

Towards a Systematic Understanding on the Challenges of Procuring Artificial Intelligence in the Public Sector

Dr. Keegan McBride

Presentation at: EU webinar on the public procurement of AI



Presentation agenda

- Short introduction
- Background for the study
- Goals of the research
- Methodology
- Findings
- Final thoughts

‘Most of GovTech is about procurement... **getting procurement rules right is one of the most important parts of driving improvements in technology....** [and] that [it] is a huge part of driving digital as a whole, including the take-up of AI’ – UK Minister of State for Digital

“House of Lords Select Committee on Artificial Intelligence AI in the UK: ready, willing and able? Report of Session 2017-19,” London, 2018. Accessed: Feb. 07, 2021. [Online]. Available: <http://www.parliament.uk/mps-lords-and-offices/standards-and-interests/register-of-lords->

Background

- Use of AI in the public sector is increasing
- There are numerous benefits, but also many potential consequences when AI is used
- Most AI systems in the public sector are currently procured, rather than built in house
- **To minimize the risks associated with the use of AI in the public sector, and maximize the gains, smart, targeted, and well developed procurement methods strategies and guidelines are needed.**
- **Many governments have experience with procurement, but procurement of AI systems is not necessarily the same**

What does the literature tell us on why procurements fail?

Procurement (general)

- Contract management capacity
- Formulation and understanding of technical requirements
- Market knowledge
- Timing
- Technical competence
- Broader organizational competencies

Procurement (AI)

- Data ownership
- Data usage in algorithms (GDPR, right to be forgotten?)
- Data sovereignty
- Bias and discrimination
- Responsibility
- Trade secrecy and intellectual property rights

Goals of this research

1. Explore the challenges encountered during the procurement of AI in the public sector
2. Understand potential proposed solutions and approaches for overcoming or preventing these challenges

Findings

Challenge

Solution

- | | |
|----------------------------|---|
| <p>1. Market knowledge</p> | <p>1. Engage in market research to understand the state-of-the-art and whether or not a specific project is feasible.</p> |
| <p>2. Trade secrecy</p> | <p>2.a. Include specific regulations within the procurement on trade secrecy and intellectual property rights. 2.b. Ensure that proper documentation is provided and mandated in procurement documents.</p> |
| <p>3. Service needs</p> | <p>3. Engage in a pre-procurement process to check whether or not AI is the best solution for a specific problem</p> |
| <p>4. Structure</p> | <p>4. Create standard procurement templates to ensure consistency and validity of AI procurements.</p> |

Findings

Challenges

1. Data availability
2. Data ownership
3. Data governance
4. Data infrastructure

Solutions

- 1.a. Conducting a data availability assessment prior to the procurement process
 - 1.b. Ensuring data access, storage and consent before the procurement
2. Ensure that the procurement has specific language that data provided by the public administration, or collected in the context of procurement, remains with the administration.
3. Ensure that contractor has followed regulation and standards during the collection of their data as well as storage.
4. Systematically analyse the current infrastructural capabilities of your organization and make it clear within the procurement.

Findings

Challenges

1. AI system quality

2. AI transparency

3. AI bias

Solutions

1.a. Apply risk management strategy to identify and mitigate risks

1.b. Ensure maintenance (over a period of time) is contractually obligatory

2.a. Including technical, procedural and explainability as mandatory requirements

2.b. Explainability and interpretability of algorithms as a design criteria

2.c. Require clear documentation about the functionality of the AI-system, the data used, and how it works (at a minimum)

3.a. Conducting a data assessment to identify and address data bias

3.b. Measures have to be taken by contractor to ensure bias is limited. Iterative AI impact assessments at crucial decisions points should be conducted.

3.c. Obligatory documentation on compliance to non-discrimination, equal treatment and proportionality

Findings

Challenges

1. Technical capacity

2. Organizational capacity

3. Individual capacities

Solutions

1.a. Encourage participation in and arrange educational courses on AI.

1.b. Consult with governmental experts in other organizations to develop an initial understanding on AI.

2.a. Develop clear guidelines that specify the key challenges and risks with public procurement of AI-based systems.

2.b. Provide guidance and best practices for AI procurement, for example by providing templates or sample procurements

3. Encourage participation in and arrange educational courses on AI.

Final thoughts

- Procurement of AI systems in the public sector does appear to have uniquely associated challenges when compared to e.g. traditional technological procurement
- Research identified 14 commonly occurring or identified challenges within four categories: procurement process, data, AI-model, and organizational capacity challenges.
- 22 potential strategies to overcome these challenges have been identified and proposed.
- This is important not only for the public sector, but clearer procurement guidelines and better procurements also bring benefits to private sector
- Future research is still needed: what is / is not AI? Are these guidelines actually useful in overcoming challenges? How does context influence the procurement of AI? How can we develop the necessary organizational capacities to better procure AI?

THANK YOU!

Hertie School
Friedrichstraße 180
10117 Berlin, Germany
T +49 (0)30 259219-0
F +49 (0)30 259219-11
info@hertie-school.org
www.hertie-school.org