Tarlan Omarbayli

To have or not to have a GovTech lab?

A comparative study of Estonia and Lithuania's models to foster GovTech

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Supervisor: Prof. Dr. Erkki Karo

Presented by: Tarlan Omarbayli
Akadeemia tee 11/1
12611 Tallinn
+32486967071
tarlan.omarbayli@student.kuleuven.be

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Abbreviations

AI	Artificial Intelligence
EU	European Union
GovTech	Government technology
PPIPs	Public-Private Innovation Partnerships
PPPs	Public-Private Partnerships
PSI	Public Sector Innovation

1 Introduction

Public sector organizations around the world are under pressure to innovate in the face of complex, interdependent challenges - from digitization and climate change to social inequalities and declining public trust. In response, innovation has become a central theme in modern public governance (Arundel et al., 2019; Kattel & Mazzucato, 2018). Governments are no longer seen as passive administrators; they are expected to actively build capacity for innovation to improve services, solve "wicked" problems, and deliver public value. This recognition has spurred a wave of reforms and initiatives aimed at making the public sector more adaptive, collaborative, and creative in tackling policy problems (Cole & Hagen, 2024; Ek Österberg & Qvist, 2020).

Broadly, two different models have emerged to foster innovation in government: one integrates innovation across existing institutions via strategy and policy (a horizontal, whole-of-government approach), and the other establishes dedicated innovation units such as public sector innovation labs or government technology (GovTech) labs. There is no universally optimal organizational design for promoting innovation and the absence of a single best model does not imply that the chosen approach and organizational structure are inconsequential (Roberts & Schmid, 2022). These models represent alternative yet complementary paths toward enhancing public innovation capacity, each with its own rationale and tools.

This thesis is motivated by a theoretical and practical puzzle: why do different governments choose different models for public sector innovation (PSI), and what does this mean for outcomes? A good example of the illustration of this divergence is the contrast between Estonia and Lithuania – focus countries for this thesis. Both countries are widely recognized as public-sector digital innovators in Europe and are regarded as GovTech leaders according to the latest GovTech Maturity Index by World Bank (World Bank, 2022). Yet they have adopted notably different models for fostering public-sector innovation.

Lithuania launched the GovTech Lab to connect startups with public-sector challenges and spur tech-based solutions. It has started as "Create Lithuania" and Ministry of Economy and Innovation initiative in 2019, and the same year was officially set up in the Agency of Science, Innovation and Technology. From August of 2022,

GovTech Lab Lithuania project is a part of the Innovation Agency Lithuania (GovTechLab Lithuania, 2025).

On the other hand, Estonia opted for having horizontal strategy approach consists of different elements which all contribute to the development of PSI, including GovTech. These elements include:

- Accelerate Estonia - a government-supported innovation lab focused on removing regulatory barriers and enabling experimental projects - pointedly avoiding the label of a GovTech lab (Accelerate Estonia, 2025),
- Innovation Team in Government Office – a team under the Prime Minister of Estonia which aims to make Estonian public services more user-friendly and people-centered by primarily employing design thinking methods. The team focuses on identifying new approaches, pushing boundaries, experimenting, learning rapidly, and iteratively improving its methods, while actively involving end users and partners from various sectors throughout the process (Government Office of Estonia, 2025a).
- Public Sector Innovation Fund – an innovation fund administered by the Government Office of Estonia, which was created to support the identification, development and real-life testing of innovative solutions for public sector (Government Office of Estonia, 2025b).

While Estonia has established lab-like initiatives in specific areas, such as regulatory hacking (Accelerate Estonia, 2025) and design thinking (Government Office of Estonia, 2025a), its overall approach to GovTech development can be characterized as predominantly horizontal, integrating innovation practices across government sectors rather than centralizing them within a dedicated structure. This divergence also reflects different strategic choices about how governments engage with the private sector to foster innovation. It presents a compelling comparative case: both nations faced similar pressures to innovate and had reputations for e-government excellence, yet one chose to “have a GovTech lab” and the other chose “not to have” one as a standalone program.

Prior research provides only partial guidance on this puzzle. The literature PSI has documented the rise of dedicated innovation labs, highlighting their potential to inject new ideas and methods into government (Pólvora & Nascimento, 2021; Tõnurist et al.,

2017). Other scholarship emphasizes innovation strategies and policies that embed innovation into the core of public management (Arundel et al., 2019; Kattel & Mazzucato, 2018). However, lack of comparative research on how different governments adopt and implement innovation mechanisms (Cinar et al., 2019, 2024; De Vries et al., 2016), a gap in understanding the outcomes and impacts of different public innovation approaches (Demircioglu, 2024), and lack of insight into why some governments embrace the model where a dedicated unit for GovTech is established while others do not makes systematic comparisons of these approaches necessary to be researched. Although early studies and reports on GovTech labs (Bharosa & Janowski, 2024; Hoekstra et al., 2023; OECD, 2024) describe what these programs do and the challenges they face, but they do not explain the strategic reasoning behind adopting such a model – nor why an alternative approach might be preferred in a similar context. In other words, we know how GovTech labs operate, but we know far less about why a government would establish a GovTech lab in the first place, or conversely, why it might choose a more horizontal innovation strategy instead. The divergent choices of Lithuania and Estonia have not been examined in depth by existing research, leaving a gap in understanding the factors and trade-offs that shape public innovation strategy at the national level.

Against this backdrop, this thesis aims to compare and explain the differing national approaches to PSI, specifically for fostering GovTech, represented by the cases of Estonia and Lithuania. In order to address the research gap, the thesis is guided by the following general research question that requires the sub-questions below to be answered:

Research question: Why do some governments embrace the dedicated GovTech lab model while others choose a different approach to foster GovTech?

- What factors influenced the Lithuanian government to adopt a GovTech lab model, and the Estonian government to pursue a different, more horizontally integrated innovation approach?
- What are the perceived benefits and limitations of a GovTech lab compared to a horizontal public innovation strategy in practice?

The first sub-question seeks to uncover the motivations, contextual factors, and decision-making processes that led each country to its respective model of fostering innovation in the public sector. The focus of the second sub-question is on the implications of each approach: how each model contributes to PSI capacity, the kinds of outcomes or innovations each produces, and any trade-offs involved.

By addressing these questions, the study aims to deepen the theoretical understanding of how governance contexts shape innovation strategies and offer practical insights for policymakers. It contributes to the literature on PSI by bridging the gap between discussions of horizontal innovation policy and specialized innovation labs. It also informs government practitioners considering the establishment of dedicated innovation units versus broader institutional approaches. Ultimately, understanding why a government would “have or not have” a dedicated GovTech lab, and the outcomes of each path, can help develop a more nuanced and context-sensitive perspective on PSI in both theory and practice.

In order to answer the research question, semi-structured interviews and analysis of secondary sources were chosen as data collection methods. Interview questions were formulated based on the information gained from literature. Collected data from interviews was analyzed manually for a deeper dive into the content.

The following sections of this research will examine and expand upon key areas of knowledge related to the previously outlined research question. Section 2 reviews the existing academic literature that informs this research. Section 3 outlines the research methodology employed in this study. Section 4 presents and summarizes the research findings. In Section 5, findings and how they answer research questions are discussed, the limitations of the study are addressed, and future research directions are presented. Finally, Section 6 offers the conclusions of the thesis.

2 Literature review

This chapter reviews the scholarly literature that informs and contextualizes this study. It proceeds thematically from broad concepts of innovation in the public sector to specific contemporary developments.

Section 2.1 begins with the theoretical foundations of PSI, defining key terms, examining how innovation in government differs from the private sector and the role of public-private partnerships (PPPs) in PSI. This section highlights why innovation is crucial for public organizations and the unique challenges it faces in bureaucratic contexts.

Section 2.2 then discusses innovation policy and strategic management in government, outlining how public administrations have incorporated innovation into their strategies. It covers the main models of purchasing innovation in the public sector, the evolution of public management policies aimed at fostering innovation, and how leadership and strategy can create an enabling environment for novel practices.

Next, Section 2.3 explores the rise of PSI labs as collaborative infrastructure. The literature documents the proliferation of these labs, their various models, and their role in introducing user-centered design and cross-sector collaboration into policymaking. This section also synthesizes findings on the success factors for innovation and common challenges they face.

Section 2.4 then turns to the emergence of GovTech and, in particular, GovTech labs. This section explains how these labs connect government problems with entrepreneurial solutions and reviews recent examples of such programs. It discusses the potential benefits of GovTech labs as well as the challenges they encounter.

Finally, Section 2.5 provides a synthesis of the key insights from the literature and identifies the research gap that emerges, setting the stage for the study's focus on differing national approaches to GovTech innovation.

2.1 Public sector innovation: theoretical foundations

This section explores the theoretical underpinnings of PSI by first unpacking how the core concepts of “public sector” and “innovation” are defined in the literature, highlighting their complexity and interdependence. It then examines how PSI differs from innovation in the private sector, considers the growing importance of PPPs as vehicles for collaborative innovation, emphasizing their potential and limitations in fostering transformative change across sectors.

2.1.1 Defining public sector innovation

In order to fully understand what public sector innovation is, one must first comprehend the two fundamental concepts of "public sector" and "innovation" (Arundel et al., 2019).

Defining “public sector” is challenging, as it can be viewed institutionally as state-owned or politically governed organizations and functionally as those serving the public interest. However, this distinction is blurred since private and nonprofit organizations also serve public interests, while some state-owned entities operate like businesses (Vivona et al., 2021). In this thesis, the author adopts the definition of the public sector provided by (Demircioglu & Audretsch, 2024), which describes it as general government organizations that are owned and funded by the government. More specifically, as cited by (Hartley et al., 2013), the public sector is “a collective effort to produce and deliver public value that is authorized or sponsored by federal, state, provincial, or local government.” Its responsibilities include governance, maintaining public order and safety, providing education, healthcare, social services, and other functions designed to support citizens and businesses (Demir, 2022; Potts & Kastelle, 2010).

Regarding the second concept, “innovation”, it is also inherently difficult to define, as there is no single, universally accepted definition that captures its full scope and meaning (Chen et al., 2020; Demircioglu & Audretsch, 2024; Vivona et al., 2021). Most academic articles related to PSI proceed without providing a definition of innovation or giving a quite general definition (De Vries et al., 2016). Although most scholars concur that innovation involves creating and implementing new ideas (Chen et al., 2020; Torugsa & Arundel, 2016), there is less consensus on the required level of novelty in

the public sector (Torugsa & Arundel, 2016). In this paper, the author adopts the definition of innovation provided by Rogers (1995), who describes it as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption." This definition is the most frequently cited in the PSI literature, according to De Vries et al. (2016). Innovations vary in their characteristics, offering solutions to complex problems (Korac et al., 2017). Since the definition of innovation in the public sector is typically broad, it is common to specify different types of innovation (De Vries et al., 2016). Distinguishing different types of innovation is crucial for building a shared understanding of PSI. A review of empirical studies on innovation types by Cinar et al. (2024), given in Table 1, reveals a lack of a widely accepted classification in the existing literature. This review is consistent with the one conducted by De Vries et al. (2016) and extends it by including social innovation as an additional type.

In order to capture the multidimensional and complex nature of PSI, it is important to highlight that a single innovation can fall under multiple types, as a new initiative may present a hybrid mix of different innovation types (De Vries et al., 2016; Torugsa & Arundel, 2016).

Given that both the “public sector” and “innovation” are challenging to define, “public sector innovation” similarly lacks a clear and widely accepted definition. While Kattel et al. (2014) noted that there is no established definition of PSI, Demircioglu (2024) PSI as the introduction or adoption of new, novel, and original elements within a public organization or service. Similarly, the OECD’s Observatory of Public Sector Innovation PSI as “the process of implementing novel approaches to achieve impact” (OECD, 2017).

As Demircioglu (2024) notes, research indicates that innovations in the public sector may not always be entirely new to the public sector, as they might have been implemented in different contexts. Additionally, scholars argue that involvement of public sector is not always necessary for PSI to occur, suggesting that other stakeholders or institutions can also drive innovation within the public sector (Broekema et al., 2022). This view broadens the understanding of PSI by highlighting the diverse sources from which it can originate.

Innovation type	**Definition**
Service Innovations	Related to service provision to public users, including novel services for existing users or delivering existing services to new user groups.
Administrative Process Innovations	Involves new methods and forms of undertaking tasks within an organization, often linked to redesigning operational routines.
Technological Process Innovations	Application of technology to operational activities and service delivery mechanisms, ranging from digital forms to automated decision-making.
Conceptual Innovations	Development of new world views that challenge existing assumptions underpinning service products, processes, and organizational forms.
Governance Innovations	Introduce new participation mechanisms for citizens and enhance transparency and accountability in the public sector.
Systemic Innovations	Capture new or improved ways of interacting with other organizations to co-deliver public services, often requiring cross-boundary collaboration.
Social Innovations	Aims to address social needs of disadvantaged groups and tackle underlying reasons for social problems, often in a cross-sectoral manner.

Table 1. Innovation types and definitions based on a review of empirical studies (Cinar et al., 2024)**.**

2.1.2 Differentiating public sector innovation from private sector innovation

Public sector innovation is a relatively nascent field of study compared to private sector innovation, with research and implementation still evolving (De Vries et al., 2016; OECD, 2022). While both sectors pursue innovation to create value, they differ significantly in their drivers, objectives, and operational environments.

Private sector innovation is primarily market-driven, focusing on competitive advantage and profit maximization. In contrast, public sector innovation is guided by the need to enhance public value, improve service delivery, and address complex societal challenges (Demircioglu, 2024). The concept of value creation also differs; while private sector success is measured through financial returns and market expansion, public sector innovation is evaluated based on service efficiency, effectiveness, and equity (Bloch & Bugge, 2013). The public sector's innovations often yield non-monetary benefits, such as increased transparency, accountability, and citizen trust (Demircioglu, 2024).

Risk tolerance further differentiates the two sectors. Private firms tend to embrace risk as part of their pursuit of innovation and market leadership. Public institutions, however, operate under political scrutiny, regulatory constraints, and budgetary limitations, making them more risk-averse. As a result, public sector innovations are often incremental rather than radical, focusing on procedural improvements rather than disruptive technological advancements (Bloch & Bugge, 2013).

The motivations for innovation also diverge. While consumer demand and market competition drive private sector innovation, PSI is influenced by policy objectives, regulatory mandates, and societal needs (Misuraca & Viscusi, 2015). Given these constraints, PSI often relies on intergovernmental and cross-sector collaborations involving government agencies, private firms, and civil society actors. Such networks facilitate the co-creation of solutions to complex policy challenges, ensuring broader acceptance and legitimacy (Hartley et al., 2013).

Measuring innovation presents additional challenges in the public sector. Unlike the private sector, where innovation can be quantified through patents, revenue growth, and market penetration, PSI requires alternative metrics, such as improved service quality, user satisfaction, and policy impact assessments. The inherent complexity and diversity of public services further complicate efforts to evaluate innovation outcomes (Bloch & Bugge, 2013).

2.1.3 The role of public-private partnerships in public sector innovation

International standards have increasingly emphasized that innovation extends beyond firm-level product or process improvements to encompass organizational and systemic changes across sectors. For example, the Oslo Manual by OECD/Eurostat (2018) explicitly broadens the definition of innovation to include a “broader range of innovation-related phenomena”. In its fourth edition, the Manual defines an innovation as any new and/or improved product or process introduced by a “unit,” and it clarifies that such a “unit” can be “any institutional unit in any sector”. This expanded perspective - from a firm-centric view to one that includes organizations and innovation systems - provides a rationale for examining PPPs in the public sector and established units for such partnerships.

Public-private partnerships or public-private collaboration refer to collaborative arrangements where public entities engage private organizations to provide goods and services. These partnerships involve both sectors sharing costs, resources, and risks associated with service and product delivery (Kuchina-Musina & Morris, 2022). It plays a crucial role in fostering innovation within the public sector by leveraging private sector expertise, resources, and agility to enhance service delivery and policymaking. Unlike traditional top-down approaches, these collaborations involve multi-actor engagement, where government agencies, businesses, and civil society actors co-create solutions to address complex societal challenges (Carbonara & Pellegrino, 2020; Demircioglu, 2024; Hartley et al., 2013). According to Carbonara & Pellegrino (2020), private sector participation brings efficiency-driven management approaches and fosters a risk-taking culture that is often lacking in government institutions. Similarly, Cankar & Petkovšek (2013) emphasize that PPPs help bridge knowledge gaps between sectors by facilitating the exchange of best practices. As defined by Brogaard (2021), public-private innovation partnerships (PPIPs) are characterized by mutual development goals and complementary capabilities, emphasizing innovation rather than solely procurement or service delivery. The collaborative nature of these partnerships fosters an open innovation environment, often incorporating user-driven design and rapid prototyping, especially in healthcare and social services (Hammond et al., 2022).

Empirical studies affirm the potential of PPPs to improve service efficiency and innovation. For instance, the introduction of a children’s social service improvement

partnership in England showed limited improvements in outcomes but significant cost implications, underscoring the importance of robust contract and performance management (Alonso & Andrews, 2022). Similarly, in developing countries, effective PPPs hinge on shared knowledge, supportive regulation, tax incentives, and the creation of innovation hubs, suggesting a systemic approach to fostering innovation (Sikombe et al., 2024).

However, challenges remain. Weak institutional capacities, misaligned incentives, and inadequate monitoring frameworks often hinder the impact of PPPs (Alonso & Andrews, 2022; Carbonara & Pellegrino, 2020; Hammond et al., 2022). According to Carbonara & Pellegrino (2020), structural features such as network configurations and contract flexibility are critical in determining innovation outcomes. The literature also emphasizes the necessity of stakeholder engagement and strategic alignment to ensure that innovation serves public interests rather than solely private gains (Brogaard, 2021; Hammond et al., 2022).

Furthermore, Brogaard, (2021) highlights that innovation outcomes in PPIPs are not guaranteed and are influenced by factors such as trust, shared goals, and collaborative capacity. Carbonara & Pellegrino (2020) argue that innovation is more likely when PPPs allow contractual flexibility and when the market and network environments are conducive to experimentation. These findings emphasize the importance of designing PPPs with attention to institutional arrangements that support iterative learning and adaptive governance.

2.2 Innovation management and policy in the public sector

As public challenges grow in scale and complexity, managing and governing innovation within the public sector has become a central concern. While innovation is often discussed in terms of organizational dynamics or individual leadership, it is increasingly evident that broader strategic and policy frameworks play a decisive role in shaping how innovation is initiated, supported, and sustained (Arundel et al., 2019; Kattel & Mazzucato, 2018).

This section examines how innovation is strategically pursued and managed by public institutions and how policy frameworks influence its uptake, institutionalization,

and long-term impact by shaping priorities, enabling cross-sector collaboration, and embedding innovation into the core functions of government.

2.2.1 Models of pursuing public sector innovation

In practice, two broad and complementary models for fostering innovation in the public sector have gained prominence. The first is a horizontal innovation strategy that integrates innovation across government institutions and processes. The second model establishes dedicated innovation units – exemplified by innovation labs or GovTech labs – as specialized entities to drive innovation. Each approach represents a distinct pathway: one embeds innovative practices system-wide, while the other concentrates innovation efforts within a focused organizational unit.

In the first model, horizontal approach, governments seek to diffuse innovation throughout existing institutions without creating new standalone structures. PSI is embedded via comprehensive policies, civil service reforms, and capacity-building programs that encourage all agencies to experiment and improve (Arundel et al., 2019; Kattel & Mazzucato, 2018). In essence, this model promotes system-wide innovative thinking as part of the bureaucracy's core operations rather than isolating innovation in a single unit. Governments pursuing this approach often adopt national innovation agendas, integrate innovation goals into agency mandates, update training and performance metrics to include innovation, and foster cross-departmental collaboration to spread new ideas (Arundel et al., 2019; Kattel & Mazzucato, 2018). This model stems from the realization that traditional bureaucratic structures—geared toward control, stability, and hierarchy—are often ill-suited to tackle complex, evolving public problems (Martinez, 2012). A mission-oriented innovation policy, that will be discussed later in Section 2.2.2, is a form of horizontal strategy that mobilizes entire institutions toward ambitious goals (Kattel & Mazzucato, 2018). Such efforts illustrate how a government can proactively steer innovation toward societal challenges through broad institutional engagement rather than via a single siloed project.

Adopting a horizontal innovation strategy offers several strengths for the public sector. Because innovation is embedded in high-level frameworks (like national development plans or digital government strategies), it enjoys strong strategic legitimacy and political backing, often accompanied by sustained funding and

leadership support (Arundel et al., 2019; Kattel & Mazzucato, 2018). This approach encourages every public agency to view innovation as part of its core mandate, linking experimentation to widely endorsed goals and performance indicators.

Over time, a horizontal strategy can build innovation capacity across the entire public workforce, fostering a culture of creativity and continuous improvement (Bloch & Bugge, 2013; Hartley et al., 2013). Karo & Kattel (2016) propose an evolutionary analytical approach to public-sector innovation capacity. From this perspective, the core building blocks of policy capacity are organizational routines (and their diversity), search and selection processes, and the surrounding selection/feedback environment. Karo & Kattel, (2016) illustrate this logic by examining science and technology policy in the East Asian "Tiger" economies: these governments built capacity by experimenting with new agencies and programs (search), then retaining and scaling those that proved effective (selection). Over time the successful innovations become embedded as routine practices, whereas less effective initiatives are pruned – an evolutionary process driven by internal and external pressures on each organization (Karo & Kattel, 2016b).

However, the horizontal approach also faces important challenges. When "everyone is responsible" for innovation, there is a risk that no one is truly accountable – diffuse responsibility can lead to coordination problems and fragmented efforts, with no clear ownership to drive initiatives forward (McGann et al., 2018). Large-scale bureaucratic adoption of innovation can be slow and uneven; individual agencies might innovate at different paces, and without dedicated oversight, momentum may falter. Furthermore, embedding innovation into traditional structures often encounters cultural resistance. Public organizations steeped in stability and risk-aversion may resist change, even if top leaders endorse it (De Vries et al., 2016; Demircioglu, 2024; Demircioglu & Audretsch, 2024). Such inertia can slow down or water down reform efforts. Finally, without any specialized unit acting as an innovation champion, horizontal strategies may struggle to achieve more radical or breakthrough innovations. The lack of concentrated expertise and creative space means innovations might remain incremental improvements, as civil servants juggle innovation with their regular duties (Tõnurist et al., 2017). In summary, while a horizontal model spreads innovation broadly, it can suffer from weak coordination and limited depth of innovation if not carefully managed.

The second model centers on establishing dedicated innovation units – such as public innovation labs, design teams, or GovTech labs – which are given a specific mandate to experiment and drive change (McGann et al., 2018; Tõnurist et al., 2017). These units create protected spaces for trying new approaches (often with user-centric or tech-driven methods) that can later be scaled into the wider bureaucracy (Pólvora & Nascimento, 2021). The two following sections (Section 2.3 and 2.4) of literature review will explore this model in more detail through the cases of innovation labs and GovTech labs.

Notably, these two approaches are not mutually exclusive; governments might pursue both simultaneously (Cinar et al., 2024). Also, Roberts & Schmid (2022) note that no single organizational design is universally best for fostering innovation, and the lack of a definitive model does not mean that the choice of approach and structure is without significance. Still, contrasting these models is valuable for understanding different pathways to PSI. This duality in approach underscores the importance that governments now place on innovation as a core capability of the public sector, whether mainstreamed across institutions or championed by specialized entities.

2.2.2 Strategic approaches to public sector innovation

Innovation has become an increasingly central theme in public governance, particularly as governments face complex and interrelated challenges such as digital transformation, climate change, and declining public trust (Arundel et al., 2019; Kattel & Mazzucato, 2018). Strategic approaches to public innovation have evolved significantly from the classical bureaucratic paradigm that emphasized control, routine, and hierarchy. These legacy systems, while effective in delivering standardized services, have proven less capable of handling so-called “wicked problems” that are dynamic, cross-cutting, and require continuous learning (Martinez, 2012). In response, many governments have experimented with new governance frameworks that support adaptive, participatory, and exploratory practices (Cole & Hagen, 2024; Ek Österberg & Qvist, 2020).

One particularly influential concept in this space is mission-oriented innovation policy. As proposed by Kattel & Mazzucato (2018), this approach encourages public institutions to play an active role in setting directions for innovation that align with

broad societal goals - such as sustainability, inclusion, or digital equity - rather than leaving innovation entirely to market forces. Crucially, this demands that public organizations build what the authors call dynamic capabilities: the institutional ability to adapt, experiment, and coordinate innovation across different actors and levels of governance (Kattel & Mazzucato, 2018).

At the same time, there is a growing recognition of the importance of bottom-up innovation, particularly when it comes from frontline public servants or local stakeholders. Empirical work by Demircioglu (2024) shows that innovations initiated by employee workgroups are often more closely linked to tangible improvements in service delivery, efficiency, and responsiveness. However, leadership still plays a crucial role - not as a top-down directive force, but as an enabler of experimentation and learning (Demircioglu, 2024). These findings suggest that a purely top-down or bottom-up model is unlikely to succeed on its own. Instead, effective public innovation strategies typically combine both: providing strong central direction while also creating space for distributed experimentation (Cinar et al., 2024).

In organizational terms, Karo & Kattel (2016a) highlight a classic tension between Weberian versus Schumpeterian models of the state. Weberian bureaucracies are centralized, expert-driven agencies that emphasize hierarchy and stable rule-based procedures, whereas Schumpeterian agencies are smaller, networked or charismatic units designed for agility and experimentation. Rather than endorsing one or the other, Karo and Kattel argue that innovation systems typically require a mix of both. In their account, entrepreneurial (Schumpeterian) agencies – often marginal or newly created – can generate bold policy experiments under uncertainty, while larger Weberian agencies supply the formal authority, resources and institutional coherence needed to implement successful (Karo & Kattel, 2016a).

Beyond the structural aspects of innovation, recent scholarships have also emphasized the importance of organizational learning and cultural change. Cole & Hagen (2024), for example, introduce the idea of “scaling deep”, which refers to embedding new values, norms, and ways of thinking within public institutions. Based on their analysis of innovation labs in Vancouver and Auckland, they argue that meaningful innovation often depends less on delivering quick outputs and more on creating the conditions for long-term transformation through learning and reflection.

This connects with concerns around how public innovation is measured and evaluated. Arundel et al. (2019) argue that existing frameworks tend to focus too much on inputs (like funding or staff numbers) or outputs (such as new services), without assessing whether innovation is actually contributing to long-term policy objectives or improving public value.

Another important factor is how policy attention shapes the uptake of innovation. Fan et al. (2023) find that when political leaders explicitly prioritize innovation - by framing it as central to economic development or public service reform - governments are more likely to adopt and institutionalize new tools, such as digital platforms.

Taken together, the literature suggests that strategic public innovation is shaped by a combination of institutional design, leadership dynamics, learning capacity, and political commitment.

2.2.3 The role of policy in supporting innovation

While innovation is often associated with organizational leadership, internal capabilities, or culture (Arundel et al., 2019; Demircioglu, 2024), there is growing recognition that policy frameworks define the enabling conditions for innovation by setting strategic directions, allocating resources, and influencing institutional behavior (Arundel et al., 2019; Bloch & Bugge, 2013; De Vries et al., 2016; Kattel & Mazzucato, 2018). The main role of policy is to provide strategic legitimacy to innovation efforts (Arundel et al., 2019; Kattel & Mazzucato, 2018). When innovation is embedded in national development strategies, digital agendas, or sectoral reform plans, it receives the political backing and visibility necessary to move beyond ad hoc experimentation (Fan et al., 2023).

Another important function of policy is its ability to mobilize and focus attention on particular innovation priorities. Fan et al. (2022) demonstrate how the adoption of e-government platforms in Chinese provinces was closely linked to how political leaders framed innovation as an economic development strategy or a governance necessity. Provinces that emphasized innovation in policy discourse saw more widespread adoption, illustrating how issue framing and agenda-setting can influence the direction and uptake of innovation, even in the absence of structural reforms.

Modern innovation challenges typically span multiple sectors and stakeholders, making inter-organizational collaboration a necessity (Cankar & Petkovšek, 2013; Hartley et al., 2013). Policies that support joint procurement models, public–private partnerships, challenge-based funding, or co-design platforms have proven effective in building the relational capacity required for collaborative innovation (Cankar & Petkovšek, 2013; Ek Österberg & Qvist, 2020; Hartley et al., 2013). This is especially relevant in the context of open innovation in the public sector, which involves drawing on external knowledge and actors to co-create solutions. While originally developed in the private sector, the concept of open innovation has gained ground in public administration, especially as governments seek to engage startups, civil society, and academia in solving complex problems (Coulon et al., 2020; de Oliveira & dos Santos Junior, 2018). Moreover, open innovation requires specific policy instruments that go beyond traditional governance tools. For example, strategic procurement policies that allow public agencies to source innovative solutions from startups, or open data policies that encourage civic tech initiatives, are direct enablers of innovation ecosystems (Coulon et al., 2020; Zuniga et al., 2021).

Finally, differences in administrative and political systems shape how policy supports innovation in practice. In centralized systems, policy mandates and national innovation strategies often lead to the formation of centralized units or dedicated agencies. In contrast, decentralized systems tend to foster more diverse, context-specific innovation arrangements (Cinar et al., 2024). These structural variations might help explain why some countries create dedicated innovation infrastructures, while others rely on dispersed efforts without a unified institutional form.

2.3 Innovation labs in the public sector

Public-sector innovation labs – often called policy labs, i-labs, or innovation teams – have rapidly proliferated around the world in the past decade (Cole, 2022a; Ferreira & Botero, 2020). Governments at various levels are establishing these labs as dedicated units or spaces to tackle public policy and service delivery challenges in new ways outside the strictures of traditional bureaucracy (Pólvora & Nascimento, 2021; Roth et al., 2020). Estimates suggest hundreds of such labs now exist, most launched in the last decade (Cole, 2022a). This section reviews the rise of PSI labs, their functions and

typologies, and how they compare to related concepts like living labs. It also discusses common critiques and limitations of the innovation lab model in government.

2.3.1 Conceptual foundations and purpose of innovation labs

The rise of innovation labs is driven by the recognition that it is difficult to drive innovation within conventional hierarchical structures that are often risk-averse and siloed. Labs offer a "safe space to innovate," where experimentation, design thinking, and cross-sector collaboration can occur with some insulation from routine constraints (Roth et al., 2020; Whicher & Crick, 2019). In general, the primary purpose ascribed to public-sector innovation labs is to improve government practices and create public value by bringing in creativity, user-centered design, and iterative experimentation to address complex societal challenges (Cole, 2022b; Tõnurist et al., 2017).

There is no single, universally accepted definition of a public-sector innovation lab. These labs typically share common elements in how they describe their relationship to government, their innovation ambitions, their role in public problem-solving processes, and the methods they use (Cole, 2022a). Broadly, a public-sector innovation lab can be defined as a dedicated team or entity with a mandate to innovate public policies or services through experimental and collaborative methods (Pólvora & Nascimento, 2021). In practice, "labs" in government take on diverse labels and forms – including policy labs, living labs, social innovation labs, and digital innovation teams – but all generally aim to inject creative, user-driven approaches into public sector work (Pólvora & Nascimento, 2021; Schuurman & Tõnurist, 2017). They are typically small units enabled to operate with greater agility than normal departments, often employing design thinking, co-design, behavioral insights, data experiments, or other innovation methodologies (Tõnurist et al., 2017; Whicher & Crick, 2019).

2.3.2 Typologies, characteristics and evolution of innovation labs

Researchers have begun to categorize different types of public-sector innovation labs and their characteristics (Cole, 2022a; Schuurman & Tõnurist, 2017). Two prominent models often discussed are living labs and policy innovation labs, which share similarities but also have distinct origins and emphases. Living labs generally refer to user-centered open innovation ecosystems that involve public, private, academic, and citizen partners (a "quadruple helix") collaborating in real-life

environments to co-create, prototype, and test solutions (Leminen & Westerlund, 2017; Schuurman & Tõnurist, 2017). They emphasize active user involvement and experimentation in real-world contexts (e.g. city neighborhoods or communities) to develop new technologies, services, or policies with immediate feedback from users. Policy labs (often simply called innovation labs within government) are usually multi-disciplinary teams embedded in government organizations and focused on innovating public policy design and service delivery (Pólvora & Nascimento, 2021). Policy labs provide dedicated experimentation spaces within government to re-frame problems, design with stakeholders, and break down silos between departments (Fuller, 2016; Pólvora & Nascimento, 2021). While living labs are often anchored in community settings and highlight broad stakeholder partnerships, policy labs tend to be institutionally housed within government (central or local) and oriented toward internal reform and policy innovation (Schuurman & Tõnurist, 2017). Both, however, are "innovation intermediaries" aiming to bridge government with citizens or users in the creation of solutions (Ferreira & Botero, 2020). Below is a comparative overview of key lab types, illustrating their definitions, structures, and aims as discussed in the literature:

- **Policy/Innovation Lab**
  - **Definition:** A dedicated team within or alongside government focused on designing public policies and services through innovative, often design-led methods involving stakeholders (Pólvora & Nascimento, 2021). Typically described as hybrids of think tanks and R&D units acting as "islands of experimentation" for the public sector (Schuurman & Tõnurist, 2017; Tõnurist et al., 2017).
  - **Typical structure:** Usually a small, semi-autonomous unit inside a government department or agency (or sometimes a cross-agency initiative). Staffed by civil servants and specialists (designers, analysts, etc.), often with high-level sponsorship. May be centrally located (e.g. Prime Minister's Office) or within a ministry or city government. Generally funded by government (Pólvora & Nascimento, 2021; Timeus & Gascó, 2018).
  - **Primary aims:** Introduce experimental and user-centered approaches into policymaking and service design. Break down bureaucratic silos and foster a culture of innovation in the public sector (Roth et al., 2020). Co-create solutions to pressing social or administrative problems, improve public

services, and build government capacity for adaptive, agile policymaking (Ferreira & Botero, 2020; Whicher & Crick, 2019). Ultimately, mainstream new methods (design thinking, data innovation, etc.) and "future-proof" governance by testing ideas before wider implementation (Roth et al., 2020)

- **Living lab**
  - **Definition:** A user-centered, open innovation ecosystem operating in a real-life context. Involves public-private-people partnerships where stakeholders (government agencies, companies, universities, citizens) co-create, prototype, and test innovations in situ (Leminen & Westerlund, 2017; Schuurman & Tõnurist, 2017). Emphasizes real-world experimentation, iterative learning, and high user involvement in problem-solving.
  - **Typical structure:** Often organized as a collaboration platform or network rather than a single unit. May be coordinated by a city government or a consortium (public and private partners). Activities occur in living environments (neighborhoods, communities) serving as testbeds. Governance is shared; not strictly an internal government team, but a multi-actor initiative. Funding is often mixed (public grants, private sector contributions, research funds) (Schuurman & Tõnurist, 2017).
  - **Primary aims:** Engage users and stakeholders directly in innovation for public services and policies. Develop solutions that are grounded in user needs and tested in real contexts (e.g. smart city solutions, e-health services). Improve the "democratic engagement" in innovation by involving citizens in co-design (Fuglsang & Hansen, 2022). Also, generate practical and scientific knowledge about what works through iterative experimentation (Schuurman & Tõnurist, 2017). The goal is to produce more effective, user-accepted innovations and inform policy with on-the-ground evidence.
- **Other variants**
  - **Definition:** Social innovation labs, civic labs, and i-Teams: Terms often overlapping with policy labs, generally indicating initiatives aimed at social problem-solving via collaborative innovation. They might be led by NGOs, foundations, or cross-sector coalitions rather than government alone, but often work closely with public agencies (Pólvora & Nascimento, 2021). These labs adopt experimental methods similar to policy labs but can operate outside traditional government hierarchies.

- **Typical structure:** Varies widely. Some are government-partnered but externally hosted (e.g. within universities or nonprofits). Others are temporary project-based labs convened around specific challenges. Structure can range from formal organizations to informal networks or PPPs. Funding and governance likewise vary (often project-based or philanthropic funding) (McGann et al., 2021; Stoll & Andermatt, 2024; Tõnurist et al., 2017; Torvinen & Jansson, 2023; Zivkovic, 2018).
- **Primary aims:** Tackle complex social challenges (poverty, sustainability, etc.) by convening diverse stakeholders in an experimental setting. Drive innovation "outside" standard bureaucratic processes when government alone lacks capacity or trust to innovate. Aims include community-driven solution development, rapid prototyping of social programs, and scaling successful experiments into policy or practice. Often explicitly focus on social impact and inclusion in the innovation process (Cole, 2022a; Da Silva Junior et al., 2024; McGann et al., 2021; Tõnurist et al., 2017).

It is worth noting that policy labs are sometimes referred to broadly as PSI labs. In practice, the boundaries between these lab types can blur – for example, a government innovation lab may employ living lab methods in a community setting, or a living lab may be formally supported by a public agency. The common thread is the use of experimental, collaborative approaches to address public sector challenges.

As the landscape of PSI labs expands, scholars have observed that labs are evolving in their orientation and capabilities. Cole (2022b) describes a typology of four generations of public-sector innovation labs, distinguished by the increasing breadth of their ambitions and methods. Early-generation labs tend to focus on introducing creativity and new ideas within government, whereas later generations pursue more systemic change and external collaboration (Cole, 2022b).

In brief, first-generation labs act as creative platforms inside government – they encourage public employees to generate ideas and "buy in" to innovation, often through design workshops and ideation challenges. Second-generation labs serve as innovation units that emphasize user-centered design and a wider array of innovation methods to create tangible solutions with public value. Third-generation labs become change partners to their host organizations, meaning they not only design solutions but also

work to transform the core processes and narratives of public agencies. Finally, fourth-generation labs function as systemic co-design labs, tackling “wicked” complex problems that transcend any single organization’s boundaries (Cole, 2022b). These labs work in close collaboration with external partners (communities, NGOs, businesses, academia), sharing power and co-creating solutions across institutional boundaries. In doing so, they aim for transformative innovations and systemic change rather than incremental improvements. Notably, the latter generations explicitly recognize that addressing complex societal challenges requires going beyond government’s walls and convening multi-actor networks in experimental problem-solving (Cole, 2022b).

Labs in the third and fourth generations are more disruptive in their innovation approaches, testing the boundaries of prevailing institutional paradigms (Cole, 2022b). They attempt to move beyond making existing systems more user-friendly, instead striving to reinvent or co-create new systems. This evolution reflects a maturation of the lab concept – from introductory innovation efforts (getting civil servants to accept new ideas) to advanced innovation stewardship (tackling systemic issues through multi-sector collaboration). It is worth noting that many of the newer labs launching today aspire to these later-generation roles (e.g. focusing on “wicked problems”), but in practice may still struggle to achieve transformation beyond incremental pilots (Cole, 2022a). The generational typology thus also highlights an ambition gap: while next-generation labs set higher aspirations, they face significant challenges in realizing large-scale change.

2.3.3 Conditions for success and common barriers

The rapid spread of public-sector innovation labs has prompted reflection on what conditions enable these labs to succeed and what obstacles commonly impede them. Many labs are short-lived or have only modest impact, leading researchers and practitioners to examine the factors that affect a lab’s effectiveness and longevity (Cole, 2022a; Pólvora & Nascimento, 2021).

On the enabling side, strong leadership support and clear mandates are repeatedly identified as critical. High-level political or executive sponsorship (e.g. a mayor or minister championing the lab) provides legitimacy, resources, and protection – indeed, “chief executive support” was found to be the most significant factor for a lab’s survival

in one study (Tõnurist et al., 2017). Sufficient autonomy is another enabler: labs need freedom to deviate from standard procedures and a safe space apart from bureaucratic pressures to truly experiment (Mulgan, 2014; Roth et al., 2020; Tõnurist et al., 2017). This often entails a delicate balance – being inside government enough to have influence yet sheltered enough to innovate.

Additionally, assembling the right mix of skills and an agile team culture is crucial. Innovation labs thrive with small, cross-disciplinary teams that can "move fast" and iterate solutions without heavy formalities (Tõnurist et al., 2017). Such teams typically include designers, policy analysts, technologists, and others who collectively bring creative and analytical capabilities.

Collaboration is another key success factor: effective labs build strong networks across departments and even outside government, acting as connectors or "silo breakers" (Pólvora & Nascimento, 2021). Engaging stakeholders – whether front-line staff, citizens, businesses, or academia – tends to improve the relevance and uptake of lab solutions (Ferreira & Botero, 2020; McGann et al., 2021).

Finally, the ability to communicate the lab's purpose and demonstrate value is an enabling factor. Because lab activities often deal with intangible concepts (like design processes or cultural change), communicating successes and lessons in clear terms helps maintain support (Ferrarezi et al., 2021).

Conversely, public-sector innovation labs encounter numerous barriers. A fundamental challenge is the inherent conservatism of bureaucratic culture. Many labs struggle against organizational norms adverse to risk and failure – traits deeply ingrained in public administration (Zurbriggen & Lago, 2019). Traditional civil service rules and mindsets (e.g. silos, lengthy procedures, fear of blame) can significantly constrain a lab's ability to implement bold ideas. Relatedly, labs are often institutionally isolated from the agencies they aim to transform. While a degree of autonomy is an enabler, too much separation can mean the lab's work remains peripheral and fails to integrate into mainstream operations (Timeus & Gascó, 2018). This isolation is exacerbated when other staff view the lab as an "outsider" or temporary project.

Another barrier is the dependence on fickle political will. Innovation labs can be vulnerable to shifting political priorities or leadership turnover. Without

institutionalization, a change in administration can lead to a lab being downsized or abruptly closed (Ferreira & Botero, 2020; Timeus & Gascó, 2018). Many labs have been short-lived exactly for this reason – for example, high-profile labs like Helsinki's Design Lab and Australia's DesignGov were dissolved once their initial champions left or priorities shifted (Pólvora & Nascimento, 2021).

Resource constraints pose a further limitation: labs are often expected to do "innovation on a shoestring." Especially in austerity contexts or developing countries, dedicated funding and staff for labs may be minimal, forcing labs to "do more with less" (Ferreira & Botero, 2020). Additionally, a lack of proper skills and capabilities within the public workforce can hinder lab projects – if civil servants are not used to co-design or agile methods, there is a steep learning curve (Ferrarezi et al., 2021). Many public organizations under-invest in innovation training, so labs often face capacity gaps when collaborating with line departments (Cole, 2022a).

Another commonly noted barrier is the difficulty in measuring and proving impact. Because labs deal with complex, long-term change, their most meaningful outcomes (e.g. culture change, learning, avoided costs) can be hard to quantify in the short term. In practice, labs often resort to counting workshops held or prototypes built, which may not satisfy senior officials looking for concrete results (Cole, 2022a; Whicher & Crick, 2019). The lack of robust evaluation frameworks for labs means they sometimes cannot clearly demonstrate their value, feeding skepticism and "innovation hype" backlash (Cole, 2022a).

Finally, labs face the challenge of managing expectations. There is a tendency to overpromise what an innovation lab can deliver – solving "wicked problems" quickly – whereas in reality many lab projects yield only incremental improvements or isolated pilots (Cole, 2022a; Tõnurist et al., 2017).

2.4 GovTech and GovTech labs

As noted in the previous section, PSI labs aim to explore alternatives to traditional bureaucratic processes, though their impact remains contested. Critics argue many labs produce only incremental or short-lived results, with limited systemic change (Cole, 2022a). In response, a new generation of innovation labs has begun to focus on more systemic, co-creative approaches to tackle complex "wicked" problems in closer

collaboration with external partners. (Cole, 2022a) describes these emerging third- and fourth-generation PSI labs as those with more transformative and notes that clarifying their purpose and strategy is critical to achieving impact. In this context, GovTech labs have emerged as a prominent example of this latest generation of public innovation labs, blending the startup accelerator model with public-sector challenges to drive digital innovation in government (Bharosa & Janowski, 2024).

Governments worldwide are increasingly exploring GovTech – an emerging approach to public-sector innovation that leverages private-sector technology and startups to improve government services. At the same time, the concept is still taking shape: academic definitions remain scarce and inconsistent (Hoekstra et al., 2023) and GovTech initiatives often emerge from policy and practice communities ahead of scholarly research (Bharosa & Janowski, 2024). Nonetheless, early studies highlight GovTech's potential to spur innovation, enhance service delivery, and even advance broader public goals like efficiency, transparency, and inclusion (Nose, 2023).

This section reviews the concept of GovTech and the emergence of GovTech labs as a specific form of fourth-generation PSI labs. The author first defines the GovTech and its ecosystem, then introduce GovTech labs as a type of PSI labs and talk about their potential and challenges.

2.4.1 Defining GovTech and GovTech ecosystem

GovTech, short for government technology, generally refers to new digital solutions developed by startups or SMEs in collaboration with governments to enhance public services or internal efficiencies (Hoekstra et al., 2023). In essence, GovTech envisions an innovation ecosystem where private entrepreneurs and technologists partner with public institutions to tackle public problems. For example, Bharosa & Janowski (2024) define GovTech as "an innovation ecosystem where private sector startups and other non-government actors use new technologies to deliver products and services to public sector clients". For the purpose of this thesis, the author adopts this definition for the research conducted. Based on this definition, we can conclude that the ecosystem of actors involved is a key feature of GovTech.

Rather than government innovating in isolation, GovTech relies on networks of startups, SMEs, civic tech developers, researchers, and government agencies working

together on public challenges (Hoekstra et al., 2023). Hoekstra et al. (2023), for example, define a GovTech ecosystem as “networks of citizens, public and private actors (including SMEs and start-ups), academia, and (venture) capital involved in the development of technological solutions to address public challenges”. This ecosystem perspective highlights that GovTech is not merely about procuring off-the-shelf tech but about co-creating solutions through partnerships between the public and private sectors (Bharosa, 2022; Bharosa & Janowski, 2024; Hoekstra et al., 2023). According to OECD (2024), there are three key groups of actors in the collaborative development of digital solutions: the public sector entities, users and innovators (startups, academia and intrapreneurs). Figure 1 illustrates how these actors interact in the GovTech ecosystem in an operating model for GovTech engagement.

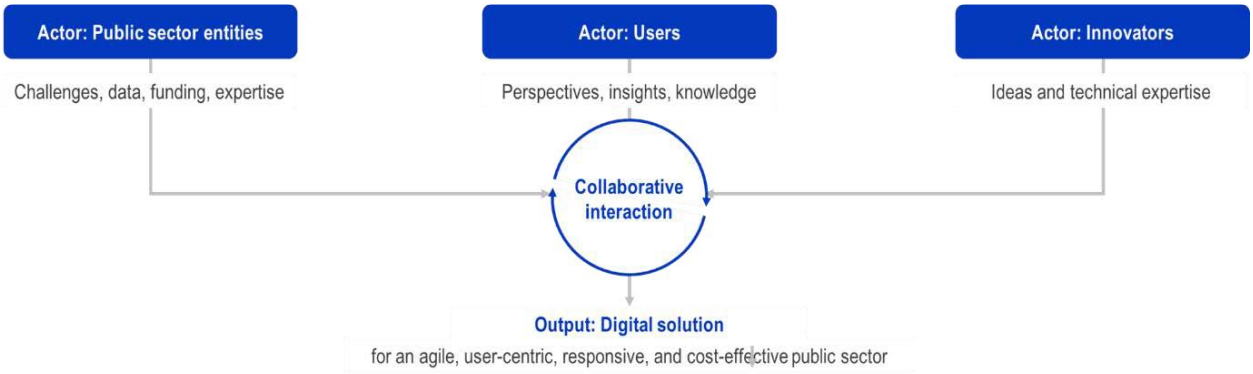

Figure 1. Operating model for GovTech engagement (OECD, 2024)

It is worth noting that operationalizing GovTech is challenging. Because GovTech initiatives involve diverse stakeholders and new modes of collaboration, governments often need to establish enabling conditions – from supportive policies and digital infrastructure to new procurement and partnership models (OECD, 2024). The OECD’s GovTech Policy Framework identifies foundational “building blocks” such as mature digital government infrastructure, public-sector capacity for experimentation, flexible funding and procurement, and an active startup community (OECD, 2024). Notably, the availability of mechanisms like startup acceleration programs to grow and scale innovative solutions is seen as a key building block of GovTech readiness (OECD, 2024).

Importantly, GovTech represents a shift toward whole-of-government digital transformation with the citizen at the center (World Bank, 2020). It also extends to deploying emerging technologies (AI, IoT, cloud) and opening government data to spur civic innovation (World Bank, 2020). In practice, GovTech programs often encourage startups to build solutions for government via hackathons, innovation challenges, and accelerator programs. This creates a public–private innovation pipeline: government identifies problem areas or "challenges," the private sector proposes tech solutions, and promising solutions are piloted or scaled with public sector support (Bharosa & Janowski, 2024). GovTech has also been linked to broader public value creation, for instance by contributing to Sustainable Development Goals or improving equity in service delivery (Labanava & Erlenheim, 2024; Nose, 2023).

2.4.2 GovTech labs as a type of public sector innovation labs

The rise of GovTech labs is rooted in the broader movement of PSI labs. While the definition of a PSI lab is fluid, such labs generally serve as innovation intermediaries: they sit at the intersection of government and external expertise, helping to generate, test, and scale new ideas (Cole, 2022a). Tõnurist et al. (2017) and Cole (2022a) note that initial generations of labs tended to concentrate on incremental improvements and in-house innovation capacity, whereas newer generations pursue more radical, systemic change and external collaboration. This evolution reflects a growing recognition in the public sector that solving complex societal challenges necessitates new collaborative models and openness to external ideas.

One such collaborative model is the accelerator. Originating in the private startup world, accelerators are time-bound programs that provide intensive support to early-stage ventures – typically mentorship, education, networking, and seed funding – to rapidly develop and scale their innovations. According to Crișan et al. (2021), unlike incubators, which might offer long-term workspace and gradual growth support, accelerators run short, cohort-based programs (often 3–6 months) that culminate in a demo-day or pilot launch. In the private sector, accelerators have become a proven model for fostering entrepreneurship and have branched into variants like corporate accelerators, social accelerators, and venture studio programs (Crișan et al., 2021).

GovTech labs are essentially public-sector innovation labs that utilize the accelerator approach to source and develop tech solutions for government needs. They embody a “fourth-generation” lab approach that seeks not just to brainstorm ideas, but to rapidly develop and implement solutions with external partners (Cole, 2022a). They act as bridging intermediaries between government agencies (which supply public problems or datasets) and startups or tech entrepreneurs (which supply innovative solutions). Roberts & Schmid (2022) describe government innovation accelerators as “boundary spanners” that connect users, public stakeholders, and technologists inside and outside of government. In practice, a GovTech accelerator program typically works as follows: public-sector entities (ministries, municipalities, etc.) put forward specific challenges or problem statements (e.g. improving traffic management, digitizing a permit process, enhancing transparency). The accelerator then calls on startups, SMEs, or project teams to propose technological solutions to these challenges, often through open competitions or hackathons. Selected teams enter a time-limited acceleration program where they receive mentorship, access to government partners or data, and sometimes funding to develop a prototype or pilot. The end goal is to pilot the solutions within the government and, if successful, to implement or procure them on a larger scale (Bharosa & Janowski, 2024). This model aims to speed up the adoption of innovation in government by leveraging the creativity and agility of startups, while providing those startups a facilitated entry into the public sector market (Roberts & Schmid, 2022). In essence, GovTech labs serve as a safe collaboration space – or sandbox – where public servants and entrepreneurs co-create solutions under guided conditions.

2.4.3 Potential and challenges of GovTech labs

GovTech labs are often heralded as a promising mechanism to inject innovation into the public sector. Proponents argue that such labs can help governments keep pace with technological change, tap into entrepreneurial talent, and deliver public value in new ways (Bharosa & Janowski, 2024). Indeed, early experiences from Europe and beyond suggest several key strengths of the GovTec lab model:

- Bridging the public–private gap: GovTech lab act as structured conduits for startups to work with government (Hoekstra et al., 2023). This lowers the entry barriers for small tech firms to engage in public projects (Roberts & Schmid, 2022). Traditionally, governments found it difficult to contract with startups due to rigid

procurement rules and trust issues. Accelerator programs mitigate this by vetting startups, aligning them with defined public needs, and often providing a controlled environment (e.g. pilot agreements or sandbox contracts) for experimentation. This boundary-spanning function builds mutual understanding: public officials learn about emerging tech, and innovators learn to navigate public sector requirements (Bharosa & Janowski, 2024; Roberts & Schmid, 2022).

- Speed and agility in problem-solving: Such labs introduce a sense of urgency and agile iteration into public problem-solving. Instead of multi-year reform projects, challenges are addressed in a matter of months through prototypes and iterative feedback between users and developers. This can accelerate the digital transformation of public services by quickly identifying what works or fails (Bharosa & Janowski, 2024; Roberts & Schmid, 2022).
- Ecosystem development: GovTech programs often cultivate a community of GovTech stakeholders – not only startups and government, but also mentors, investors, and academia. By hosting hackathons, meetups, and demo days, labs signal that government is "open for innovation," which can stimulate the local tech ecosystem (Bharosa & Janowski, 2024).
- Public value focus: A distinguishing feature of acceleration by GovTech labs (versus purely commercial accelerators) is their orientation toward public value outcomes. Program designs typically require that solutions demonstrably improve public services, citizen experience, or governmental efficiency (Bharosa & Janowski, 2024). This focus can drive startups to tailor their innovations to deliver social benefits, not just profits.

However, alongside these opportunities, researchers and practitioners have identified significant challenges that GovTech labs face in practice. Several common challenges documented in recent studies of GovTech programs are summarized below:

- Public-private mismatch: Misalignment between government demand and startup supply. Government agencies may not precisely articulate their needs or may seek solutions not readily available in the market, leading to a gap between what startups offer and what the public sector can adopt. Conversely, startups may propose innovative tools that do not neatly fit government's procurement

categories or immediate priorities, causing promising solutions to stall (Bharosa & Janowski, 2024; Hoekstra et al., 2023).

- Procurement and legal barriers: Rigid or outdated procurement processes often hinder GovTech adoption. Without adapted procedures (such as innovation-friendly contracts or sandbox exemptions), GovTech labs struggle to transition prototypes into deployed solutions. Legal constraints, including regulations that prevent using cloud services or data sharing, can also block implementation of startup solutions (Hoekstra et al., 2023; OECD, 2024).
- Capability and culture gaps: Skill and culture gaps between startups and government entities impede collaboration. Public sector staff may lack technical literacy or innovation management skills, making it hard to evaluate and integrate new tech (Hoekstra et al., 2023; OECD, 2024). Likewise, startups often have little experience working with government, leading to frustration with bureaucratic pace and requirements. Differences in work culture – agile vs. hierarchical, risk-taking vs. risk-averse – can lead to misunderstandings or mistrust (Bharosa & Janowski, 2024).
- Institutional void: Absence of clear frameworks and ownership for GovTech within government. GovTech labs frequently operate in an “institutional void” where no single agency is fully empowered to implement outcomes (Bharosa & Janowski, 2024) Ambiguities around who in government will fund, maintain, and scale a pilot solution can result in innovations dying after the pilot phase.
- Trust and risk aversion: Low trust in startups as reliable partners for critical public services. Public officials, especially those burned by past vendor issues, may fear vendor lock-in or failure by unproven startups. Additionally, political and public pressures make governments highly risk-averse; a failed pilot could attract negative scrutiny (Bharosa & Janowski, 2024).
- Scalability and sustainability: Difficulty scaling pilots to full deployments and sustaining them long-term. Many GovTech lab outputs remain at prototype stage or limited trials. Scaling up might require significant funding, integration with legacy systems, or policy changes that are beyond the lab’s scope. Moreover, startups may pivot or fail before their solution can be fully adopted. Ensuring that promising solutions transition to stable, scalable products (with viable

business models or sustained government support) is an ongoing challenge (Bharosa & Janowski, 2024; OECD, 2024).

Despite these challenges, the overall potential of GovTech labs is regarded as significant. Achieving this potential requires careful program design – for instance, choosing challenges wisely, securing high-level political support (to overcome internal resistance), simplifying procurement for pilot projects, and building internal capacity to work with tech firms. Some early lessons from existing GovTech labs emphasize the importance of champions in government who can drive the initiative, the need for clear goals and metrics focused on public value, and the benefit of starting with small, demonstrable wins to gain trust (Bharosa & Janowski, 2024).

2.5 Summary and research gap

This section consolidates the main findings from existing literature and identifies the research gap that emerges, thereby laying the groundwork for the study's focus on differing national approaches to GovTech innovation.

2.5.1 Synthesis of key themes from literature

Across the reviewed literature, there is a clear progression in how governments approach innovation. PSI is widely recognized as essential yet challenging due to institutional inertia and complex accountability structures (De Vries et al., 2016; Demircioglu, 2024; Demircioglu & Audretsch, 2024). This has driven a shift toward collaborative models capable of addressing "wicked" problems through openness and experimentation (Cankar & Petkovšek, 2013; Hartley et al., 2013; Kattel & Mazzucato, 2018). Over the past two decades, many governments have adopted strategic reforms to institutionalize innovation as a core function, appointing innovation officers and implementing policies to support experimentation (Cinar et al., 2019). However, scholars argue that mandates alone are insufficient without enabling structures (Mulgan, 2014) and factors like administrative culture, political priorities, and capacity can influence the choice of model to support innovation (De Vries et al., 2016), which lead to the rise of different approaches to foster PSI.

Scholars broadly identify two key models for organizing PSI: implementing horizontal innovation strategy (Arundel et al., 2019; Kattel & Mazzucato, 2018) and

establishing dedicated innovation units (McGann et al., 2018; Tõnurist et al., 2017), which are not mutually exclusive (Cinar et al., 2024). At the same time, researchers note that there is not universally “best” model for fostering innovation – no one-size-fits-all solution applies to every government (Roberts & Schmid, 2022).

Table 2 compares the horizontal innovation strategy with the dedicated innovation unit model, summarizing their definitions, key strengths, and common challenges as identified in the literature.

The horizontal strategy brings government-wide buy-in and embeds innovation into the fabric of institutions, but it can suffer from weak accountability and slower, incremental progress. In contrast, a dedicated lab creates a concentrated engine for innovation, often producing fast, visible results, yet it may become isolated from the rest of government or dependent on continued sponsorship. The review of existing work sets the foundation for questioning how governments choose among these innovation approaches and what consequences follow from those choices.

Dimension	Horizontal innovation strategy model	Dedicated innovation unit model (Innovation labs & GovTech labs)
Definition	An approach to embed innovation principles across existing public institutions without creating new structures. Implemented through comprehensive policies, public management reforms, and capacity-building efforts to drive system-wide innovation in all agencies (Arundel et al., 2019; Kattel & Mazzucato, 2018).	Establishes specialized entities (e.g., innovation labs, design teams, GovTech labs) with an explicit mandate to experiment and drive change. These units create protected spaces for user-centric or tech-driven pilot projects that can later be scaled into the broader bureaucracy (McGann et al., 2018; Pólvora & Nascimento, 2021; Tõnurist et al., 2017).
Key strengths	Provides strategic legitimacy, political backing, and sustained funding by integrating innovation into high-level policy frameworks (Arundel et al., 2019; Kattel & Mazzucato, 2018). Encourages all departments to pursue innovation as part of their core mandate, aligning experimental projects with widely endorsed goals and performance metrics (Cole, 2022a; Fan et al., 2023). Also fosters capacity-building and a culture of creativity and continuous improvement across the public workforce (Bloch &	Offers a “safe sandbox” environment to test new approaches outside normal bureaucratic constraints, enabling more radical or user-centered experimentation (Pólvora & Nascimento, 2021). Staffed with small, agile, cross-disciplinary teams that can iterate solutions rapidly and apply specialized innovation methods (Tõnurist et al., 2017). Often acts as a boundary spanner, breaking down silos and connecting government with external innovators (startups, citizens) for co-creation of solutions (Pólvora

	Bugge, 2013; Hartley et al., 2013).	& Nascimento, 2021; Roberts & Schmid, 2022).
Common challenges	Diffuse accountability can lead to coordination problems when no single unit owns innovation initiatives, risking fragmentation or loss of momentum (McGann et al., 2018). Embedding new practices into traditional bureaucratic structures often faces cultural resistance, which slows down reforms despite top-level support (Bunduchi et al., 2015; De Vries et al., 2016; Demircioglu, 2024). Moreover, without any dedicated unit, this approach may lack the specialized expertise and creative methods needed for breakthrough innovations, resulting mostly in incremental changes (Tõnurist et al., 2017).	May remain isolated from the wider administration: too much autonomy can render the unit's work peripheral, and risk-averse agency cultures can impede adoption of its ideas (Timeus & Gascó, 2018; Zurbriggen & Lago, 2019). Continuity depends on political and financial support—shifting priorities or leadership can withdraw backing or terminate the unit (Ferreira & Botero, 2020). Additionally, practical barriers such as rigid public procurement rules and mismatches between startup solutions and government requirements often hinder the scaling of pilots in accelerator programs (Bharosa & Janowski, 2024; OECD, 2024).

Table 2. Comparison of horizontal innovation strategy and dedicated innovation unit models.

2.5.2 Identified research gap and study focus

Despite the rich literature on PSI, there remain important gaps in understanding that this thesis seeks to address. First, scholars have noted a lack of comparative research on how different governments adopt and implement innovation mechanisms (Cinar et al., 2019, 2024). Specifically, there is limited knowledge about why certain governments choose one type of innovation initiative over another. As the literature review showed,

both innovation labs and GovTech labs have emerged as prominent models, yet the literature does not yet explain under what conditions or for what reasons a government might favor a focused GovTech lab program versus a broader innovation lab or policy-driven approach. Recent systematic reviews of PSI highlight that context matters – differences in administrative culture, political priorities, and governance traditions can lead to divergent innovation practices – but empirical studies comparing these differences across countries are few (De Vries et al., 2016). This gap points to the need for more nuanced comparative analyses that take into account how national or institutional context influences the selection and design of PSI strategies.

Secondly, there is a gap in understanding the outcomes and impacts of different public innovation approaches. Many studies focus on the processes of innovation (how an innovation lab operates, how innovations are developed) or on initial adoption (the launch of an initiative), but fewer examine what happens after the pilot or initiative concludes (Demircioglu, 2024). It remains underexplored whether initiatives like GovTech labs lead to more sustained innovation capacity or better public services compared to other approaches. For instance, are the solutions from a GovTech lab more likely to be implemented and scaled than those from a traditional innovation lab, or vice versa? Do these models complement each other, or do they represent alternative paths with different benefits and trade-offs? This thesis positions itself to help fill this gap by examining not just the existence of innovation programs, but their perceived benefits and limitations in practice.

The most noticable gap – and the focal point of this research – is the lack of insight into why some governments embrace the model with a dedicated GoveTech model while others do not, and what implications arise from this choice. The emergence of GovTech labs is a very recent development, and academic research on this phenomenon is still nascent (Hoekstra et al., 2023). Early reports and studies (Bharosa & Janowski, 2024; OECD, 2024) have documented the concept and early challenges of GovTech initiatives, but they do not explain the strategic decision-making behind adopting such models. In other words, we have descriptions of what GovTech labs do, but not a clear understanding of why a government would establish a dedicated GovTech lab program in the first place, or why an alternative approach might be preferred elsewhere. The literature reviewed has not examined this kind of divergence in depth. There is,

therefore, a gap in understanding the motivations, contextual factors, and expected benefits that lead one country to implement a GovTech lab and another to pursue a different route to innovation. Moreover, it is unclear from existing research what each approach yields – for example, does Lithuania's GovTech lab yield innovations or capacities that Estonia's model does not, or vice versa? Are there trade-offs in focusing on a startup-driven model versus a policy-driven model?

Addressing these questions is important for both theory and practice. From a theoretical perspective, investigating these differences can contribute to the literature on PSI by integrating insights about how political-administrative context influences innovation strategy. From a practical perspective, understanding why a GovTech lab might be pursued (or avoided) and what outcomes it produces can inform policymakers in other jurisdictions who are considering how best to foster innovation in the public sector. It can provide useful information to policymakers in other countries in which GovTech is still emerging.

3 Methodology

3.1 Research design

To answer the research question posed by this thesis an exploratory comparative case study approach was selected. Case studies offer a valuable methodological framework for deeply understanding specific phenomena within their real-world contexts (Brown, 1998; Merriam, 2009). Given that GovTech is a relatively new phenomenon and comparative research examining how different governments adopt and implement innovation mechanisms, especially considering contextual differences, is scarce (Cinar et al., 2019, 2024; De Vries et al., 2016), this study conducts an exploratory comparative study analysis focused on Estonia and Lithuania and their respective approach to foster GovTech ecosystems.

The decision to employ a comparative rather than single case study approach arises from the methodological limitation identified by Achen & Snidal (1989), who argue that the analysis of individual cases, regardless of their depth and quality, cannot always clearly differentiate unique aspects from those common across similar events. Single case studies, despite offering in-depth insights, often fall short in facilitating broader generalizations applicable to other contexts. Consequently, an inductive research approach was chosen, as the primary goal of this thesis is to explore and subsequently generalize insights derived from the comparative cases (Woiceshyn & Daellenbach, 2018).

The selection of Estonia and Lithuania as comparative cases was guided by pragmatic considerations. Both countries share comparable historical backgrounds as post-Soviet Baltic states and are recognized leaders in digital governance and GovTech innovation (World Bank, 2022). The author's motivation to explore this topic originated from an interaction with a government official from another developing post-soviet country regarding their interest in enhancing GovTech innovation domestically.

Although the initial idea centered on understanding the functioning of GovTech labs specifically, limited existing literature encouraged a broader exploration, leading to the formulation of the central research question and sub-questions:

Research question: Why do some governments embrace the dedicated GovTech lab model while others choose a different approach to foster GovTech?

- What factors influenced the Lithuanian government to adopt a GovTech lab model, and the Estonian government to pursue a different, more horizontally integrated innovation approach?
- What are the perceived benefits and limitations of a GovTech lab compared to a horizontal public innovation strategy in practice?

The first sub-question aims to uncover the motivations, contextual factors, and decision-making processes influencing each country's adoption of its respective innovation model. The second sub-question investigates the practical implications of each model, evaluating their contribution to public-sector innovation capacities, the types of outcomes generated, and the potential trade-offs involved. Collectively, these sub-questions will enable comprehensive exploration and answer the main research question effectively.

A thorough literature review was carried out prior to finalizing the research questions and selecting an appropriate research methodology. This process involved an extensive database search focusing on key concepts relevant to this study, utilizing Web of Science, Limo (KU Leuven), and Google Scholar databases. These databases were selected due to their extensive collections of scholarly research covering diverse topics and reputable journals. A backward and forward citation search strategy complemented the initial database searches to ensure comprehensive coverage of relevant literature.

The selection and screening of articles involved careful examination of keywords, titles, and abstracts. Initially, literature from broader fields such as PSI and innovation policy management was reviewed. Subsequently, the focus narrowed to specific innovation models in the public sector, innovation labs, and finally GovTech labs. To comprehensively identify relevant literature, multiple keywords were employed, including but not limited to: "public sector innovation," "innovation policy management," "public-private partnership*," "public sector innovation labs," and "GovTech."

3.2 Data collection

This research obtained qualitative data; hence the inductive approach was chosen over the deductive and adductive approaches and inductive research often requires qualitative research methods (Merriam, 2009; Woiceshyn & Daellenbach, 2018). The study aimed to explore the perspectives of government officials, policymakers, and innovators involved in fostering public-sector innovation, particularly GovTech innovation, in Estonia and Lithuania.

Interviews, which are the most approached data collection method in qualitative research (Yin, 2018), served as the primary method for gathering empirical data. This was supplemented by an analysis of secondary data sources, including websites of relevant public organizations and policy documents related to the development of GovTech ecosystems.

To achieve comprehensive and relevant insights, the research employed convenience and snowball sampling methods - two forms of purposeful sampling. Convenience sampling entails selecting participants based on factors such as availability, accessibility, and willingness to participate. Snowball (or chain) sampling, one of the most common purposeful sampling techniques, involves identifying additional suitable participants through referrals provided by initial respondents (Merriam, 2009). Participants were selected based on their expertise, experience, and active involvement in fostering GovTech innovation within their respective countries. Potential participants were initially identified and contacted via official organizational websites, with invitations sent through email requesting their participation.

In May 2025, a total of nine in-person and online interviews of approximately one hour took place. Interviewees were chosen based on their roles within the respective GovTech ecosystems, including ecosystem conveners (such as founders or orchestrators) and active participants. Specifically, four individuals from Estonia and five from Lithuania were interviewed. Given the relatively nascent nature of GovTech, these respondents were strategically selected for their influential roles in establishing, developing, and advancing GovTech ecosystems in their countries. Table 3 shows the roles and countries of the respondents. Since each interviewee occupies a unique role within their country's public sector, generalized role titles are employed rather than specific designations to preserve the anonymity of participants. Estonia-based

participants include those involved in horizontal innovation initiatives (e.g. Accelerate Estonia, Innovation Team and Public Sector Innovation Fund under Government Office, etc.), while Lithuania-based participants work with the GovTech Lab Lithuania or related innovation programs:

Role / Position	**Country of work**
Digital Strategy Expert, Ministry of Justice and Digital Affairs	Estonia
Manager at GovTech Lab Lithuania, Innovation Agency Lithuania	Lithuania
Innovation Team Member at Government Office (Prime Minister's Office)	Estonia
Project Manager at Public Sector Innovation Fund	Estonia
Manager at GovTech Lab Lithuania, Innovation Agency Lithuania	Lithuania
Top Manager at GovTech Lab Lithuania, Innovation Agency Lithuania	Lithuania
Co-founder of Accelerate Estonia program	Estonia
Innovation Leader at Accelerate Estonia program	Estonia
Innovation Expert at Innovation Agency Lithuania	Lithuania

Table 3. List of the roles and countries of interviewees.

Consistent with the qualitative nature of case studies, semi-structured interviews were employed, allowing for conversational flexibility and open-ended responses rather than rigidly structured questions (Yin, 2018). Interview questions were carefully crafted based on insights gathered from the literature review and focused on several main themes:

- Broad context and background of innovation efforts in their government/organization,
- Perceptions of different GovTech innovation models,

- The rationale or decision-making behind adopting a particular approach,
- Implementation experiences and stakeholder involvement,
- Outcomes, benefits, and challenges of the approach, and
- Reflections on trade-offs or alternatives and any lessons learned.

The interview guide consisted of approximately 10-12 core questions, each accompanied by additional follow-up prompts as necessary. All participants were informed about the research objectives and specific research questions prior to the interviews. Furthermore, interviewees were assured of confidentiality, with clear communication that quotes or insights would not be attributed directly to individuals without explicit consent.

Prior to the interviews, participants provided their consent for the interviews to be recorded, ensuring that their responses could be accurately transcribed and analyzed for this research later by the author. These transcriptions subsequently served as the foundation for the data analysis phase, helping to illuminate the research questions under investigation.

3.3 Data analysis

Data analysis in this research was conducted manually to allow for an in-depth and nuanced examination of the interview data. Given the manageable volume of qualitative data collected, manual analysis was particularly suitable, facilitating an immersive exploration into the detailed content (Merriam, 2009). Data collection and analysis were carried out simultaneously, following an iterative process, a practice recommended to enhance the depth and accuracy of qualitative analysis (Merriam, 2009). This approach enabled the researcher to refine the inquiry continually, prompting further data collection when gaps or new insights emerged.

Analysis followed a structured inductive approach. Initially, all interview transcripts were read thoroughly to ensure complete familiarity with the data. Following this, open coding (Merriam, 2009) was performed inductively - key words, phrases, and notable expressions were highlighted and annotated to capture initial codes and preliminary insights. During this stage, significant patterns, emerging themes, and unique insights began to surface.

After open coding, the identified codes were grouped into broader conceptual categories based on thematic similarities. This categorization process was facilitated by color coding, which visually represented different themes, concepts, and recurring patterns across the dataset. Through systematic comparisons within and between the coded categories, several dominant themes emerged. These themes addressed the study's research questions and provided structure to the subsequent analysis.

To preserve the authenticity and integrity of participants' perspectives, the results and discussion sections incorporate direct quotes from interviewees. This use of participant quotations ensures transparency in how interpretations were derived, reinforcing the credibility and validity of the findings (Merriam, 2009). The analysis concluded by interpreting the identified themes in the context of the research questions, providing nuanced insights into the approaches Estonia and Lithuania have taken in fostering their respective GovTech ecosystems.

3.4 Use of artificial intelligence as a scholarly support tool

In the process of writing this thesis, artificial intelligence (AI) was employed as a supportive tool to enhance the clarity and efficiency of the writing process. Specifically, OpenAI's ChatGPT (GPT-4o and GPT-4.5 models) was used for language-related tasks such as correcting grammatical errors, improving sentence structure for academic relevance, and formatting existing data into tables based on literature already reviewed. Importantly, these uses were limited to editorial and presentational functions and did not influence the research design, data collection, or analytical interpretations. The integrity and originality of the research were therefore fully preserved. The AI tool functioned analogously to a digital writing assistant, facilitating time efficiency and improved readability. In line with philosopher Arnold Gehlen's concept of the human being as a "*Mängelwesen"* (deficient being), the use of such technological tools underscores the adaptive strategies employed to compensate for human limitations. AI was thus utilized as a scholarly support tool, not as a substitute for critical thinking or analytical reasoning.

4 Results

This chapter presents the findings of the comparative case study, drawing primarily on insights from expert interviews in Estonia and Lithuania. The results are organized thematically, reflecting the core aspects of the research questions. First, the drivers that led each country to adopt its GovTech innovation strategy are examined. This includes the contextual motivations, leadership influences, and strategic considerations that prompted Lithuania to create a dedicated GovTech Lab and Estonia to pursue a more distributed approach. In subsequent sections, the analysis will cover the institutional arrangements and capacities underpinning each model, as well as the perceived benefits and trade-offs as experienced in practice. Throughout this chapter, anonymized quotes from interviewees are used to illustrate common themes and differences. The aim is to provide a clear, evidence-based narrative of *what* choices were made and *why*, as recounted by those directly involved in or knowledgeable about the GovTech initiatives in the two countries.

4.1 Factors behind the GovTech innovation models

Estonia and Lithuania have both built reputations as digitally advanced governments, yet their approaches to fostering GovTech innovation diverged. Interview evidence indicates that this divergence was not coincidental but rooted in different drivers and decision-making dynamics in each country. In Lithuania, the establishment of a centralized GovTech Lab was largely an opportunistic initiative sparked by a small group of innovators and supported by political leaders, filling a perceived gap in the public sector's innovation toolkit. Estonia, by contrast, eschewed a single "GovTech lab" and opted for a horizontal strategy, leveraging its existing digital governance ecosystem and a philosophy of embedding innovation across agencies. Several key factors shaped these choices in each nation.

Lithuania: Bottom-Up Experimentation with Top-Level Backing.

In Lithuania, the decision to create a GovTech Lab was driven by a confluence of grassroots initiative and receptive leadership, rather than by long-range government planning. One Lithuanian interviewee recounted that it *"was not… a strategic decision"* at the outset – the GovTech Lab initially *"came up as a project, one of the pilot projects in Create Lithuania"*. Create Lithuania, a program engaging young professionals in

public projects, provided a sandbox for new ideas. A few team members in this program recognized a lack of mechanisms to bring innovative solutions into government and seized the chance to propose a solution. They *"saw the lack of this kind of system"* in the public sector and noticed that similar innovation labs were *"being established… in other countries"*, which inspired them to *"test it in Lithuania"*. The idea was pitched to the Ministry of Economy and Innovation, whose Minister proved supportive, allowing the concept to take root. As one participant described, *"they pitched it to the Minister [who] was happy with that approach"*, so the GovTech Lab began as an experimental pilot *"at that point"*.

Several practical factors enabled this bottom-up experiment to evolve into an official program. One crucial factor was risk tolerance (or the lack thereof) and external funding. The Lithuanian public sector was initially cautious about investing its own funds in unproven innovation initiatives, as one interviewee noted: *"the public sector is not eager to test with their own money"*. Instead, the team *"found… funding from the European Union"* so that the GovTech Lab approach could be *"tested with EU funding"*, incurring little direct risk to government budgets. This trial phase, funded by EU structural funds for the first few years, demonstrated the model's viability. Only after *"three or four years"* of pilot projects did the government opt to scale up its commitment and *"put the state budget into GovTech"*, transitioning the Lab to sustained national funding. In essence, external resources and early successes were leverage points: EU support allowed the Lab's champions to prove its value, which in turn helped convince political authorities to formally adopt and finance the Lab as part of the Innovation Agency.

Interviewees stressed that high-level support was pivotal at this stage. The endorsement of key ministers and other leaders *"significantly influenced [the Lab's] establishment"*, providing legitimacy and momentum. In summary, Lithuania's GovTech Lab was propelled by enterprising individuals and an enabling environment – political buy-in and EU funds – rather than by pre-existing policy mandates. It filled a strategic void by creating a dedicated hub for GovTech experimentation, in line with the country's broader openness to innovation.

Several interviewees emphasized the role of visionary initiatives and leadership in this process. One expert explained that despite initial fragmentation and a perceived

lack of "innovation-minded people" in the public sector, *"the GovTech Lab emerged from a broader cultural openness toward innovation, initiated through the Create Lithuania program… inspired partly by Scotland's approach… [and] key political leaders' support significantly influenced its establishment"*. In other words, a government-sponsored program (Create Lithuania) provided the initial concept and team for the lab, drawing inspiration from abroad, and top-level political backing - notably from the Ministry of Economy and Innovation - was crucial in turning that concept into an institutional reality.

Tradition of centralization is another factor that influenced the Lithuania's path to the current model to foster GovTech. Lithuania's establishment of a centralized GovTech Lab provided a distinct institutional anchor for PSI, characterized by a clearly defined mandate and centralized governance logic. This centralization aligns closely with Lithuania's broader administrative tradition, described by one expert as highly hierarchical and top-down - *"one of the most centralized countries in Europe in terms of how the government is structured."* The Lab was consciously designed to function as a centralized innovation hub precisely because Lithuanian governance lacks a tradition of horizontal innovation: *"Before GovTech Lab there wasn't such kind of mechanism in place… we didn't have strong experience in cross-institutional innovation"*, a Lithuanian interviewee observed.

Beyond the immediate origin story, Lithuania's motivations for the GovTech Lab also tied into strategic goals of modernizing public services and boosting the innovation ecosystem. Initially, the Lab's activities were very much oriented toward the startup community – essentially treating GovTech as a way to support tech startups by pairing them with public-sector problems. An interviewee from the Lab reflected that in the first year *"they worked on… helping [IT] startups,"* following examples like Scotland's program, but over time the focus shifted to *"public sector efficiency, modernization… working more with the demand side of innovation and not that much with startups*". This shift was driven by the realization that new solutions would only take root if government agencies were ready to implement them: *"without the demand of the public sector there is no point in creating GovTech products… nobody will buy and use them"*. Thus, a key driver became improving the public sector's capacity and willingness to innovate, not just creating opportunities for startups, and for that a centralized lab was

found to be necessary to *"take those public sector organizations by hand"* and build basic innovation capacity and awareness. Over five years, the Lab succeeded in elevating GovTech on the national agenda – one interviewee noted that *"the word GovTech is quite known within the public sector"* now, and the topic even appeared in government program documents after recent elections. This indicates that a political and cultural shift was achieved: what began as a small experiment grew into a recognized pillar of the government's innovation strategy. In short, Lithuania's choice to launch a GovTech Lab was driven by the convergence of an available innovation idea, external support, and the pursuit of both economic and governance objectives – namely, to stimulate the tech sector and to inject new innovative practices into public services.

The presence of a formal Lab gave a concrete structure and identity to these efforts, something interviewees suggested made innovation more tangible and communicable across the government. At the same time, some indications of forward-looking strategic intent for GovTech and broader PSI also emerged. According to one GovTech Lab representative, *"everyone is interested in seeing how it goes and then maybe some decisions will be made"*, implying that the current lab-led model may evolve depending on outcomes and institutional learning. Another expert noted that while current activities are centered around the GovTech Lab, *"if there would be more initiatives like ours… it would be still OK,"* suggesting openness to a more distributed model in the future. At the same time, the country appears to be seeking more structure and alignment: *"We don't actually have a common goal that we are all seeking… it's a bit fragmented"*. Interviewees noted that a roadmap is being developed to move beyond prototypes toward scaling full solutions and to broaden digital skills training in the public sector. They also highlighted upcoming plans to establish a new AI-focused regulatory sandbox under the Innovation Agency – set to launch next year – which GovTech startups could leverage for testing high-risk solutions, signaling a strategic commitment to deepen public-sector innovation capacity in the coming years.

Estonia: Integrating Innovation through Decentralized Leadership.

In contrast to Lithuania's path, Estonia did not establish a singular GovTech lab or accelerator. The interviews reveal that Estonia's horizontal approach to GovTech innovation was underpinned by a deliberate philosophy: that innovation should be woven into the fabric of every government agency, rather than managed by a standalone

unit. PSI in Estonia has long been mainstreamed as part of everyday governance, even if it is not always labeled as “innovation.” The observations regarding Estonia's approach highlight the role of "hidden innovation" in mature digital states. As one official from the Government Office noted, *“all ministries, all agencies… might do something within the field of innovation, but they don’t necessarily talk about it through [that term]. They just do something differently”*. In other words, innovation activity was occurring organically across the government.

One Estonian official emphasized that the government had *“taken [the] approach that we don’t want to create [a] specific public sector innovation… strategy”* or a new centralized program for GovTech. The rationale was that Estonia already had overarching digital development goals, such as those outlined in the Estonia’s Digital Agenda 2030 strategy (Ministry of Economic Affairs and Communications Estonia, 2021), and that *all ministries and sectors needed to “lead the change in their own field”* for these goals to be realized. In other words, innovation was seen as everyone’s mandate. This reflects a policy legacy dating back to Estonia’s e-government breakthroughs in the 2000s: digital innovation had long been treated as a cross-cutting priority, integrated into each domain (from healthcare to education) rather than siloed.

Several factors and enablers explain why Estonia’s government was inclined toward this distributed model. First, the presence of internal champions and networks reduced the perceived need for an external lab. The country’s innovation ecosystem includes not only formal initiatives (discussed below) but also a strong informal community of reform-minded civil servants. As one interviewee noted, there is essentially *“a kind of informal network of innovation-minded people within the public sector… more than 100 people… who keep the movement alive”*, a *“gang of like-minded people”* driven by personal mission to improve government. These individuals act as catalysts inside their respective organizations, pushing innovative ideas and collaborating across agency lines. Such a bottom-up, people-centric dynamic has been a hallmark of Estonia’s public sector innovation – it suggests that individual leadership at various levels played a major role. Instead of relying on a single new institution to disseminate innovation, Estonia benefited from these internal champions and a culture that encourages initiative. One expert attributed this to personal motivations, calling it *“mission-driven”* work fueled by *“personality and individuals”* who have a “*calling… to be change makers*

within the public sector". This culture of empowerment meant that many ministries developed their own innovative projects, creating a sense that innovation was already distributed and no separate GovTech lab was strictly necessary.

Secondly, Estonia's approach was driven by a strategic choice to use existing or lightly-structured programs to address innovation challenges rather than setting up a new lab brand. The government put in place several initiatives in the late 2010s that, collectively, cover much of the same ground a GovTech lab might – but these were embedded in different parts of the government. Notably, the Accelerate Estonia program was launched under the Ministry of Economic Affairs and Communications as a public innovation initiative. However, it was *"pointedly avoiding the label of a GovTech lab"*. According to one interviewee involved in the program, *"Accelerate Estonia is not GovTech in that sense"*, even though it is government-run. The *"main difference,"* he explained, is that while typical GovTech accelerators *"seek… problems to solve within the public sector, we at Accelerate Estonia… solve problems on the regulatory side for private sector companies. So our customer is not the government"*. This highlights a key motive in Accelerate Estonia: rather than primarily using startups to fix public-sector problems, the priority was to remove barriers and enable innovation in the wider economy (for instance, by tweaking laws or regulations to allow new technologies to thrive). Rather than concentrating innovation in one unit, the government's aim has been to integrate it into the work of all agencies. An innovation advisor in Estonia stressed that having many public officials involved in innovation builds capacity across the board: *"the more people you have dealing with innovation, the more people will have the capacity to [do it] next time on their own"*. This sentiment, echoed by several Estonian interviewees, reveals a deliberate philosophy behind the horizontal strategy – it seeks to avoid over-reliance on a single innovation hub by cultivating an innovation mindset government-wide. In practice, this philosophy was backed by the Prime Minister's office: instead of a GovTech lab, the Government Office established a small Innovation Team around 2018, and a Public Sector Innovation Fund, to spur user-centric service redesign and fund pilot projects within agencies and thus to support projects across ministries. These were modest in size but symbolically important: they signaled top-level commitment to innovation (by housing the team at the center of government) while still expecting line ministries to carry innovations forward.

One interviewee described the Government Office's role as a facilitator or "accelerator" for others, rather than an implementing lab itself. An Estonian interviewee credited the Innovation Team with *"a mindshift change… in our public sector"* by promoting design thinking and cross-sector problem solving. It was also noted that in Estonia *"more investments to go into the solutions"* needed – a gap the Innovation Fund was created to address. Estonian interviewees expressed divergent views on the role of the Government Office's Public Sector Innovation Fund in driving GovTech. Some characterized the Innovation Fund as effectively a dedicated GovTech unit. For example, one ministry official noted that the Government Office hosts an Innovation Team and Innovation Fund "*specifically focused on GovTech*". However, this was contested by a member of the Innovation Fund team herself, who clarified that their scope extends beyond GovTech alone: *"We run innovation projects with EU funds... whether it's GovTech, whether it's public innovation procurements… we have different topics we work on… we also have projects that are maybe not that intensely govtech."*. She further emphasized that while they do support GovTech-related projects, *"it's quite diverse"*, indicating that the Fund sees itself as more of a broad enabler of PSI rather than a dedicated GovTech team.

Similar inconsistencies appeared in discussions around Enterprise Estonia's (now operating under the name Estonian Business and Innovation Agency) role in GovTech. One interviewee described them as a stakeholder relevant to the GovTech space, aligning them with the government's wider innovation and procurement efforts. However, other respondents firmly rejected this notion. A senior official with prior experience in Enterprise Estonia bluntly assessed Enterprise Estonia's GovTech contribution as *"zero,"* arguing that the agency *"is all about focusing on private sector companies"* rather than government technology solutions. These divergent interpretations highlight a lack of shared understanding regarding the institutional boundaries and mandates for GovTech promotion in Estonia.

Decentralized governance tradition is another factor that influenced Estonia's approach to GovTech innovation. No single agency "owns" GovTech; instead, various institutions each carry a part of the load. One official from the Ministry of Justice and Digital Affairs explained, *"We have a very autonomous and very decentralized way of doing things… every ministry has its own mandate and digital governance is not*

centrally imposed". As another Estonian official put it, *"We don't want to create a specific public sector innovation or digitalization strategy… just because all of the different fields actually have to implement it in their own way"*. Such a decentralized governance structure naturally aligned with a horizontal innovation model. This allocation of responsibility encourages ownership at the ministry level – as one Lithuanian observer remarked of Estonia's model, embedding innovation roles in ministries can foster *"independence and accountability for innovation at departmental levels"*.

Finally, the role of political leadership and evolving policy frameworks cannot be overlooked in Estonia's case. While no single political decision was made to "reject" a GovTech lab model, the overall approach has been sustained by a series of leadership stances and policy decisions favoring integration over centralization. For example, Estonia's current Digital Agenda 2030, which is currently being updated to tackle gaps and misalignments observed, and the Research, Development and Innovation Organisation Act, which is referred to as *TAIKS* in Estonian (Ministry of Education and Research of Estonia, 2025), emphasize governance structures that coordinate innovation across the whole of government.

Additionally, one of the interviewees pointed out that Estonia is currently developing a "framework for experimentation" – a horizontal regulation to make it easier for both government and companies to test innovative solutions in a safe, sandbox-like environment, enabling regulatory sandboxes in Estonia (Accelerate Estonia, 2025b). One interviewee highlighted that under updated Research, Development and Innovation Organisation Act, the Government Office is now explicitly tasked as *"a central coordinator for public sector innovation"*. The fact that Estonia is contemplating (even modestly) a more coordinated innovation governance suggests that the original driver – a belief in decentralization – is being balanced with a recognition that some central steering is helpful.

Still, at its core, Estonia's strategy has been driven by normative and practical considerations that favored a whole-of-government approach: a conviction that innovation is best achieved when it is not isolated in one unit but rather supported by networking and knowledge-sharing. *"Instead of… ruling it centrally, we have taken [the] approach of helping [agencies] through the process"*, one Estonian official

explained, describing how her team works by guiding ministries in redesigning their own services and bringing in private partners, rather than issuing top-down directives. A horizontal model was seen as allowing more flexibility and tailor-made solutions in each domain (as another expert noted, it gives "*more room to play*" even if it's harder to coordinate) compared to a one-size-fits-all lab. It also aligns with Estonia's small-country pragmatism – with limited resources, embedding innovators in every ministry (even informally) can be more sustainable than concentrating resources in a single new agency.

Comparative Perspective on Motivations.

The divergent drivers in Lithuania and Estonia underscore different theories of change for public innovation Lithuania's approach was driven by a perceived innovation gap and the emergence of a solution to fill it, catalyzed by external examples and supported by political leadership willing to try something new. The creation of the GovTech Lab addressed both a functional need (connecting startups with public problems) and a symbolic one (signaling a modern, startup-friendly government), and it was made possible by tapping into external funding and talent. Estonia's approach, on the other hand, was driven by a continuity of its digital government culture and a conscious choice to internalize innovation. Rather than start a new lab, Estonian policymakers and innovators doubled down on integrating innovation practices into existing institutions – a choice reflecting confidence in the country's digital maturity, a decentralized administrative tradition, and the presence of in-house innovation enthusiasts.

Each approach has its rationale, as interviewees from both countries recognized. A Lithuanian expert acknowledged that a horizontal model like Estonia's can *"embed innovation responsibilities directly within various ministries, fostering independence and accountability… however, such an approach could risk inconsistency due to variations in personal competencies… across institutions"*. At the same time, an Estonian expert acknowledged that Lithuania's centralized approach can offer clear leadership and coordination, noting that "*it makes sense to have a strong, visible unit that everyone knows… it creates a shared understanding and consistency, which is sometimes harder to achieve when everything is distributed*". However, she also noted that this can lead to dependency: "*if you have a very centralized one body responsible…*

then nobody else can innovate", suggesting that such models may risk limiting innovation capacity to the central unit alone.

For now, it is clear that contextual factors shaped each country's GovTech innovation trajectory: Lithuania's centralized GovTech Lab can be traced back to opportunistic innovation entrepreneurship and supportive leadership amid a less developed innovation ecosystem, while Estonia's horizontal model emanated from its established digital governance ethos and an intent to keep innovation as an integral, shared responsibility of public sector rather than a standalone endeavor.

4.2 Benefits and the limitations of the two models

Lithuania's dedicated GovTech Lab model

Benefits

Interviewees highlighted several positive outcomes from Lithuania's decision to establish a centralized GovTech Lab. A foremost achievement has been raising awareness and interest in GovTech across the public sector. The Lab has promoted a *"robust culture of innovation"* in government by actively engaging agencies in tech-driven problem solving. One expert noted that the GovTech Lab *"brings more [of a] different type of thinking into [the] public sector"*, fostering a mindset shift toward openness and collaboration. In practice, the Lab's flagship "Challenge Series" programs have connected public institutions with startups to co-create solutions, *"encourag[ing] active participation in innovation from public sector agencies and SMEs"* and building a collaborative ecosystem. Unlike traditional grants, the Lab not only offers seed funding but also hands-on support — *"facilitation and moderation of the process"* — to help projects succeed. This approach has demonstrated that innovation in the public sector *"requires co-creation,"* involving the public agency, private tech partners, and end-users alike, a new way of working that the Lab has introduced in government.

Another key outcome of the Lab model has been capacity-building for innovation. The GovTech Lab created new programs such as a GovTech Innovation Academy to strengthen public servants' skills in digital innovation and design thinking. One interviewee described this Academy as *"four days [of] trainings for public sector representatives"* on topics like design thinking, born from the realization that *"it's not*

enough just to have one program" – ongoing education was needed to embed innovation competencies. These efforts have started to yield tangible results in public services. Participants pointed to a number of pilot projects (proofs of concept) implemented through the Lab, with around *"70% of institutions"* continuing development of those solutions after the initial pilot phase. In other words, many agencies didn't stop at a prototype; the Lab's intervention *"starts some processes in public sector institutions"* that lead them to carry on innovating. As one interviewee quipped, agencies often *"expect… [a] tower"* of a solution but instead get a modest *"house"* – yet *"a house which they know how it functions"*, so they can keep improving it with new features.

The Lab is increasingly seen as a central resource for public innovation: the Ministry of Economy and Innovation has begun formulating strategic goals for emerging technologies (like AI in government) and *"they see [the Lab] as the key… institution who can help other public sector institutions and guide them in this process"*.

Limitations

Despite these benefits, Lithuania's centralized lab approach comes with notable trade-offs and challenges. A recurring theme in the interviews was the risk of dependency on the GovTech Lab as the sole locus of innovation activity. Several interviewees cautioned that reliance on the Lab for funding and coordination can inadvertently discourage ministries and agencies from pursuing innovation on their own. One expert observed that when a single unit leads GovTech, *"everyone is looking… to GovTech Lab as someone who has to provide"* the necessary *"tools for skills development"*, instead of developing capabilities internally. This dynamic can *"close… opportunities for other centres to emerge"*. In other words, the existence of a dedicated lab may crowd out organic innovation initiatives in agencies. *"One challenge is that reliance on the GovTech Lab… can reduce independent innovation initiatives within individual agencies,"* explained a Lithuanian interviewee, *"creat[ing] a dependency culture rather than encouraging internal, independent innovation strategies."* Another Lab team member agreed that the model can be *"disempowering"* for civil servants, who come to feel that *"money… [and] skills will flow through GovTech Lab"* rather than through their own organizations. The downside of the Lab's helpfulness, in this view, is that it can sap the initiative and empowerment of innovators

outside the Lab's core team. As one interviewee concluded, compared to a more distributed approach, the centralized model might leave people *"not empowered enough"* to innovate independently.

Interviewees from the Lab also acknowledged practical limitations related to resources and sustainability. The GovTech Lab in Lithuania remains a small unit with finite capacity, yet it faces high expectations from across government. With innovation activities concentrated in one hub, *"limited resources is probably the biggest challenge"* to achieving broader impact. One Lab manager noted that the approach is still young and evolving – *"the approach that we are using is quite new in the public sector… so [we] still need to improve it every year"*. In their view, the Lab model *"didn't show [its] full potential yet"* in terms of translating pilots into scalable *"govtech products"* that deliver lasting change. There is concern about ensuring innovations persist beyond the Lab's direct involvement. As one interviewee put it, the goal is to *"make a change in the public sector… that could stay even if the Lab goes [away],"* and *"we still need to work on that"*.

Estonia's horizontal innovation model

Benefits

In Estonia, where no single "GovTech Lab" exists, innovation is pursued through a horizontal, distributed strategy. This approach has yielded its own set of outcomes, primarily by embedding innovation capacity directly within ministries and agencies. Interviewees noted that because each public organization is responsible for innovating in its own domain, some agencies have developed especially strong internal capabilities. *"Every ministry and every agency… might do something in the field of innovation,"* one Estonian interviewee explained, even if they don't always label it as such. In the best cases, certain institutions have made innovation a clear priority. For example, the Estonian Tax Authority was frequently mentioned as a success story of an agency that *"took it as their priority"* to modernize, investing in new solutions and skills. With *"the right people, [the] right management,"* and sufficient resources, such organizations *"developed their own capacities"* and achieved notable results without depending on any external accelerator or lab. These organically innovating agencies demonstrate that a horizontal model can produce pockets of excellence: as one interviewee observed,

"we see certain ministries… where the innovation is fostered much stronger," often driven by internal champions and autonomy to *"do their own thing"*.

Estonia's horizontal model has also benefited from and reinforced a strong culture of cross-sector collaboration and digital advancement. Because innovation responsibilities are not siloed in one unit, inter-agency and public–private partnerships have been pivotal. Interviewees pointed out that many of Estonia's flagship digital solutions were built through close cooperation between government and tech firms. *"One of the best examples would be the whole Estonian digital infrastructure and the X-Road,"* noted an expert, recalling that the public sector early on *"realized that… they [wouldn't] be able to do it themselves."* Instead, *"private sector companies… built the Estonian digital infrastructure,"* in effect forming a long-standing public–private partnership to modernize services. This openness to external expertise is a hallmark of Estonia's innovation success – government agencies readily partner with startups and companies to solve problems, rather than attempting it alone. Moreover, Estonia's small size and cohesive administrative culture have made horizontal collaboration relatively effective. It was noted that in Estonia *"everybody knows everybody,"* which lowers barriers to coordination across organizations. Officials can quickly reach out to peers in other agencies or even ministers, making it *"just a phone call away"* to rally support or expertise, an interviewee explained. This tight-knit network, combined with a generally forward-looking mindset in the civil service, means that *"the public sector hasn't been against change"* – many Estonian officials are *"open minded and welcoming of new innovation"*. As a result, innovative ideas can find receptive audiences throughout the government. Indeed, interviewees cited "usual suspects" like the e-residency program and the X-Road data exchange system as emblematic GovTech successes that emerged from Estonia's broader digital governance ecosystem. These solutions were not the product of a single lab, but of collaborative efforts by multiple institutions integrating innovation into their regular operations.

Limitations

The most frequently mentioned drawback by interviewees was the risk of fragmentation and uneven progress. Without a central coordinating unit, innovation efforts can become dispersed and duplicated. *"Fragmentation and duplication is an issue,"* one Estonian interviewee emphasized, especially in a small country with limited

resources: *"it is not feasible for several organizations to work on a very similar solution… it's not rational."* Yet in a decentralized system *"it's not always easy to pinpoint or realize that there's a duplication somewhere."* In other words, multiple agencies might inadvertently invest in solving the same problem or developing parallel tech tools, wasting effort. The horizontal approach also leads to highly variable outcomes across different ministries. Because each agency's innovation capacity depends on its leadership and staff, the government has *"very uneven… ability to innovate."* Some ministries are *"very innovation driven,"* while others *"just don't see it as a priority at all,"* according to an interviewee who works across departments. This unevenness can reinforce fragmentation: an enthusiastic agency pushes ahead while a less interested one lags behind, and no overarching mechanism ensures consistency.

Another challenge noted in the Estonian model is the difficulty of consciously spreading an innovation culture and vision across the whole government. In the absence of a single flagship program or lab, champions of innovation must work harder to promote new approaches to all stakeholders. As one interviewee reflected, when innovation is horizontal *"it takes a lot of work… to get the message across to policymakers, to decision makers"* about the importance and value of innovative practices. There is no high-profile "GovTech Lab" brand to draw attention, so the case for innovation must be continuously made within each context. By contrast, *"if we had an accelerator, it maybe would be easier to communicate [these] messages,"* the interviewee admitted. Thus, a trade-off of Estonia's approach is the greater effort required to coordinate and communicate innovation goals across disparate institutions. Nevertheless, it is worth noting that not all experts perceived significant downsides. One interviewee contended that they *"don't see any downside"* to having multiple institutions involved, suggesting that the real danger to innovation would be if *"everybody works in silos"* with no collaboration. This perspective implies that as long as agencies coordinate well (as Estonia often does informally), a distributed model can function effectively.

4.3 Recommendations to other countries' public sectors

Interviewees offered practical advice for governments hoping to foster GovTech innovation. Many stressed the importance of having a solid foundation before launching ambitious projects. For example, one Estonian interviewee warned that *"before*

starting... flashy projects, you should have the basics covered," meaning that core digital infrastructure and systems must be in place first. Likewise, a Lithuanian participant emphasized team composition: governments should seek *"the right balance"* in innovation teams by including *"crazy people, who want to explore something completely new" alongside those "with... bureaucratic experience."*

Interviewees also recommended close collaboration with external partners and careful attention to local context. One Estonian respondent urged governments to *"work closely and talk with private sector and universities,"* highlighting that public–private collaboration can inject new ideas and skills. This same interviewee cautioned that innovation should not be pursued blindly: *"there's no point in innovating just for the sake of innovating. It's more about the capacities, the culture, the way of thinking."* A Lithuanian expert made a related point about tailoring strategies to each country's circumstances. She suggested that *governments "experiment with different models because every country is different"* and that *"there is no universalized approach"* to GovTech. She also encouraged fostering *"international collaboration,"* noting that exchanging ideas across borders had *"given a lot"* to her own team's work. An Estonian interviewee likewise warned that solutions cannot simply be copied from one setting to another: *"It's never possible to copy paste one country solution to another, because the environment... conditions are so different."*

Several participants urged a cautious, incremental approach to implementation. For instance, a Lithuanian interviewee advised governments to *"start small and test it on a small scale before investing big resources and funding into that,"* reflecting a preference for piloting ideas before committing major budgets. Echoing this, another respondent observed that innovation teams should pick issues that are important yet tractable: *"It's always necessary to choose really high priority social topics, but to find things that you can do,"* instead of taking on problems that are too broad or difficult to deliver quickly. This advice suggests that countries should focus GovTech efforts on clear, concrete goals and iterate gradually, rather than overreaching.

Additionally, several interviewees, particularly from Lithuania, emphasized the role of public procurement frameworks in enabling innovation, stating that *"governments should focus significantly on improving public procurement processes to effectively purchase innovations,"* arguing that traditional procurement methods *"do not yet reflect*

the needs of more agile and experimental innovation approaches." This recommendation is a lessons-learned from the early challenges faced by them: *"we thought that we will support startups and they will bring the new solutions… But then the public sector were not aware how to procure them, were not aware how to use them, and there was huge frustration from both sides."*

4.4 Summary of findings

The interviews reveal that Lithuania and Estonia adopted different innovation strategies to foster GovTech, driven by different contextual factors. The practical impacts of these models were also contrasting. Table 4 summarizes the key factors behind each country's model, and Table 5 presents the summary of the reported benefits and limitations of each approach. Additionally, the interviewees recommended the other countries' public sectors to (1) solidify their basic digital infrastructure and governance, (2) assemble balanced teams combining creativity with public-sector know-how, (3) collaborate with external experts while remaining aware of local context, and (4) pilot innovation projects on a small scale with achievable targets.

Factor category	Lithuania's dedicated GovTech Lab model	Estonia's horizontal innovation strategy model
Origin	Bottom-up initiative from "Create Lithuania" program; opportunistic; political backing	Organic evolution; continuation of digital governance ethos; deliberate avoidance of new central unit
Funding Mechanism	Initially EU structural funds (de-risking); later state budget	Existing national budgets; EU structural funds for specific projects
Administrative culture	Centralized, hierarchical; lack of cross-institutional cooperation tradition	Decentralized, autonomous ministries; strong informal networks
Primary strategic goal	Modernize public services; stimulate startup ecosystem; build internal demand-side capacity	Embedded innovation; user-centricity; better public services; regulatory hacking
Ecosystem maturity at inception	Low; needed "take by hand" approach to build foundational capacity	High; established digital infrastructure and ingrained innovation practices
Internal innovation dynamics	Perceived lack of "innovation-minded people"; need for coordination and a focal point	Strong internal champions and an informal network of "innovation minded-people"; "hidden innovation" occurring organically across government

Table 4. Comparative Factors Influencing GovTech Innovation Models (Lithuania vs. Estonia)

	Lithuania's dedicated GovTech Lab model	**Estonia's horizontal innovation strategy model**
Benefits / Outcomes:	- Institutionalized co-creation (e.g. Challenge Series connecting agencies with startups) - Capacity-building (GovTech Innoation Academy, trainings to public servants) - High pilot continuation - Raised innovation awareness; GovTech is now a known agenda item - Central hub fosters consistent strategy across agencies	- Strong internal innovation capacity (some ministries/agencies self-innovate effectively) - Pockets of excellence driven by champions with autonomy - Robust public–private collaboration (e.g. co-built X-Road digital infrastructure) - Horizontal model leverages existing budgets and partnerships; no dependency on one unit - Cohesive administrative culture ("everybody knows everybody") eases cross-agency coordination
Limitations / Challenges:	- Risk of dependency: ministries may wait for Lab's funding/support instead of innovating internally - Potential crowding-out of ministry/agency-led initiatives (disempowerment of staff) - Limited Lab resources and capacity (small team, high demand) - Difficulty scaling the impact; sustainability of govtech products beyond lab environment	- Risk of duplication (several ministries/agencies working on a very similar solution). - Uneven ability across ministries/agencies to innovate - Difficulty of consciously spreading an innovation culture and vision across the whole government

Table 5. Perceived Benefits and Limitations of GovTech Innovation Models

5 Discussion

This section synthesizes the key findings from the comparative study of Estonia and Lithuania's GovTech innovation models, directly linking them to the initial research questions, while situating the empirical observations within the broader academic literature. The discussion also highlights unexpected results, offering deeper insights into the complexities of fostering PSI. Finally, it recognizes the limitations of the research and proposes future research directions.

5.1 Discussion of findings and research questions

The research clearly demonstrates that while both Estonia and Lithuania are widely recognized as public-sector digital innovators and GovTech leaders in Europe, they have adopted fundamentally different models for fostering PSI, particularly in the GovTech domain. Lithuania established a dedicated GovTech Lab, functioning as a dedicated unit to drive tech-based solutions for public sector challenges. This approach is characterized by Lithuanian experts as *"definitely centralized"*. In stark contrast, Estonia opted for a predominantly horizontal, integrated strategy, embedding innovation practices across existing government institutions and relying on a network of diverse, often less formally labeled, initiatives. Estonian experts consistently described their country's approach as a *"distributed horizontal effort"*.

The overarching message for readers is that there is no single "best" or universally optimal model for fostering GovTech innovation. Instead, the effectiveness and suitability of a dedicated GovTech lab versus a horizontal strategy are deeply contingent on a country's administrative culture, existing digital maturity, prevailing political will, and the specific innovation challenges it aims to address.

Furthermore, these models are not static; both countries show signs of evolving their approaches, suggesting a dynamic interplay between centralization and decentralization in the pursuit of sustained PSI. The effectiveness of a model hinges on its alignment with the specific national ecosystem and its capacity to adapt to emerging needs. As one Estonian expert articulated, *"It's never possible to copy paste one country solution to another, because the environment, the external and internal conditions are so different"*. Similarly, a Lithuanian expert encouraged governments to *"experiment with different*

models because every country is different" and emphasized that *"there is no universalized approach".*

A crucial observation from the study is that the adoption of these divergent models was often less a deliberate, top-down strategic decision and more an emergent outcome of pre-existing administrative traditions, historical digital development, and opportunistic initiatives. For Lithuania, the GovTech Lab's establishment *"was not… a strategic decision"* at its outset, but rather *"came up as a project, one of the pilot projects in Create Lithuania".* This indicates an organic, bottom-up origin rather than a grand, pre-planned strategic design.

Similarly, Estonia's horizontal approach is described as a continuation of its *"long digitalisation transformation journey"* and a culturally ingrained approach where innovation is so embedded that ministries and agencies *"just do something differently"* without necessarily labeling it as "innovation". This suggests a natural evolution rather than a discrete decision point. This challenges the conventional view of strategic planning in public administration, where major policy shifts are often assumed to be the result of deliberate, rational choices by central authorities. Instead, it highlights the significant influence of path dependency, existing bureaucratic structures, and the entrepreneurial efforts of individuals or small groups within the public sector. For policymakers and scholars alike, this implies that understanding the evolutionary trajectory and cultural embeddedness of innovation capacity is as crucial as analyzing formal strategic documents or organizational charts. Designing successful innovation models may require identifying and nurturing existing informal networks and cultural predispositions, rather than attempting to impose entirely new structures from scratch.

The empirical findings from this comparative study align significantly with existing academic literature on PSI, while also offering nuanced contributions to the understanding of GovTech. Estonia's horizontal approach resonates with scholarship emphasizing mission-oriented innovation policy and the embedding of innovation into the core of public management. The observed reality of innovation *being "mainstreamed as part of everyday governance"* and ministries being expected to *"lead the change in their own field"* directly supports the theoretical notion of building "dynamic capabilities" across institutions and fostering a system-wide culture of continuous improvement. However, the challenges identified in Estonia, such as

"fragmentation and duplication", are consistent with the literature's identified drawbacks of horizontal strategies. The incremental nature of many Estonian innovations also reflects the challenge of achieving radical breakthroughs without a dedicated unit.

Conversely, Lithuania's GovTech Lab exemplifies the rise of dedicated innovation units in the public sector, serving as "safe spaces to innovate" and acting as "innovation intermediaries". Its focus on connecting government problems with entrepreneurial solutions through an accelerator-like model aligns with descriptions of "fourth-generation" labs and "boundary spanners" that connect various stakeholders. The benefits observed in Lithuania, such as institutionalized co-creation to bride the public-private gap,and fostering ecosystem development by raising awareness and capacity-building, are well-supported by existing scholarship on GovTech labs. However, the challenges faced by Lithuania's GovTech Lab – including risk of dependency, resource and capacity gaps, and scalability issues – are also strongly reflected in the literature.

The study significantly contributes to the broader understanding of PPPs and the development of GovTech ecosystems. It reinforces the crucial role of PPPs in PSI, as highlighted by Carbonara & Pellegrino (2020) and Hartley et al. (2013). Both countries, despite their different models, actively engage external actors (private firms, startups, academia), confirming that collaborative innovation is a necessity for addressing complex policy challenges. The findings also deepen the understanding of GovTech ecosystems by providing empirical evidence of how different national contexts shape the "building blocks" presented by OECD (2024). Lithuania's experience underscores the importance of "startup acceleration programs" as a key building block for less mature ecosystems, while Estonia's case highlights the significance of "mature digital government infrastructure" and existing "public-sector capacity for experimentation" as foundational elements that enable a more distributed approach.

A key observation from the study is that the suitability of a centralized lab versus a horizontal strategy might be tied to the *maturity* of a country's PSI ecosystem, implying these models could represent developmental stages. This perspective is directly supported by a Lithuanian expert who stated that *"these two models... are more like stages of development"*. This suggests a causal relationship: a less mature ecosystem benefits more from a centralized, guiding entity to kickstart and institutionalize

innovation, provide a clear focal point, and build foundational skills. This centralized hub can then serve as a catalyst for broader cultural change and capacity building. Once a certain level of maturity is achieved, a more distributed, horizontal approach becomes feasible and potentially more sustainable, as innovation capacity is then embedded across multiple institutions. For policymakers in countries considering GovTech innovation, this implies a critical initial assessment of their existing public sector's digital maturity, risk appetite, and innovation culture. A dedicated lab might be a necessary "first stage" intervention for less mature contexts to create a visible impact and build foundational capabilities. More mature contexts, however, might find horizontal integration more efficient and sustainable, leveraging existing decentralized capacities. This reframes the "either/or" choice as a "when/how" question, emphasizing an evolutionary pathway for PSI.

A significant and unexpected finding is the "grass is greener" phenomenon, where experts from both Estonia and Lithuania expressed a desire for elements of the other country's model. Estonian interviewees, operating within a horizontal system, acknowledged the benefits of a centralized unit for *"clear leadership and coordination,"* noting it *"makes sense to have a strong, visible unit that everyone knows… it creates a shared understanding and consistency, which is sometimes harder to achieve when everything is distributed"*. One Estonian expert even stated, *"I think we kind of need something similar in Estonia as well"* to bring *"central knowledge and understanding"*. Conversely, Lithuanian interviewees, while praising their centralized GovTech Lab, recognized its limitations. They noted that the centralized Lab *"might be a little bit disempowering"* for other institutions and that they *"should move to some more like hybrid like centralized but also decentralized model"*. This phenomenon directly contradicts a simplistic view of distinct, static models. At the same time, it resonates with Karo and Kattel’s conceptualization of the tension between Weberian and Schumpeterian models of state organization. In their framework, innovation systems should not rigidly commit to either centralized, rule-based (Weberian) bureaucracies or decentralized, experimental (Schumpeterian) units; instead, they argue for a hybrid morphology that leverages the strengths of both configurations (Karo & Kattel, 2016a). The expressed desires for elements of the "other" model indicate a continuous learning process and a recognition that the "optimal" solution is not a fixed state but an adaptive equilibrium. This suggests that governments are constantly seeking to balance the

benefits of centralized coordination, visibility, and focused expertise (strengths of the dedicated lab model) with the advantages of widespread capacity, embedded innovation, and reduced dependency (strengths of the horizontal model). This challenges the notion of a definitive "best practice" and emphasizes continuous learning and adaptation within complex administrative systems.

Another unexpected result is Lithuania's strategic shift from a primary focus on supporting startups to prioritizing public sector demand for innovation. The Lithuanian GovTech Lab, initially *"more concentrated on the startups"* and aiming to *"diversify the procurement market"* by bringing in smaller tech firms, underwent a significant, *"natural"* strategic shift. It quickly realized that *"without the demand of the public sector there is no point in creating GovTech products… nobody will buy and use them".* Consequently, the Lab's focus *"shifted to public sector efficiency, modernization… working more with the demand side of innovation and not that much with startups".* This evolution reveals a crucial learning curve in GovTech implementation. It demonstrates that simply fostering a supply of innovative solutions from startups is insufficient if the public sector lacks the internal capacity, willingness, or appropriate procurement mechanisms to adopt them. The initial assumption that a vibrant startup ecosystem alone would drive PSI was tempered by the reality of bureaucratic inertia and risk aversion within government. This highlights the critical importance of internal public sector readiness and demand-side capacity as a prerequisite for successful GovTech adoption, rather than merely focusing on external private sector engagement.

While the general challenge of public procurement is acknowledged in literature, the pervasiveness and intensity of procurement challenges across both countries, particularly in Lithuania, emerged as a strong and consistent theme from the interviews. Lithuanian interviewees stressed that traditional procurement *methods "do not yet reflect the needs of more agile and experimental innovation approaches"* and that the public sector is *"super afraid of corruption"* when engaging with businesses, leading to an unwillingness to deviate from rigid rules. Estonian experts echoed this, highlighting the difficulty of procuring innovation when the outcome is unknown and the need for *"better drafts for the procurement proposals and for the agreements"*. This finding elevates procurement from a mere administrative hurdle to a fundamental systemic barrier that *can "block implementation"* and *"hinder the scaling of pilots"*. It

underscores that even with dedicated innovation units or embedded innovation cultures, the inability to flexibly and effectively purchase novel solutions remains a critical constraint on achieving widespread impact.

5.2 Limitations of the research

This study, while offering valuable insights into the comparative approaches of Estonia and Lithuania in fostering GovTech innovation, is subject to several limitations that warrant acknowledgment. These limitations primarily stem from the inherent constraints of conducting qualitative research within a specific timeframe and scope, particularly when engaging with high-level public sector professionals.

Firstly, the research faced practical limitations concerning the accessibility and availability of interviewees. The study aimed to gather perspectives from individuals holding top-level government positions and influential roles within their respective GovTech ecosystems. While nine interviews were successfully conducted, the demanding schedules of these senior officials, coupled with the finite timeframe allocated for this thesis, meant that securing additional interviews or follow-up discussions was challenging. Some potential interviewees, despite their relevance and expertise, were unavailable due to extensive commitments, making it impossible to incorporate their valuable opinions. This constraint, while unavoidable, means that the findings represent the perspectives of a specific group of key stakeholders, and a broader range of voices might have offered even richer or alternative insights.

Secondly, the scope of this comparative study was intentionally limited to two countries: Estonia and Lithuania. While these nations were selected due to their comparable historical backgrounds as post-Soviet Baltic states and their recognized leadership in digital governance and GovTech innovation, focusing solely on these two cases inherently restricts the generalizability of the findings. The unique administrative cultures, political landscapes, and digital maturity levels of Estonia and Lithuania, as highlighted in the discussion, mean that the observed factors influencing their GovTech models and their subsequent outcomes may not be directly transferable to other national contexts. Expanding the research to include a wider array of countries with diverse governance structures, economic conditions, and stages of digital development could provide a more comprehensive understanding of the various pathways governments take

to foster GovTech. Such an expansion would allow for more robust cross-national comparisons and potentially reveal additional influencing factors or trade-offs not evident in the current two-country analysis.

5.3 Future directions for research

Building upon the findings and acknowledging the limitations of this study, several promising avenues for future research emerge. One critical area for further investigation is the long-term sustainability and scalability of GovTech solutions. While both the centralized lab and horizontal approaches can successfully initiate pilot projects and foster innovation, a persistent challenge identified in this study is the difficulty in transitioning these pilots into widespread, sustainable solutions within the public sector. Future research could involve longitudinal studies tracking successful GovTech initiatives beyond their initial implementation phase, analyzing factors such as sustained funding models, integration with legacy systems, and the development of internal public sector capacity for long-term maintenance and adaptation.

Another compelling direction involves a deeper exploration of hybrid innovation models and their evolutionary pathways. This study revealed that experts from both Estonia and Lithuania expressed a desire for elements of the other country's approach, suggesting a dynamic tension between centralization and decentralization. Future research could systematically analyze how governments transition between different innovation models or consciously adopt hybrid approaches that combine the strengths of both dedicated units and horizontal strategies.

Furthermore, given the significant role of digital maturity and administrative culture in shaping GovTech strategies, future research could conduct more extensive comparative analyses across a broader spectrum of countries at varying stages of digital development. For instance, studies could compare countries with nascent digital infrastructures to those with highly advanced e-governance systems, or contrast nations with highly centralized bureaucracies against those with more decentralized administrative traditions. Such research could refine the *"stages of development"* hypothesis proposed in this study, providing a more comprehensive framework for understanding the contextual determinants of GovTech innovation.

6 Conclusion

The contemporary landscape of public governance is marked by an increasing imperative for innovation, driven by complex global challenges ranging from rapid digitization to societal inequalities. This thesis has significantly contributed to the evolving discourse on PSI by providing a nuanced comparative analysis of Estonia's and Lithuania's models to foster GovTech.

The central problem that motivated this thesis is a fundamental theoretical and practical puzzle: why do different governments choose divergent models for PSI, and what are the implications of these strategic choices for their outcomes? There is no universally optimal organizational design for promoting innovation, and while the absence of a single best model does not render the chosen approach inconsequential, these models represent alternative paths, each with its own rationale and tools. This study undertook a comparative analysis of Estonia and Lithuania, two nations widely recognized as GovTech leaders in Europe. Despite their shared standing in digital governance, these countries have adopted notably different models: Lithuania launched a dedicated GovTech Lab, while Estonia pursued a horizontal, integrated strategy, leveraging different initiatives, pointedly avoiding a standalone GovTech lab.

Against this backdrop, the thesis was guided by the central research question: "*Why do some governments embrace the dedicated GovTech lab model while others choose a different approach to foster GovTech?*" This overarching inquiry was systematically addressed through two sub-questions, providing a structured pathway to comprehensive understanding and aiming to deepen the theoretical understanding of how governance contexts shape innovation strategies while offering practical insights for policymakers.

The first sub-question, "*What factors influenced the Lithuanian government to adopt a GovTech lab model, and the Estonian government to pursue a different, more horizontally integrated innovation approach?*", revealed distinct drivers rooted in each country's historical, administrative, and political contexts. Lithuania's dedicated GovTech Lab was largely an opportunistic initiative that emerged from bottom-up experimentation rather than a pre-planned, top-down strategic decision. It gained essential top-level backing from the Ministry of Economy and Innovation and was enabled by initial funding from an external source - the European Union, de-risking the

venture. This centralized approach aligned with Lithuania's generally highly hierarchical and top-down administrative tradition, where a perceived lack of cross-institutional innovation mechanisms made a dedicated hub a logical choice to focus on helping public sector organizations and build foundational innovation capacity. The Lab's strategic goal evolved from supporting startups to prioritizing public sector efficiency, modernization and working more with the demand side of innovation, recognizing the need for government agencies to be ready to implement solutions. In contrast, Estonia's horizontal approach was underpinned by a deliberate philosophy that innovation should be woven into the fabric of every government agency, reflecting its long-standing digital governance ethos. The perceived need for an external lab was diminished by the presence of internal champions and networks - a strong informal community of innovation-minded civil servants fostering cross-agency collaboration. Estonia strategically leveraged existing or lightly-structured programs, such as Accelerate Estonia, a small Innovation Team in the Government Office, and Public Sector Innovation Fund, aligning with its decentralized governance tradition where ministries operate with significant autonomy.

The second sub-question, "*What are the perceived benefits and limitations of a GovTech lab compared to a horizontal public innovation strategy in practice?*", highlighted a unique set of outcomes for each country. Lithuania's dedicated GovTech Lab model significantly raised awareness and interest in GovTech and fostered a robust culture of innovation by introducing a different type of thinking into government operations. It institutionalized co-creation and engaged in capacity-building for innovation, leading to a high pilot continuation rate. However, concerns included the risk of dependency on the GovTech Lab as the sole locus of innovation activity, potentially disempowering civil servants and crowding out independent initiatives. The Lab also faced limited resources and capacity and challenges in translating pilots into scalable GovTech products for lasting change. Estonia's horizontal model fostered strong internal innovation capacity in some organizations, with pockets of excellence emerging from autonomous agencies. It benefited from and reinforced robust public-private collaboration, with flagship digital solutions co-built with tech firms. Estonia's cohesive administrative culture and small size facilitated cross-agency coordination. The main drawbacks were the risk of fragmentation and uneven progress, leading to dispersed and duplicated efforts, and uneven innovation ability across ministries due to

reliance on individual leadership. The absence of a single flagship also made it harder to consciously spread an innovation culture and vision across the whole government.

Collectively, the answers to these sub-questions demonstrate that the choice of innovation model is not arbitrary but deeply context-dependent. Lithuania, with a more centralized administrative tradition and a less developed initial innovation ecosystem, found a dedicated GovTech Lab to be an effective mechanism to kickstart and centralize innovation efforts, build foundational capacity, and raise awareness. Estonia, with its established digital governance ethos, decentralized administrative culture, and existing networks of internal champions, found a horizontal approach more aligned with its operational reality, embedding innovation as a shared responsibility. This reinforces that it is not possible to copy paste one country solution to another, because the environment, the external and internal conditions are different. A crucial observation is the hypothesis that these models might represent developmental stages. A less mature ecosystem may benefit more from a centralized, guiding entity to kickstart and institutionalize innovation, providing a clear focal point and building foundational skills. Once a certain level of maturity is achieved, a more distributed, horizontal approach becomes feasible and potentially more sustainable, as innovation capacity becomes embedded across multiple institutions. This reframes the "either/or" choice of innovation models as a "when/how" question, emphasizing an evolutionary pathway for PSI.

In addition to answering the research questions, the study revealed several key insights with broader implications. The "grass is greener" phenomenon, where experts from both countries expressed a desire for elements of the other's model, indicates a continuous learning process and an adaptive equilibrium in PSI. This suggests governments constantly seek to balance centralized coordination with widespread capacity. Furthermore, Lithuania's experience highlighted a strategic shift from a primary focus on supporting startups to prioritizing public sector demand for innovation, recognizing that without the demand of the public sector there is no point in creating GovTech products. This underscores the critical importance of internal public sector readiness and demand-side capacity for successful GovTech adoption. Finally, the pervasive and intense challenge of public procurement emerged as a fundamental systemic barrier to GovTech adoption and scaling in both countries, as traditional

methods do not yet reflect the needs of more agile and experimental innovation approaches.

Additionally, this study offers several key recommendations for other public sectors considering GovTech innovation. It is crucial to first establish solid basic digital infrastructure and governance before embarking on ambitious projects. Building innovation teams with a balanced mix of creative thinkers and those with bureaucratic experience is vital. Governments should actively foster close collaboration with external partners, such as the private sector and universities, while always tailoring strategies to their unique local context, recognizing that there is no universal 'copy-paste' solution. An incremental approach, starting with small-scale pilots on high-priority yet tractable issues, is advisable before committing significant resources. Finally, a fundamental focus must be placed on reforming public procurement processes, as traditional methods often hinder the agile and experimental nature of GovTech solutions.

While this study offers valuable comparative insights, it is subject to limitations, including practical constraints in interviewee accessibility and its scope being limited to two countries. Building upon these insights, future research could explore the long-term sustainability and scalability of GovTech solutions, delve deeper into hybrid innovation models and their evolutionary pathways, conduct broader comparative analyses across diverse countries, and focus specifically on public procurement reform.

Ultimately, this thesis offers a contribution to the evolving landscape of PSI. By providing a nuanced comparative analysis of Estonia's and Lithuania's models to foster GovTech, it enriches the theoretical understanding of how diverse governance contexts shape innovation choices and offers practical insights for policymakers. This research aims to inform the design of effective, sustainable, and impactful GovTech strategies that truly enhance public services and deliver tangible public value in an increasingly complex and digitized world.

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Appendix

A List of interviewees

Interview transcripts can be provided upon request.

Interviewee	Role / Position	Country of work
A	Digital Strategy Expert, Ministry of Justice and Digital Affairs	Estonia
B	Manager at GovTech Lab Lithuania, Innovation Agency Lithuania	Lithuania
C	Innovation Team Member at Government Office (Prime Minister's Office)	Estonia
D	Project Manager at Public Sector Innovation Fund	Estonia
E	Manager at GovTech Lab Lithuania, Innovation Agency Lithuania	Lithuania
F	Top Manager at GovTech Lab Lithuania, Innovation Agency Lithuania	Lithuania
G	Co-founder of Accelerate Estonia program	Estonia
H	Innovation Leader at Accelerate Estonia program	Estonia
I	Innovation Expert at Innovation Agency Lithuania	Lithuania

B Interview guide

Thank you for taking the time to speak with me. I am conducting research for my master's thesis on how different governments foster public sector innovation, specifically in the GovTech domain (government technology solutions). The study focuses on two distinct approaches: one approach involves setting up a dedicated GovTech accelerator or innovation lab to work with startups, and the other relies on a more horizontal strategy where innovation is encouraged across government without a single dedicated unit. For example, Lithuania has established a GovTech Lab to source tech solutions for public-sector challenges, whereas Estonia has taken a broader innovation route without creating a GovTech-specific accelerator. The aim is to understand why each country chose its approach and what the outcomes or trade-offs have been.

There are about 10 to 12 open-ended questions in total and follow-up questions. The conversation is semi-structured, so please feel free to elaborate or bring up any relevant points even if I don't explicitly ask. There are no right or wrong answers – I'm interested in your honest insight based on your knowledge and role.

Before we start, I want to assure you that your responses will be kept confidential. Findings from all interviews will be aggregated in my thesis, and any quotes or information used will not be directly attributed to you by name without your permission. If there are any questions you prefer not to answer or can't speak to, that's absolutely fine – just let me know.

I would like to ask for your consent to record this interview. Do you agree with the interview being recorded?

Do you have any questions before we begin?

Semi-Structured Interview Questions

1. Background and Role: To start, could you briefly describe your role and how you have been involved in public sector innovation or GovTech initiatives in your work?

2. Overall Innovation Approach (Context): How would you characterize your government's overall approach to public sector innovation and GovTech? Would you say it's driven by a specific program or unit (like an innovation lab/accelerator), or is it a more distributed, horizontal effort across ministries and agencies?

Follow-up prompts:

- What are some key initiatives or strategies the government has implemented to promote innovation/govtech solutions in the public sector?
- In your view, who are the main players or institutions driving public innovation in your country (central agencies, ministries, private sector partners, etc.)?

3. Perceptions of Dedicated vs. Horizontal Models: Governments can either create dedicated innovation units (such as GovTech labs or accelerators) or opt for a horizontal strategy where innovation is integrated into existing structures. Based on your experience, what do you see as the key differences between these two approaches in terms of how they work or what they achieve?

Follow-up prompts:

- What do you think is the value or strength of having a specialized program like a GovTech accelerator?

- Conversely, what do you think are the advantages of a more mainstreamed approach (embedding innovation in every department without a single dedicated lab)?
- Have you observed any cultural or organizational differences when innovation is driven by a special unit versus when it's part of everyone's mandate?

4. Rationale for Chosen Approach (Decision Factors): Focusing on your country's approach, what do you believe were the main factors or motivations that led the government to choose this model for fostering GovTech innovation? In other words, why did [Estonia/Lithuania] decide to [pursue a horizontal strategy / establish a GovTech lab] instead of the other approach?
Follow-up prompts:

- Can you describe any specific context or events that influenced this decision (for example, a policy plan, leadership vision, or a particular problem that needed addressing)?
- What role did factors like political leadership, availability of funding, or public service culture play in shaping this decision?
- *If government official involved in decision:* Were there internal debates or analyses comparing different models before deciding on the current approach?

5. Implementation Experience: How has this innovation approach been implemented in practice? Could you walk me through what it took to get it up and running and how different stakeholders have been involved or reacted?
Follow-up prompts:

- What were some of the first steps in launching the program/strategy (e.g. setting up a team, getting political approval, securing budget) and how did you engage various stakeholders – for example, government ministries, agencies, or departments, and (if applicable) startups or private partners – in the process?
- Were there any notable challenges during implementation, such as resistance within the bureaucracy, legal hurdles, or difficulties in collaboration? How were these overcome?

6. Outcomes and Benefits: From your perspective, what have been the main outcomes or successes of this approach so far? What benefits or strengths has it demonstrated in improving public sector innovation or GovTech solutions?
Follow-up prompt:

- Can you share any specific success stories or examples of impact? (For instance, a particularly successful pilot project, a policy change, or a tech solution implemented as a result of this initiative.)

7. Challenges and Limitations: On the other hand, what are the main challenges or limitations you have encountered with this approach? Are there any drawbacks or trade-offs that come with using this model to foster innovation?
Follow-up prompts:

- What aspects of public-sector innovation do you think this approach has not been able to address optimally? (For example, scaling solutions beyond pilots, ensuring long-term adoption, etc.)
- Have you noticed any resource or capacity issues (e.g. funding, staff skills, time) that hinder the approach's effectiveness?

8. Comparative Reflections (Dedicated lab vs Horizontal): Given the two different models (a dedicated GovTech accelerator vs. a horizontal innovation strategy), how do you think they compare in practice? Do you believe the results or the process would be different if [Estonia/Lithuania] had taken the other route?
Follow-up prompts:

- In your opinion, what advantages might the alternative model have had for your context? And what disadvantages or challenges might it have brought?
- Do you think there are certain conditions under which one model works better than the other? (For example, does it depend on government size, existing digital maturity, political support, etc.?)
- *If knowledgeable about other country:* Why do you think *[the other country]* chose that path? (E.g., Why might Lithuania have felt an accelerator was necessary, or why Estonia opted for a different approach?)

9. Future Outlook: Looking ahead, how do you see this approach evolving in the future? Are there any plans or discussions to adjust or complement the current model for fostering GovTech innovation in your country?
Follow-up prompt:

- Is the government considering any new initiatives or policy changes to strengthen innovation (for example, expanding the program, introducing legislation to support GovTech, or possibly trying a hybrid of both approaches)?

10. Lessons and Recommendations: Based on what has been learned so far in [Estonia/Lithuania], what lessons or insights would you share with other governments that are deciding between setting up a GovTech lab versus taking a more horizontal innovation approach?
Follow-up prompt:

- What do you think are the critical success factors for fostering public sector innovation, regardless of model (leadership, flexibility, private sector engagement, etc.), that others should keep in mind?

11. Closing Question – Additional Thoughts: Those are all the planned questions I have. Is there anything else you'd like to add that we haven't discussed? Perhaps an important point or example that you think is relevant to understanding why governments choose one innovation approach over another?

Declaration of Authorship

I hereby declare that, to the best of my knowledge and belief, this Master Thesis titled "To have or not to have a GovTech lab? A comparative study of Estonia and Lithuania's models to foster GovTech" is my own work. I confirm that each significant contribution to and quotation in this thesis that originates from the work or works of others is indicated by proper use of citation and references.

Tallinn, 02 June 2025

Tarlan Omarbayli

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Given Name: Tarlan
Student number: r0967974
Course of Study: Public Sector Innovation and eGovernance
Address: Akadeemia tee 11/1, 12611, Tallinn, Estonia
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I confirm that I have read and understood the information in this document. I agree to the outlined procedure for plagiarism assessment and potential sanctioning.

Tallinn, 02.06.2025

Tarlan Omarbayli