CT AI Quality

Last updated by | Mateusz Macias | Jun 17, 2020 at 1:13 PM GMT+1

AI Quality Functional Area - CT AI Centre

Introduction

This document briefly describes how the AI Quality functional area operates.

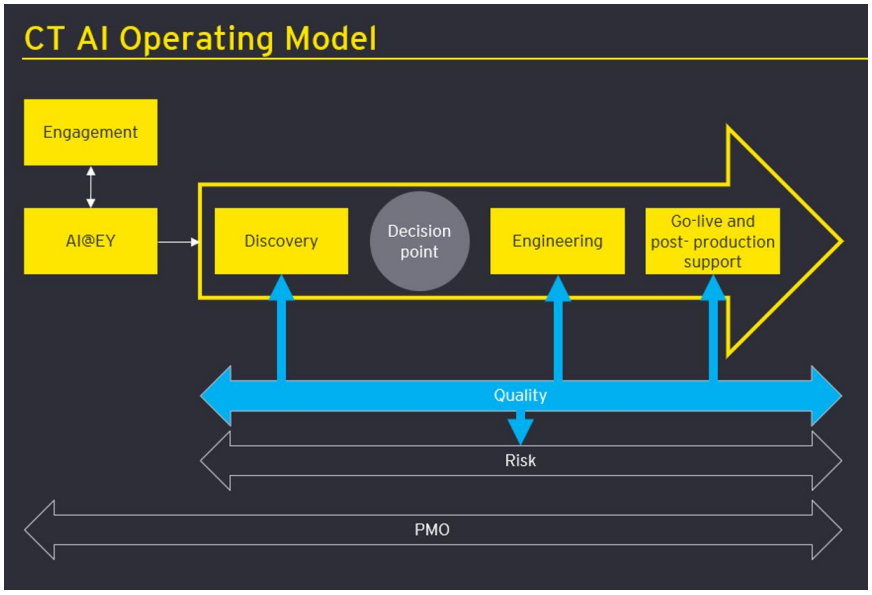
The AI Quality function provides a framework for quality assurance of the AI solutions developed by the CTAI Group, which is to be adopted by all our data scientists and engineers.

It is important to mention that all AI solutions will need the sign-off from the AI Quality team for their final release to the clients/SLs.

The diagram below shows the CTAI operating model and the interactions among the different functional areas.

Main goals

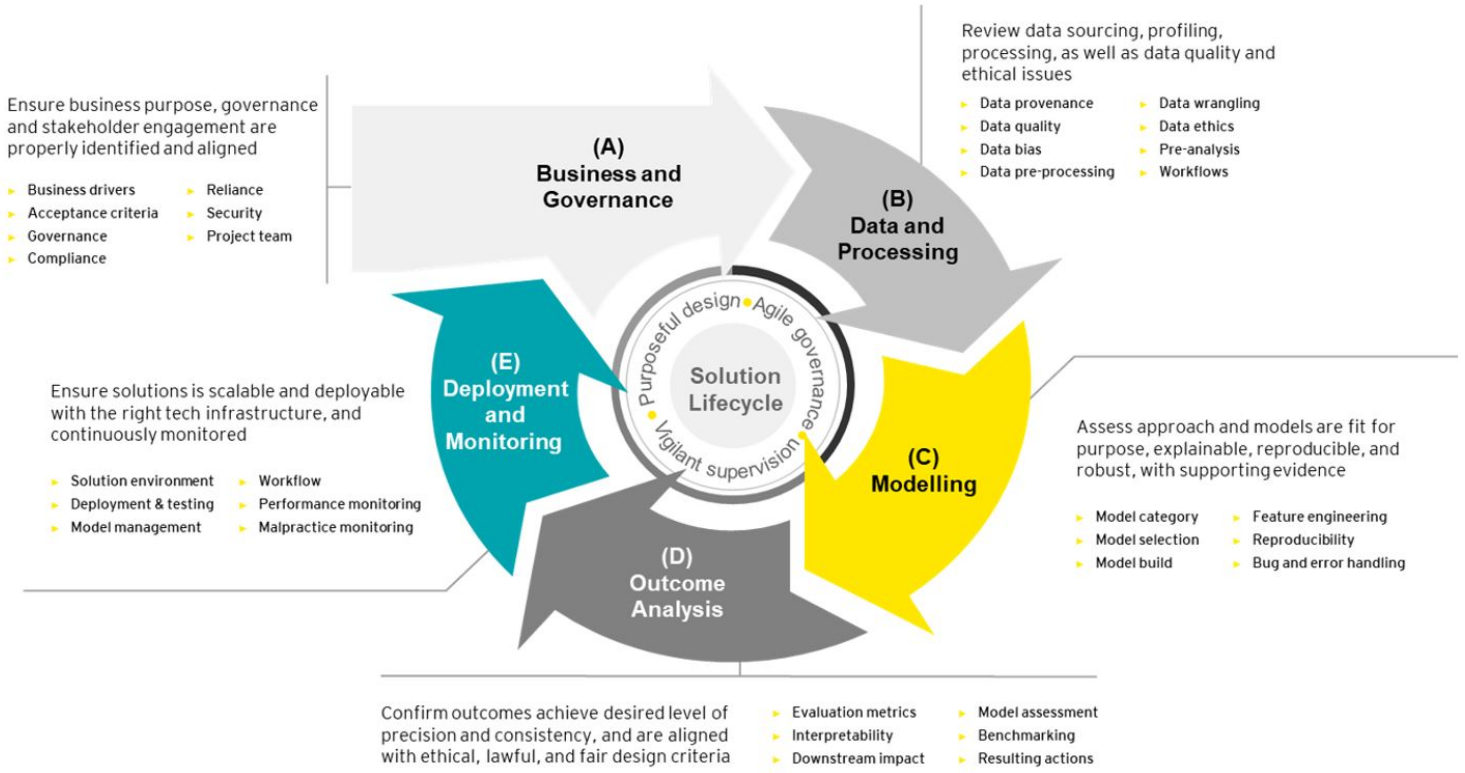
- Align the AI Quality requirements across Discovery, Engineering and Post-Production
- Partner with Engineering to provide best practices for AI development, deployment and monitoring
- Partner with Risk to identify and mitigate potential technical risks
- Identify how AI testing should be executed to ensure the production of high-quality AI solutions
- Sign off AI QA assessments for all AI solutions



AI Testing across Product Lifecycle

The Trusted Solution Lifecycle shown below has been adopted by CTAI Engineering to support the development, monitoring and governance of AI models throughout their lifecycles. It consists of five components, each of them characterised by a set of considerations and corresponding testing procedures in hierarchical levels of detail.

Trusted Solution Lifecycle



The AI Quality team will assist the product teams throughout the AI Quality process to make sure we hit all the marks. We will provide our data scientists and engineers with insights and guidance to identify requirements in this area, as well as major techniques and toolkits to fulfil those requirements following best practices.

We will focus on the following three AI QA assessments and their alignment with the Trusted Solution Lifecycle:

1. AI QA Assessment for Discovery – executed during component (A)
2. AI QA Assessment for Engineering – executed during components (B,C,D)
3. AI QA Assessment for Post-Production – executed during component (E)
   These assessments summarise the AI quality requirements for the product, the elements of testing executed by the engineers-developers, and the considerations for continuous monitoring of the models post-production.

Additionally, to ensure our engineering teams deliver high-quality, fair, transparent and reliable AI solutions, we provide them with more specific testing guidelines to consider during the development lifecycle:

- Data science/ML engineering best practices, with further explanations
- Explainability
- Fairness
- Robustness
- Open source libraries to inspect certain aspects of a ML process: data/features, models and predictions

AI Quality Process

This process will normally begin in the Engineering phase, although it could start in the Discovery phase for certain products. Below the roles that need to be specified for each product as well as the activities and deliverables of this process.

Roles:

- Global AI Quality Lead: Luis Pizarro
- AI QA Lead: TBD for each product
- Project Manager: TBD for each product
- Lead Engineer: TBD for each product

Activities and deliverables:

1. Connecting with the global and local leaders for the product
   AI QA Lead Explains the role of AI QA during product lifecycle
   Project Manager Establish working and communication flows
   Deliverable: Project Manager Communication matrix

2. Understanding AI requirements for the product
   Project Manager Document product's AI requirements
   Deliverable: AI QA Lead Discovery AI QA Assessment

3. Scoping and conducting AI QA assessments
   Lead Engineer Identify testable AI components
   Lead Engineer Scope AI QA testing and monitoring
   Lead Engineer Scope AI QA reporting
   AI QA Lead Review implementation for AI QA testing and monitoring
   Deliverable: Lead Engineer Engineering & Post-Production AI QA Assessments

4. Signing off AI QA assessments
   AI QA Lead Consolidate AI QA report
   Deliverable: Global AI Quality Lead AI QA report sign-off