ALGORITHM WATCH

Impact Assessment of ADM Systems in the Public Sector

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AlgorithmWatch

AlgorithmWatch is a not-for-profit organisation with the aim to evaluate and shed light on algorithmic decision making (ADM) processes that have a relevance to society – meaning they are used either to predict or prescribe human action or to assist or make decisions automatically.

WATCH | EXPLAIN | NETWORK | ENGAGE

PUBLIC SECTOR

- Unique provider of certain services (security, social benefits, public health)
- No possibility for people to choose provider of services / to deny
- Unique access to certain kinds of data / information of the affected
- Special responsibility towards those affected
- Unique legal requirements binding public authorities
- Need to set an example, credibility in controlling private actors

OUR ADM-MANIFEST

1. ADM is never neutral.
2. The creator of ADM is responsible for its results. ADM is created not only by its designer.
3. ADM has to be intelligible in order to be held accountable to democratic control.
4. Democratic societies have the duty to achieve intelligibility of ADM with a mix of technologies, regulation, and suitable oversight institutions.
5. We have to decide how much of our freedom we allow ADM to preempt.

IMPACT ASSESSMENT TOOL FOR PUBLIC AUTHORITIES

- Impact assessment tool: Ethical framework, operationalization, checklists

- https://algorithmwatch.org/en/adms-impact-assessment-public-sector-algorithmwatch/

EXISTING GUIDELINES

- Numerous recommendations by companies, authorities, civil society, …
- Valuable advice for an ethically acceptable use

- Open questions:
  - “Calculation” of an ethics-score via vague criteria
  - Snapshots
  - Complexity and implementation

ETHICAL FRAMEWORK: SEVEN PRINCIPLES

- Intrinsic principles:

  Harm Prevention | Justice / Fairness | Autonomy | Beneficence

- Instrumental principles:

  Control | Transparency | Accountability

OPERATIONALIZATION VIA CHECKLISTS

- Method or tool to obtain transparency on risk signals
- Checklist 1 (triage): questions derived from ethical principles
  → answers determine which checklist 2 questions need to be answered
- Checklist 2 (transparency): questions to be answered in transparency report
- Result: transparency report

CHECKLIST 1 – TRIAGE (Excerpt):

Justice and Fairness

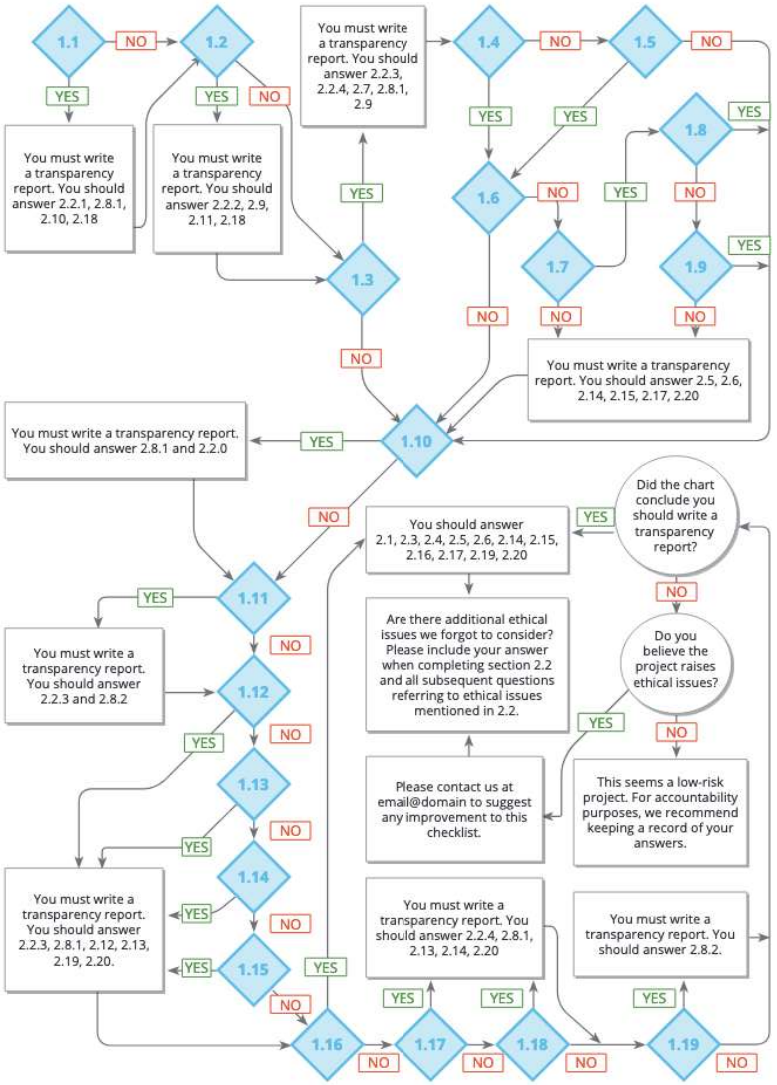
1.12. Political risk: Is it possible that the technical system will have an effect on a political decision (e.g. a popular vote)?

1.13. Economic risk: Does the technical system affect the distribution of public resources to economic actors in society?

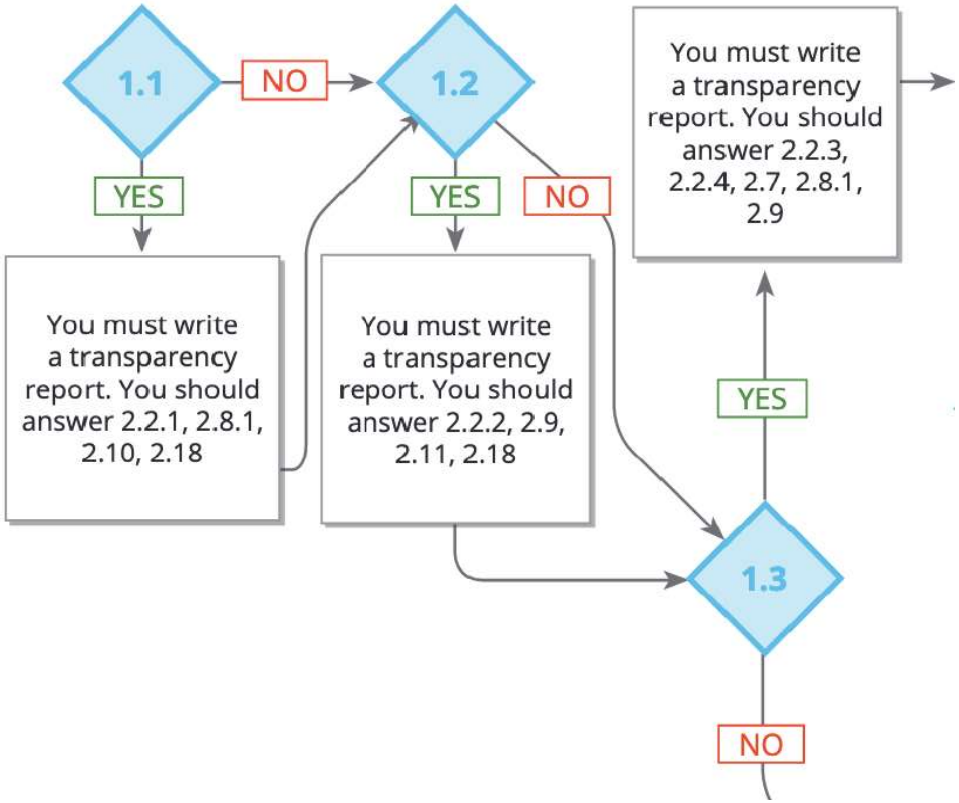
1.14. Statistical proxy risk: Does the technical system rely on a statistical model of human behavior or personal characteristics?

1.15. Procedural regularity risk: Is the system designed to be adaptive so that it will not treat all new cases in the same way as those it encountered in the past, because it changes its parameters (e.g., in order to become more efficient)?

FLOWCHART


1.1
NO
1.2
YES
YES
NO
You must write a transparency report. You should answer 2.2.1, 2.8.1, 2.10, 2.18
You must write a transparency report. You should answer 2.2.2, 2.9, 2.11, 2.18
You must write a transparency report. You should answer 2.2.3, 2.2.4, 2.7, 2.8.1, 2.9
1.4
NO
1.5
NO
YES
YES
1.8
YES
1.6
NO
YES
NO
1.7
1.9
YES
NO
NO
NO
1.3
NO
You must write a transparency report. You should answer 2.5, 2.6, 2.14, 2.15, 2.17, 2.20
You must write a transparency report. You should answer 2.8.1 and 2.2.0
YES
1.10
NO
Did the chart conclude you should write a transparency report?
YES
You should answer 2.1, 2.3, 2.4, 2.5, 2.6, 2.14, 2.15, 2.16, 2.17, 2.19, 2.20
NO
1.11
YES
NO
Are there additional ethical issues we forgot to consider? Please include your answer when completing section 2.2 and all subsequent questions referring to ethical issues mentioned in 2.2.
Do you believe the project raises ethical issues?
You must write a transparency report. You should answer 2.2.3 and 2.8.2
1.12
YES
NO
YES
NO
1.13
Please contact us at email@domain to suggest any improvement to this checklist.
This seems a low-risk project. For accountability purposes, we recommend keeping a record of your answers.
YES
NO
1.14
You must write a transparency report. You should answer 2.2.3, 2.8.1, 2.12, 2.13, 2.19, 2.20.
YES
NO
You must write a transparency report. You should answer 2.2.4, 2.8.1, 2.13, 2.14, 2.20
You must write a transparency report. You should answer 2.8.2.
YES
1.15
YES
NO
YES
YES
YES
1.16
1.17
1.18
1.19
NO
NO
NO
NO

FLOWCHART


1.1
NO
1.2
YES
YES
NO
You must write a transparency report. You should answer 2.2.3, 2.2.4, 2.7, 2.8.1, 2.9
You must write a transparency report. You should answer 2.2.1, 2.8.1, 2.10, 2.18
You must write a transparency report. You should answer 2.2.2, 2.9, 2.11, 2.18
YES
1.3
NO

CHECKLIST 2 – Transparency (Excerpt):

Stage of assessment for checklist items 2.7 to 2.19: after testing the system

Translation and Control Transparency

2.7. What methodologies have been used to test and measure the performance of the system?

[Please indicate how you measure the performance with respect to the main goal of the system, specified in checklist 2—question 2.1]

2.8. What methodologies have been used to identify …

2.8.1. the stakeholders directly affected by the system's predictions/recommendation/decisions? What are the foreseen effects on these individuals?

2.8.2. the individuals affected by digital transformation in the public administration (e.g. public administration personnel)? What are the foreseen effects on these individuals?

OUR APPROACH

- First step: Triage for all ADM systems
- Second step: Transparency report

- No score, but a tool for reaction to risk signals on a case-by-case basis
- Transparency
  - Necessary (but not yet sufficient) condition for ethical conformity
  - Different addressees of transparency

- Accompanying project over entire life cycle (planning, testing, operation)

- Practice-oriented checklists

POLICY RECOMMENDATIONS

- Mandatory impact assessment for every ADMS deployed in public sector
- If risk signals are detected, public authorities must ensure that a transparency report is provided and that follow-up measures are taken.
- Public register for every ADMS deployed in the public sector
  - containing intelligible information on system's purpose, underlying model, actors involved in development and deployment, and results of impact assessment (or on addressees of transparency)

THANK YOU!