Z-inspection®: Socio Technical Scenarios

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Structure of the Lesson

Creating Socio Technical Scenarios to assess the AI System.

Why using socio-technical scenarios?

െ One of the specific aspects of the methodology involves using what we call socio-technical scenarios , in order to anticipate possible uses and problems of the system under review.

What are socio-technical scenarios?

ଓThe scenarios are built around possible everyday life experiences that could result from the use. Anticipating those experiences highlights possible problems that could arise from such use.

What are socio-technical scenarios?

ଓ One can then 'look' at the situation from different points of view, highlighting different approaches and appraisal of the technology at hand. The team draws from their diverse experiences in technological assessments to debate the specific context of the situation. This prevents abstract oppositions between general principles.

Why are socio-technical scenarios useful?

 This method proved to be useful in allowing lively discussion of specific problems related to the use case while engaging at the same time tensions between fundamental principles and ultimately various understandings of our moral obligations (understandings that can be linked to the main ethical theories).

Why are socio-technical scenarios useful?

ɞThe scenarios themselves are created based on the perceived ethical stakes of the system's specification (including its relationship with the prior socio-technical context), how its operation is intended to affect the interests of various groups, and how the terms of its deployment reflect or enact a consensus across stakeholders for its appropriate use.

Why are socio-technical scenarios useful?

℗ In past cases, different Z-Inspection® teams exercised discretion in how these scenarios were created and internally discussed in the process of carrying out the inspection.

℗ The outcome of this first step is the identification of a number of issues to be assessed.

We use Socio-technical Scenarios
to identify *issues*

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By collecting relevant resources, a team of interdisciplinary experts create socio-technical scenarios and analyze them to describe:

the aim of the AI systems,

the actors and their expectations and interactions,

the process where the AI systems are used,

the technology and the context (*ecosystem*).

Resulting in a number **of *issues* to be assessed**.

How to start?

❧ Initially the experts team meet together with the stakeholders owning the use case in a number of workshops (via video conference) to define **socio-technical scenarios of use of the AI systems.**

❧ We use the term *stakeholders* to denote the actors who have direct ownership on the development and deployment of the AI system.

Socio-technical scenarios

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· What is the **Aim of the system**

Goal of the system, context WHY it is used, …

Socio-technical scenarios

- **Actors (primary, secondary, tertiary)**

Who is using the system,

Who is influenced by decisions of the system,

Who has interest in the system being deployed, …

Socio-technical scenarios

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· **Actors' Expectation and Motivation**

Why would the different groups of actors want the system?

What are their expectations towards the system behavior?

What benefits are they expecting from using the system?

Are there any conflicts?

Socio-technical scenarios

· **Actors' Concerns and Worries**

What problems / challenges can the actors foresee?

Do they have concerns regarding the use of the system?

Socio-technical scenarios

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- **Context where the AI system is used**

Additional context for the situations where the AI system is used, how it could be used in the future, ...

Socio-technical scenarios

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- **Interaction with the AI system**

What is the intended interaction between the system and its users?

Why is it like this?

How are decisions being made when the AI is active?

Socio-technical scenarios

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· **AI Technology used**

Technical description of the AI system, so technically inclined people can get a better intuition how it is working

Socio-technical scenarios

- **Clinical studies /Field tests**

Was the system's performance validated in (clinical/test field) studies?

What were the results of these studies?

Are the results openly available?

Socio-technical scenarios

· **Intellectual Property**

What IP regulations need to be considered when assessing / disseminating the system?

Is it open access?

Does it contain confidential information that must not be published?

Socio-technical scenarios

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· **Legal framework**

What is the legal framework for use of the system?

What special regulations apply?

Socio-technical scenarios

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- **Ethics oversight and/or approval**

Has the AI system already undergone some kind of ethical assessment or other approval?

If not - why not? If so, was this internal/external, volunteer/regulated, what was covered?

Did they get a waiver? Was there a clearing, but it was very light or internal and not considered sufficient?

Why Socio-technical scenarios?

ଔ With the information organized this way, people are encouraged to go through the materials again and ask questions in the document where they need additional clarifications from the stakeholders or developers. **This helps bring everyone to a shared understanding of the system which helps create socio-technical scenarios based on possible uses.**

ଔ It also helps stakeholders to identify where they need to provide additional information on the system.

Socio-technical scenarios

Add your questions….

Readings

ଔଷ **Ethical Framework for Designing Autonomous Intelligent Systems.** J Leikas et al. J. of Open Innovation, 2019, 5, 1

ଔଷ **How to Assess Trustworthy AI in Practice.** arXiv:2206.09887 [cs.CY]. **[v2]** Tue, 28 Jun 2022