Audit of AI and Machine Learning

Overview

Governance and Risk lie at the heart of business and the decisions that need to be taken. Driven from goals and missions, the strategy of the firm needs to align to its risk management and governance processes. As business becomes increasingly challenging due to market developments and the impacts of crisis, these topics have come clearly into focus.

Areas such as AI and ML have both become increasingly important as a consequence of developments resulting from the crisis. The internal auditors need to be able to address these important areas. Specifically, they need to appreciate that the impact of AI on the business is significant and ensure that appropriate questions are posed leading to risk minimisation.

This course provides internal auditors with the tools that they require to enable them to audit these important areas.

Learning Objectives

Participants of this course will benefit from the following:

- Gaining a high-level understanding of the role of AI and ML in banking
- Consider how to audit AI applications
- Understanding and challenging the approach adopted for AI corporate governance
- Appreciate the role of ethics in an organisation and how this applies within n AI environment
- Understand the new UE AI Act and what this is likely to mean

Who Should Attend?

Internal audit staff.

Methodology

This course will include the development of audit programs, case studies and discussions.

Knowledge Pre-Requisites

Knowledge of risk based internal audit is assumed.

Course Outline

Session 1: What is AI?

- Machine learning and deep learning
- The developing role of AI and its relationship to ML
- The role of big data in AI and ML
- The use of AI in practice
  - Where it works
  - Where it does not work well – yet
- AI, ML and risk management
- What can go wrong with AI – the Meta case
- The regulation of AI – The new EU AI Act
- EU prohibited practices for AI
- EU general control expectations for AI
- EU TPRM expectation for AI

Case Study: What does AI really mean to you and what are your concerns?

Session 2: The Governance of AI?

- What are management's concerns?
- The 3 lines model and AI
- Reputation, goals, missions and strategy and AI
- What is the perception of staff and other key stakeholders regarding AI?
- The impact of prohibited practices on AI and ML
- The impact of AI on business activities and information received

Case Study: Auditing the governance of AI

Session 3: Making AI Work

- The importance of Big Data
- The role of a data lake
- Strategically restructuring enterprise data architecture for AI
- Fragmented data sets

- Defeating Bias
- Optimizing Information Analysis
- Utilizing the IoT

Case Study: Auditing the data architecture for AI

Session 4: The uses of AI
- The business cases
- Skills and expertise
- Approval hierarchy and developing algorithms
- The role of validation
- Considering what is really acceptable to a firm

Case Study: Auditing a business case

Session 5: AI impacts on an organisation
- Opportunities for automation and AI/ML in banking
- Key impacted areas and what this is likely to mean
- AI/ML and the changing customer
- Changing staff and the treacle
- Hidden opportunities
- Production and operations
- Adding AI to the Supply Chain
- Marketing and Sales Applications
- Real time AI
- The Next-Generation Workforce

Case Study: Auditing business impacts

Session 6: Organisational AI/ML Controls
- Designing AI/ML models
- Ensuring data quality and robustness
- Human roles
- Human intervention AI and ML
- Demonstrating use cases
- Testing the model prior to use
- Model validation
- Ensuring appropriate outcomes
- Things to avoid
- The main control environment

Case Study: Develop an audit programme to address controls over AI/ML

Session 7: Ethics and AI/ML
- The contents of an ethical framework
- How does AI relate to business ethics?
- The issue of data ethics
- Data collection
- Data analysis
- Data storage
- Developing standards and policies
- Bias
- Recent and historic cases including:
  - Cambridge Analytics
  - IBM
  - Meta
  - Goldman Sachs

Case Study: Develop an audit programme to address Ethics and AI

Session 8: AI/ML and Financial Crime Deterrenze
- The role of AI/ML in financial crime deterrence
  - Advance cyber security analytics
  - Developing defensive strategies
  - Automating repetitive security tasks
  - Close zero-day vulnerabilities
- How are attackers leveraging AI?
- Building up trust towards automated security decisions and actions
- Identifying Vulnerabilities
- Modelling AI/ML after previous security breaches
- Using AI/ML techniques in incident responses
- Using AI/ML to detect malware
- AI and natural language processing
- AI/ML and Fraud detection

Case Study: Develop an audit program for AI and financial crime deterrence

Session 9: AI in Internal Audit

- Key business risks and trends for internal audit
- The impact of the revised 3 lines model from the IIA
- The changing internal audit approach
- The role of artificial intelligence in internal audit
- Issues with data and the impact of the crisis
- The value to be gained from AI by internal audit
- Data cleansing
- Data completeness
- Data reduction
- What does this mean for internal audit?
- Defining the internal audit role
- Recognition of the change of analysis
- Developing suitable audit findings
- Fraud deterrence
- Financial crime deterrence
- Unusual patterns of behaviour

Case Study: How does AI change internal audit?