There has been a commitment to reintroduce it in 2023.
- On January 26, 2023, National Institute of Standards and Technology (NIST) released the AI Risk Management Framework that is intended for voluntary use.

What are the main areas of data ethics?



Associated terms

Internal / external awareness & accountability, data subject right of enquiry and appeal

Transparency, interpretability, visibility, meaningful understanding, black box, global / local explanations

Bias / unfair bias, unintended consequence, equity, equality, parity, profiling, protected characteristics

Justifiability, impact, risk, values, code of conduct, ethical design

Ethical data sources, ethical data collection, ethical feature creation

Human-in-the-loop, implementation management, operational playbooks, change management

Responsible use of AI Framework

Responsible AI means the responsible design, development and use of AI in compliance with applicable legal and regulatory requirements, regulatory expectations and a set of agreed principles relating to AI, which align with conduct and ethics.

AI Definition

A clear AI definition that reflects organisational needs and aligns with applicable laws and policies.

Example:

Artificial Intelligence (AI) means any system that performs a function which would otherwise require human cognitive input, using techniques such as machine learning (ML), to provide outputs such as decisions, predictions, recommendations or other content.

Responsible AI Principles

With agreed AI definition, establish a set of principles for developing, deploying and operating AI systems.

Example:

- Human Oversight
- Accountability
- Fairness
- Transparency & Explainability
- Accuracy
- Robustness & Resilience

AI principles based on applicable laws, regulations and standards

Risk Based Approach

Levels of risk for AI systems:

Prohibited AI: Certain AI use cases deemed to pose an unacceptable risk to individuals or society must be prohibited. For example, emotion recognition, behavioural manipulation, social scoring

High risk AI: Nature of the activity, the inputs, or the functionality of the AI system, which pose a significant risk to health, safety or fundamental rights of natural persons

Medium risk AI: AI systems with manageable risks are subject to initial risk assessments and specific transparency requirements in line with the AI Principles and applicable policies.

Human oversight will be a key determining factor when classifying use cases. Those with a-human-in-the-loop are significantly more likely to be classified as medium risk.

AI Governance Framework

Uplift governance framework:

Review existing AI framework consisting of inter-linked policies, processes and controls

Review of data ethics, data protection and governance of models policies

Create complementing non-technical AI guideline

Governance, Oversight and Reporting

The Group Compliance function provides independent oversight and control over the risks arising from responsible use of AI and ethical use of data.



Governance Framework

- Organisation wide data ethics **principles and requirements** when using models or select data analytics activities
- All three LoDs need to **collaborate** on approach to governance on ethical use of data and responsible use of AI.
- An ongoing **review process** for assessing adherence with responsible use of AI and data ethics principles and Requirements



Connectivity with Business










- Group Compliance form part of model risk management to **review** when AI models use client identifying data / personal data
- Group Compliance **review use case** for assessment of suitability or other compliance risks
- **Risks identified** communicated to model risk management for consideration in materiality assessment
- **Group Compliance engagement in business governance forums** ensures any AI models that are not triggered by model risk management for additional review still receive appropriate group compliance input

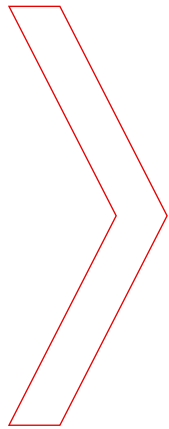


Group Compliance Oversight

- Identify **high risk use cases** and assess effectiveness of three LoDs policy and control frameworks
- Develop organisation wide **data ethics policy** and adherence by 1st & 2nd LoDs
- Review and augment **risk taxonomy**
- Implement mandatory training
- Continuous engagement with regulators

Responsible Use of AI - Associated Risks and Considerations

Associated Risk	Risk Description	Considerations for Compliance
Ethics and Legal	<ul style="list-style-type: none"> • Unethical outcome due to feature selection based on protected personal data (e.g., gender, age) • Unethical historical decisions in the training dataset • End user misled to believe to be interacting with a human rather than AI 	<ul style="list-style-type: none"> •  Code of Conduct and Ethics •  Policies and Guidelines
Fairness and Bias	<ul style="list-style-type: none"> • Unfair outcome due to inadequate or combination of feature selection • Unfair outcome due to unbalanced training dataset • Biased outcomes due to underfitting or overfitting of model to training dataset 	<ul style="list-style-type: none"> •  Enhanced Governance and Controls •  Connectivity with Business
Uncontrollable Outcomes	<ul style="list-style-type: none"> • Uncontrollable outcome due to model dynamically learning and automatically updating based on the live inputs received (rogue learning / model drift) • Unnoticed deterioration of the predictive performance of a model due to hidden contextual changes (concept drift) 	<ul style="list-style-type: none"> •  Risk Assessment
Interpretability and Explainability	<ul style="list-style-type: none"> • Non explainable predictions due to selection (by human or machine) of poorly understood individual or combined features • Lack of transparency due to model not being interpretable • Model not auditable due to unavailability of training dataset 	<ul style="list-style-type: none"> •  Human supervision and oversight •  Skill sets and Training
Stability and Change	<ul style="list-style-type: none"> • Poorly performing models due to use of low quality or extreme value in training dataset • Fraudulent outcomes due to injection of fraudulent data in the training dataset • Incorrect outcomes due to incoherent patterns learned from the training dataset 	<ul style="list-style-type: none"> •  Regulatory Development Tracking and Engagement •  Source and quality of training dataset



Generative AI Inherent Risks

Risk Mechanism	Inherent Risk	Considerations for Compliance
Hallucinations / Incorrect output	<p><i>Incorrect advice and / or negative publicity</i></p> <ul style="list-style-type: none">> Created content can appear accurate but be partially or wholly incorrect – if missed in human reviews / shared externally, it could result in regulatory or reputational impacts, such as inappropriate advice, advice outside role / geography, or inaccurate reporting	<ul style="list-style-type: none">Code of Conduct and EthicsPolicies and Guidelines
Temptation for out of policy use	<p><i>Data leakage</i></p> <ul style="list-style-type: none">> As employees use external websites (those not blocked or via personal device), confidential information may be included in prompts. The third party may use this information to the company's detriment, data may be leaked via networks / cyber-attack	<ul style="list-style-type: none">Enhanced Governance and Controls
Chances of plagiarism in outputs	<p><i>Plagiarism accusations, copyright infringement</i></p> <ul style="list-style-type: none">> When generating text, the outputs can reproduce copyrighted material almost exactly. This could lead to accusations of plagiarism, and / or infringement on copyrights of other individuals / organisations	<ul style="list-style-type: none">Connectivity with Business
Bias hidden within outputs	<p><i>Customer reaction to bias within text</i></p> <ul style="list-style-type: none">> Generated content can contain bias against protected classes such as gender and race, which is subtle and can be missed in human review. For example, if an email partially created with GenAI used a line such as 'Mexican stand-off', 'going Dutch', this might not be caught but could cause offense and lead to complaints / negative media exposure	<ul style="list-style-type: none">Risk AssessmentHuman supervision and oversight
Free Text Prompting	<p><i>Use of models outside of approved scope</i></p> <ul style="list-style-type: none">> When free text prompting is allowed from users, without constraints on what data prompting can be directed to, this may allow the system to be used for purposes outside its approved scope and risk assessment	<ul style="list-style-type: none">Skill sets and TrainingRegulatory Development Tracking and EngagementSource and quality of training dataset

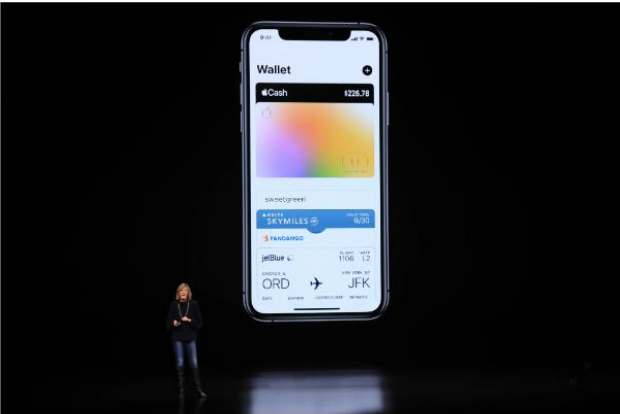


Examples of AI related reputational damage

The New York Times

Apple Card Investigated After Gender Discrimination Complaints

A prominent software developer said on Twitter that the credit card was “sexist” against women applying for credit.



Jennifer Bailey, vice president of Apple Pay: Regulators are investigating Apple Card’s algorithm, which is used to determine applicants’ creditworthiness. Jim Wilson/The New York Times

By Neil Vigdor
Nov. 10, 2019

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RBC-owned U.S. bank to pay \$31M fine for discriminatory mortgage lending policies



City National was bought by Royal Bank in 2015
The Associated Press - Posted: Jan 13, 2023 11:19 AM EST | Last Updated: January 13



A woman is shown outside a City National branch in Los Angeles, where the RBC-owned bank is based. (Lucy Nicholson/Reuters)

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Samsung workers made a major error by using ChatGPT

News By Lewis Maddison published April 04, 2023

Samsung meeting notes and new source code are now in the wild after being leaked in ChatGPT



(Image credit: Valeriya Zankovych / Shutterstock.com)

CNN World Africa Americas Asia Australia China Europe India Middle East United Kingdom

World / Asia

Finance worker pays out \$25 million after video call with deepfake ‘chief financial officer’

By Heather Chen and Kathleen Magramo, CNN
© 2 minute read · Published 2:31 AM EST, Sun February 4, 2024



Authorities are increasingly concerned at the damaging potential posed by artificial intelligence technology. loonchai weonakawand/Moment RF/Getty Images

Exploring new questions posed by AI

Panel discussion and Q&A:

Claire Foster is Global Head of Markets & Group Treasury Compliance & Operational Risk Control. Claire has over 20 years financial services experience having started her regulatory career at the London Stock Exchange before moving across to lead Compliance advisory teams at a number of Investment Banks including JP Morgan, Deutsche Bank and UBS.

Luke Vilain is a Data Ethics & GenAI Risk Specialist at UBS and has spent the last 5 years focusing on how to make data ethics practical and widespread – specifically, designing policy, processes, reusable tooling, and control frameworks to deliver data ethics by design and at scale. This covers fairness, explainability, ethical purpose and ethical data use. He is deeply passionate about data ethics and responsible AI, and wants to bring awareness and understanding to audiences around the world.

Giuseppe Nuti is the head of Machine Learning & AI for UBS's Global Markets. Giuseppe's team is focused on a range of problems: from recommendation engines to optimal execution on behalf of UBS's clients. Prior to this role, Giuseppe was an algorithmic trader at UBS - New York - specialized in fixed income and foreign exchange.

Chris Purves is the Global Co-Head of Emerging Technology at UBS. In this role, Chris is responsible for future-proofing the bank and anticipating and solving unmet needs of internal and external clients by delivering new technologies and innovative approaches to the firm including AI and DLT. Prior to that he ran IB Digital Platforms where Chris was responsible for leading efforts to leverage our data and deliver technology-driven efficiency to our IB market-making, distribution, and processing activities.

Karen Poole is Programme Manager for Regulatory Change and Cross Border Compliance & Operational Risk Control at UBS. She has worked with a variety of Financial organisations, retail and investment, both in first and second line roles, delivering regulatory change across multiple regulators. Karen currently manages the UBS investment Bank change portfolio for Compliance and Operational Risk Control.

Key Takeaways

Increasing Usage

The use of AI in financial services is not new. However, recent advances in GenAI are expected to drive a significant increase in usage.

New and Increased Risk

The use of GenAI may introduce some new risks. However, given that it seeks to replicate human behaviour, the most significant impact will likely be to elevate risk levels associated with more traditional taxonomies.

Governance and Control

Existing supervisory, governance and control frameworks will need to be enhanced to consider AI usage in the same way that they consider human behaviour today.

Human in the Loop

Having a human-in-the-loop will allow us to continue to place reliance on staff experience and training, reducing the risk associated with the use of AI.

Regulatory Focus

The global evolution of the regulatory landscape is gathering pace and the level of regulatory scrutiny firms are subjected to is likely to increase.

Opportunities for 2LoD

AI, and GenAI in particular, will present opportunities for 2nd line functions to improve the way in which we perform our roles.

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