

# Collecting Feedback on Design Patterns for Platform Engineering in the Public Sector

Bachelor's Thesis Kick-off Presentation

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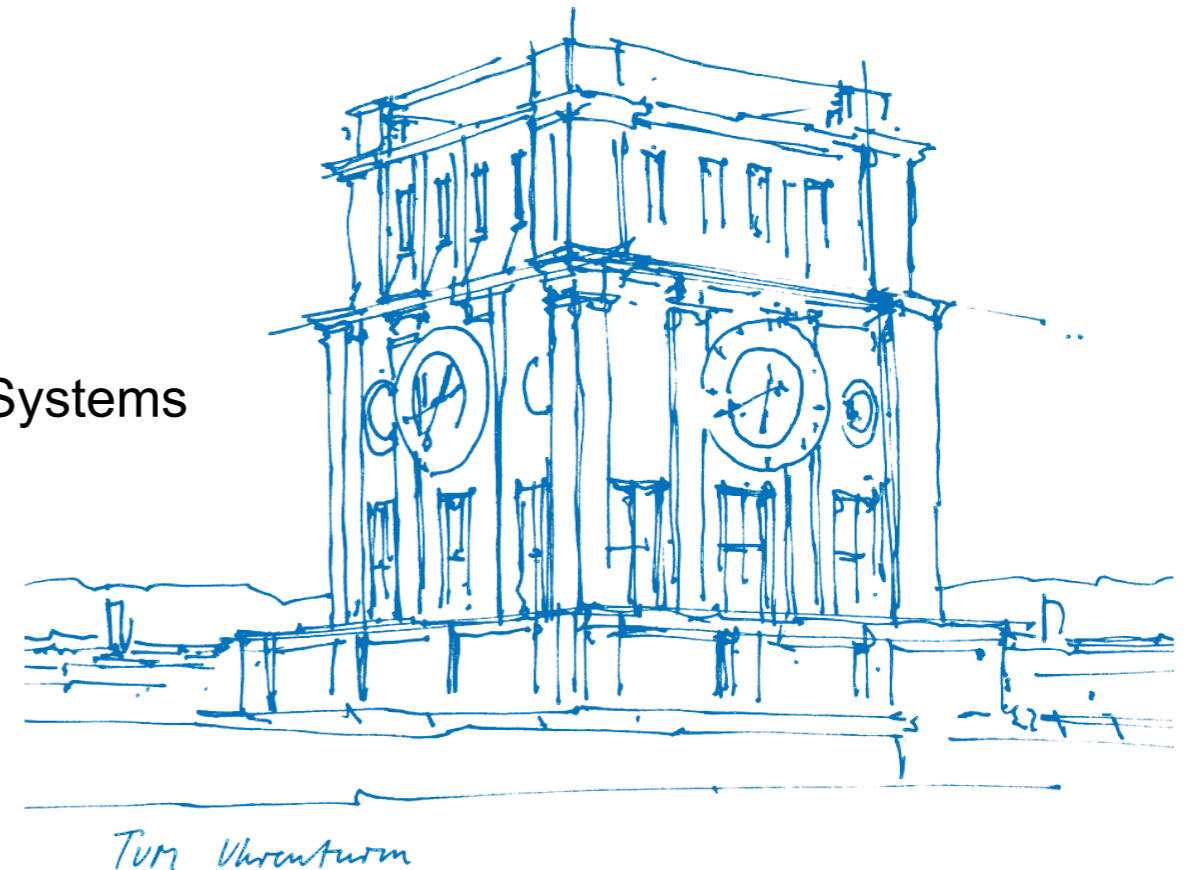
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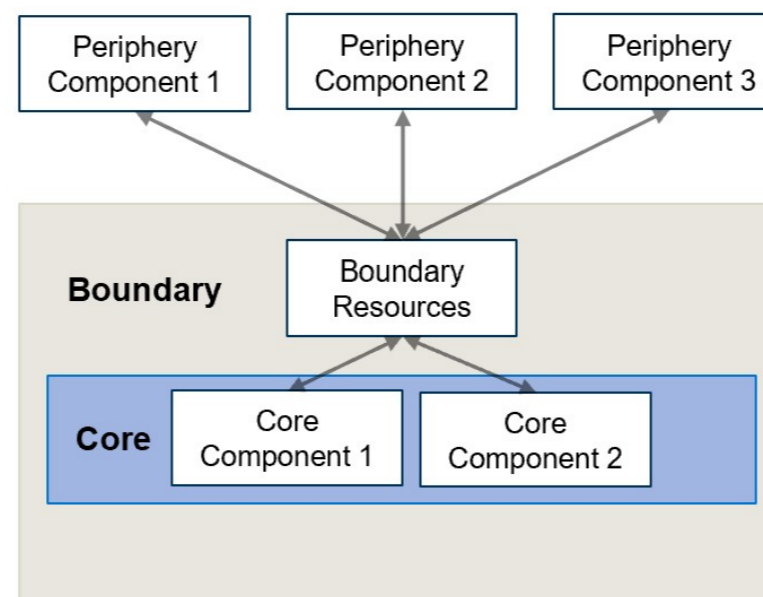
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# Motivation - Definition of GaaP

- **Government as a Platform (GaaP)** is a promising approach to the digital transformation of the public sector due to its efficiency through the reuse of common components [1].
- **GaaP** is enabled by **platform-oriented** infrastructure [2].
- Significant **cost reduction** [2].

# Motivation - Platform-Oriented Infrastructure

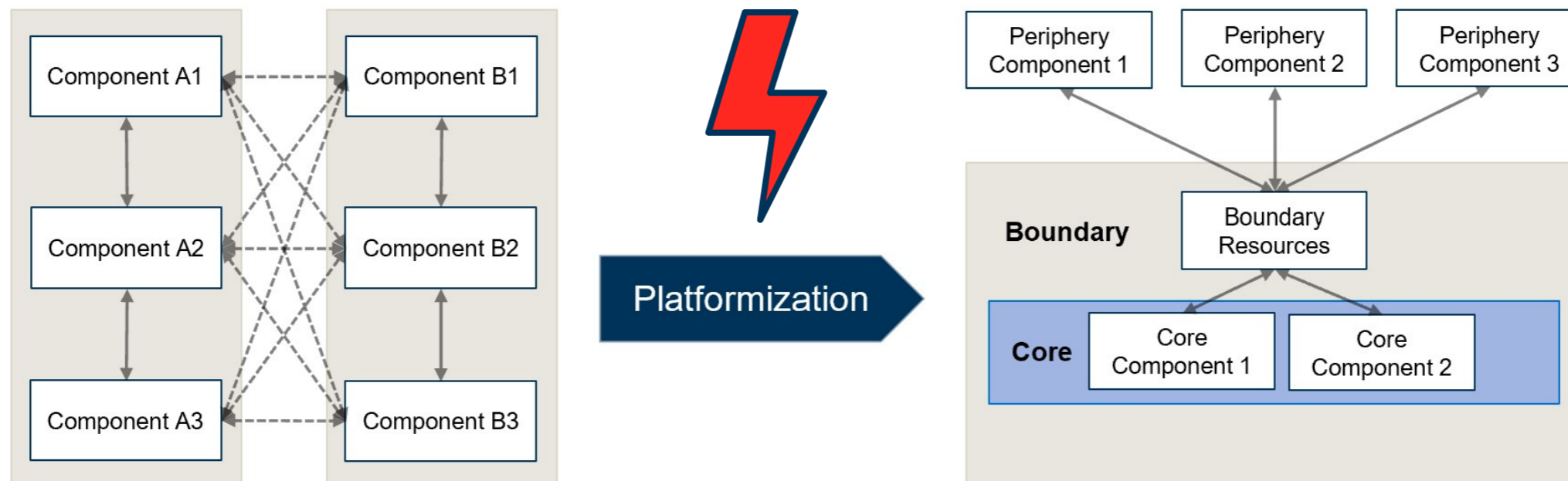
- **Application of Platform Structures and Principles (Dimensions):**
  - Platform **architecture**—identifies the infrastructure.
  - Platform **roles**—determines stakeholders of the infrastructure.
  - Platform **openness**—readiness for collaboration.
  - Platform **management**—orchestration of the platform.



Platform-oriented infrastructure [3]

# Motivation - Complication

- No clear guidelines or methods for the transformation process towards platform-oriented infrastructure—**platformization** [1].
- How to design a good **platform-oriented infrastructure** in a **public sector**?



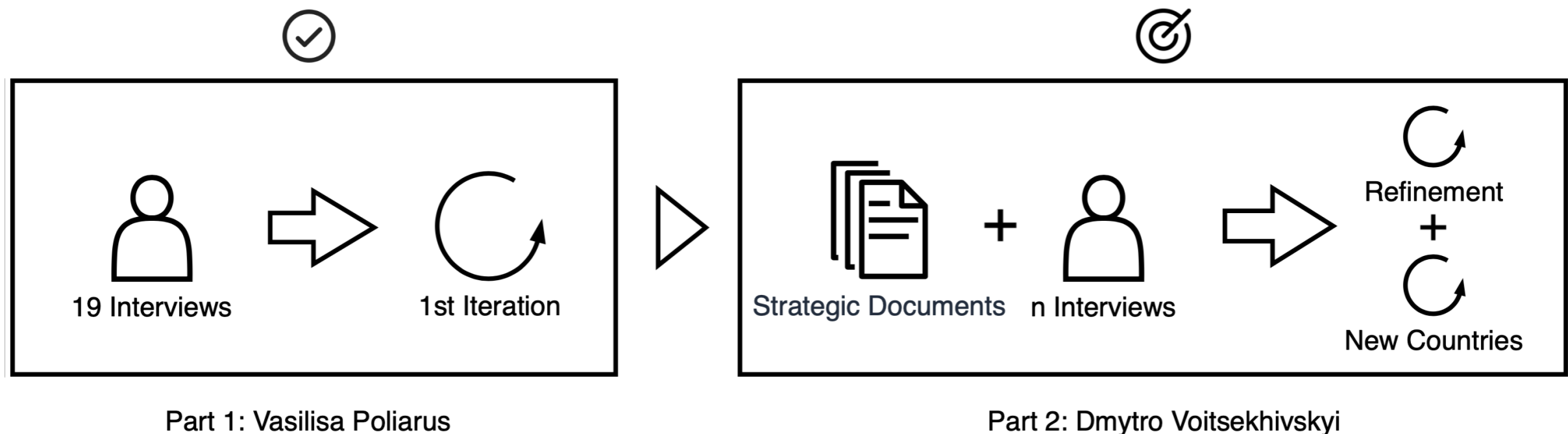
Platformization process [3]

# Resolution: Learning from Successful Countries

- **Italy, Estonia, UK** are (relatively) successful in the application of GaaP — but what do they have in common?
- **Design Patterns** are abstractions generated from valuable experiences of developers in solving problems repeatedly encountered within certain contexts [4].
- They may be **recognised, extracted** and **reused** by other countries.
- Parallel learning objectives:
  - What are typical **core components, elements of the infrastructure**?
  - What are defining **roles** of GaaP? — e.g. **owner, complementor, user**.
  - What **degree of openness** is suitable?
  - How to **orchestrate the stakeholders** and ensure **public value**?

# Resolution: Learning from Successful Countries

- **19** existing interviews in the first iteration
  - **Italy, Estonia, UK**
- Conducting **n** interviews in the second iteration as well as analysing **strategic documents**:
  - **Italy, Estonia, UK, Germany (?)**



# Design Patterns v1

- **Distributed architecture**
  - The system is decentralised and data is distributed across different databases.
- **Transparent data management**
  - Guarantee the freedom of information to ensure data privacy, avoid full government control.
- **Digital identity, interoperability, and interface**
- **Public-private sector partnership**
- **User-centric services with incentives**
- **Educational programs**
- **Compulsory digital identity**



# Resolution: Learning from Successful Countries

- Italy [5]
  - **Agenzia per l'Italia Digitale (AgID)** follows the principle of duplication avoidance of investments for similar services at the local level.
- Estonia [6]
  - **X-Road** - a universal system of registries.
  - **The electronic ID (eID)** - a system of identification and authentication.
- UK [7]
  - **Government Digital Service (GDS)**
  - **GOV.UK** - a portal for accessing public services.

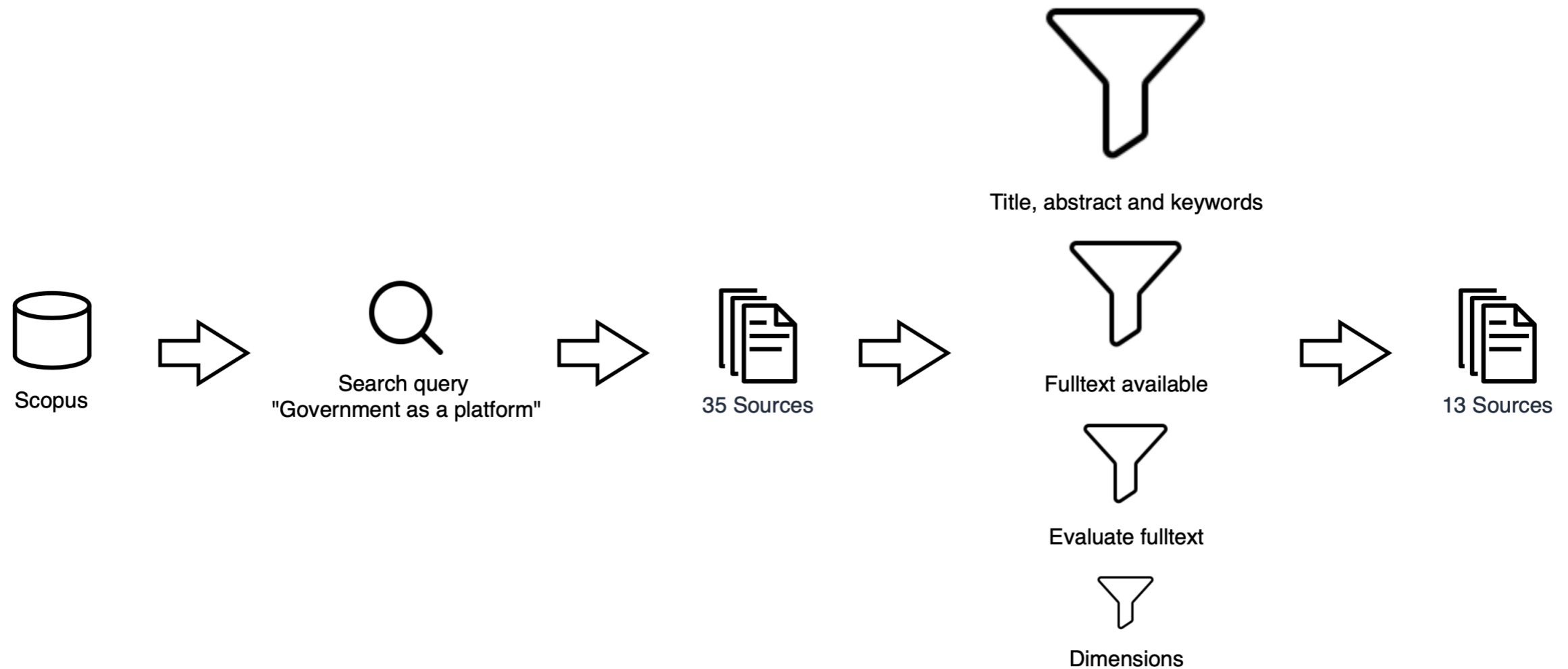
# Methodology - Learn from the Best

- Research questions:
  - **RQ1:** What are the dimensions of design decisions in applying GaaP in practice?  
Expected result: **Coding concept**
  - **RQ2:** What are design decisions of countries that successfully apply GaaP?  
Expected result: **List of design decisions**
  - **RQ3:** Which design patterns can be derived from these decisions?  
Expected result: **Design patterns**

# Added Value

- Interviews to be conducted specifically with respect to **design patterns**.
- **Cross-check**: reevaluation of countries' patterns from Vasilisa's work by other countries as well as itself.
- **Extending existing patterns** with the input from countries of different GaaP maturity.

# First Results - Structured Literature Review

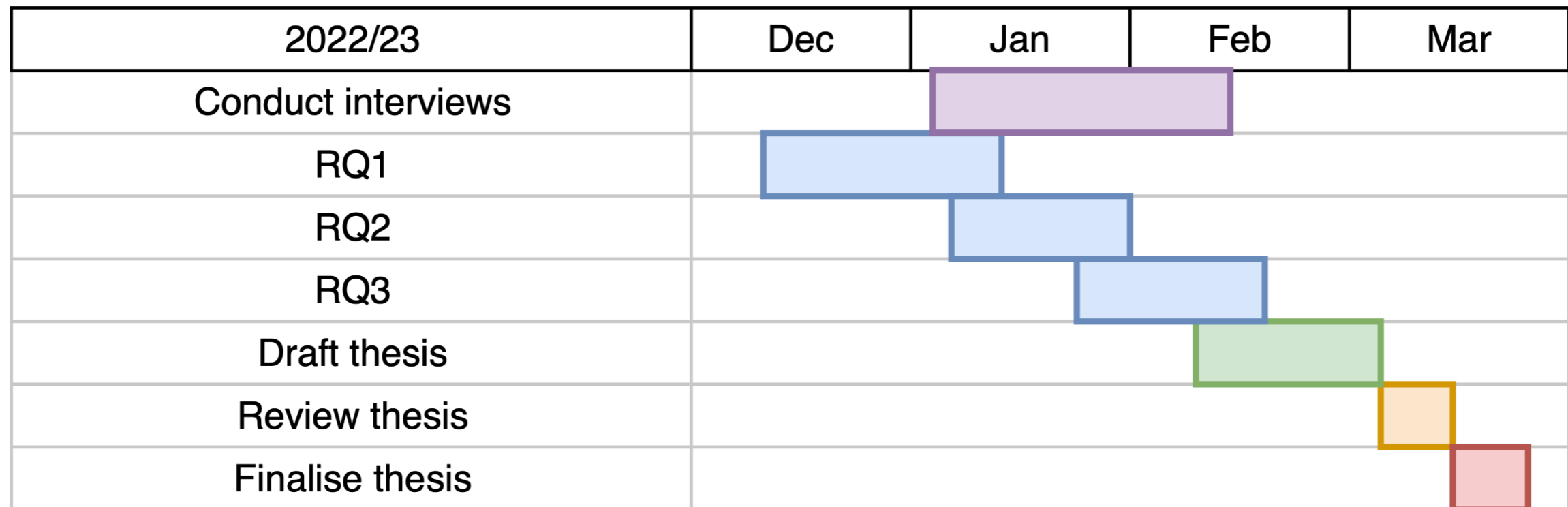


# First Results - Structured Literature Review

#	Source
1	TROVARSÌ FRA L'INCUDINE E IL MARTELLO? PLATFORM INFRASTRUCTURES AND THE WORK OF PLACE-BASED POLICY ENTREPRENEURS: A MULTIPLE STREAM APPROACH (MSA) ANALYSIS OF THE F
2	<b>Outsource or Invest? A Multiple Case Study of Digital Government Platform Strategies</b>
3	Effects of Application of Information on the Expectations of Benefits from GaaP: Moderating Effects from Perceptions of IIT
4	<b>Doing more among institutional boundaries: Platform-enabled government in China</b>
5	Government as a platform: Intergovernmental participation for public services in the Russian Federation
6	<b>Determinant factors for adoption of government as a platform in south korea: Mediating effects on the perception of intelligent information technology</b>
7	<b>Barriers of Government as a Platform in Practice</b>
8	<b>Government as a Platform? Constitutive Elements of Public Service Platforms</b>
9	Governability and a technocratic approach to government as a platform: Critics using the Russian case
10	Development of the e-Government in the Context of the 2020 Pandemics
11	The History of Creation of Methods and Automated Support Systems for Public Administration
12	Is the GaaP wider than we think?: Applying a sociotechnical lens to Government-As-A-Platform
13	Life and death of "government as a platform" in France   [Vie Et Mort De L'État Plateforme]
14	<b>The priority of factors of building government as a platform with analytic hierarchy process analysis</b>
15	Participatory governability under development: The institution of citizen participation as the basis for the design of the "government as a platform" in developing countries
16	Integration of Digital Services Within the Framework of the Implementation of "Government as a Platform" (GaaP) Model on the Example of a Social Fund
17	<b>Government as a platform, orchestration, and public value creation: The Italian case</b>
18	An open platform centric approach for scalable government service delivery to the poor: The Aadhaar case
19	Give me a database and I will raise the Nation-state
20	Introduction to mini-track 'towards government 3.0: Disruptive ICTs, advanced policy informatics/analytics and government as a platform'
21	Electronic government vs digital government in the context of digital transformation
22	Government as a Platform: Critics of a Technocratic Culture of Public Governance in Digital Era
23	<b>Digital readiness in government: The case of Bahía Blanca municipal government</b>
24	Relationship between service usefulness and information awareness toward citizen satisfaction of E-Government services in Kuala Lumpur
25	Data-centricity as the key enabler of digital government: Is Russia ready for digital transformation of public sector
26	<b>Open governance systems: Doing more with more</b>
27	Open data platforms: Discussing alternative knowledge epistemologies
28	<b>Appraising the impact and role of platform models and Government as a Platform (GaaP) in UK Government public service reform: Towards a Platform Assessment Framework (PAF)</b>
29	The civic open data and crowdsourcing app ecosystem: Actors, materials, and interventions
30	Freedom of information as a catalyst for responsiveness in the e-Government environment: A closer look at Botswana
31	ICT-enabled public sector innovation: Trends and prospects
32	Lean government and platform-based governance-Doing more with less
33	From e-government to we-government: Defining a typology for citizen coproduction in the age of social media
34	We-government: An anatomy of citizen coproduction in the information age
35	Linking UK Government data
	<b>* Transforming digital infrastructures through platformization</b>
	<b>* Towards "Government as a Platform": An analysis framework for public sector infrastructurepublic sector infrastructure</b>
	<b>* Building the Next Generation of Digital Government Infrastructures</b>

# Timeline

2022/23	Dec	Jan	Feb	Mar
Conduct interviews				
RQ1				
RQ2				
RQ3				
Draft thesis				
Review thesis				
Finalise thesis				



# References

1. Kuhn, Peter, et al. "Barriers of applying Government as a Platform in Practice: Evidence from Germany." *Proceedings of the 55th Hawaii International Conference on System Sciences*. 2022.
2. Kuhn, Peter; Dallner, Simon; Buchinger, Matthias; and Balta, Dian, "Towards "Government as a Platform": An analysis framework for public sector infrastructure" (2022). *Wirtschaftsinformatik 2022 Proceedings*. 4.
3. Vasilisa Poliarus, "Identification of Design Principles for Platform Engineering in the Public Sector" (2022)
4. Buckl, Sabine, Florian Matthes, and Christian M. Schweda. "Utilizing patterns in developing design theories." (2010).
5. Cordella, Antonio, and Andrea Paletti. "Government as a platform, orchestration, and public value creation: The Italian case." *Government Information Quarterly* 36.4 (2019): 101409.
6. Margetts, Helen, and Andre Naumann. "Government as a platform: What can Estonia show the world." *Research paper, University of Oxford* (2017).
7. Brown, Alan, et al. "Appraising the impact and role of platform models and Government as a Platform (GaaP) in UK Government public service reform: Towards a Platform Assessment Framework (PAF)." *Government Information Quarterly* 34.2 (2017): 167-182.