

# GOVTECH4ALL



Deliverable: 3.1

## **Validation and Maturity Assessment Scaling Framework**

Work Package 3

Scale-Up

Version: 3.0



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## Deliverable Overview

This document outlines the methodological framework for the validation and maturity assessment of scaling up digital innovation pilots within the public sector. This will be the main framework for organizing and performing the validation of the scalability assessment of all the GovTech4All-beta pilots at various intervals of the project and provide the Recommendations on Large-Scale Pilots (LSPs) concepts.

## Additional Information

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1.0	26/07/2023	Initial deliverable structure, ToC and basic concepts	GRNET, Digicampus
2.0	06/9/2023	Comparative analysis of approaches and methodologies	GRNET, Digicampus
3.0	11/9/2023	Scalability self-assessment process	Digicampus
4.0	18/9/2023	Updated version(s) of the document featuring various sections	GRNET, Digicampus
Final	28/9/2023	Final review and ready for submission at EC	The Lisbon Council

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## Statement of Originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation, or both.



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## List of Terms and Abbreviations

Abbreviation	Description
PC	Project Coordinator
DPO	Data Protection Officer
GDPR	General Data Protection Regulation
SGA	Specific Grant Agreement
WP	Work Package
ISAT	Intervention Scalability Assessment Tool
PIET-T	Population, Intervention, Environment, Transfer
EC	European Commission
EU	European Union
TRL	Technology Readiness Level
SRL	Societal Readiness Level
ORL	Organizational Readiness Level
LRL	Legal Readiness Level



## 1. Executive Summary

The scope of this document is to provide a preliminary view of the boundaries, methodological approach, basic attributes, variables, and criteria per domain that will act as the baseline of the GovTech-4-all Scale-Up framework. This framework will provide the self-assessment tool for the scalability and reusability of GovTech solutions for societal problems that have societal impact. The GovTech ecosystem consists of public and/or private organizations.

GovTech4All Incubator will provide the ecosystem and accompanying services to help digital solution providers and public administrations work together on specific challenges. Toward this end, the work conducted in WP3 – Scale Up, will primarily focus on two main objectives: (a) to define and apply a methodological framework for the validation and maturity assessment of scaling up digital innovation pilots within the public sector, and (b) to provide substantial recommendations and justifiable advice based on the aforementioned framework for potential Large-Scale Pilots (LSPs) following the successful execution of the pilots, with particular emphasis on scaling up possibilities regarding geographical coverage i.e., from the local, to the regional, and the national level all the way up to a cross-border perspective, as well as pivoting and scaling towards other economy domains (i.e., cross-domain).

This document provides a comparative analysis of various methodologies that have been considered. It then presents the basic components and building blocks of the framework tool and finally, the proposed action plan. Currently, in M3, the preliminary version of D3.1, Validation and Maturity Assessment Scaling Framework (the current document), will be delivered providing the boundaries, methodological approach, basic attributes, variables, and criteria per domain that will act as the baseline for the more detailed and extended GovTech-4-all Scale-Up framework.



## 2. Introduction to the Framework

### 2.1 Introduction

The GovTech4All Incubator will provide the ecosystem and accompanying services to help digital solution providers and public administrations work together on specific challenges. Toward this end, the work conducted in WP3 – Scale Up, will primarily focus on two main objectives: (a) to define and apply a methodological framework for the validation and maturity assessment of scaling up digital innovation pilots within the public sector, and (b) to provide substantial recommendations and justifiable advice based on the aforementioned framework for potential Large-Scale Pilots (LSPs) following the successful execution of the pilots, with particular emphasis on scaling up possibilities regarding geographical coverage i.e., from the local, to the regional, and the national level all the way up to a cross-border perspective, as well as pivoting and scaling towards other economy domains (i.e., cross-domain).

This document focuses on the former objectives and aims to outline the methodological framework for the validation and maturity assessment of scaling up digital innovation pilots within the public sector. This is the initial version of the framework which provides an outline, basic concepts, and principles of the framework. As the GovTech4All-beta pilots mature further, the framework will go into a deliberation process, following which, a more detailed and final framework will be available by M6 of the project. Based on this framework, an early dialogue with the pilots will commence to elaborate further on methods and approaches to make pilots scalable. All pilots will undergo a validation and maturity assessment process for scaling up at three different intervals in the project's lifetime (initial, mid, and end of project), to provide recommendations on Large-Scale Pilots (LSPs) concepts. The updated version of this framework will be available alongside the provision of D3.2: Scalability Validation and Maturity Assessment Reports & Recommendations on Large-Scale Pilots (LSPs) v1, at M6.

### 2.2 Background

The development of a new product or process has several development phases from idea to operational use by the end user. In the GovTech4all programme we are adopting the Horizon Europe 2020 approach (which chooses a scaleup model based on technology readiness levels) and will make it more specific for scaling up GovTech solutions. Readiness levels refer to the growth model of a new product or process, where each individual phase of this growth model can be identified by a number of specific indicators. Growth or upscaling then means that the development of the product or process passes from one phase to the next.

It has long been recognized in science and practice that growth of a product does not only relate to technical aspects if it is to be successful. For example, the organization (including suppliers) must be ready to produce the product, the end user must be ready to use it, etc.





We therefore opt for an integrated approach (technical, market/society, organisation, legal, etc.) to the readiness levels of the growth model.

### 2.3 Scope

The scope of this framework is the GovTech societal problem solutions which deliver societal impact, scalability, and reusability. The GovTech ecosystem consists of public and/or private organizations.

### 2.4 Objective Framework

The objective for *the developer of the solution* is to provide insight into the development phase. Each phase has specific characteristics for development with corresponding approaches, best practices, and methods to be applied. Transition from one phase to another is marked by a status (e.g., the prototype has successfully passed the test or audit). With this insight, possible next steps (including associated methods) for growth can also be selected. Distinction in method is important because the method used may be useful at one stage of development, while in the next phase it may not be useful, or even counterproductive.

*The goal for the Client (EU) and/or financier* is to provide insight into the maturity of the proposed solution, making selection and prioritization possible.

## 3. Methodological Approach

During the initial phases of this task, all involved partners, namely GRNET and DIGICAMPUS performed a comparative analysis of different approaches, which included an analysis scale-up method with primary effect on the healthcare sector, as well as a compared perspective with DIGICAMPUS validation methods. The following table provides an overview of the methods that have been analysed alongside their basic descriptions.

Organisation	Method	Description
GRnet	<b>PIET-T model<sup>1</sup></b>	Transferability model for health interventions: PIET-T: Population, Intervention, Environment, Transfer.
GRnet	<b>ISAT assessment model<sup>2</sup></b>	A guide for assessing the scalability of health interventions. Existing of three phases: A) Setting the scene, B) Intervention implementation planning, C) Summary of scalability assessment:

<sup>1</sup> <https://implementationscience.biomedcentral.com/articles/10.1186/s13012-018-0751-8>

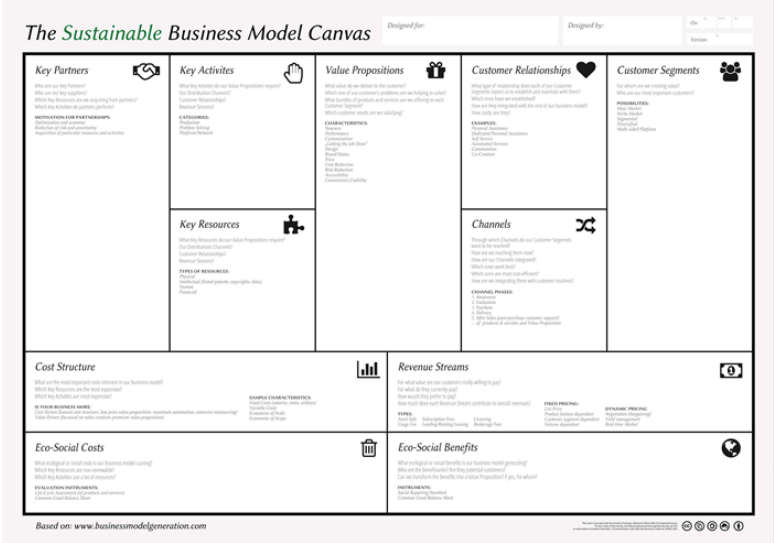
<sup>2</sup> <https://health-policy-systems.biomedcentral.com/articles/10.1186/s12961-019-0494-2>



		<ul style="list-style-type: none"> <li>• Help assess the scalability of an intervention.</li> <li>• Identify and assess contextual factors facilitating or hindering scale up.</li> <li>• Provide a mechanism for identifying gaps in the information required to make an assessment or to inform an assessment on the scalability of an intervention.</li> <li>• Provide a structure for working through key considerations when determining if a program is scalable.</li> </ul>
Digicampus	<b>Validation lab</b>	A long term public private collaboration for testing gov-tech solutions in a specially designed innovation ecosystem in which government organizations, start- or scale-ups and corporations can collaborate. A crew consists of a start-up, a problem owner, and stakeholders. In 8 to 10 weeks, they develop a product or service with societal value.
Digicampus	<b>Beachhead deployment finder GovTech</b>	At the start of a validation of scale-up lab this excel sheet is used to evaluate and score start or scale-ups according to dimensions: Personal connections, problem/solution potential, solution fit, time to develop, available budget, market entry barriers, strategic and reference value, political importance, ecosystem in place, sustainability
Digicampus	<b>Sustainable business model canvas</b>	<p>The Sustainable Business Model Canvas supports the development of an idea into a viable business model. It follows a holistic approach regarding the internal and external relationships.</p> <p>In addition to economic criteria, it focuses on the ecological and social consequences of the activity. It aims at maximizing positive impact and avoiding negative impact on society and nature. Therefore, sustainability is integrated into the core business.</p> <p>The visualization on the canvas fosters coherence of the concept and clarification among the team members. It</p>



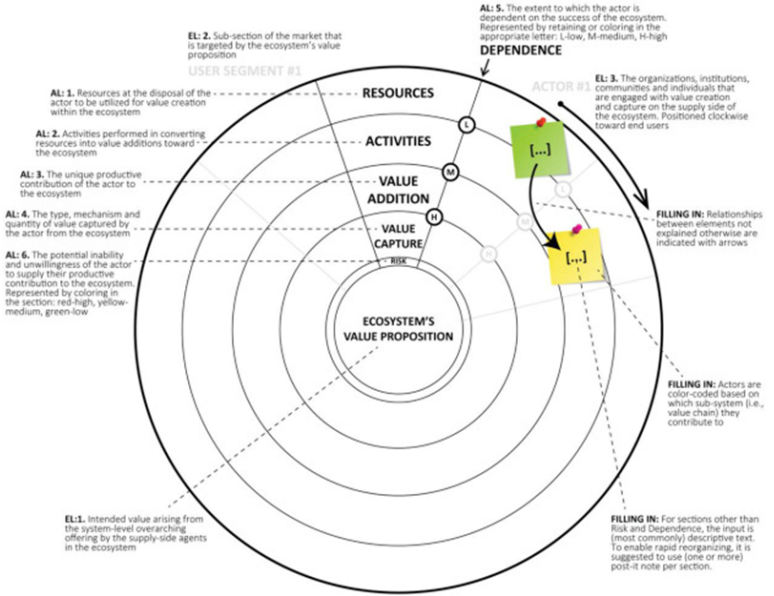
further supports communication with third parties and prepares for a solid business plan.



Digicampus

**Ecosystem value mapping**

The ecosystem map is a synthetic representation capturing all the key roles that have an influence on the user, organization, and service environment. The ecosystem map is built by first displaying all the entities, and then connecting them based on the type of value they exchange.



Bain & Company

**Elements of value pyramid**

Understanding the 30 elements of value for consumers can help companies gain an edge.

Table 1: Comparative analysis of methodologies for scale-up framework



Some basic conclusions established from this comparison lead to the fact that the ISAT score sheet can be applied before and after performing a scale-up workshop or program to select scale-ups and measure their performance after a pilot project. The Digicampus toolbox offers specific hands-on tools for facilitating a program for scaling-up an initiative. The 'ISAT score sheet' and the 'Beachhead deployment finder' share similar criteria that are presented differently. ISAT measures from 0-3 (not at all – to a large extent) whereas the beachhead deployment measures 1-5 and uses different measurements (bad-perfect / slow-fast / low-high).

When the ISAT score sheet and its criteria is taken as a point of departure then the validation lab can contribute extra criteria for the different domains. Furthermore, when the ISAT score is compared to the PIET-t model it becomes apparent that the ISAT score doesn't differentiate between a primary and target context, an important distinction to illustrate transferability.

Therefore, it is apparent that these frameworks and approaches constitute the appropriate attributes, variables, and criteria per domain to be considered for the final GovTech-4-all Scale-Up framework, but the process of consideration needs to be worked upon more thoroughly during the following period heading from ISAT along with possible additional validation / scale-up criteria from Digicampus tools.

When combining frameworks, one should carefully consider the differences and overlap between concepts such as maturity and transferability, validation and scale-up and frameworks and methods.

## 4. Components of the framework

Given the goal of the framework, it consists of the relevance, scalability, and reusability components. These components are further explained in the following sections.

### 4.1 Relevance

One of the goals of this framework is to enable selection and prioritization for further scale-up by the EC. The central question is whether the proposed solution after implementation actually offers a solution to a relevant social problem (societal problem-solution fit with societal impact). What is relevant is largely determined by the political choices made at the EU or national level. Relevance can be demonstrated by:

- Link the proposed solution to goals and policy choices of the EU or Member State (Digital Decade, Compass, etc.)
- Explicit request from a member state or EU government
- PM



In addition, selection and prioritization are made possible by, for example, gaining insight into:

- Which group of citizens benefits from the solution?
- What type of solution is it: small impact with high frequency or high impact with small frequency?
- What are the expected disadvantages of the solution?
- PM

## 4.2 Scalability

As mentioned before, we have adopted the Horizon Europe 2020 approach (which chooses a scale-up model based on technology readiness levels) and will make it more specific for scaling up GovTech solutions.

Scalability is defined as *the ability of intervention shown to be efficacious on a small scale and/or under controlled conditions to be expanded under real world conditions while retaining effectiveness*. In this definition, scalability therefore focuses on proposed solutions that demonstrably already have a certain maturity (shown to be efficacious on a small scale and/or under controlled conditions) and that should mainly be supported with the growth towards large-scale implementation and use.

Scalability is assessed using multiple readiness/maturity level frameworks, such as Technology, Societal, Organizational and Legal Readiness. The table below gives an overview of different types of readiness levels (green) per readiness level (blue).

	TRL	SRL	ORL	LRL
1	Basic principles observed	Identification of the generic societal need and associated readiness aspects	Identification of the organizational need (infrastructures, capabilities, skills) and associated organisational readiness aspects	Generic consideration of legal and ethical compliance aspects are observed but nothing has yet been done for the development of the solution
2	Technology concept formulated	Formulation of proposed solution concept and potential impacts; appraisal of societal readiness issues; identification of relevant stakeholders for the development of the solution	Formulation of proposed solution concept and potential impacts; appraisal of organisational readiness issues; identification of relevant roles, processes, functions and structures for the solution	Formulation of the need to enhance the legal normative, laws, rules and guidelines and solution concept; appraisal of legal and ethical compliance issues
3	Experimental proof of concept	Initial sharing of the proposed solution with relevant stakeholders (e.g. through visual mock-ups): a limited group of the society	Comprehensive description of proposed solution's impacts within the organisation in terms of roles, competences and skills, physical infrastructures required	Abstract description of the proposed solution's legal and ethical compliance



		knows the solution or similar initiatives		
4	Technology validated in lab	Solution validated through pilot testing in controlled environments to substantiate proposed impacts and societal readiness: a limited group of the society tests the solution or similar initiatives	Solution validated through simulation of major induced changes to substantiate proposed impacts and organisational readiness: the organisation which is developing the solution starts to acquire roles, competences and skills, physical infrastructures required	Solution's legal and ethical compliance prospects validated against any required or recommended changes in the legal and/or regulatory system
5	Technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)	Solution validated through pilot testing in real or realistic environments and by relevant stakeholders: the society knows the solution or similar initiatives but is not aware of their benefits	Proposed solution validated through pilot testing in real or realistic organisational environments: the organisation which is developing the solution achieves roles, competences and skills, physical infrastructures required	Definition of the proposed solution's legal and ethical compliance status after pilot testing in real or realistic organisational environments
6	Technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)	Solution demonstrated in real world environments and in co-operation with relevant stakeholders to gain feedback on potential impacts: the society knows the solution or similar initiatives and awareness of their benefits increases	Solution demonstrated in real world environments and in co-operation with relevant stakeholders to gain feedback in order to improve roles, processes, functions and infrastructures required	Detailed description of the required or recommended changes in relevant laws, regulations or organisational rules to ensure full compliance with the proposed solution
7	System prototype demonstration in operational environment	Refinement of the solution and, if needed, retesting in real world environments with relevant stakeholders: the society is completely aware of the solution's benefits, a part of the society starts to adopt similar solutions	Refinement of the roles, processes, functions and infrastructures required and retesting of the solution in relevant organisational environments	Refinement of the solution within the existing legal and ethical system and, if needed, proposals for required or recommended changes to some aspects of it
8	System complete and qualified	Targeted solution, as well as a plan for societal adaptation, complete and qualified; society is ready to adopt the solution and have used	Targeted solution, as well as a plan for organisational embedment, complete and qualified: roles, processes, functions and	Targeted solution, as well as a legal and ethical compliance audit, complete, qualified and ready to be launched on the market



		similar solutions on the market	infrastructures are available	
9	Actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)	Actual solution proven in relevant societal environments after launch on the market; the society is using the solution available on the market	Actual solution proven in relevant organisational environments: roles, processes, functions and infrastructures are correctly used for the solution on the market	Actual solution proven legally and ethically compliant after launch on the market

Table 2: Different types of readiness levels per readiness level

### 4.3 Reusability

In the selection process for new pilots, the question of whether a solution contributes to the European GovTech ecosystem is also relevant. For example, a proposed solution can be of great value to other solutions (for example, a payment service that is used in other digital transaction solutions). In the development of the entire ecosystem, this can be an argument for developing it first and other solutions later.

Reusability refers to the ability to reuse an application, service, component as part of the solution or process provided by a pilot. Reusability can therefore relate to the ability to use a part of the proposed solution in another solution but can also relate to the use of the same solution in another Member State.

### 4.4 Link to tools and best practices for scaleup

Part of the framework is the link from the different maturity levels with methods, tools and best practices for scaleup.

### 4.5 Report

The self-assessment tool consists of questions about the component's relevance, scalability and reusability. User feedback about the tool will be provided via an individual report (as an example, the graph below is included where the result is made clear for each component).



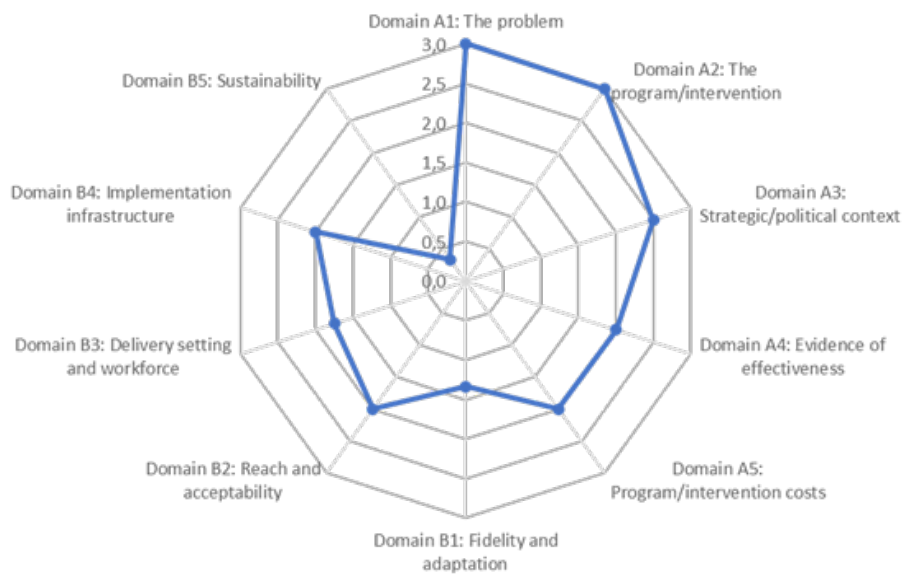


Figure 1: Spider-web example of the assessment analysis results.

For the purpose of the overview and the selection process for new pilots, the individual self-assessments are aggregated into a total overview. (As an example, the matrix below is included.)

Pilot candidate	Societal impact	Maturity level	Reuseability
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

Figure 2: Overview matrix example of the assessment analysis results.





## 5. Action plan and Future work

The work conducted within WP3 regarding the scale-up of the pilots is strongly intertwined with the maturity level and the progress of the work conducted with each pilot in WP2. As the GovTech4All-beta pilots mature further, the framework will go into deliberation process, finalization and the self-assessment process will run in parallel. The following figure depicts the evolutionary progress of the action plan according to the SGA and the specificities behind the design of this work package.



Figure 3: The Action Plan timeframe for GovTech-4-all-beta Scale-up processes.

Currently, in **M3** the preliminary version of **D3.1: Validation and Maturity Assessment Scaling Framework** (current document), will be delivered providing the boundaries, methodological approach, basic attributes, variables, and criteria per domain that will act as the baseline for the more detailed and extended GovTech-4-all Scale-Up framework.

This baseline will go into thorough discussion and analytical deliberation with all pilot leaders and project partners in order to finalize the methodology, the exact criteria and questions per domain, and the overall scalability framework self-assessment process. This will deliver the updated version of **D3.1: Validation and Maturity Assessment Scaling Framework** (final version) in **M6**. At the same time, as planned, the initial version of **D3.2: Scalability Validation and Maturity Assessment Reports & Recommendations on Large-Scale Pilots (LSPs) V1** will be delivered according to the updated methodology and the established scalability framework self-assessment process. This will be based upon the early findings and preliminary requirements established within each pilot, providing a report regarding the validation on the maturity for scaling at the early stages of each pilot.



Finally, at **M12** there will be a secondary assessment based on the updates within each pilot resulting in **D3.5: Scalability Validation and Maturity Assessment Reports & Recommendations on Large-Scale Pilots (LSPs) V2**. In M24 we will deliver the final validation and maturity assessment of scaling up the digital innovation pilots of GovTech4All-beta, and provide interventions and recommendations to this end.





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