



Knowledge Building on Defining an Ecosystem

Deliverable 1.2



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Author(s) name(s)	Gustavo Magalhães - Beta-i Luma Moreno Aleixo - Beta-i Bert Lukkien – Stichting ICTU/Digicampus Berend Nieuwschepen – Stichting ICTU/Digicampus
Contributing partners	Stichting ICTU
Reviewer(s)	Jet Klaver [JK] (Stichting ICTU/Digicampus) Kamila Gasinska – Innovation Agency (Lithuania)
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Deliverable abstract

The concept of innovation ecosystems encompasses varied perspectives, which, when combined, can be defined as partnerships creating value and maintaining ongoing innovation. Broadly, the ecosystem mapping process involves identifying two dimensions: stakeholders and interactions. For an innovation ecosystem to evolve, it is essential to create a safe environment where learning, experimentation, and validation of solutions and business models can take place. In that sense, for the ecosystem to grow effectively, a minimum viable innovation ecosystem is necessary. The Minimum Viable Innovation Ecosystem stands for the least complex community that allows the participants to learn, experiment and validate their solutions and business models in a safe environment. Based on a six-stage maturity model - progressing through design, orchestration, development, enablement, expansion, and growth stages - the GovTech4all ecosystem is mapped to provide the minimum conditions so that it can continuously evolve and grow, thus promoting the evolution and sustainability of innovation within the pan-European Govtech sector.



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Table of Participants

Acronym	Full work
LISBONCO	The Lisbon Council for Economic Competiveness
BETAI	Wildtriumphs LDA
GRNET	National infrastructures for research and technology
LANTIK	Lantik S.A.M.P
AYTO	Ayuntamiento de Madrid
BRON	Bron Innovation
ICTU	Stichting ICTU
GOBE	Oda Ventures SL
DAOL	Biedriba Latvijas Digitalais Akselerators
GOVMIND	Govmind GMBH
AMTEGA	Agencia para la Modernization Tecnologica de Galicia
MAETD	Ministerio de asuntos economicos y transformacion digital
IALT	Viesoju Istaiga Inovciju Agentura
DIMUM	Direction interministérielle du numérique

Table of abbreviations

FPA	Framework Partnership Agreement
MVIE	Minimal Viable Ecosystem
SGA	Specific Grant Agreement
SME	Small and Medium Size Enterprises
TL	Task Leader
WP	Work Package
WPL	Work Package Leader



1. Introduction and Overall Strategy

This report delves into innovation ecosystems and the significance of a minimum viable innovation ecosystem. The objective is to understand how these ecosystems can be designed and nurtured to create value and sustain continuous innovation within the GovTech sector. Based on academic research and practical experience, we aim to provide insights into the two dimensions of innovation ecosystems, stakeholders and the interactions through the stages of ecosystem maturity. Additionally, the report outlines the strategic approach of the GovTech4All initiative in creating a cohesive European GovTech market.

2. What is an Innovation Ecosystem?

The concept of innovation ecosystems is multifaceted, with varying perspectives that shape its definition. In academic literature, two views can be identified to define an innovation ecosystem: Ecosystem-as-structure and Ecosystem-as-coevolution (Hou & Shi, 2021).

Ecosystem-as-structure is an alignment structure of the multilateral set of partners which need to interact in order for a focal value proposition to materialise (Adner, 2017). This definition portrays ecosystems as a means to realise the goal of creating value.

Ecosystem-as-coevolution is a community of affiliated and interacting actors which keeps open exchange with environments for continuous innovation (Moore, 2006). This definition portrays ecosystems as a goal in itself: making sure that the ecosystem is healthy ultimately results in continuous innovation.

In the case of the GovTech4All project, a combination of the two definitions is chosen. As a starting point, the ecosystem is a means to create value, as determined by the pilots involved. After that, however, it is envisioned that maintaining the ecosystem is a goal to continuously create value. That is why, from literature and discussions with the parties involved in deliverable 1.2, an innovation ecosystem is defined as:



An alignment structure of the set of partners which need to interact for a focal value proposition to materialise, ultimately resulting in a community of affiliated and interacting actors which keeps open exchange with environments for continuous innovation.

This definition accentuates both the goal of the GovTech4all project of creating an ecosystem to create value, and accentuate the importance of the longevity of an ecosystem, resulting in continuous innovation. This definition implies the focus of building an innovation ecosystem should not just be on the short-term success of the ecosystem, but rather build a strong foundation for longevity and prosperity.

3. What is a Minimum Viable Innovation Ecosystem?

Broadly, the ecosystem mapping process involves identifying two dimensions: stakeholders and interactions. Stakeholders are the different partners who play varying roles in the ecosystem, including public and private institutions, academia and other relevant entities. Their involvement is crucial, as they bring different resources, expertise and perspectives that can drive innovation and value creation. Interactions refer to the various ways in which these stakeholders collaborate, communicate and share information. Effective interactions enable the exchange of ideas, promote partnerships and facilitate the co-creation and validation of solutions.

For an innovation ecosystem to evolve, it is essential to create a safe environment where learning, experimentation, and validation of solutions and business models can take place. In a growth-oriented framework, the ecosystem's role is crucial in fostering the development and scalability of these solutions. In that sense, for the ecosystem to grow effectively, a minimum viable innovation ecosystem (MVIE) is necessary.

The Minimum Viable Innovation Ecosystem (MVIE) stands for the least complex community that allows the participants to learn, experiment and validate their solutions and business models in a safe environment. Several aspects can be tested in this environment - security, scalability,



regulatory frameworks, financial readiness, operational impacts – mitigating the risk of failure when it comes to going after a bigger market.

This MVIE includes a diverse range of stakeholders, from government departments, public institutions, gov digital teams, GovTech labs, to innovation labs, startups or scale-ups, civic tech associations, academia, end users, all aligned to collaborate on the experimentation and validation of new technological solutions.

In addition to the stakeholders, the MVIE also includes a diverse array of interactions, such as interviews, surveys, matchmaking sessions, horizontal activities, use cases, and pilot projects, scaling up, strategic planning and sustainability, communication and dissemination, as well as the strengthening of partnerships with EU GovTech activities and initiatives.

By focusing efforts on a strategic group of stakeholders and well-defined interactions, the MVIE allows for quicker and more efficient validation of innovations, facilitating their adoption and large-scale implementation. Thus, the MVIE serves as a structured model for developing technologies that meet governmental needs, promoting the maximum effectiveness and impact of GovTech initiatives in terms of digital transformation and improvement of public services.

4. Stages of Maturity of an Innovation Ecosystem

For the ecosystem to evolve, the expectation is to allow the expansion of innovations through different stages of maturity. As the ecosystem matures, it creates a conducive environment for the development and validation of innovative ideas, paving the way for success and widespread implementation of these innovations.

Innovation is established through collaboration, utilising combined skills and knowledge. A strong ecosystem is required where stakeholders share a common goal and have access to open innovation with shared ownership. It will be a key element to design a MVIE, in order to ensure clearly defined goals and efficient collaboration. With a MVIE in place, a strategic decision can be made to



develop new innovations internally or with a combination of designated partners.

Based on extensive practical experience designing and developing innovation ecosystem at different levels of governance, Beta-i has developed an approach to MVIE model based on six stages of maturity:

- Design
- Orchestration
- Innovation Development
- Innovation Enablement
- Expansion
- Growth

Design

The design stage adopts a systemic perspective to acknowledge the complexity of the GovTech ecosystem, the various players to be coordinated, the multiple layers of interactions, and the emergent outcomes.

In this stage, it will be considered more than the value proposition, four key questions need to be taken into account:

1) Who are the players of the MVIE and what are their roles?

Identify and understand the internal and external stakeholders, including active partners, silent partners, and other emerging stakeholders, and clearly define the roles and responsibilities of each.

2) What are the individual and transversal challenges of the GovTech4all project and its pilot partners?



Map the specific challenges of each partner and the common challenges that permeate the entire Govtech4all project, facilitating a coordinated approach to overcome them.

3) What is the governance model of the ecosystem regarding access, participation, and commitment?

A governance model that details how access to the ecosystem will be managed, the criteria for stakeholder participation, and the levels of commitment expected from each participant.

4) How can we ensure the evolvability of the MVIE?
Establish mechanisms and practices that ensure the MVIE's ability to evolve and adapt continuously, promoting long-term innovation and sustainability.

Orchestration

The Orchestration focuses on a detailed innovation strategy. This involves, in collaboration with MVIE participants, setting up an innovation timeline, identifying key milestones to achieve, determining how these milestones will be measured, as needed, and assigning responsibilities to each involved stakeholder.

At this stage, the ecosystem progresses from abstract concepts to a more tangible and operational phase.

The aim of orchestration is to maximise innovation exploitation by providing clear guidelines on different innovation methodologies that align with the objectives of the broader agenda of the GovTech4all project. This stage ensures that the entire ecosystem is aligned and working together to realise the planned innovations, fostering a coordinated and effective environment for the implementation of technological solutions.

Innovation Development

In the innovation development stage, the ecosystem progresses to a more advanced level as the transition from planning to the execution of the innovation strategy takes place. This approach can



involve implementing test pilots, scaling for exploitation - including strategic planning and project sustainability - expansion through strategic partnerships with related projects and other stakeholders.

The innovation development process is based on these three phases - testing, scaling, and expansion - which often interconnect to form a dynamic cycle instead of simply following a linear progression.

Innovation Enablement

The innovation enablement stage focuses on the technological maturity of the GovTech ecosystem.

This maturity stage is key to the GovTech project's agenda, emphasising the cultivation of a technological environment that supports the continuous advancement and integration of innovative solutions.

The Interoperability Regulatory Sandboxes presented by the Interoperable Europe Act, provide a structured environment to test and validate innovative solutions, ensuring they align with strategic objectives and regulatory requirements. Key points include:

- Foster innovation and develop digital interoperability solutions for public services;
- Facilitate cross-border cooperation and enhance public service synergies;
- Support the growth of an open European GovTech ecosystem, including partnerships with SMEs, research institutions, and startups;
- Improve understanding of cross-border interoperability opportunities and barriers, including legal aspects;
- Contribute to the development or update of Interoperable Europe solutions;
- Promote evidence-based regulatory learning;
- Enhance legal certainty and best practice sharing to ensure regulatory compliance.



By embedding the Interoperability Regulatory Sandboxes into the innovation enablement phase, the GovTech project can systematically nurture and integrate technological advancements, thereby driving forward the agenda of digital transformation within the public sector.

Expansion

The expansion maturity level focuses on broadening the project's reach and disseminating successful innovations.

Leveraging established frameworks to amplify the project's impact, ensuring that successful innovations can be applied in new contexts and to different groups. The ecosystem definition will take place in every partner territory engaged in the second SGA.

Growth

The Growth maturity level emphasises sustainability and long-term impact.

This stage involves continual development and the strengthening of partnerships to ensure that the innovations and initiatives maintain their relevance and effectiveness over time.

5. GovTech Ecosystem

GovTech is a new way to deliver public sector innovation, based on collaboration between public sector organisations and innovative players such as startups. The goal is to open the public sector technology market to ensure that governments use the best solutions, whether they come from startups or other governments.

The relevant types of stakeholders for a GovTech ecosystem are government departments, public institutions, gov digital teams, GovTech labs, innovation labs, startups or scale-ups, innovative SMEs, civic tech associations, academia, and end users.



Each group plays a crucial role in the ecosystem, contributing unique perspectives, resources, and expertise:

- **Government Departments:** Government departments are fundamental stakeholders in the GovTech ecosystem as they represent the primary users and beneficiaries of GovTech solutions. Their involvement is crucial in identifying specific challenges and requirements within the public sector. By collaborating with government departments, solutions can be tailored to address real-world needs and assist in streamlining government operations and services.
- **Public Institutions:** Public institutions, which may include regulatory bodies, public service agencies, and other government entities, provide the essential infrastructure for implementing GovTech solutions. Their participation is key in ensuring that solutions comply with regulatory standards, adhere to data privacy laws, and are aligned with the overall goals of the public sector.
- **Gov Digital Teams:** Government digital teams lead the way in implementing digital changes in government agencies. Their expertise in technology, digital innovation, and project management is vital for the successful implementation of GovTech initiatives. They bridge the gap between technological advancements and government services, ensuring efficient and effective integration of new technologies.
- **GovTech Labs:** GovTech labs are specialised entities that facilitate the co-creation of innovative solutions between the public sector and innovative companies. These labs play a crucial role in orchestrating and supporting the collaborative processes needed for innovation. They act as hubs for identifying government challenges, enabling experimentation, and fostering partnerships between public institutions and private sector innovators.
- **Innovation Labs:** Innovation labs, similar to GovTech labs, serve as centres for ideation, experimentation, and solution development. These labs encourage creativity, collaboration, and iteration to address complex problems within the public sector. Their role is to explore novel approaches and technologies that can drive innovation and transformation in government services.



- **Startups, Scale-ups or Innovative SMEs:** Startups, scale-ups or innovative SMEs, bring agility, innovation, and fresh perspectives to the GovTech ecosystem. These entrepreneurial ventures often introduce disruptive technologies and agile methodologies that can address government challenges in new and creative ways. By collaborating with startups and scale-ups, the GovTech ecosystem can benefit from rapid innovation, outside-the-box thinking, and scalable solutions.
- **Civic Tech Associations:** Civic tech associations focus on leveraging technology to promote citizen engagement, transparency, and accountability in government operations. Their involvement helps ensure that GovTech solutions are designed with the public's best interests in mind. Civic tech associations advocate for citizen-centric solutions and technologies that empower individuals to engage with government processes and services.
- **Academia:** Academic institutions provide research expertise, innovation insights, and a talent pool of skilled individuals, collaborating with government agencies and industry partners to drive technological advancements and conduct research on emerging trends. Their involvement fosters knowledge transfer, research-driven innovation, and the development of robust solutions for public sector challenges.
- **End users:** End users of GovTech solutions can be, for instance, schools, hospitals, and municipalities. They use these solutions to improve administrative efficiency, enhance service delivery, and offer better local services. Their feedback on usability and practicality is crucial for refining and improving these innovations.

For simplicity, a GovTech ecosystem can be deconstructed into the demand-side and supply-side. The demand side typically refers to the stakeholders that require and consume GovTech solutions, such as government departments, public institutions, and civic organisations. Their role involves the identification of the problems, challenges, and needs within the public sector. By actively engaging in co-creation processes with solution providers, these stakeholders ensure that technologies are effectively tailored to their specific contexts.

Additionally, the demand-side partners can provide feedback on the usability and effectiveness of implemented solutions, helping to refine and improve them. Often, the demand side also allocates



resources and funding to support the development and deployment of these technologies. Ensuring accountability and ethical standards, they consider broader implications such as data privacy and equity, ultimately driving the creation of innovative, practical, and impactful GovTech solutions that enhance public sector efficiency and benefit citizens.

The role of the supply side in a GovTech ecosystem comprises entities that provide GovTech solutions for occurring challenges and offer methodologies. The supply side develops solutions that meet the demands of government agencies and public institutions. They collaborate closely with the demand side in co-creation processes to ensure practical and user-friendly technologies, incorporating iterative feedback for continuous improvement.

Moreover, supply side entities redevelop a solution for wider use, ensuring scalability and interoperability. By keeping up to date with emerging trends and maintaining a flexible approach, they guarantee that public sector solutions remain innovative, effective, and conducive to more efficient, transparent, and responsive governance.

Nevertheless, within the ecosystem, stakeholders can fulfill multiple roles simultaneously. For instance, Innovation labs can lead prototyping and testing of new technologies while also partnering with academia to conduct research and share knowledge on emerging trends, or a government department can participate in policy making decisions while also collaborating with gov digital teams to streamline digital services for citizens.



6. The GovTech4All Ecosystem

The GovTech4all ecosystem is composed of stakeholders working together to develop cross-border innovation projects, learn from each other, deliver common pilots and raise the profile of GovTech in each European country and at European Union Level. The ecosystem started by covering 14 countries and 21 partners.

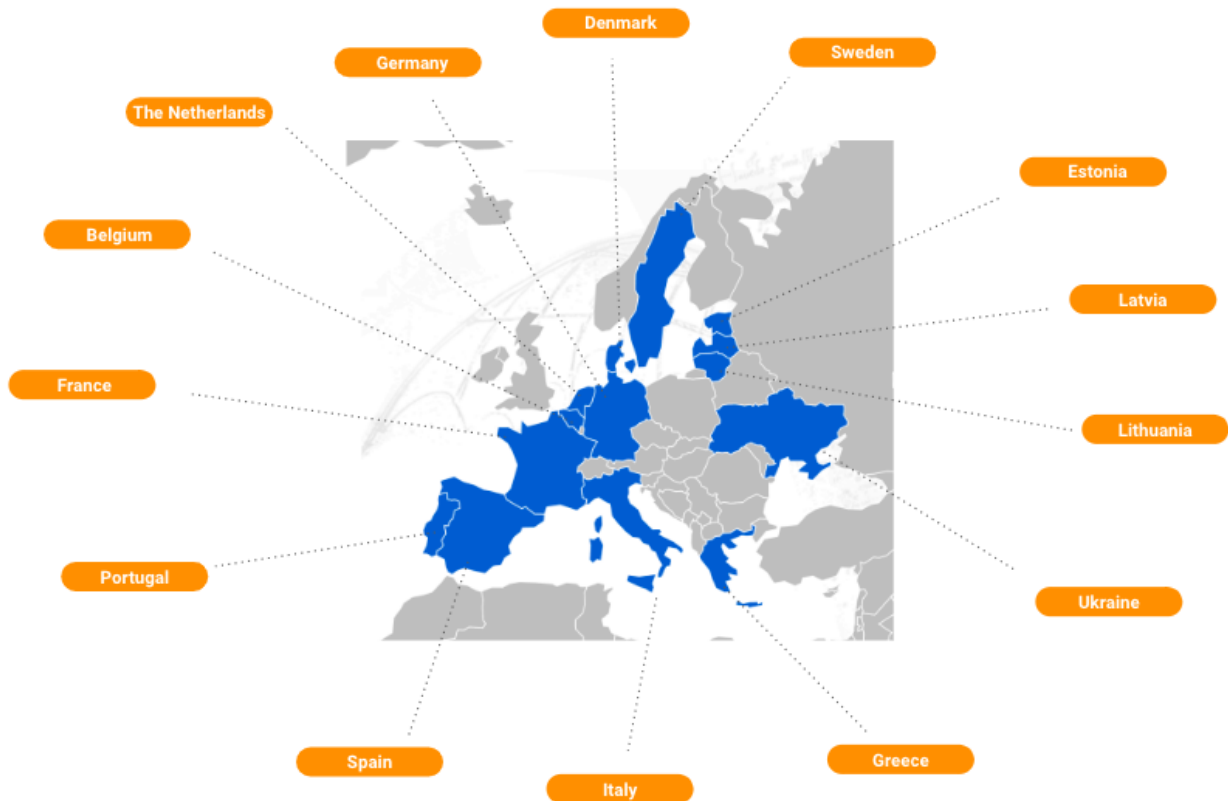


Figure 1 Govtech4all partner distribution

It has expanded to cover 18 countries, bringing together 26 distinct partners to foster a single European GovTech market and promote new models of public sector innovation.

A key component of The GovTech4all minimum viable ecosystem is its ability to grow, both in terms of partners and activities, ensuring continuous development, sustainability and long-term impact.



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The Govtech4all Framework Partnership Agreement (FPA) is permanently open to new partners joining the ecosystem. To foster a pan-European GovTech ecosystem and market, it is essential to collaborate with all critical European GovTech actors, particularly those from public administrations responsible for digital transformation and digital governance. This includes national digital teams from the wider European community outside the European Union, supporting variable geometry and preparatory work for eventual EU membership.

The decision-making processes and governance structure of the GovTech4All project are based on the FPA, Specific Grant Agreement (Specific Grant Agreement), and the Consortium Agreement. These documents outline the roles and responsibilities of consortium bodies and members and the voting system used to facilitate democratic and efficient decision-making.

National digital agencies express interest by contacting the Lisbon Council, followed by coordination for an initial meeting to discuss joining and understanding project benefits. Information sharing, submission of a letter of intent, consortium voting, and approval through the defined procedures culminate in the formal integration of new partners into the GovTech4All FPA after signing the consortium agreement, ensuring a systematic and transparent pathway for partnership inclusion. GovTech4All emphasises that there is no one-size-fits-all approach. Each potential new partner is approached in a tailored and flexible manner.

The project currently includes:

1. Agency for the Technological Modernization of Galicia (Amtega) (Spain)
2. Beta-i (Portugal)
3. Beta.gouv.fr (France)
4. Bron Innovation (Sweden)
5. Centre de Telecomunicacions I Technologies de la Informació (CTTI) (Spain)
6. Dataport (Germany)
7. Digicampus [Stichting ICTU] (the Netherlands)



8. Digital Accelerator of Latvia (DAoL) (Latvia)
9. Federale Overheidsdienst Beleid en Ondersteuning (FPS BOSA) (Belgium)
10. Gobe (Spain)
11. Govmind (Germany)
12. Govtech Campus Deutschland (Germany)
13. GovTech Programme of Serbia (Serbia)
14. GRNET - National Infrastructures for Research and Technology (Greece)
15. Innovation Agency (Lithuania)
16. LANTIK-BFA (Spain)
17. Lisbon Council (Belgium)
18. Madrid City Council Digital Office (Spain)
19. Malta Information Technology Agency (MITA) (Malta)
20. Ministry for Digital Transformation of Ukraine (MDTU) (UA)
21. Ministry of Economic Affairs and Communications (Estonia)
22. Ríkiskaup (Iceland)
23. Secretariat-General for Digital Administration (SGAD) (Spain)
24. Tech4Civ, Technical University of Denmark (DTU) (Denmark)
25. The Department for Digital Transformation (Italy)
26. Ukrainian Startup Fund (USF)

In terms of interactions, GovTech4all includes interviews, surveys, matchmaking sessions, use cases, pilot projects, setting clear innovation goals, defining milestones, assigning tasks, developing pilot projects, and planning for sustainable growth. In this sense, working together on pilot activities, tracking their progress, creating policy briefs and articles, organising high-profile roundtables with decision makers to provide policy recommendations, sharing information on GovTech-related activities through blog posts, and outreach efforts within and across borders through methods like startup competitions and acceleration.

Furthermore, the interactions are reinforced through in-person meetings, knowledge shared through online workshops, networking sessions with stakeholders from different regions, and



seeking feedback through surveys or interactive sessions. These diverse interactions play a key role in fostering engagement, promoting innovation, and driving meaningful progress in the evolving realm of GovTech within the EU landscape.

With regard to activities and initiatives, GovTech4all aligns with broader European innovation strategies, especially around the Interoperable Europe Act. By fostering collaboration and scaling initiatives at the national and European levels, GovTech4all aspires to establish a sustainable platform for innovative practices across borders. Additionally, the project seeks to align with existing programs, shape supportive policy frameworks for GovTech initiatives, and contribute towards the objectives outlined in key strategic digital initiatives. Such initiatives can be illustrated by the GovTech Connect, European Digital Innovation Hubs working group on Artificial Intelligence for public administrations, IMPACTS European Digital Infrastructure Consortium working group, Public Sector Tech Watch, SPIN4EIC, Horizon Europe, as well as communities, such as Open-source Community, Public Procurement Community, and Interoperable Europe Board and Community.

It may also seek synergies with other programmes and funding lines of the EU that demonstrate greater impact potential, such as the European Data Strategy and related policies, the Digital Decade Policy Programme, the European Green Deal, the European Commission's proposal and the upcoming Artificial Intelligence Act.

7. The road to a Healthy Govtech4All ecosystem

The GovTech4all-beta is by design continuously evolving and growing. For the incubator to work effectively within an ideal ecosystem, there needs to be a comprehensive alignment between the solutions offered and the existing needs, extending beyond the boundaries of the current consortium.

The maturity model presented in this report is not a deterministic path but rather a continuous process that allows us to move towards a broader GovTech Ecosystem. In that sense, it is crucial



to evolve the ecosystem through the stages of maturity - Design, Orchestration, Innovation Development, Innovation Enablement, Expansion, and Growth.

At this point, currently, the GovTech4all ecosystem can broadly be said to be at the orchestration and development stages. Key initiatives and activities that should be considered to evolve the ecosystem through its maturity stages include:

It is essential that, in each partner country, a series of other agencies and departments are involved that have an interest in actively contributing to the development of pilot projects. Looking ahead, this approach implies that existing partners must expand their role, acting not only as providers or adopters of solutions, but also as active agents in identifying interested partners within their own local ecosystem.

Simultaneously, the consortium must actively pursue expansion into the wider European community and participants in the Digital Europe programme. This requires a continuous effort to establish bilateral partnerships with digital teams across borders, aiming to increase the diversity and reach of the project.

Moreover, it's essential for GovTech4All-beta to outreach relevant startups and SMEs for the project. This involves establishing effective channels of communication and collaboration with these companies, identifying those with an interest and expertise in the GovTech sector, and offering them opportunities to actively engage in the project.

More tangibly, these avenues for ecosystem development can materialise as follows:

1. Including more public partners from existing partner states, from different departments;
2. Including a wider community of “reuser” administrations, not taking part in the project but reusing the solutions developer;
3. Developing a developers and startups community, to be involved in pilots and startup challenges;
4. Adding new member states as partners.



5. Collaborating with all critical European GovTech actors, particularly those from public administrations responsible for digital transformation and digital governance. This included national digital teams from the wider European community and participants in the Digital Europe Programme.

In conclusion, based on this approach, the GovTech4All ecosystem can evolve, promoting innovative solutions and creating a robust and interconnected GovTech community, contributing to the advancement and sustainability of GovTech initiatives on a larger scale.

