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

Bachelor's Thesis Final Presentation

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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].
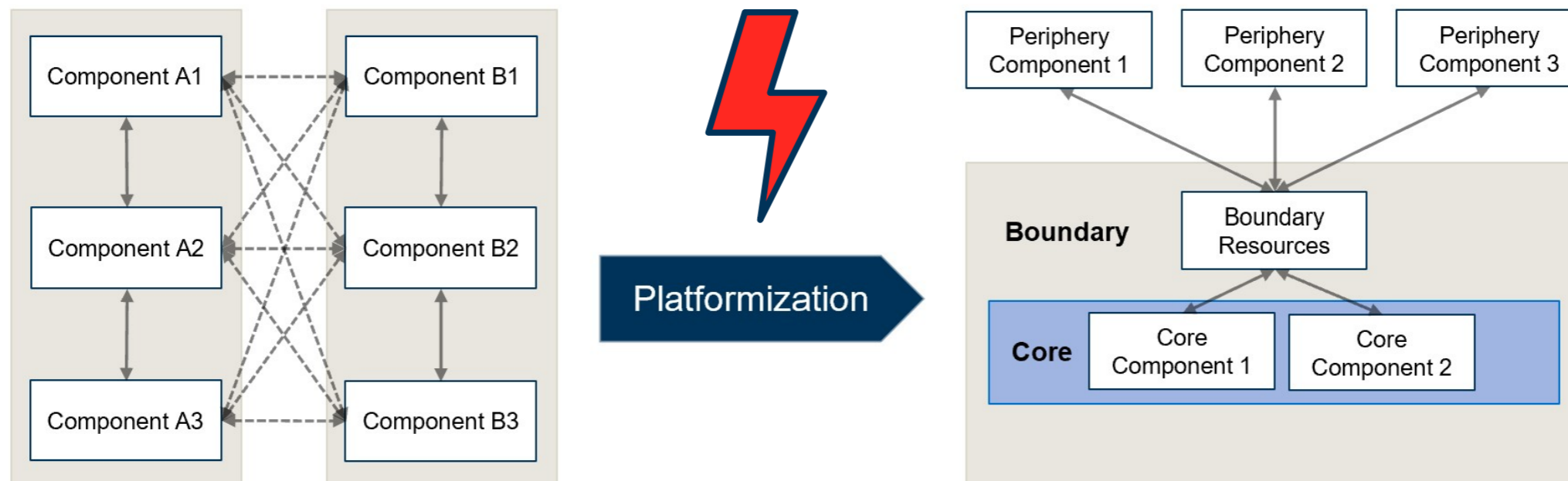
- Germany could take good advantage of GaaP.

[2]

[2]

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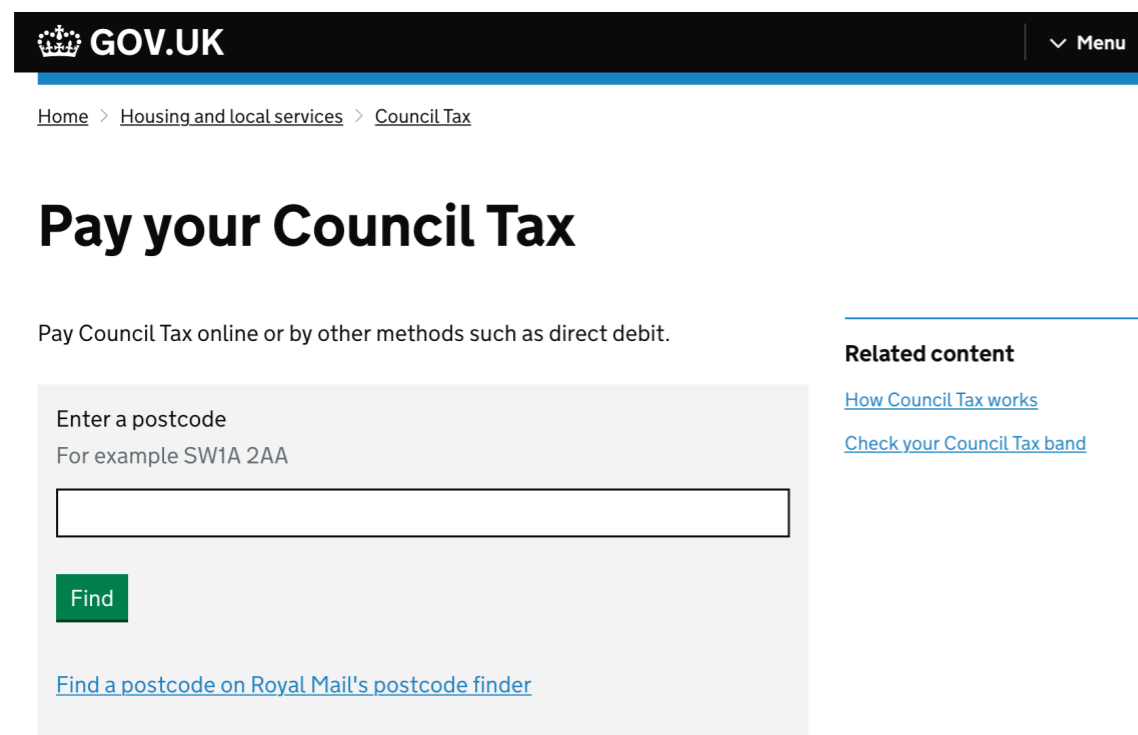
Motivation - Complication

- 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**?
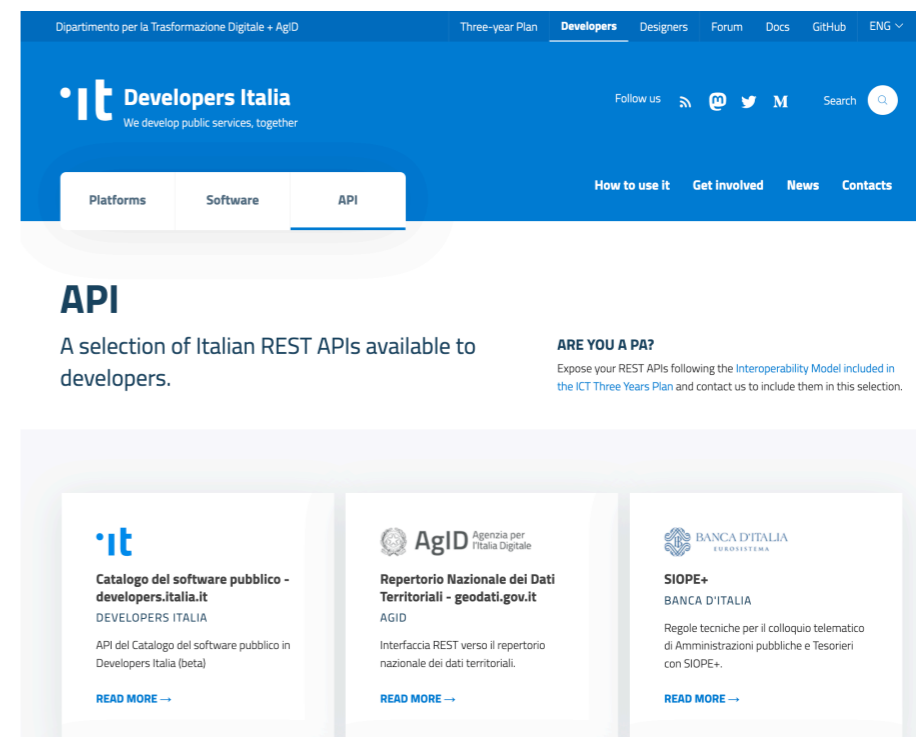

Platformization process [3]

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Resolution: Learning from Successful Countries

- **Italy**, **Estonia**, **UK** are (relatively) successful in the application of GaaP.

- Interviewing experts to collect and refine feedback on existing design patterns for platform engineering.

[4]

[5]

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Resolution: Learning from Successful Countries
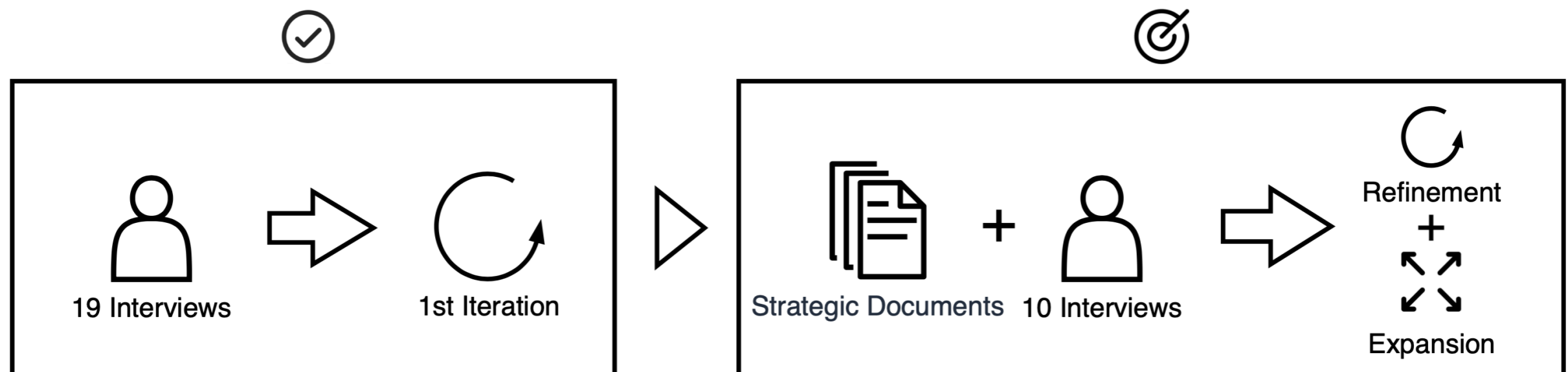
- Research questions:

    - **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**

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Theoretical Background

- **Government as a Platform (GaaP)** is the implementation of the private sector platform concept in the public sector [6].

- The goal of GaaP is to simplify access to and the use of governmental services [7]

- Shared infrastructure and services can help reduce costs, improve efficiency, and reduce duplication of effort [8].

- It involves an open platform that aims to increase public value through the collaboration of citizens and the government [3].

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Methodology: Learning from the Best

- First iteration (before this BT) — **19** existing interviews.
  - **Italy**, **Estonia**, **UK**

- Second iteration (object of this BT) — conducting **10** interviews.
  - **Italy**, **Estonia**, **UK**

Part 1: Vasilisa Poliarus   Part 2: Dmytro Voitsekhivskyi

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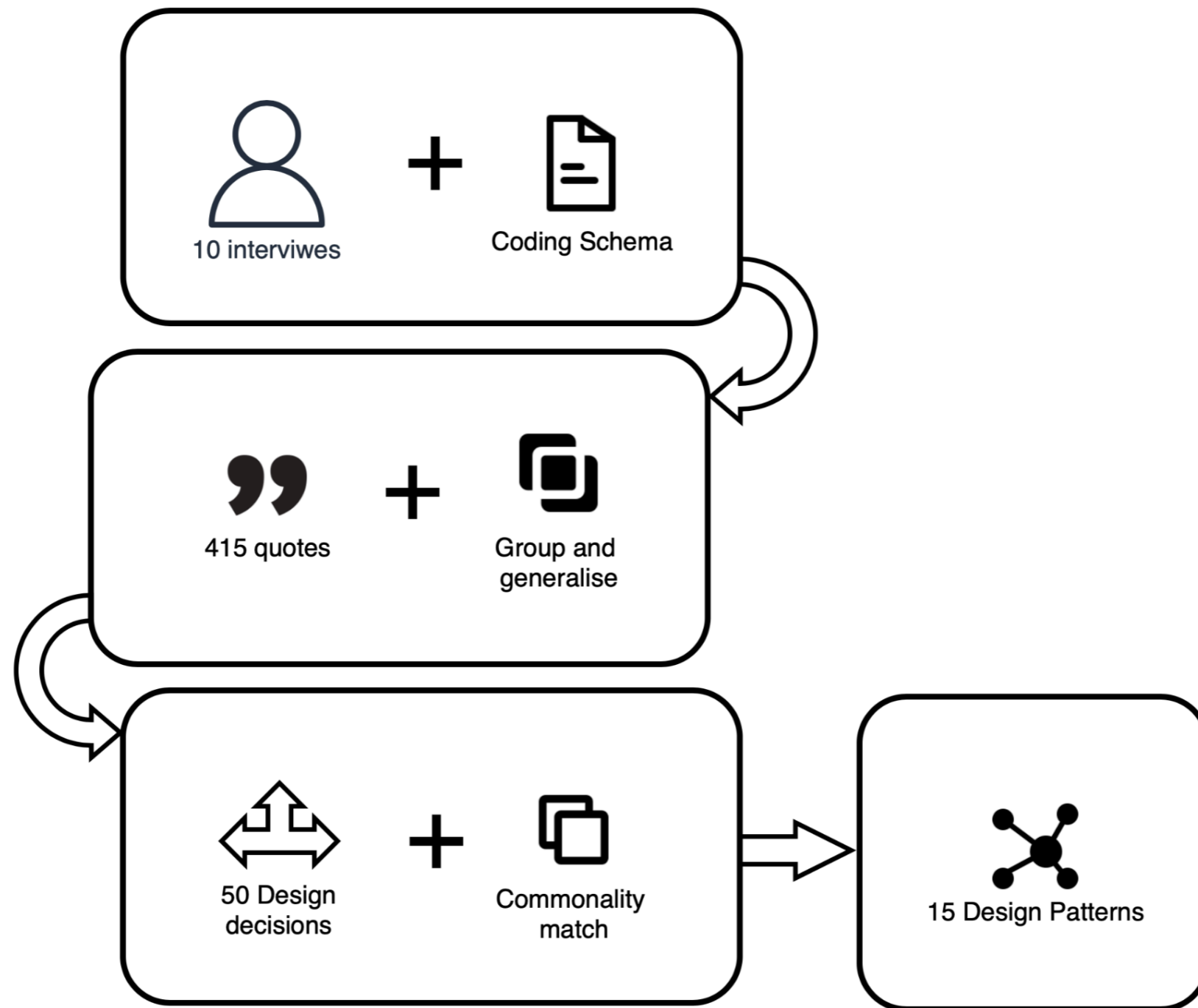Technical University of Munich

Results - Coding Concept

- **Content** dimensions:
  - Platform **architecture**—concerned with the infrastructure apects [9].
  - Platform **governance**—concerned with the roles of the stakeholders [9, 10].
  - Platform **principles**—concerned with the openness, participation and co-creation [11].
  - Platform **management**—concenrned with the orchestration of the platform [12].

- **Structural** dimensions:
  - **Descriptive**—existing state of affairs and experience [13].
  - **Prescriptive**—suggestions and recommendations [14].

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TUM

Results - Coding Matrix

	Architecture	Governance	Principles	Management
Descriptive	What decisions regarding the general architecture and components of the infrastructure have been taken in that country?	What decisions regarding roles of the infrastructure and components have been taken?	What decisions regarding the openness, participation and co-creation of the infrastructure have been taken in that country?	What decisions regarding the managnment of the infrastructure have been taken in that country?
Prescriptive	What are recommendations regarding the general architecture and components of the infrastructure that other countries should consider?	What are recommendations regarding the roles and governance of the infrastructure that other countries should consider?	What are recommendations regarding the openness, participation and co-creation of the infrastructure that other countries should consider?	What are recommendations regarding the management of the infrastructure that other countries should consider?

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Results - Design Patterns

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Results - Design Patterns

Platform Architecture	**Implement four main GaaP infrastructure functionalities**: - Digital identity. - Digital payment system. - Interoperability framework. - Implement a citizen notification system.*
Platform Governance	**Clear governance**: - Have a strong, competent figure to lead the transformation process. - Have a single owner per component.*

Platform Principles	**Embrace openness**: - User accessibility. - Open-source public administration software. - Give people opportunities to work on things that matter.* **Guide the way**: - Design guidelines, templates and standards.
Platform Management	**Value legacy:** - Maintain functional artefacts and communities around them. - Focus on achieving goals at zero rather than improving ready components.* **Human Resources**: - Hire young people with the right competencies. - Know the competencies and attainment levels of the employees. - Invest in people.

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Results - Example

- **Dimension: Platform Governance**
  - Clear Governance — "Have a strong, competent figure to lead the tranformation process."

- **Quotes:**
  - "The center has a particular minister who's often third in power in Parliament or in the ruling party behind the Prime Minister in the Deputy Prime Minister. And his job was to make sure everybody complied. **He did that through the force of his own personality**." — 01-GB

  - "Because everybody puts their own agenda first, and it doesn't mean that central initiatives often aren't successful because they need to be winners and losers in all these transformations and **it's quite hard to achieve that without the use of the Prime Minister**." — 01-GB

  - "Really by **muscle rather than rules**." — 01-GB

  - "**You do need leadership**. I think the combination of **my leadership and our minister** was noted." — 02-GB

  - "We established a digital commission and **we called Diego Piacentini to run it**. So he had to overcome resistance by various administrations." — 04-IT

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Discussion - Comparison with v1

	First iteration (**Poliarus**) [13]	**Second** iteration (**Voitsekhivskyi**)
Platform Architecture	- Identity, interoperability and interface. - Distributed architecture.	**Implement four main GaaP infrastructure functionalities:** - Digital identity. - Digital payment system. - Interoperability framework. - Implement a citizen notification system.
Platform Governance		**Clear governance:** - Have a strong, competent figure to lead the transformation process. - Have a single owner per component.

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Discussion - Comparison with v1

	First iteration (**Poliarus**) [13]	**Second** iteration (**Voitsekhivskyi**)
Platform Principles	- Transparent data management. - Public-private partnership. - User-centric services with incentives. - Educational programs. - Compulsory digital identity.	**Embrace openness:** - User accessibility. - Open-source public administration software. - Give people opportunities to work on things that matter. **Guide the way:** - Design guidelines, templates and standards.
Platform Mangement		**Value legacy:** - Maintain functional artefacts and communities around them. - Focus on achieving goals at zero rather than improving ready components. **Human Resources:** - Hire young people with the right competencies. - Know the competencies and attainment levels of the employees. - Invest in people.

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Discussion

- Are the findings actual **design patterns**?

- **Observed cases:**
  - Few cases examined.
  - Differences in culture, politics, and societal values.
  - Importance of context and peculiarities when solving a problem.
  - Difficult to draw universal conclusions.

- **Suggestions:**
  - Unique characteristics and contexts should be considered.
  - Consider a more suitable term.

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Conclusion

- **Summary:**
  - 6 design pattern clusters.
  - More refined, comprehensive patterns.
  - Mutual opinions collected.
  - More systematic and evidence-based understanding of GaaP.

- **Limitations:**
  - Few cases.
  - What is a suitalbe criteria for commonalites.
  - Incomplete coverage of aspects.

- **Future work:**
  - More cases.
  - Seek more generalised patterns.
  - Procedures on applying the patterns.
  - Suitability assessment of solutions.

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