MERLYNN

2022

AI Ethics - Digital Twins
in Regulatory Assessments

Summary

Responsible use of AI (in particular high risk AI) is set to be a regulatory requirement within the next few months. In order to comply organizations must demonstrate that their AI has passed the conformity assessments and is monitored on an ongoing basis.

Moral and ethical standards are difficult to define using system rules. Decision-Making Digital Twins, created with TOM, replicate the opinion of human experts enabling organizations to consistently and accurately screen and monitor an organization's AI.

Regulatory Obligations

The **European Artificial Intelligence Act** is expected to come into effect in 2023. In terms of the Act, "high-risk" AI systems are only permitted to operate in the European market, if they have passed a **pre-market conformity assessment** and can demonstrate **ongoing post-market monitoring**.

The national supervisory authority will designate third-party organizations that have developed the capacity to conduct pre-market conformity assessments of high-risk AI systems.

To ensure regulatory oversight the EU Commission will establish a **European Artificial Intelligence board** to share best practices among member states and to issue recommendations.

Furthermore the EU High-Level Expert Group on Artificial Intelligence (AI HLEG), recommends involving a **multidisciplinary team of people from within and/or outside the organization** with specific competencies or expertise to assist in providing insight and advice.

The Challenge

In practically implementing these requirements, organizations are set to face challenges in:

- **Interpretation and explainability of subjective issues**
- **Consistent & efficient evaluation of their AI technologies**
- **Implementation of on-going monitoring**

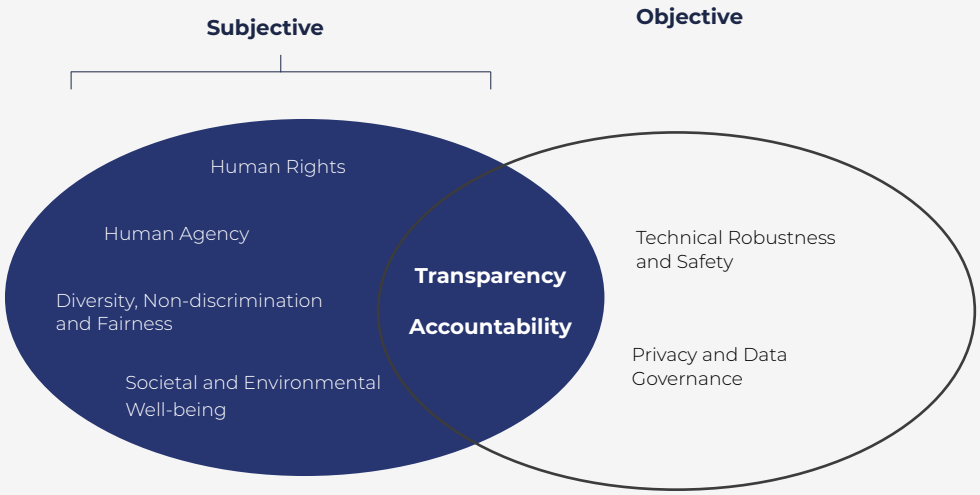
Digital Twin Solution

The TOM technology provides organizations with the ability to digitally replicate human judgment and opinion.

This enables organizations to select a panel of human experts - regulators, ethicists, etc. - the people best qualified to provide insight on the subject of ethics and morality, and digitally replicate their opinions.

The decision-making Digital Twin panel forms the basis of a real-time monitoring capability to support organizations in complying with their ethics-based obligations.

Panel of Digital Twins adjudicate subjective issues



Challenges addressed

Interpretation and explainability of subjective issues

- The opinion of the true subject matter experts are reflected in the outcome of the Digital Twin *(non-experts are no longer required to interpret guidelines, policies, etc.)*.
- Transparency - The outcome is explained in the audit trail.

Consistent & efficient evaluation of AI

- Digital Twins deliver consistent outcomes.
- Real-time access to advice & opinion of the expert enables the assessment to be processed more efficiently - relieving the bottleneck around the experts and delivering decisions in a much shorter time frame.

On-going Monitoring Capability

- Provided the data required for the Digital Twin to make an assessment is available, the Twin can be consulted 24/7, 365 days a year for multiple assessments.

Impact

Using a Digital Twin library provides organizations with a practical, efficient, and consistent solution to **systematize, defend, and recommend right and wrong behavior**.

TOM's transparent decisioning audit trail enables organizations to demonstrate to regulators exactly how each Digital Twin decision has been tested and held to the highest possible moral standards *(those of the panel)*.