

AI Procurement Guide

WHY PROCUREMENT?

There is a big opportunity for procurement to serve as an informal, “soft law” type of AI governance by promoting compliance with ethical norms. When procurement standards demand transparency and an ethical approach, companies that provide products and services to governments will not only need to adopt these AI-related procurement standards, their actions will also drive broader diffusion of best practices throughout the industry.

This is consistent with calls for mission-oriented and challenge-led innovation policies, as set out by economist Mariana Mazzucato, for instance. Mazzucato describes challenge-led policies as “policies that use investment and innovation to solve difficult problems”.

Fortunately, the mindset surrounding government procurement is shifting from an almost exclusive focus on commercial considerations to a more holistic evaluation that integrates ethical, social and environmental dimensions as well.

For example, the UK Social Value Model has been applied to central government tenders from 2018 to mandate that a minimum weighting of 10 per cent be applied to the social value score. It is critical that government tenders, which aim to secure highly innovative AI applications, build up these existing frameworks while perfecting and customising them.

This component of the TBI AI toolkit aims to provide a guide on how to strategise procurement as a tool to drive AI adoption and foster ethical, responsible and trustworthy AI. This guide has benefitted from emerging literature in the field, in particular the World Economic Forum’s (WEF) report “AI toolkit in a Box”, the Alan Turing Institute’s guide “Understanding Artificial Intelligence Ethics and Safety: A Guide for the Responsible Design and Implementation of AI systems in the Public Sector”, and the Florida Law Review’s “Acquiring Ethical AI” article by David S Rubenstein.

It recommends two different pathways for the procurement of AI-enabled public services:

1. **Challenge-based:** Strategise procurement as an experimental mechanism to incentivise ethical AI innovation by targeting the current startup ecosystem (and therefore significant players of the future) with small and agile tenders centred around a clear problem statement, rather than specifics of a solution.
2. **Standards-based:** Strategise procurement as a “soft-law” mechanism to gradually embed rigorous AI ethical standards across well-established tech players, utilising the commercial lever of high-budget, large-scale public tenders. Such tenders would entail a detailed request of information (RFI) to mitigate the risks identified by the appointed AI procurement team. This path aims to directly demonstrate a commitment to responsible AI and also to indirectly suggest that such “soft-law” mechanisms be followed by actual legislation, thus triggering a phenomenon of “anticipated compliance” among large tech players.

PROCUREMENT STRATEGIES – RECOMMENDED APPROACHES

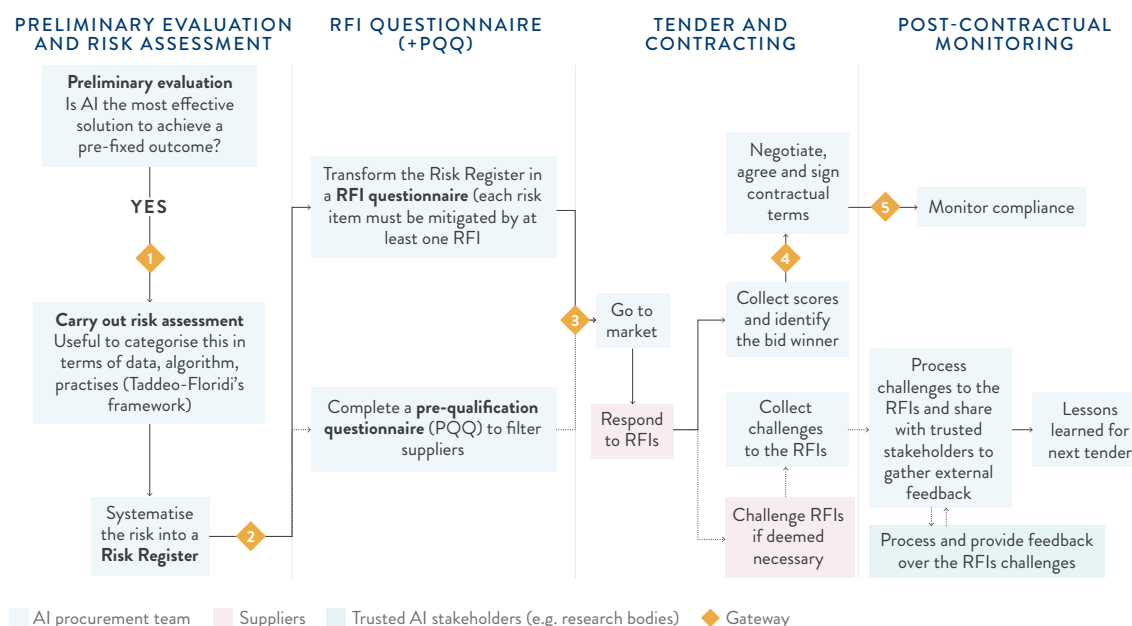
	Challenge-based	Standards-based
What is your goal?	Incentivise ethical AI innovation to shape the emerging part of the AI ecosystem	Embed rigorous AI ethical standards across well-established tech players
When to use it?	Small to medium tenders, medium-risk AI applications	Large tenders, medium to high-risk AI applications
What businesses should you engage?	Tech startups and SMEs	Big and well-established players
How does it translate into practice?	<p>Focus on developing a clear problem statement, rather than specifics of a solution</p> <p>Support an iterative (as opposed to linear) approach to product development (e.g. set expectations with providers through the request for proposal to specify the project must be delivered using an agile approach)</p>	<p>Mitigate each risk with at least one RFI</p> <p>Embrace an entrepreneurial mindset when writing RFIs, with the intention to maximise the amount of information from industry</p>

Given that the WEF has already carried out policy work on the implementation of the challenge-based procurement pathway, this toolkit will focus on the second approach.

PROCUREMENT LIFECYCLE: STANDARDS-BASED APPROACH

The procurement lifecycle for the second approach is summarised by the following stages:

1. Risk assessment
2. Request for information (RFI)
3. Evaluation and contractual award
4. Post-award monitoring



1. Risk Assessment

The AI procurement team should carry out a risk assessment. In this respect, it is worthwhile mentioning that most AI applications present minimal to no risk, as highlighted by the debate surrounding the EU AI Act. Examples of AI applications that present minimal to no risk are chatbots/virtual assistants. Such applications can increase efficiencies significantly, as demonstrated by Australia’s use of chatbots for its taxation office, which achieved more than three million interactions and was able to resolve 88 per cent of queries on first contact.

Conversely, other applications such as AI-powered benefits allocation, fraud detection or crime prediction can pose serious societal risks and end up being the cause of highly damaging outcomes that undermine public trust in the technology. A landmark example is the self-learning algorithm used by Dutch tax authorities to identify childcare-benefits fraud, which produced inaccurate and highly discriminatory results.

Given the contextual nature of AI risks, a non-specific risk assessment is neither possible nor advisable. However, as a general principle, investment in a diverse and cross-disciplinary team is necessary for a sound evaluation of AI applications at all procurement stages. AI procurement is not business as usual, thus it requires a bespoke and highly specialised team.

As noted by David S Rubenstein’s landmark article “Acquiring Ethical AI”, the value of AI risk assessments “will depend, in large measure, on the people responsible for their curation. At a minimum, the AI risk-assessment team should include subject-matter experts, IT personnel, data scientists, lawyers and ethical AI champions”.

The risk register below provides a high-level template.

EXAMPLE OF A RISK REGISTER FOR AN AI APPLICATION (NON-EXHAUSTIVE)			
Risk Description	Risk Category	Impact	RFI to use as mitigation (to be completed after the RFI stage)
Use of sensitive data	Data related	High	e.g. Inclusion of stakeholders and explainable AI
Ambiguous data quality and contextual bias	Data related	High	e.g. Inclusion of stakeholders and explainable AI
Reliance on third parties to design, deploy, audit and monitor the AI system	Algorithm related, commercial (vendor lock-in)	Variable	e.g. Explainable AI

2. Request for Information (RFI)

What roles can RFIs play in developing responsible AI?

It is important to note that RFIs in large-scale tenders, addressed to the most significant players of the industry, can serve a dual purpose with regards to AI ethics development: they help by bridging the information asymmetry between industry players and governments while also simultaneously fostering innovation and commercial competition around AI.

Government procurement teams need to think strategically (if not entrepreneurially) on both fronts to maximise and systematise the amount of information provided by bidders through RFIs – for future use and reference.

How should procurement teams write RFIs?

The foundation of all RFIs should be based in the risk assessment carried out during the planning phase by the appointed team. Each risk item should be mitigated/de-risked by at least one RFI. We recommend Canada’s Algorithmic Impact Assessment and the European Law Institute’s Model Rules as two excellent templates to build your RFI questionnaire.

The table below provides a template listing RFIs for a potential AI-related government tender.

LIST OF RFIs FOR A POTENTIAL AI-RELATED GOVERNMENT TENDER

Example of requirements	Score weight (ad-hoc)	Responsible owner (ad-hoc)
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Traceability

Adoption of procedures for documenting the development and maintenance of AI-based services and solutions

Explainable AI (transparency)

Explanation of logic behind algorithms, choices and de-selections, outputs and outcomes. Explainable outputs from AI systems are crucial as they enable smoother engagement with other suppliers to continue or build upon your AI system in the future, thus limiting the risk of vendor lock-in

Description of the path the team adopted to achieve explainable AI. The “Understanding Artificial Intelligence Ethics and Safety” guide from the Alan Turing Institute illustrates four interconnected strategies: internal explanation, post-hoc explanation, supplemental infrastructure and counterfactual explanation

Inclusion of stakeholders

Proof of engagement with potentially affected groups throughout the design process of the solution

Robust evidence of the selected groups’ feedback into the inclusion of product testing, with a contextual explanation of how said feedback improved the product in its various iterations

Multidisciplinary team

To develop, evaluate and deliver AI projects requires a diverse team that understands the interdependent disciplines incorporated into AI technologies. Also provide a detailed overview of the team (*a non-exhaustive list would include: domain expertise – for example, health care, transportation, system and data engineering, model developer and data ethicist*)
