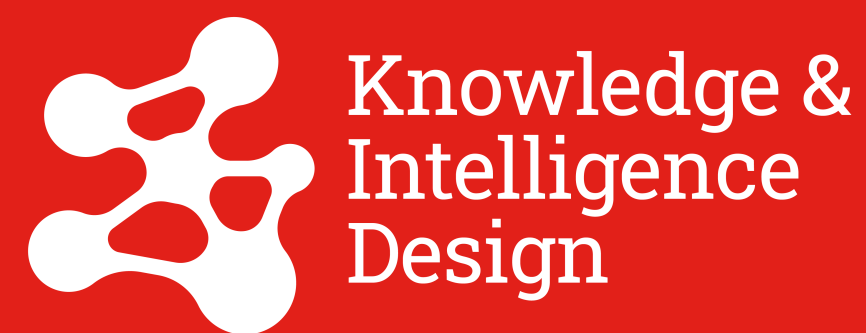

Contestable Camera Cars: A Speculative Design Exploration of Public AI That Is Open and Responsive to Dispute

Kars Alfrink, Ianus Keller, Neelke Doorn, and Gerd Kortuem
Delft University of Technology

CHI 2023

Hamburg, Germany

www.contestable.ai



Camera cars

Credit: AMS Institute

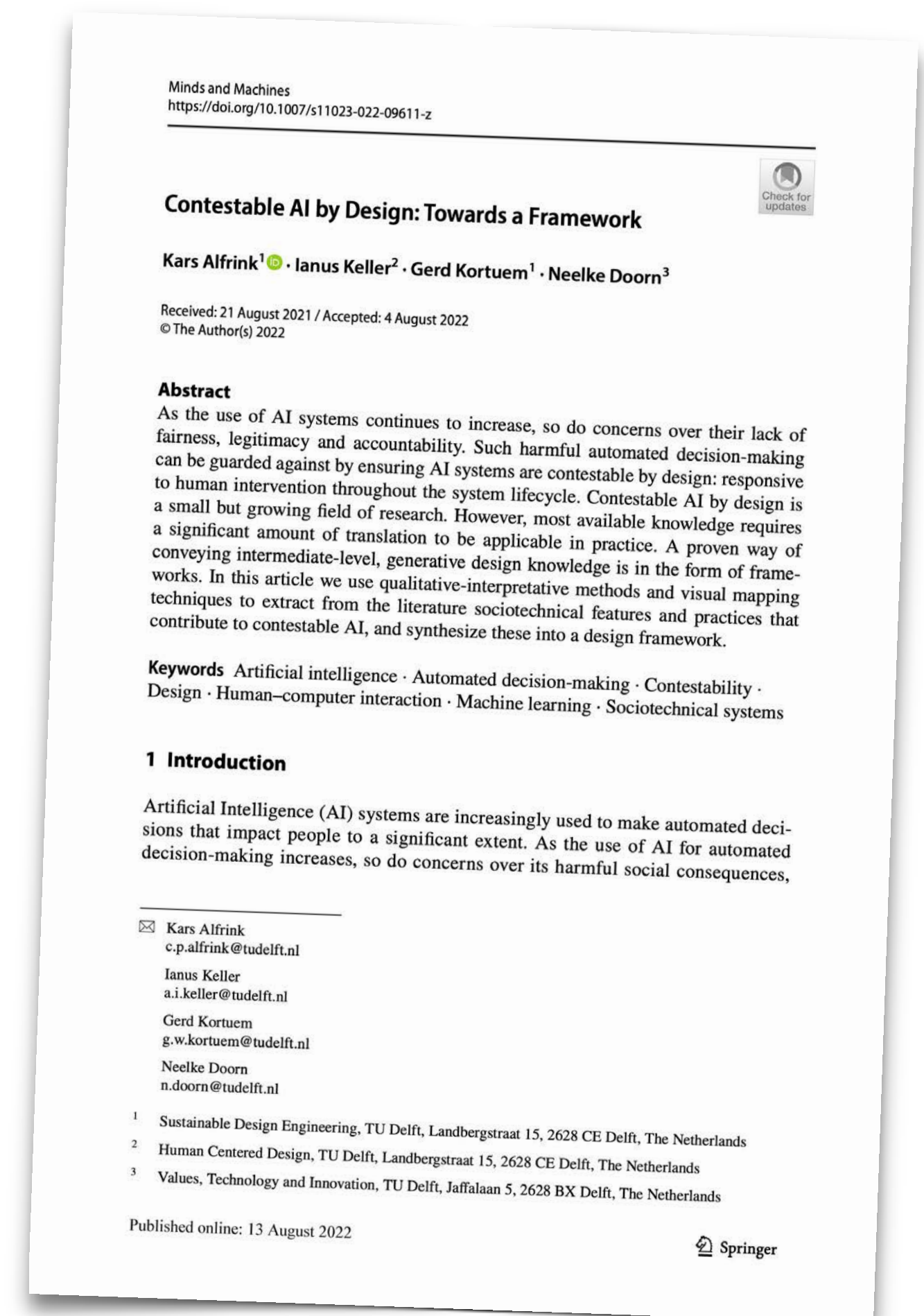


Public AI

The use of feedback-adjusted data analysis and processing to augment, support or automate policy execution in the public sector. (adapted from Suchman, 2018)

Contestable AI

AI that is open and responsive to **dispute**, throughout the **system lifecycle**, establishing a **dialectical relationship** between decision subjects and system operators.
(Alfrink et al., 2022)



-
- Humans **challenging** machine predictions (Hirsch et al., 2017)
 - **Deep** system property (Vaccaro et al., 2019)
 - Human **intervention**, **contestability by design** (Almada, 2019)
 - **Procedural** relationship (Sarra, 2020)
 - **Justifications** (Henin & Le Métayer, 2021)

RESEARCH QUESTIONS

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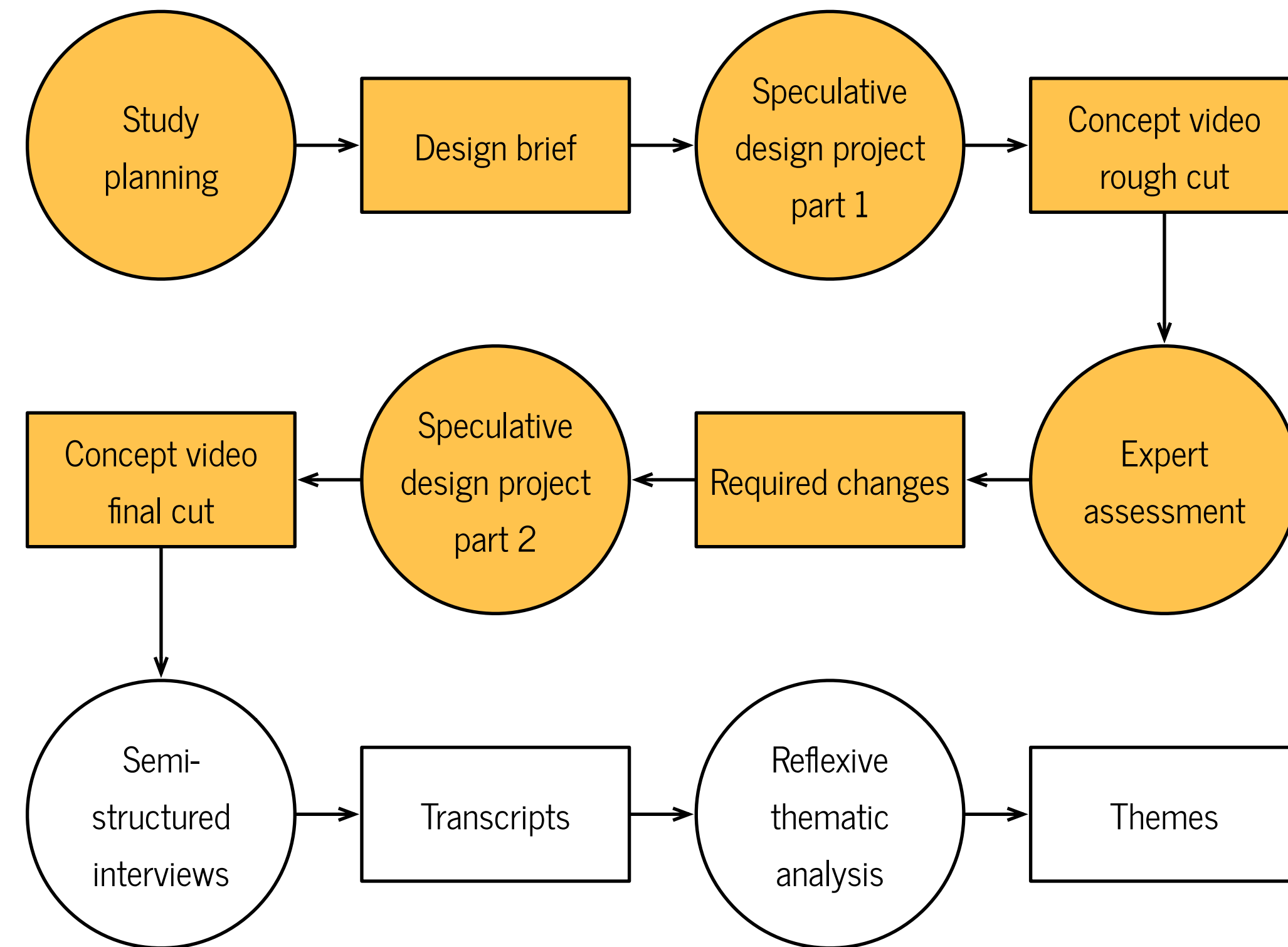
RQ1: What are the characteristics of a contestable public AI system?

RESEARCH QUESTIONS

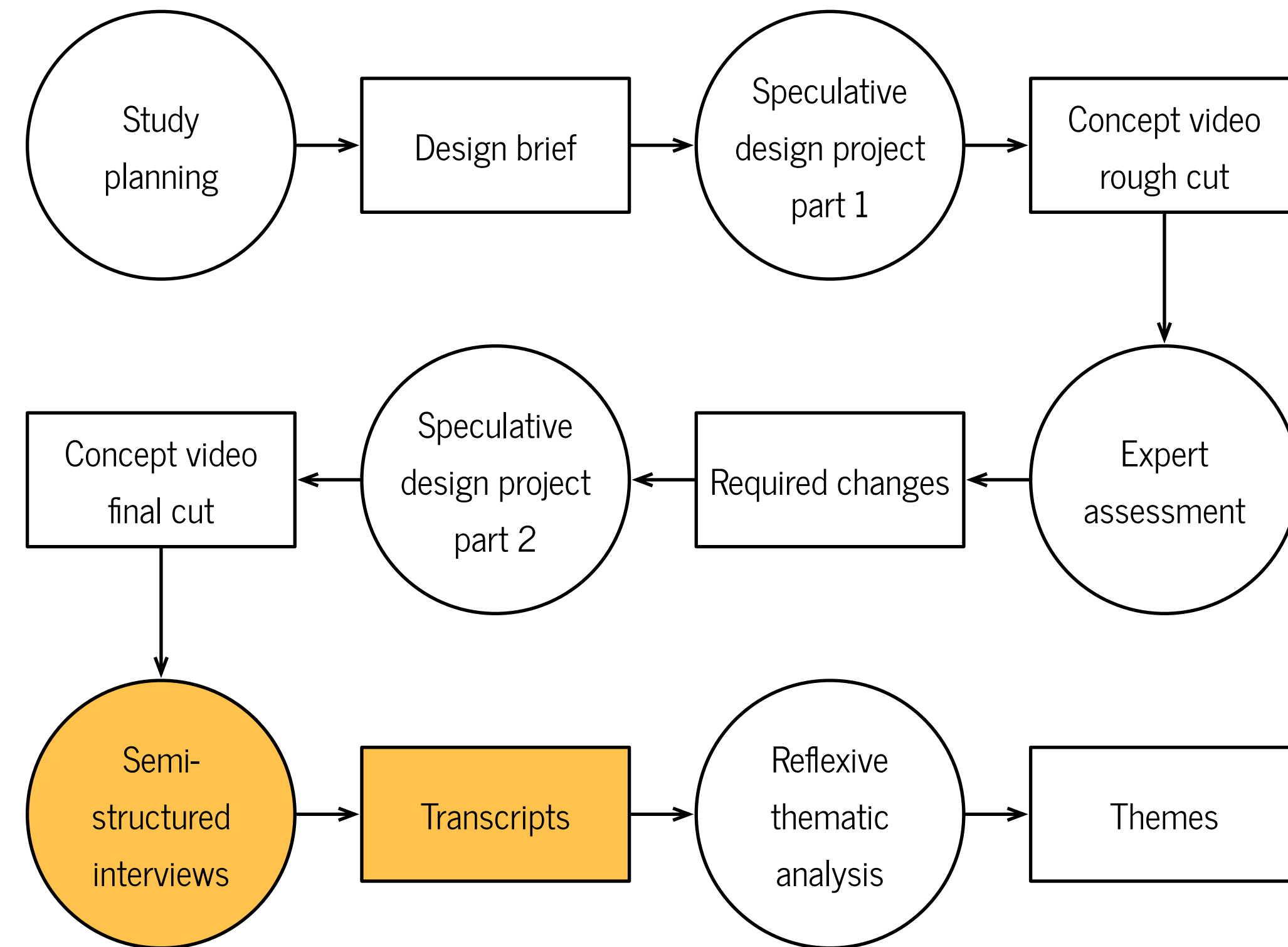
RQ1: What are the characteristics of a contestable public AI system?

RQ2: What are the challenges facing the implementation of contestability in public AI?

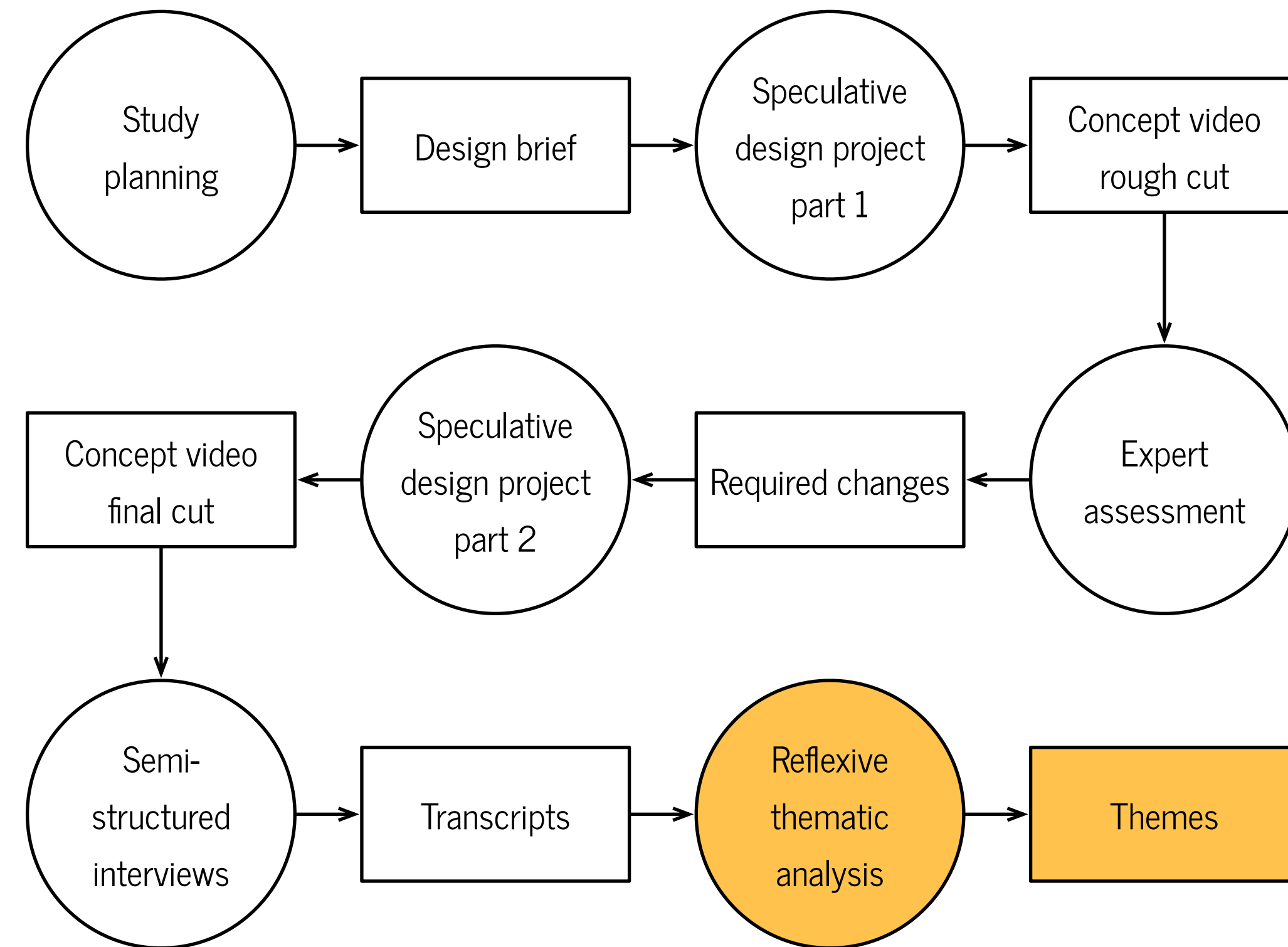
Approach



Approach



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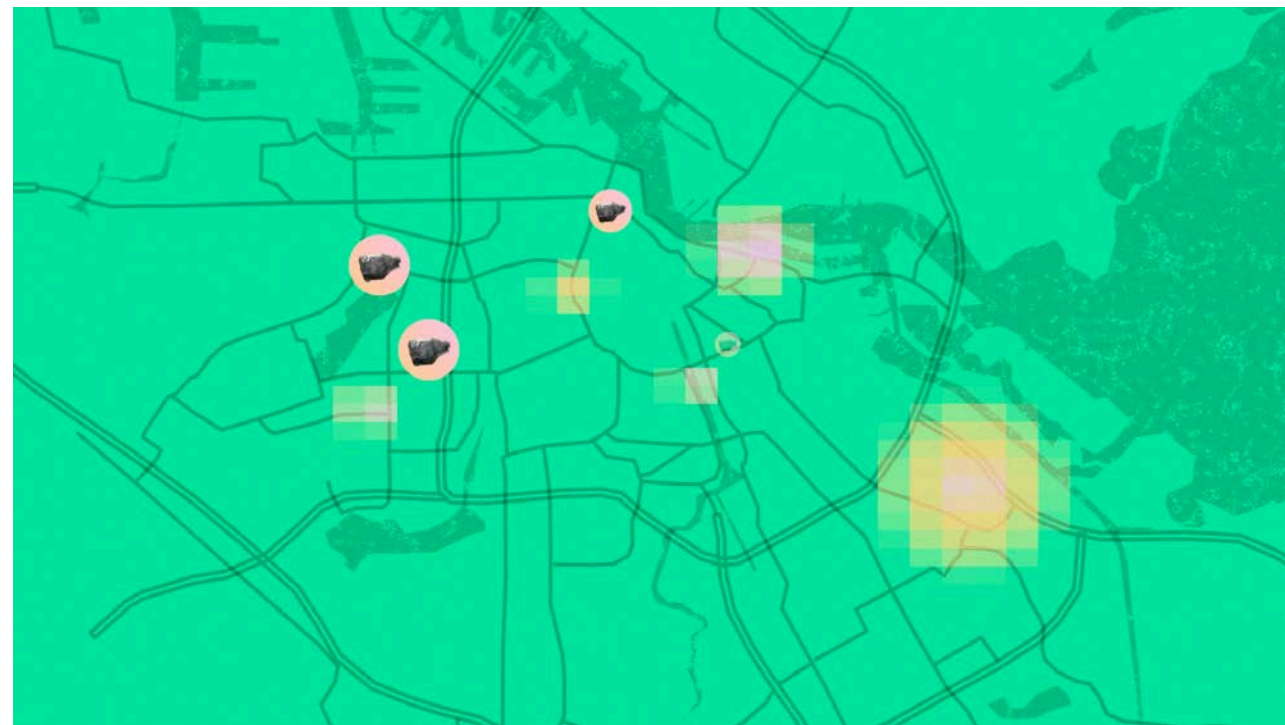
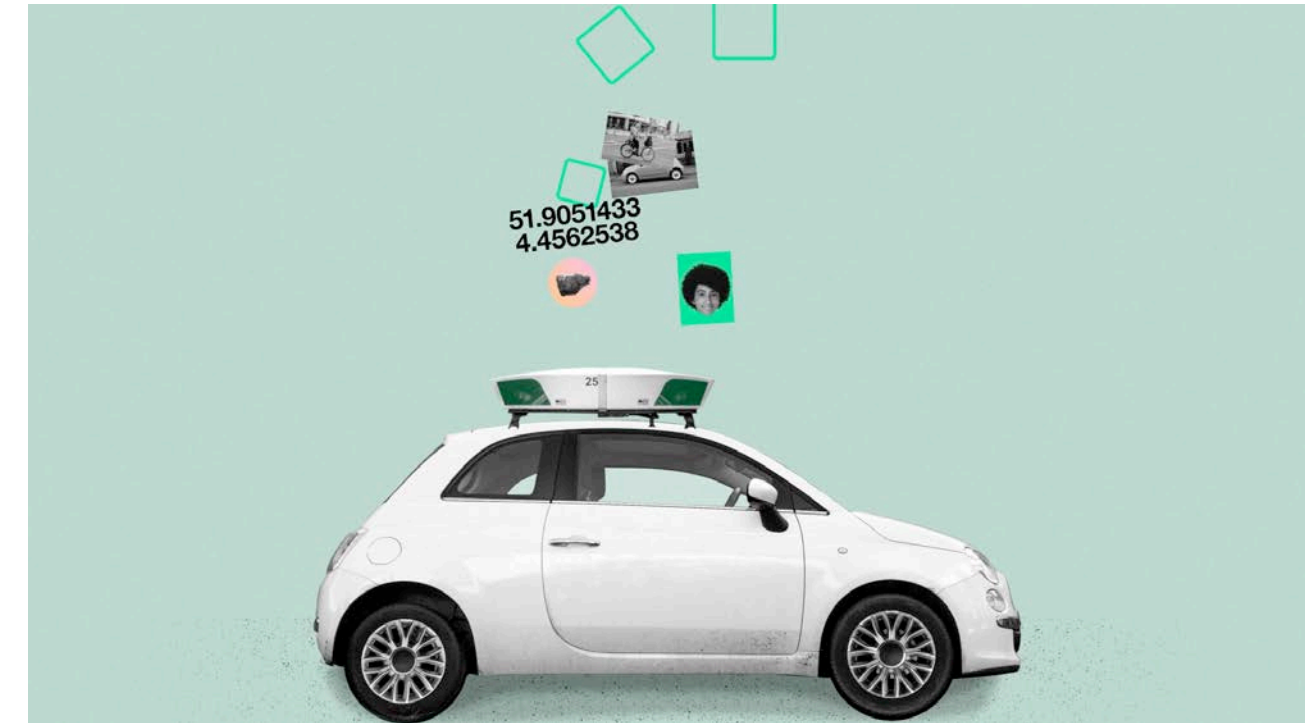
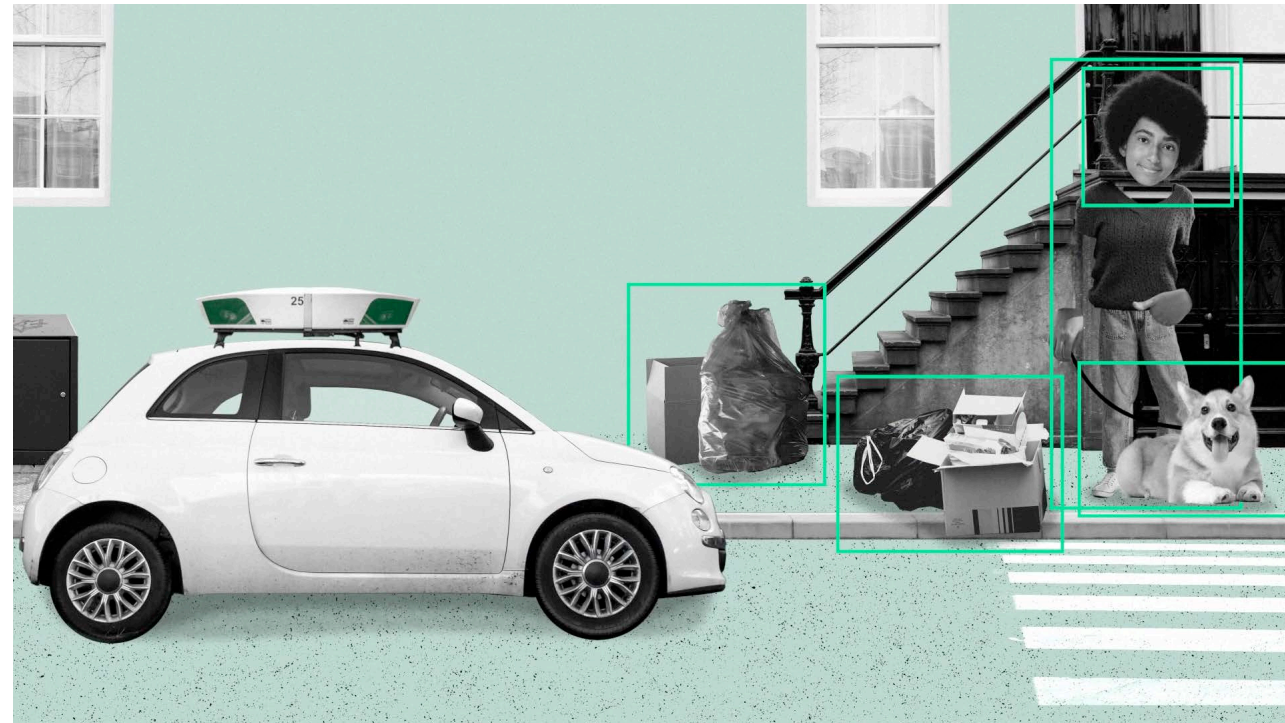


Results



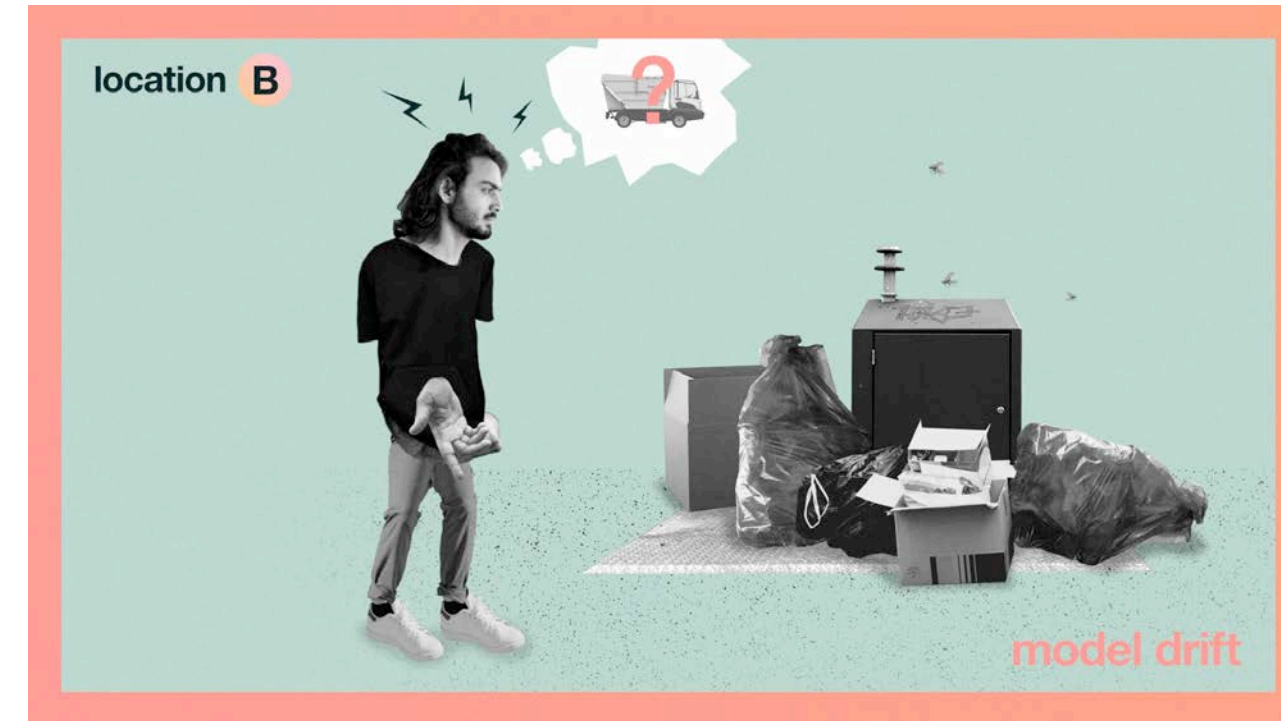
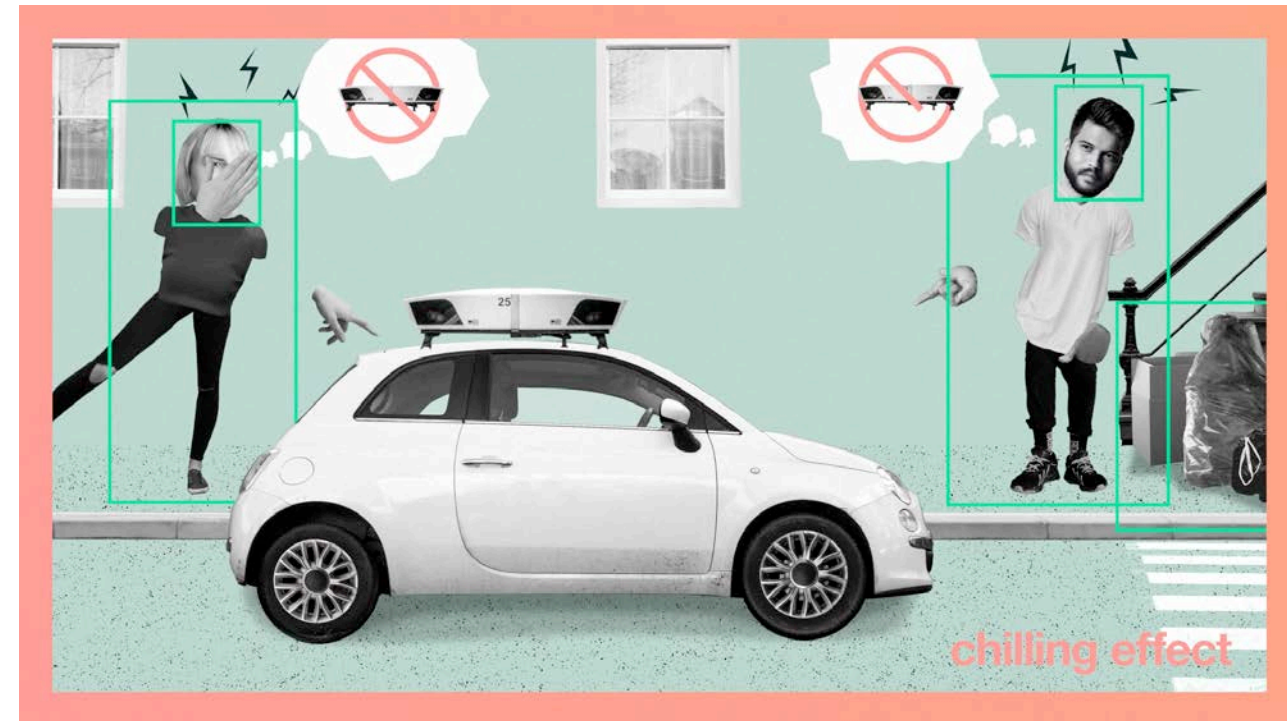
contestable camera cars

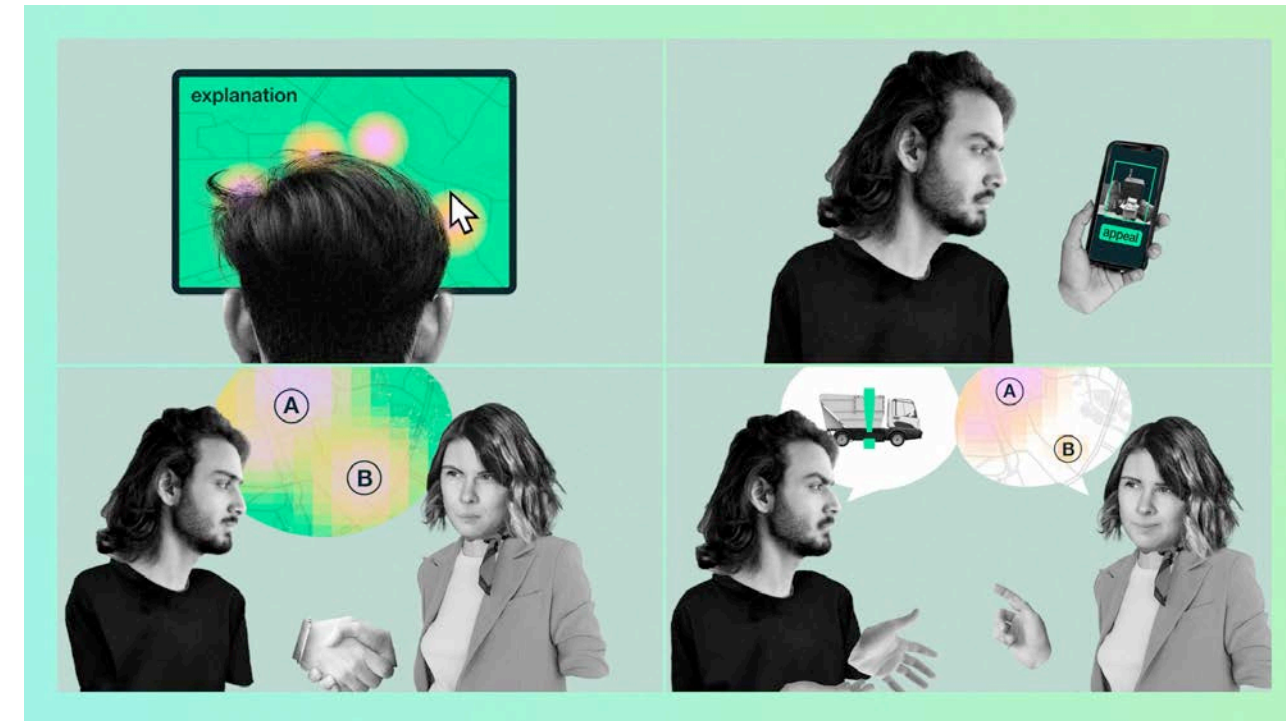
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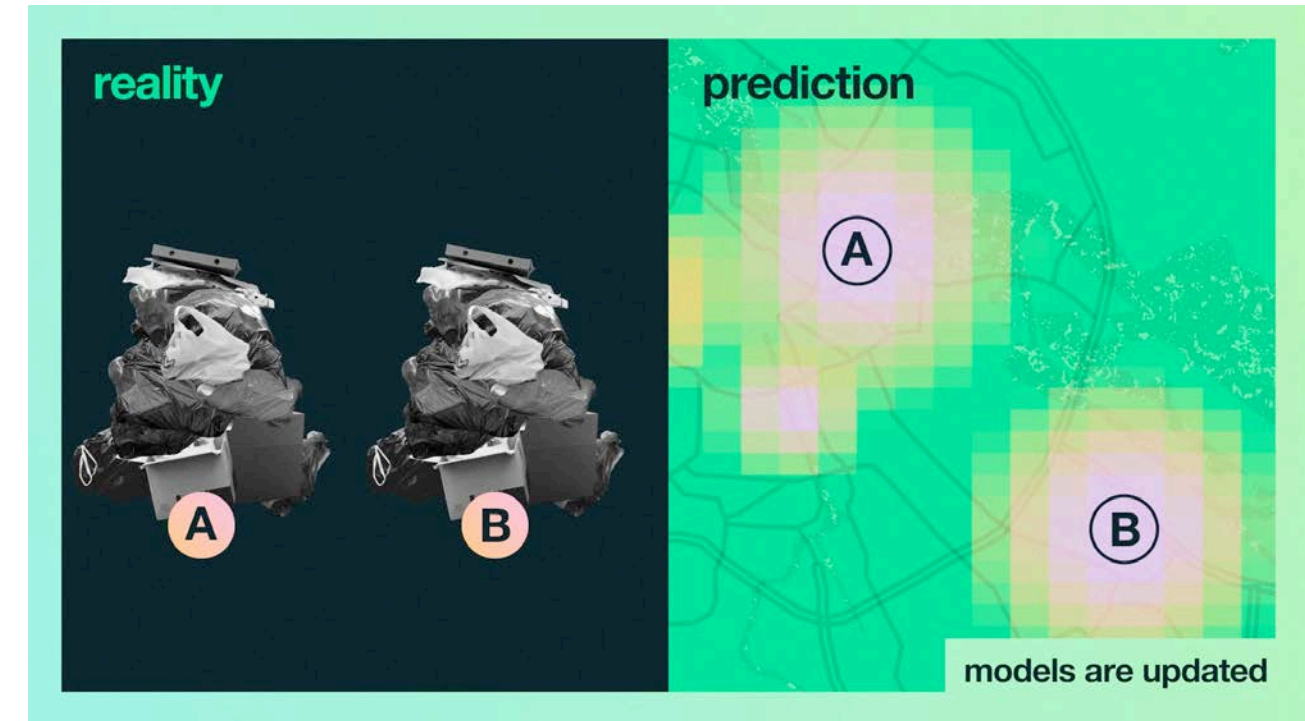
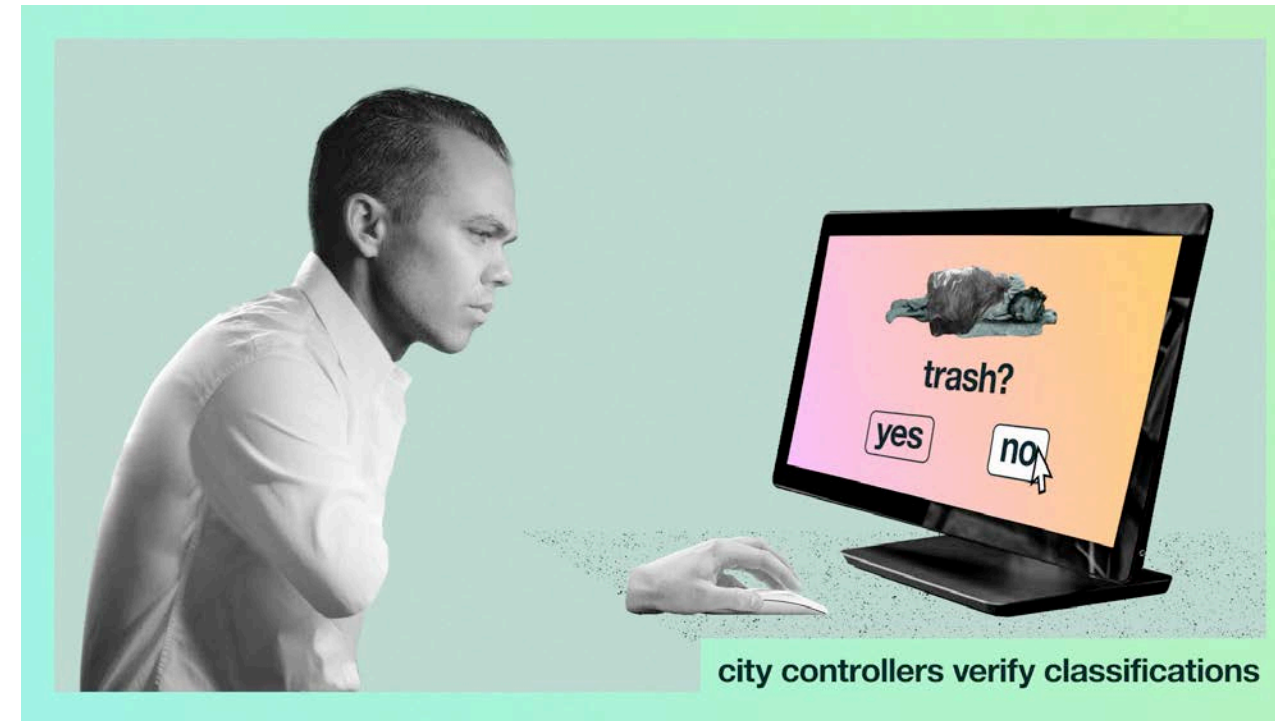
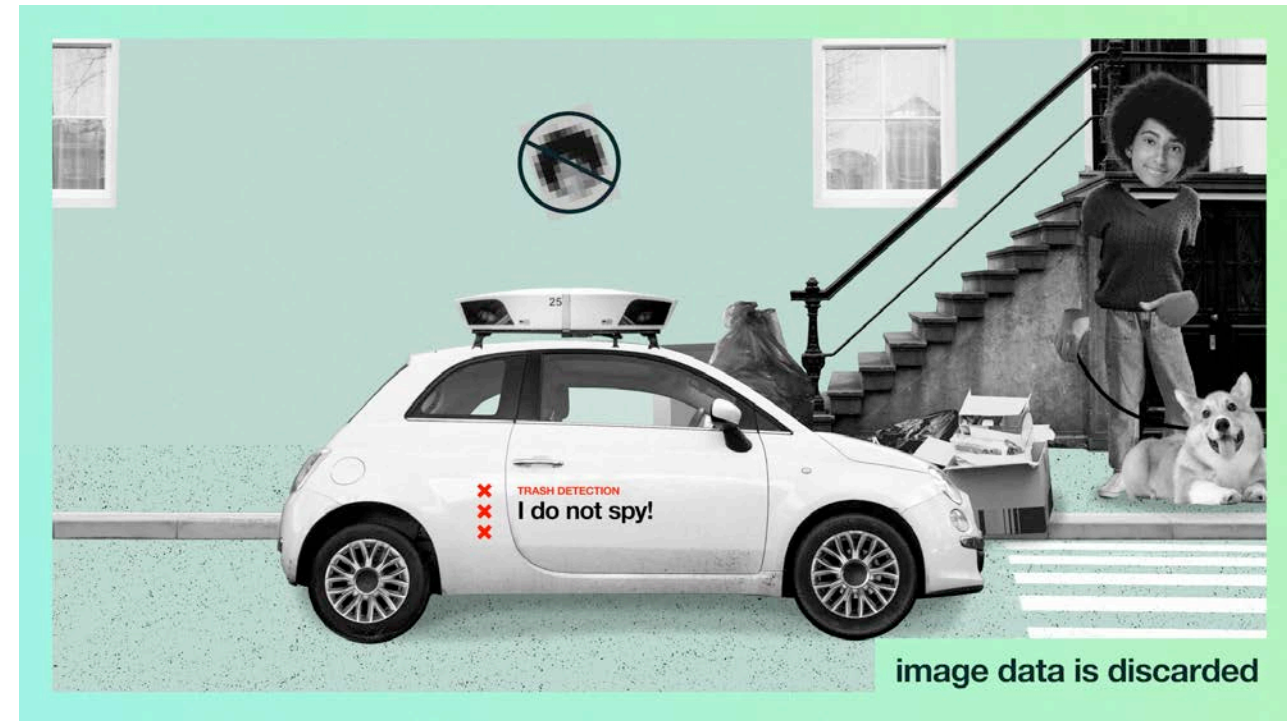


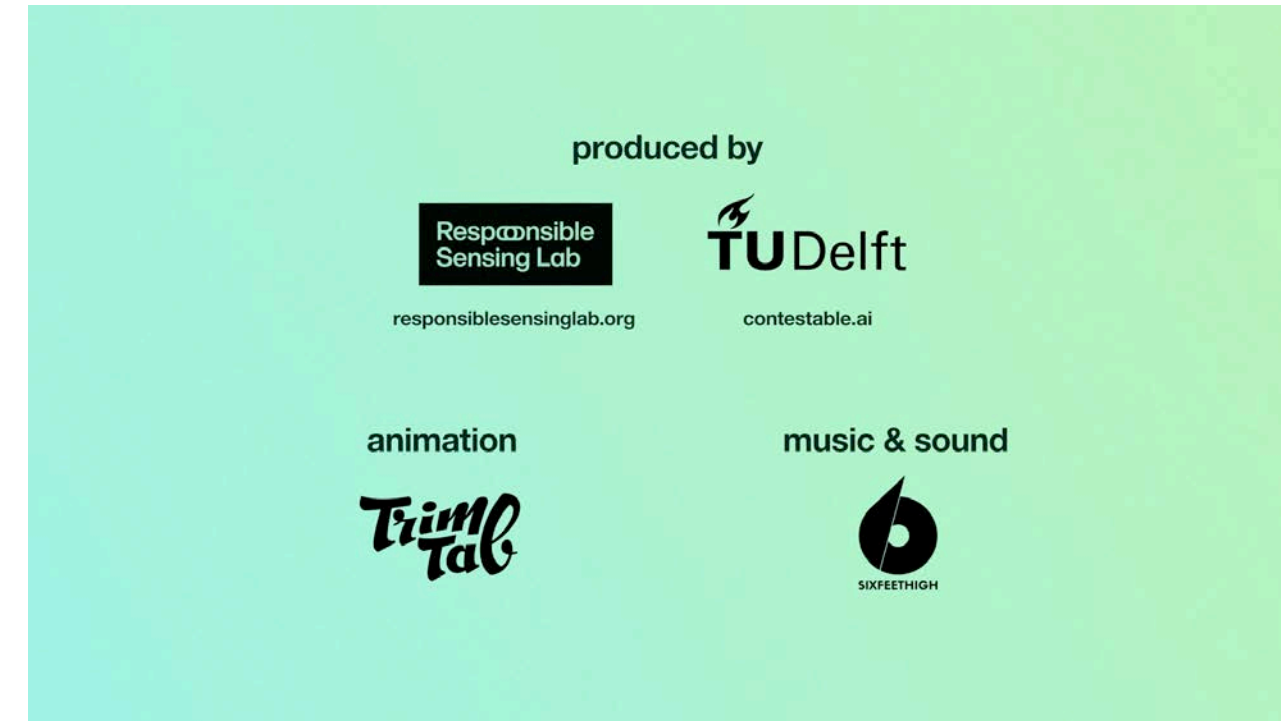
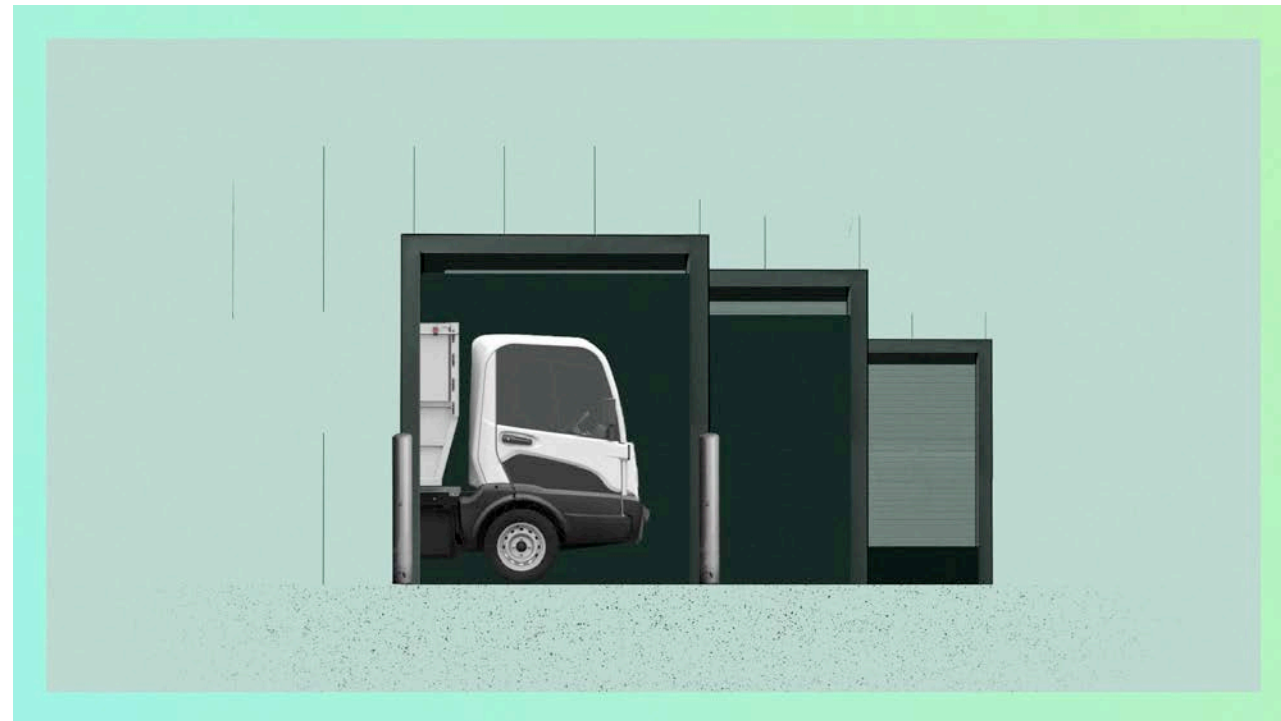
vehicle	destination
truck 03	→ location a
truck 12	→ location b
truck 17	...
truck 09	...
truck 02	...











Civil servant interview themes: **Challenges facing implementation of contestability mechanisms**

- 1. Enabling civic participation**
- 2. Ensuring democratic embedding**
- 3. Building capacity for responsibility**

1. Enabling civic participation

citizen capacities



1. Enabling civic participation

citizen capacities

communication channels



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citizen capacities

communication channels

feedback to development



1. Enabling civic participation

citizen capacities

communication channels

feedback to development

reporting inequality



1. Enabling civic participation

citizen capacities

communication channels

feedback to development

reporting inequality

participation limitations



2. Ensuring democratic embedding

democratic control



2. Ensuring democratic embedding

democratic control
external oversight



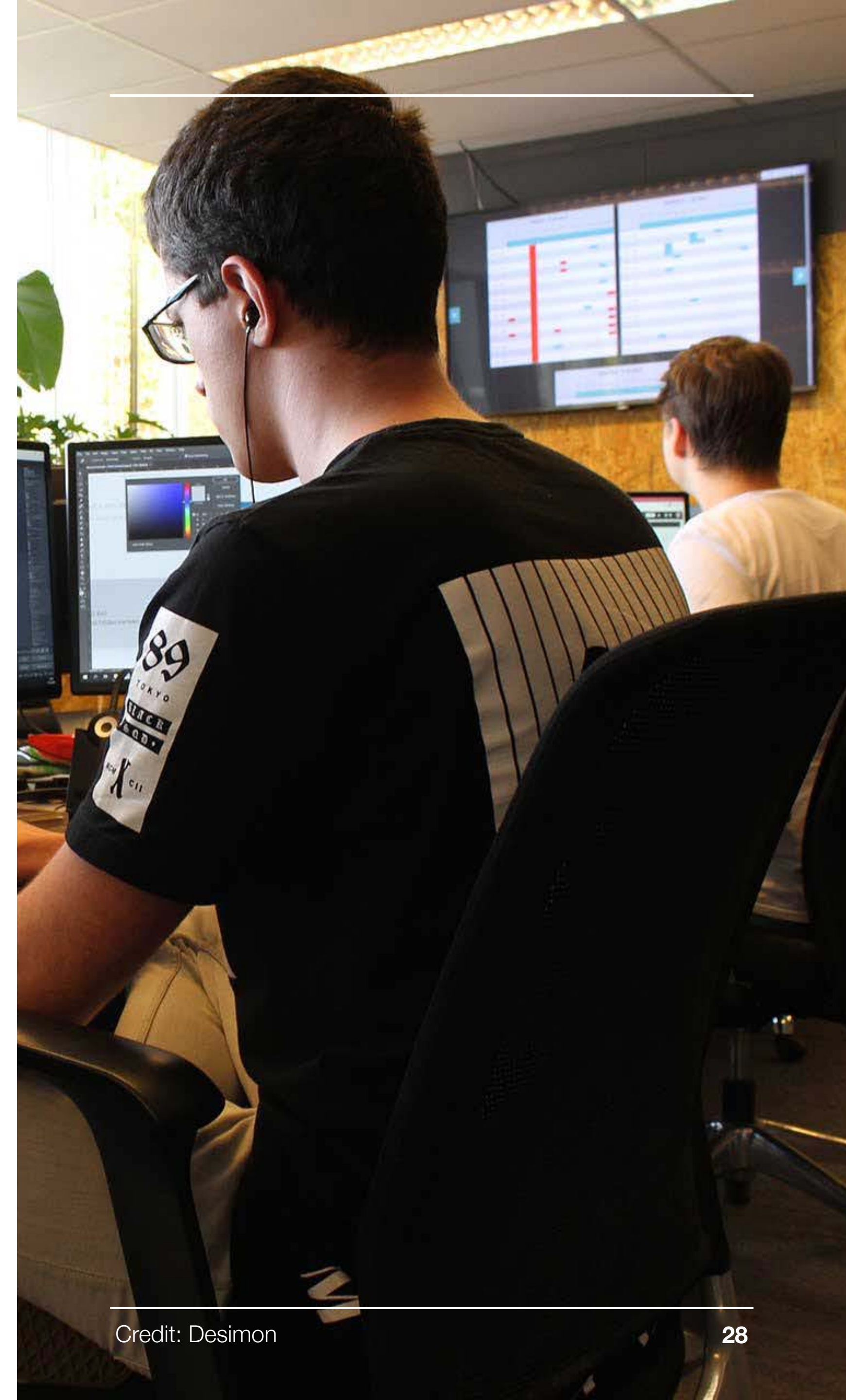
2. Ensuring democratic embedding

democratic control
external oversight
dispute resolution



3. Building capacity for responsibility

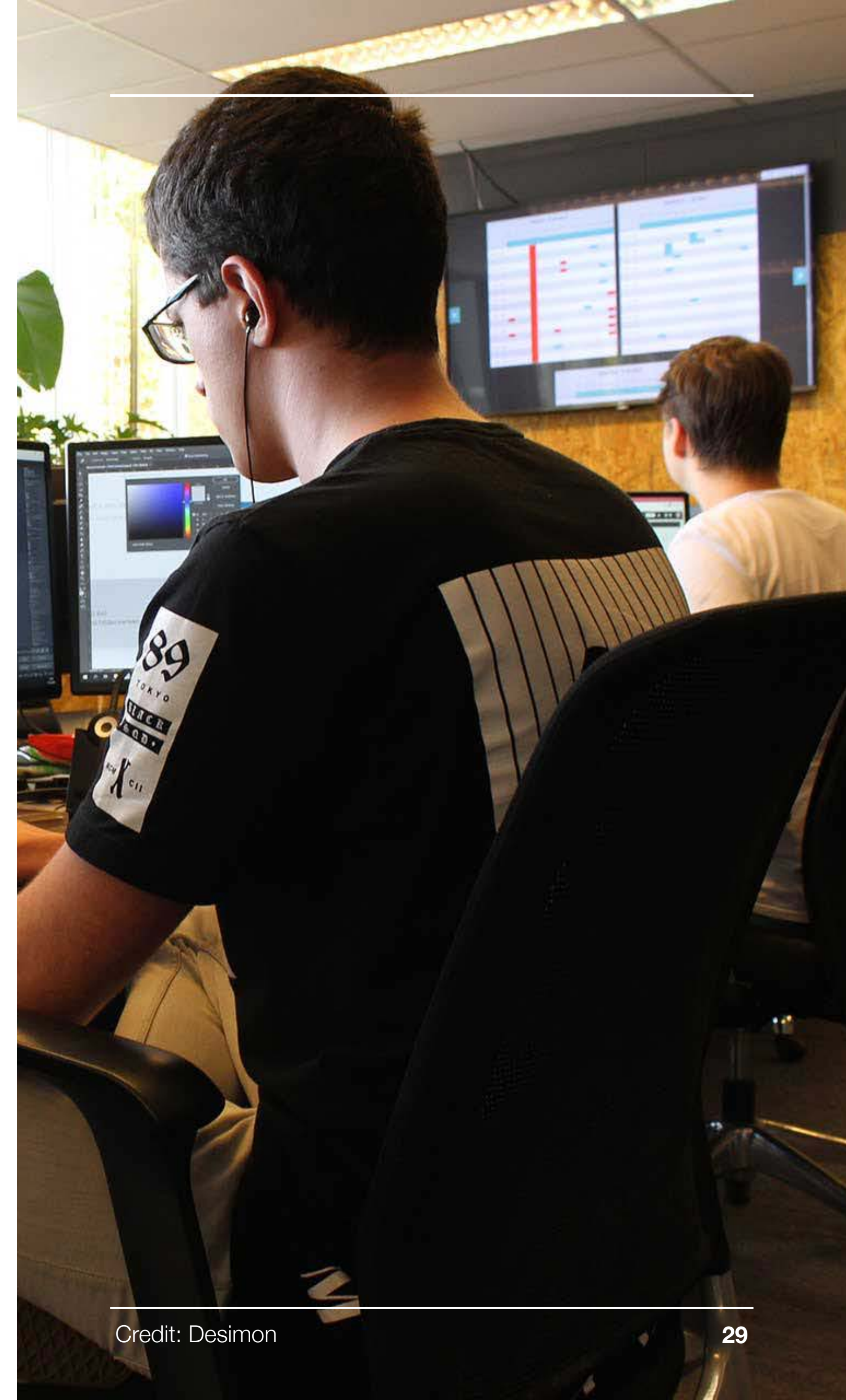
organizational limits



3. Building capacity for responsibility

organizational limits

accountability infrastructure

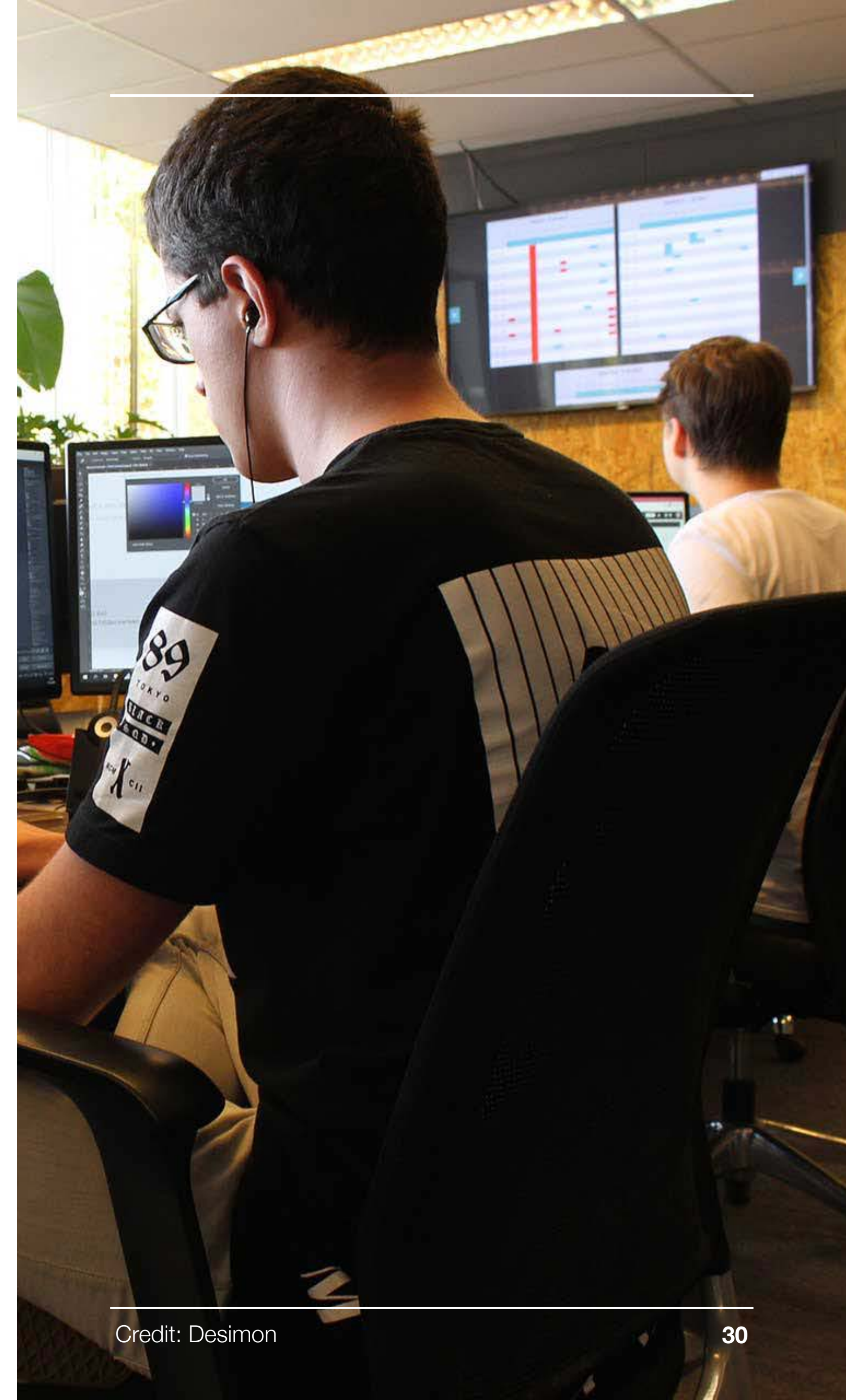


3. Building capacity for responsibility

organizational limits

accountability infrastructure

civil servant capacities



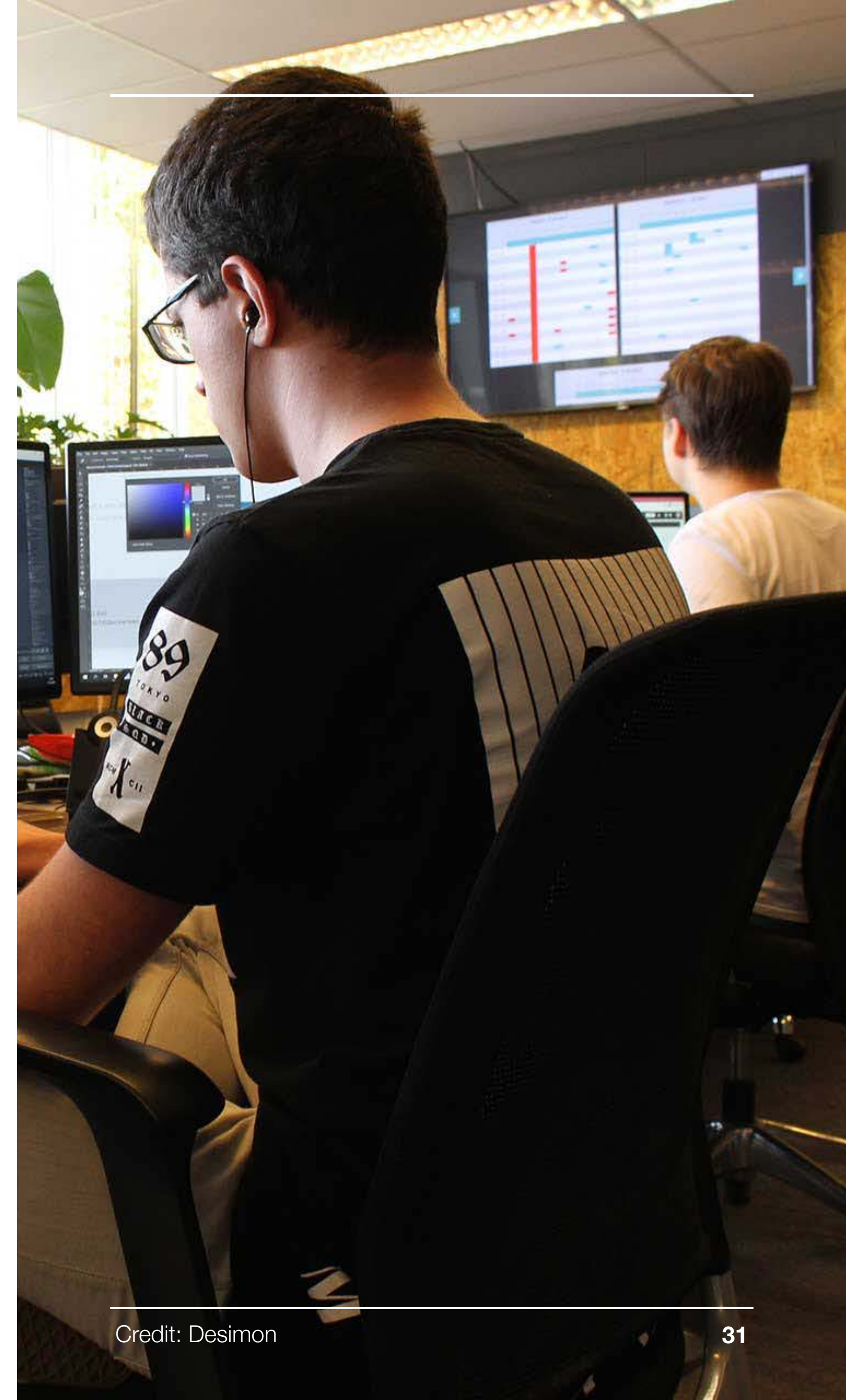
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organizational limits

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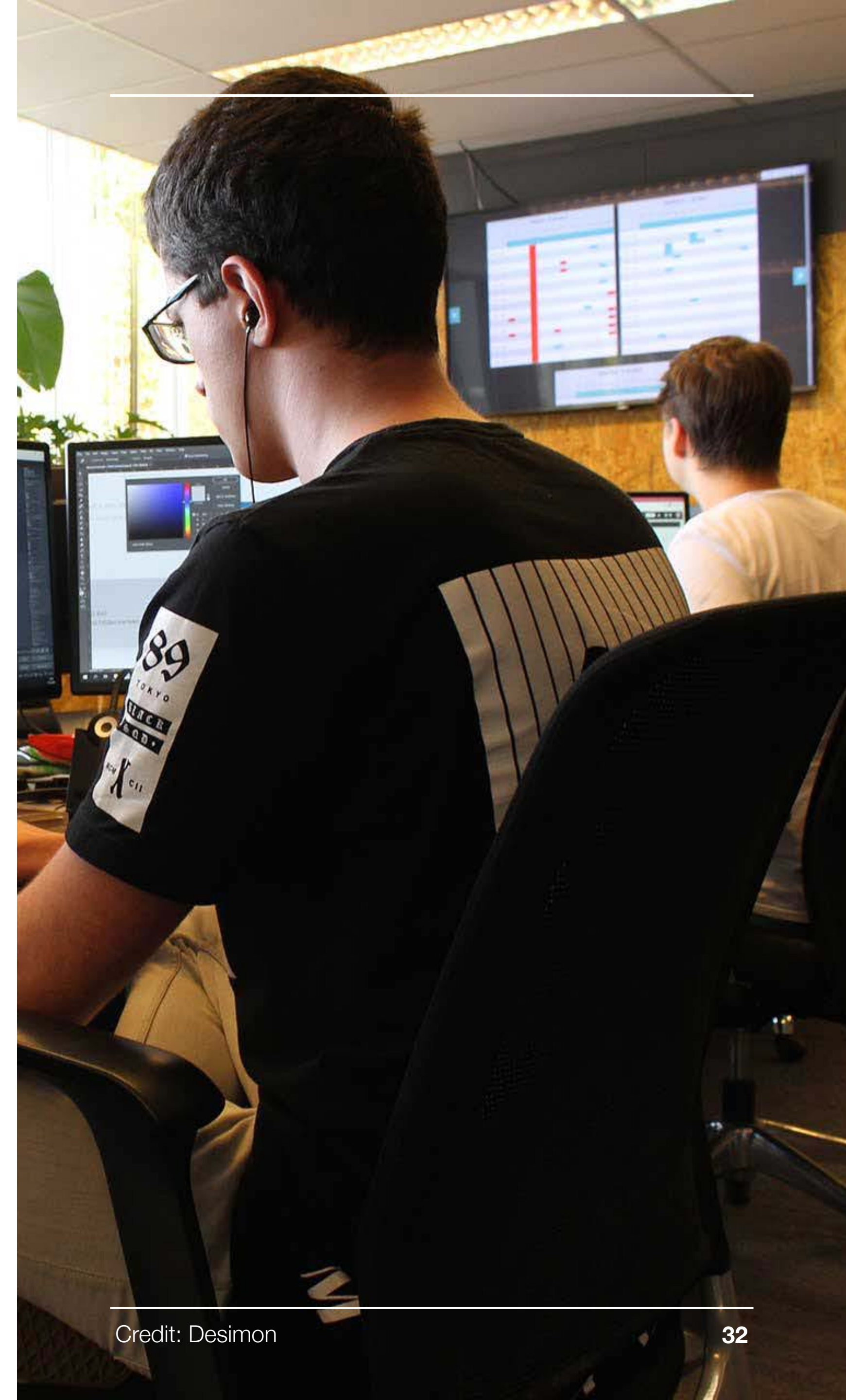
civil servant capacities

commissioning structures



3. Building capacity for responsibility

organizational limits
accountability infrastructure
civil servant capacities
commissioning structures
resource constraints



Discussion

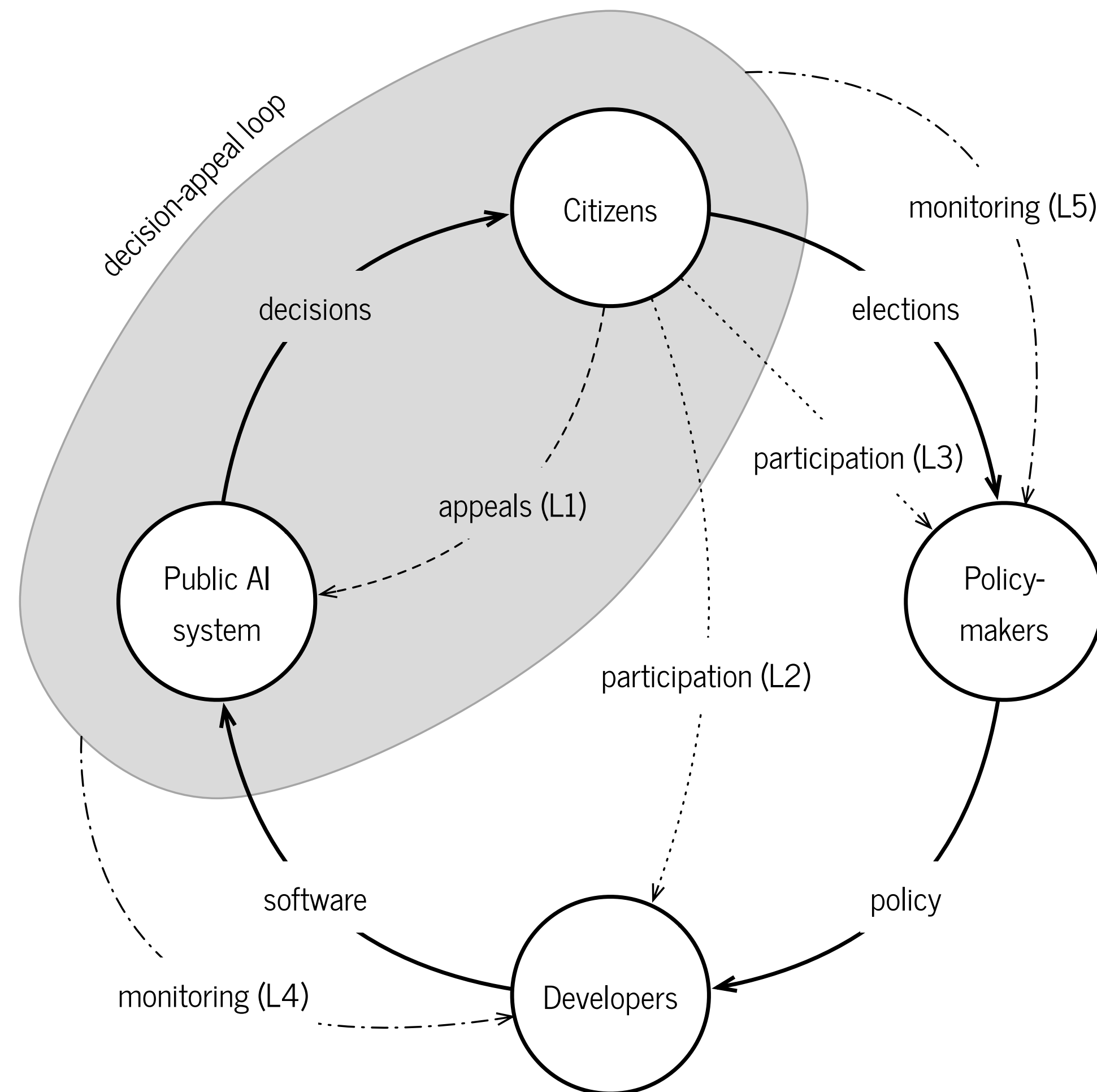
Five loops

basic flow of policy through software into decisions (solid arrows)

direct appeals of individual decisions by citizens (L1, dashed arrow)

direct participation by citizens in systems development and policy making (L2-3, dotted arrows)

second-order feedback loops leading from all decision-appeal interactions in the aggregate back to software development and policy-making (L4-5, dashed-dotted arrows)



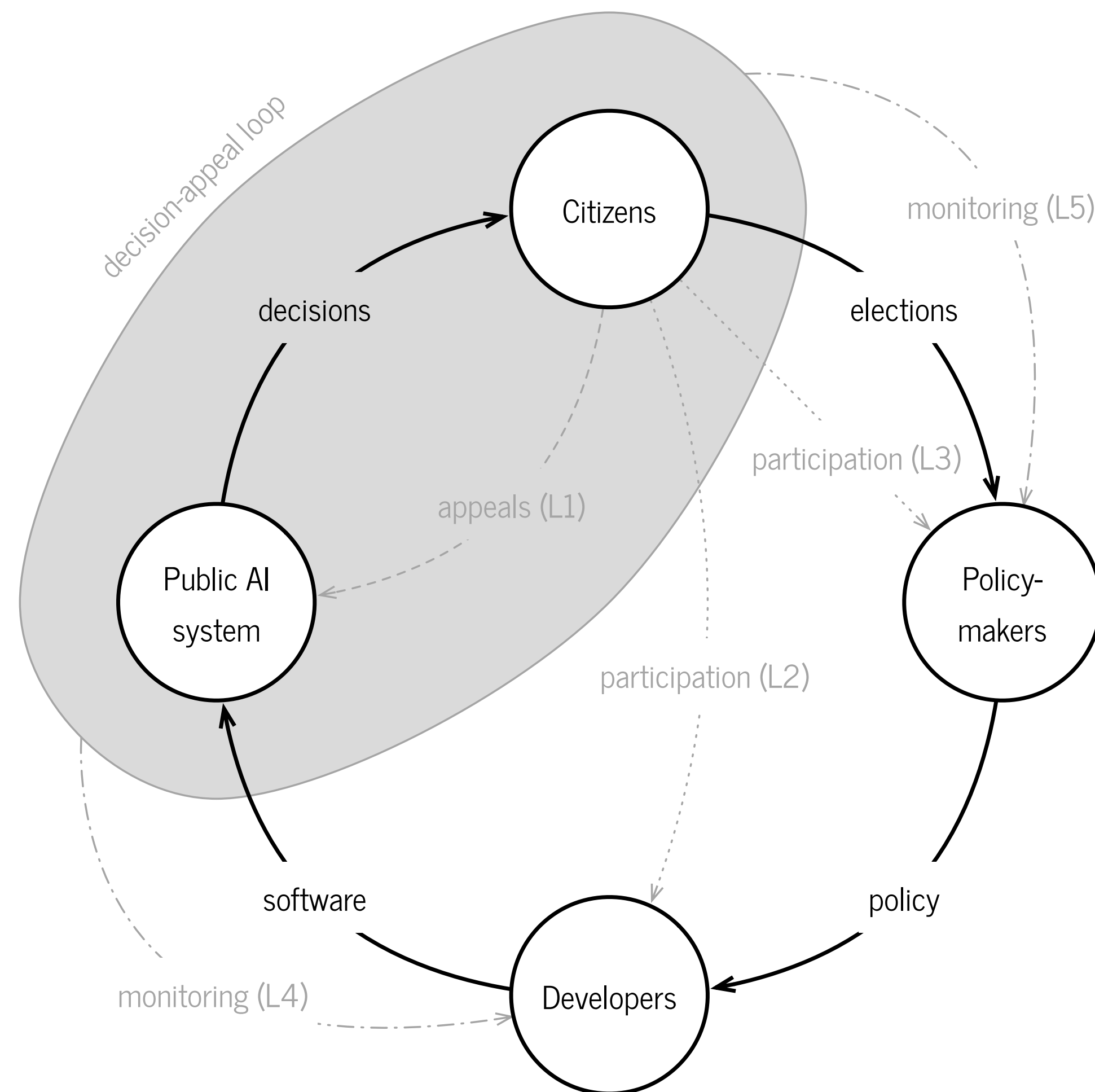
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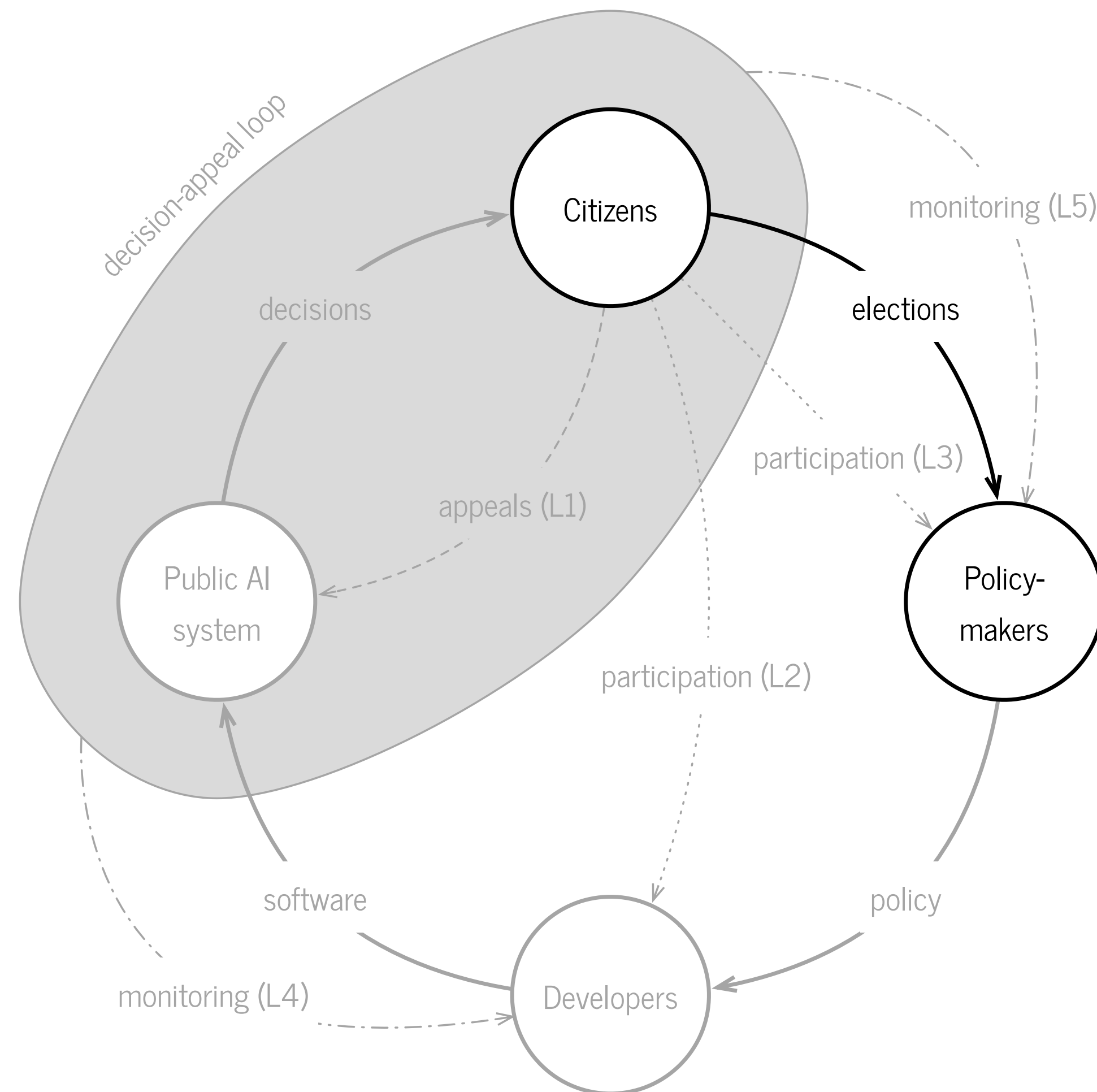
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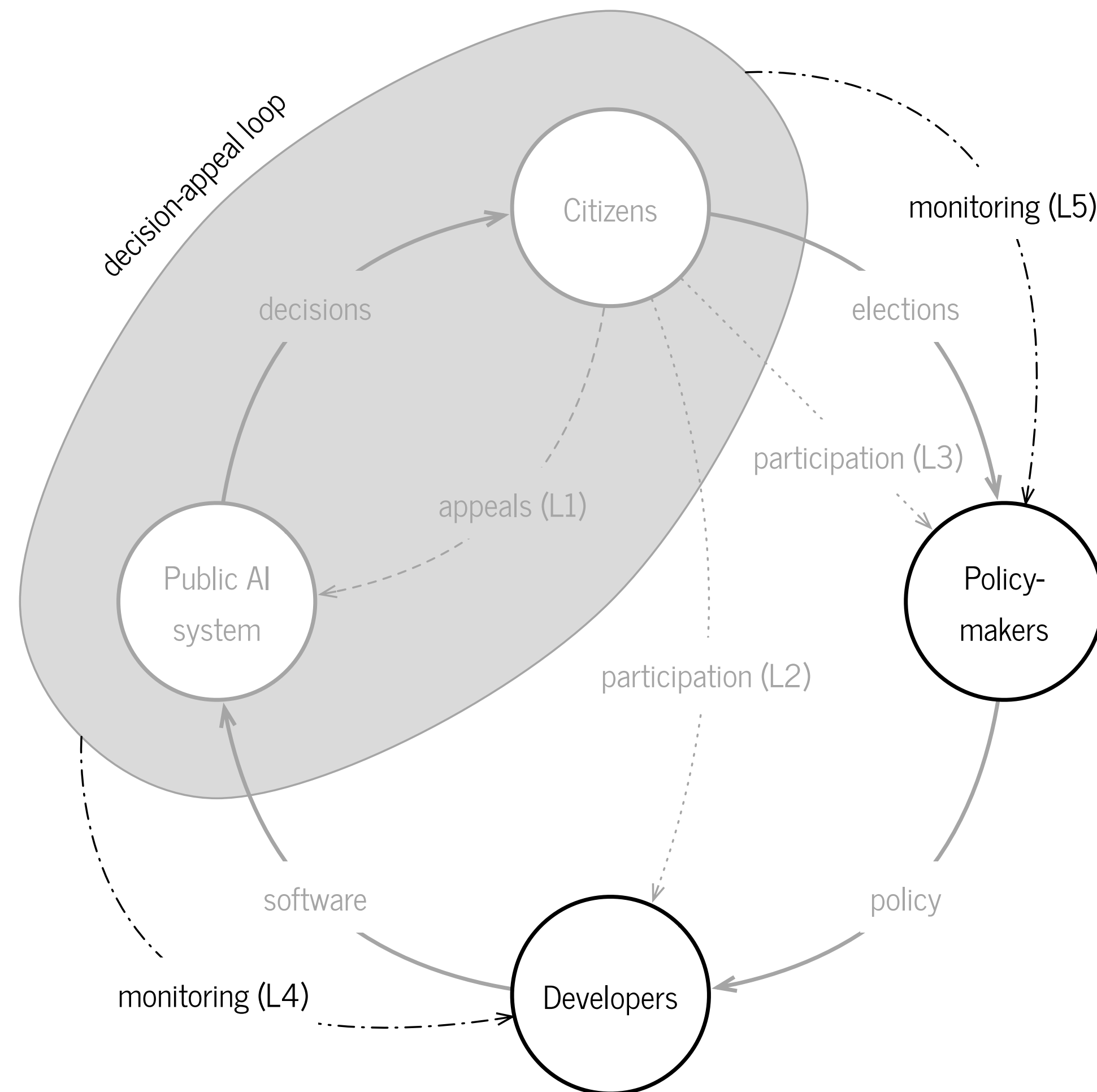
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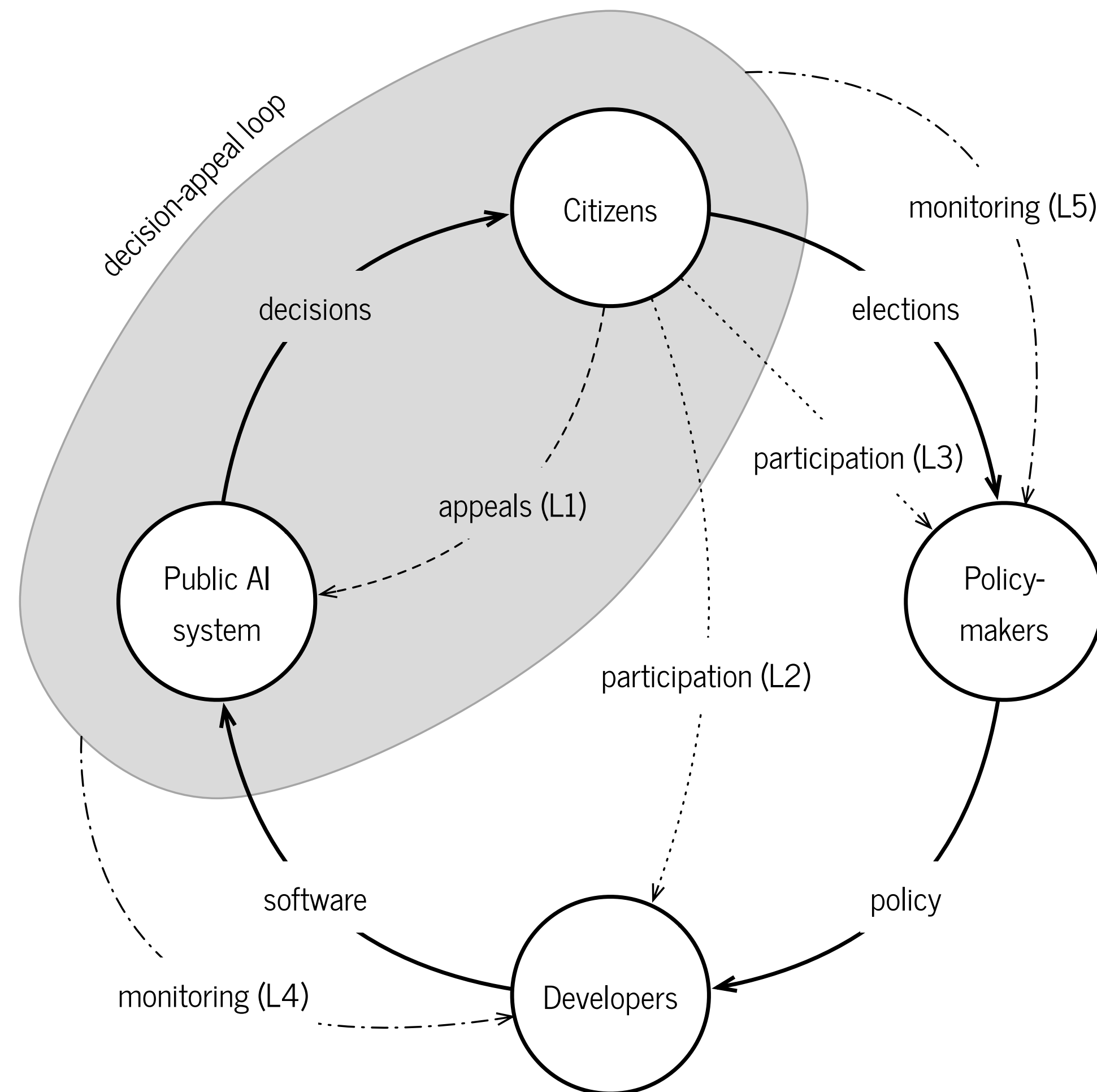
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- 4. Evocative examples as practical design knowledge.**

CONCLUSION

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Contestability in context of public AI means more than direct individual participation in systems' algorithms, models and datasets.

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Contestability in context of public AI means more than direct individual participation in systems' algorithms, models and datasets.

Contestable public AI requires interventions in executive power's enactment of policy through technology.

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