



Scalability Validation and Maturity Assessment Reports & Recommendations on Large-Scale Pilots (LSPs)

Deliverable 3.2

Work Package 3

Scale-Up

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Deliverable abstract

This document follows-up on the outcomes of D3.1 regarding the validation and maturity assessment of scaling up digital innovation pilots within the public sector, thus establishing an early dialogue with WP2 pilots, organising the validation of scalability at the early stages of WP2 to get scalable pilots and provide recommendations on Large-Scale Pilots (LSPs) concepts. The document at hand presents the results and outcomes of this early-stage validation and assessment.

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1. Executive Summary

The scope of this document is to provide the initial version of **D3.2: Scalability Validation and Maturity Assessment Reports & Recommendations on Large-Scale Pilots (LSPs) V1** which is based according to the methodology and the established scalability framework self-assessment process presented in **D3.1: Validation and Maturity Assessment Scaling Framework**. As indicated in the later deliverable, the outcomes of this assessment and the recommendations derived will be further enhanced and tailored for each Pilot separately as Work Package (WP3) progresses into the project starting from **M12** where 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**.

As already mentioned, in this project, both public and private sector organisations, research bodies, and NGOs work together to learn from each other by collaborating to share insights, execute common pilot initiatives and enhance the prominence of GovTech at the national and EU levels. Concretely, the project's central focus revolves around the delivery of three pilots:

- **Pilot 1:** Secure information in cross-border data spaces.
- **Pilot 2:** Helping EU citizens obtain social benefits with personal regulation assistants.
- **Pilot 3:** Start-up challenge for innovative procurement.

This initial version of the assessment has been 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.

2. Scalability Methodology

The project's approach adopts the Horizon Europe 2020 approach, The Technology Readiness Level (TRL) (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 an intervention shown to be efficacious on a small scale and/or under controlled conditions to be expanded under real-world conditions while retaining effectiveness¹. In this definition, scalability focuses on proposed solutions that demonstrate a certain level of maturity (shown to be efficacious on a small scale and/or under controlled conditions) and that should mainly be supported with growth towards large-scale implementation and use.

¹ Milat AJ, King L, Bauman AE, Redman S. The concept of scalability: increasing the scale and potential adoption of health promotion interventions into policy and practice. *Health Promot Int.* 2013 Sep;28(3):285-98. doi: 10.1093/heapro/dar097. Epub 2012 Jan 12. PMID: 22241853.

Scalability is assessed using multiple readiness/maturity level frameworks, such as Technology, Societal, Organisational and Legal Readiness. The table below gives an overview of different types of readiness level domain (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 knows the solution or similar initiatives	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
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 similar solutions on the market	Targeted solution, as well as a plan for organisational embedment, complete and qualified: roles, processes, functions and infrastructures are available	Targeted solution, as well as a legal and ethical compliance audit, complete, qualified and ready to be launched on the market
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 1 Different types of readiness levels per readiness level

Since the delivery of D3.1, which features the above framework, the WP3 team has developed it further into the 'GovTech4All Maturity Scan' based on the different readiness levels. This is a **scalability validation and maturity assessment** tool in the form of a questionnaire (presented in Annex A), to be utilised by each Pilot for this early assessment.

The questionnaire is divided into three different tabs for Technology Readiness Level (TRL), Societal Readiness Level (SRL), and Community Readiness Level (CRL) (customised for the needs of GovTech4All as opposed to Organisational Readiness Level (ORL) presented above), with a few questions per tab, a predefined answer field, and open-ended free-text fields per line.

Please note that the Legal Readiness Level (LRL) is not featured in this initial version of the tool and will be developed further by the WP3 team for the next update of the questionnaire.

Although each Pilot, as indicated in **D2.1: Pilot Handbook for cross-border pilot preparatory activities, users' recruitment for the pilots, and collaboration instruments**, at this point has not reached a significant level of maturity in terms of requirements or detailed definition of the different use cases, involved organisations, etc., the WP3 team established an early dialogue with each WP2 pilot leader to utilise the tool for the provision of an initial assessment, resulting in potential scale-up recommendations for each pilot.

The WP3 team has slightly adjusted the questionnaire for Pilot 3 to make it more in line with the development of a process instead of software, to feature the objectives of the respective Pilot more considerably. That is why the WP3 team has adjusted primarily the Technology Readiness Level (TRL) tab as well as throughout the questionnaire for Pilot 3, to have a more process-oriented approach.

3. Assessment Analysis Results

3.1 Pilot 1: Secure information in cross-border

Pilot 1 aims to target some of the technical challenges that are encountered by public administrations/institutions that need to coordinate their actions at a cross-border level to deliver the highest quality services to citizens. These organisations need to be able to collect/share sensitive information concerning private citizens in a manner which is secure and guarantees the citizens' privacy. More specifically:

- Citizens/public authorities provide sensitive information to other local/regional/national authorities.
- Data collected/shared and stored are fragmented, untrustworthy and lack sovereignty.

The overarching objective of Pilot 1 is to establish a PoC (Proof of Concept), in which the applicability of the technological key points (i.e., quantum-safe and homomorphic encryption algorithms) must be fulfilled. This will be achieved with a selection of pre-identified use cases held together by the three consortium partners involved in this pilot and with public organisations as end-users.

Early assessment of this Pilot with respect to the **GovTech4All Maturity Scan** tool portrays an overall score status of 2 for TRL, 2 for SRL, and 1 for CRL. More specifically:

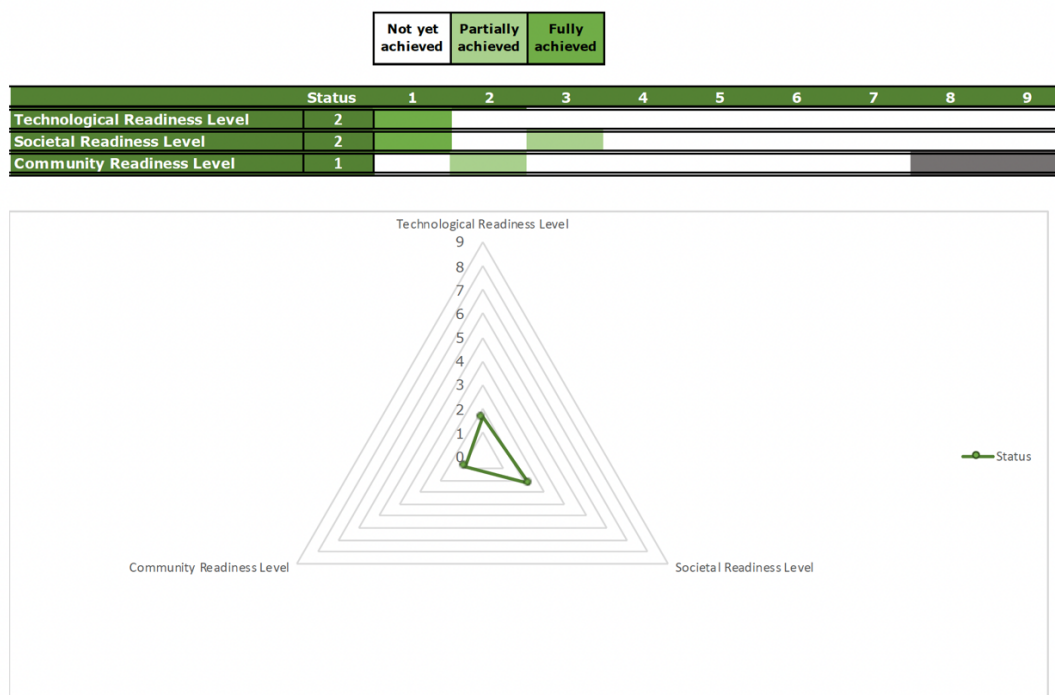


Figure 1 Spider-web of the assessment analysis results Pilot 1

Regarding **Technology Readiness Level (TRL)**, Pilot 1 aims to address some of the technical challenges encountered by public administrations/institutions that need to coordinate their actions at a cross-border level to deliver the highest quality services to citizens. It has defined the preparatory work, Implementation Plan, and Methodology to select from a list of three use case options that are most suitable. With respect to **the formulation of the technological concept**, four technological points have been established (secure encryption algorithms, working with encrypted data, giving the information once, and shared data spaces) to build a Proof of Concept (PoC). From the previous four points, the secure encryption algorithms and the working with encrypted data have been further described (e.g., using Quantum-Safe (QSafe) algorithms and Fully Homomorphic Encryption (FHE), amongst others). With respect to **experimental proof of concept**, this has not been achieved yet; data must be validated by professional domain experts (end-users), and although it will be synthetic, it must be indistinguishable from real-world data. Finally, **lab validation of the respective technologies** has not yet been established at these early stages of the project. In principle, at the current early stage of the project, we cannot accurately describe the outreach and maturity of the pilot.

Concerning **Societal Readiness Level (SRL)**, the societal needs are associated with the public organisations that need to be able to collect/share sensitive information concerning citizens in a manner which is secure, guarantees the citizens' privacy, and ensures the security, privacy, and interoperability in the exchange and storage of sensitive information is a priority. Regarding the **potential societal impact**, for each of the two selected use cases, the one on SKILLS notably focuses on the enhancement of security measures for certificate verification and the reduction of administrative overheads, while the HEALTH one optimises the interoperability with security, tailored to meet the healthcare sector's unique standards and requirements, through instant

messaging. **The first round of testing of the proposed solution together with relevant stakeholders and proposed solution validated by testing in a closed relevant environment,** has not been established yet at these early stages of the pilot preparation. Further feedback on societal impacts will be known only after the execution of the pilot in later stages of the project.

Finally, the **Community Readiness Level (CRL)** has achieved a low score since the involvement of associated organisations for the selected use cases is still pending and how the parties will collaborate within this pilot will be further understood and described as the project evolves in later stages.

3.2 Pilot 2: Helping EU citizens obtain social benefits with personal regulation assistants

This pilot proposes to implement a Personal Regulations Assistant (PRA), a digital tool helping citizens identify which benefits they are entitled to and apply for them, and enabling helpers with digital literacy, but limited business knowledge, to provide guidance to potential beneficiaries. The PRA developed in this pilot will be a first step towards a more proactive government. The aim of this pilot is to share, combine, and improve existing knowledge of Rules as Code solutions (such as OpenFisca) in the context of Personal Regulations Assistants (PRA) across three Member States to ease access to schemes to which citizens and other entities are entitled.

Early assessment of this Pilot with respect to the **GovTech4All Maturity Scan** tool portrays an overall score status of 3 for TRL, 4 for SRL, and 2 for CRL. More specifically:

		Not yet achieved	Partially achieved	Fully achieved							
	Status	1	2	3	4	5	6	7	8	9	
Technological Readiness Level	3										
Societal Readiness Level	4										
Community Readiness Level	2										

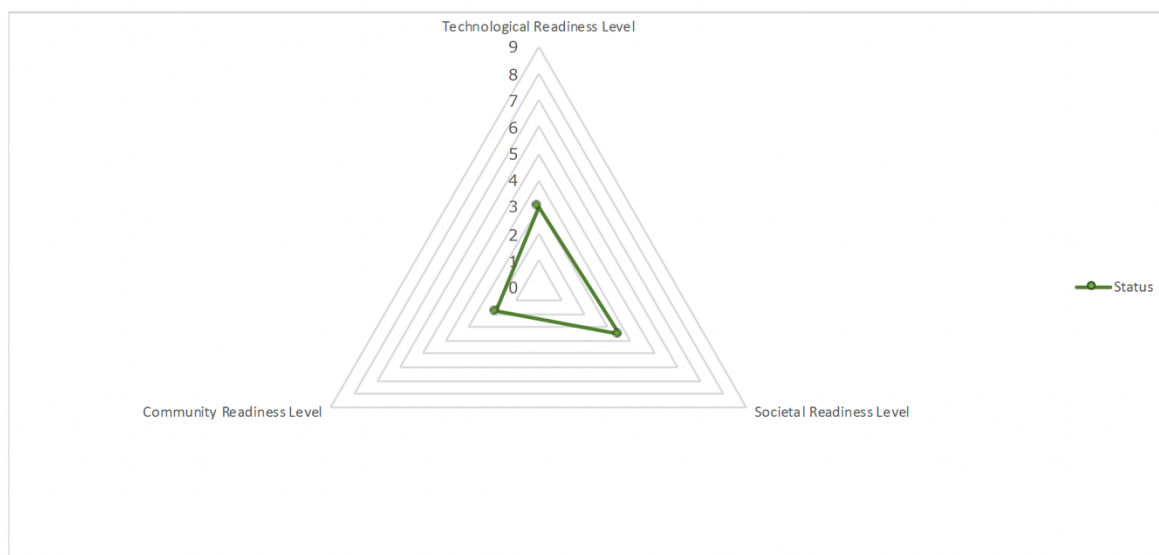


Figure 2 Spider-web of the assessment analysis results for Pilot 2

It should also be noted that the TRL, SRL, and CRL are different for each country contributing to Pilot 2. This creates difficulty in forming a hybrid overview, and it may be prudent to assess these separately for each country once specific use cases have been selected per country or at the conclusion of the project.

Pilot 3: Start-up challenge for innovative procurement

Market-ready solutions from startups and scaleups that are being implemented in the private sector could be a good fit for the public sector's needs, also in the field of energy efficiency.

The proposed solution to this complex situation is a GovTech Startup Challenge. This process will identify, pilot, and scale solutions from startups and scaleups already on the market with high TRLs that could help European municipalities use energy more efficiently and minimise the impact of the energy reduction requirements that will apply to all countries.

The GovTech Startup Challenge will follow an open innovation process to define a concrete and actionable challenge that can be solved with technology from startups and scale-ups and run a six-month pilot with the best solution identified.

The GovTech Startup Challenge aims to contribute to the development of a European GovTech single market and the adoption of innovative procurement methods that allow public institutions to experiment with innovative market-ready solutions before scaling up.

This will be achieved by:

- Creating a pre-commercial space where local governments can become acquainted with and pilot innovative solutions developed by startups and SMEs in the energy efficiency field.
- Bringing new providers such as startups and scale-ups closer to public administration.
- Implementing a GovTech open innovation process at the EU level, which can be replicated by other European institutions.
- Implementing in different municipalities the Design Contest procurement option.

Early assessment of this Pilot with respect to the **GovTech4All Maturity Scan** tool portrays an overall score status of 3 for TRL, 2 for SRL, and 0 for CRL. More specifically:

		Not yet achieved	Partially achieved	Fully achieved						
	Status	1	2	3	4	5	6	7	8	9
Technological Readiness Level	3									
Societal Readiness Level	2									
Community Readiness Level	0									

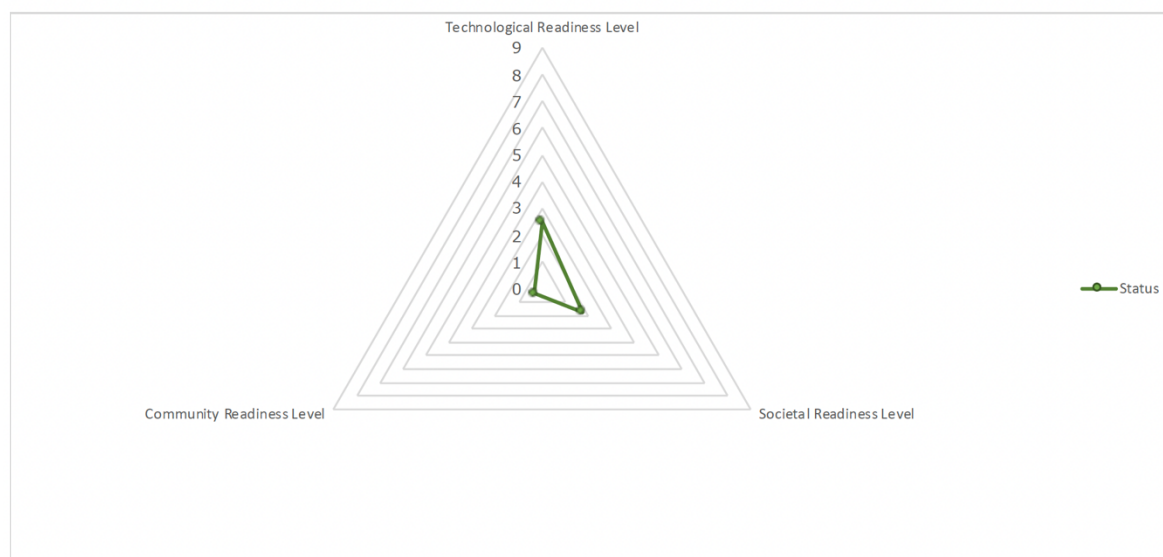


Figure 3 Spider-web of the assessment analysis results for Pilot 3

4. Recommendations

4.1 Overview of assessment

Based on the outcomes of the assessment process for all pilots of GovTech4All, the WP3 team has observed a clear diversity in the maturity status of each pilot as well as a low scoring in most of the indicators as expected, indicating the low level of maturity of each pilot which is anticipated at the early stages of such projects, when the requirements elicitation phase is still ongoing and the critical decisions on the use cases are still under finalisation.

Indicator	Status		
	Pilot 1 Status	Pilot 2 Status	Pilot 3 Status
Technological Readiness Level (TRL)	2	3	3
Societal Readiness Level (SRL)	2	4	2
Community Readiness Level (CRL)	1	2	0

Table 2 GovTech4All Pilot Maturity Assessment Overview

As a general observation, it is evident that across all Pilots the initial levels of all indicators, e.g. for **TRL**: basics in focus, formulation of concept process, for **SRL**: identification of societal tasks, formulation of a draft proposal for the proposed solution, for **CRL**: identification of organisational needs, establishment of inventory of possible effects, etc., have progressed quite sufficiently and achieved a high level of completion. This is also thoroughly described and verified in D2.1 and is deemed logical and expected at this stage of all pilots into the project.

However, further aspects (levels) of these indicators portray a lower level of maturity which is expected to be increased in the second half of the first year of the project, during pilot execution since these levels are expected to present a significant increase.

4.2 Scale-up Criteria and Recommendations

At this stage of the project and considering the early low maturity levels of all Pilots, we have recognised the need to provide horizontal suggestions and recommendations in the form of criteria across all Pilots, to promote scalability. These recommendations will be further enhanced and tailored for each Pilot separately as we progress into the project, starting from **M12**, where 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**.

The list of proposed criteria and recommendations across all Pilots can be found below:

Criteria	Example Questions/ Characteristics
<p>Problem</p> <p>Describe the problem, who it affects, what it affects and how it is currently being addressed (if at all). Where possible, draw on recent data available that provides evidence of the problem and its impacts. This may include population survey data</p>	<ul style="list-style-type: none"> ▪ What is the problem and who does it affect? ▪ How does the problem impact on the general public and specific citizens/stakeholders associated with the different domains for the pilots? ▪ What is current practice to address the issue?

Criteria	Example Questions/ Characteristics
<p>either at the local, regional, or national level, or secondary data sources as examples.</p>	
<p>Pilot Solution</p> <p>Description of the proposed solution or intervention to address the problem.</p>	<ul style="list-style-type: none"> ▪ Describe the aims/objectives and intended outcomes of the proposed solution proposed for scale up. ▪ Provide (1) a summary description of the proposed solution and (2) its aims and objectives. ▪ Describe the key elements of the proposed solution proposed for scale up (including the process of delivery). ▪ What are the key intervention components? (e.g. Frequency and intensity of the proposed solution, etc.).
<p>Strategic and political context</p> <p>Consideration of the current strategic, political, and environmental context. It may also help to consider other influences that may contribute to the context such as industry/commercial players or the non-government sector.</p>	<ul style="list-style-type: none"> ▪ Is addressing the problem consistent with national, state or regional policy directions or priorities? ▪ Is addressing the problem an identified need of funding agencies? ▪ How well will the intervention proposed for scale up align with the broader strategic and/or political context?
<p>Effectiveness</p> <p>Level of evidence available to support the scale up of the proposed solution. This includes the consideration of evidence from various sources such as the scientific literature and/or from results of any other known evaluations of the intervention if it has been piloted/trialled in your area or by someone else in another area. In some cases, you may have access to both types of evidence, but in others you may be limited</p>	<ul style="list-style-type: none"> ▪ What is the strength of evidence of effectiveness for the proposed solution in addressing the problem, based on literature? ▪ What was the size of the proposed solution effect (if known)? ▪ Describe core proposed solution components that contribute to intervention effectiveness (if known) ▪ Is the effect size of the proposed solution meaningful from a population policy perspective (according to domain or use case)? ▪ Did the proposed solution have differential

Criteria	Example Questions/ Characteristics
<p>to one only. It is important that you read and consider both if available.</p> <p>In this section, the target population is defined as the group of people the proposed solution is intended for. In some cases, your target population can be very specific, for example, those with a certain condition/risk factor. In others, the target population can be broad, for example all those within a specific geographical area. It is important that a target population is defined as it will have an impact on future monitoring and evaluation activities.</p>	<p>effects on the target population?</p> <ul style="list-style-type: none"> ▪ Did the proposed solution have any known unintended consequences and/or adverse outcomes that were reported (in the literature or elsewhere)? ▪ Is there evidence that the proposed solution has a relative advantage over existing solutions to address the same problem? ▪ Has the proposed solution been implemented at a: <ul style="list-style-type: none"> ○ (a) Larger scale (either in literature or elsewhere) ○ (b) Other delivery settings (from original intention)?
<p>Intervention reach and acceptability</p> <p>Considers the reach and acceptability of the proposed solution for the target population.</p>	<ul style="list-style-type: none"> ▪ Describe the target population for the proposed solution at scale. ▪ How will the intended target group be identified and recruited at scale? ▪ Are there any foreseeable facilitators and/or barriers for reaching the target populations as part of the scale up process?
<p>General infrastructure considerations</p> <p>Consideration of the potential implementation infrastructure required for scale up. Some of the answers to these questions may be known or could be extrapolated given known information.</p> <p>Implementation infrastructure comprises the organizational and workforce support systems required for implementation at scale, including training, accreditation processes, competency frameworks, information and performance monitoring systems.</p> <p>Implementation support team can be taken to refer to the additional human</p>	<ul style="list-style-type: none"> ▪ Describe the infrastructure requirements for the delivery of the proposed solution. ▪ Describe the operational requirements for delivery of the proposed solution. ▪ Were there facilitators and/or barriers to the creation and maintenance of implementation infrastructure? ▪ Have there been any projections/estimations made for scale up, to consider: <ul style="list-style-type: none"> ○ Likely implementation infrastructure required ○ Likely resources and timeframe required to build or procure the implementation infrastructure? ▪ Will implementation at scale require the creation of an implementation support

Criteria	Example Questions/ Characteristics
<p>resources required to assist in the implementation at scale. Their roles may include, but are not limited to, assistance with the delivery setting and workforce, managing or providing oversight of the scale up process, training and providing advice.</p>	<p>team?</p> <ul style="list-style-type: none"> ▪ Are there any foreseeable facilitators and/or barriers to building implementation infrastructure as part of the scale up process?
<p>Delivery settings and Workforce considerations</p> <p>Considers the setting within which the proposed solution is delivered as well as the delivery workforce. In this domain, we refer to the delivery setting as the 'setting' in which the proposed solution is to be implemented, for example, municipalities, ministries, NGOs, etc. The delivery organisation, on the other hand, refers to the individual organizations that will implement the proposed solution. Delivery organizations may be newly created for the purpose of scaling up or they may already exist. Finally, the delivery workforce refers to those directly involved in delivering or administering the proposed solution to the target population.</p>	<ul style="list-style-type: none"> ▪ Will the proposed solution be implemented in the same settings at scale? ▪ Who will deliver the proposed solution at scale? ▪ Is the proposed solution likely to be acceptable to the delivery workforce involved if implemented at scale? ▪ Does the proposed solution require a small or a large departure from current practices and cultures of delivery organisations and workforce? ▪ Have there been any projections/estimations developed for scale up, to consider: <ul style="list-style-type: none"> ○ Likely level of adoption/uptake rates of delivery organisations ○ Likely required timeframe required to achieve desired level of adoption/uptake by delivery organisations. ○ Likely required timeframe to achieve the desired levels of resourcing/recruitment of the delivery workforce. ▪ Are there similar proposed solution already in place in the proposed delivery setting that might facilitate or hinder scale up? ▪ Are there any foreseeable facilitators and/or barriers for the delivery settings as part of the scale up process? <ul style="list-style-type: none"> ○ Facilitators or barriers in this case

Criteria	Example Questions/ Characteristics
<p>Cost and quantifiable benefits of scale-up</p> <p>Considers the known costs of the proposed solution delivery as well as any quantifiable benefits. Economic evaluation is dependent on information on the costs and benefits of programs. Methods include cost effectiveness analysis, cost benefit analysis, cost utility analysis, etc. In some circumstances, proposed solution costs may not be well known, but it is preferable that some indication of costs be gathered so that more informed consideration of scalability can be made.</p>	<p>can be in terms of process, people, practices, policies, budget.</p> <ul style="list-style-type: none"> ▪ What were the proposed solution costs reported (if available)? ▪ Was there any evidence of benefit outweighing the costs?
<p>Proposed solution fidelity and adaptability</p> <p>Considers whether there are any changes to the proposed solution required for scale up. For example, if the original solution required the delivery of 10 separate elements and only 8 elements are to be delivered in the scale up, record this. Any known impacts of these changes should also be noted.</p>	<ul style="list-style-type: none"> ▪ Will there be any changes and/or adaptations made to the solution from what was described if the proposed solution is scaled up? ▪ Are those changes and/or adaptations likely to have any impact on the intended outcomes of the proposed solution as described? ▪ How will proposed solution fidelity be monitored and maintained?
<p>Sustainability (i.e., long term outcomes of the scale-up, etc.).</p> <p>Consider the longer-term outcomes of the scale up, and how, once scaled up, the proposed solution could become sustainable over the medium to longer term. Some of these questions will be</p>	<ul style="list-style-type: none"> ▪ What level of integration into existing service delivery settings or organisations will the proposed solution require if scaled up? ▪ If the proposed solution is implemented at scale, will it require a large commitment of funds (initial or ongoing)? ▪ Is the proposed delivery workforce required for implementation at scale sustainable (e.g. financially and/or in terms of supply)?

Criteria	Example Questions/ Characteristics
<p>difficult to answer or, in some cases, impossible.</p> <p>However, they are listed to promote thinking and to facilitate planning, which may increase the likelihood of future success. It is worth noting that 'sustainability' is context dependent, and it will be necessary to consider your context when determining what timeframe would be appropriate for the intervention to be considered sustainable or how best to define what sustainability means.</p>	

Table 3 Scalability criteria and recommendations for GovTech4All Pilot

5. Annex A – GovTech4All Maturity Scan

Technological Readiness Levels (TRL)

The TRLs indicate the degree of development of a technology (intended innovative solution), where TRL 1 stands for technology at the beginning of development and TRL 9 for technology that is technically and commercially ready.

Level (1-9)	Question	Answer option: Yes or No	Explanation - Why 'NO' or why 'YES'
Verkennen	Level 1: Basics in focus You will research your innovative idea and the basic principles (frameworks and preconditions for creating the solution) of the innovation. You will be involved in fundamental research and desk research.	Has the objective been determined?	Choose your answer here
		Have the principles (frameworks and preconditions) been determined?	Choose your answer here
	Level 2: Technology concept formulated You have formulated the technological concept, including the practical applications. In this phase, you will mainly be involved in experimental and/or analytical research.	Is the technology that will be applied clearly formulated?	Choose your answer here
		Has a potential application of the technology been identified?	Choose your answer here
		Have any experiments been conducted with the technology?	Choose your answer here
	Level 3: Experimental Proof of Concept You investigate the applicability of the concept on an experimental basis (experimental proof of concept). You test and validate hypotheses about different components of the concept.	Have the hypotheses regarding the components of the concept been validated?	Choose your answer here
	Have any experiments been carried out on the application?	Choose your answer here	
Ontwikkelen	Level 4: Technology validated in lab You will test the Proof-of-concept of your innovation on a lab scale. A prototype that you develop in this phase costs relatively little money and time to develop and is therefore still far from a definitive product, process or service.	Have the concepts been tested in a lab (a controlled environment)?	Choose your answer here
		Has a first prototype been made?	Choose your answer here
	Level 5: Technology validated in relevant operational environment You will investigate the operation of the technological concept in a relevant environment. This is the 1st step in the demonstration of the technology. A prototype that you develop in this phase costs a relatively large amount of time and money and is not far removed from the final product or system	Have the concepts been tested in a relevant (real) environment?	Choose your answer here
		Does the prototype (partially) work?	Choose your answer here
	Level 6: Technology demonstrated in relevant operational environment You will extensively test and demonstrate the prototype in a relevant test environment. Testing takes place after technical validation in a relevant (pilot) environment, such as a living lab. The prototype provides insight into the operation of all components together.	Has the innovation been proven to work?	Choose your answer here
		Has a market been found for the innovation?	Choose your answer here
Demonstreren	Level 7: Prototype approved in operational environment You will test and demonstrate the prototype in a user environment to prove operation in an operational environment. The demonstration of the prototype in a practical environment provides new insights for the final version and application of your innovation	Has the prototype been tested in the user and operational environment?	Choose your answer here
		Has the prototype been refined in response to the new insights from the demonstration?	Choose your answer here
		Has the final prototype been tested and demonstrated?	Choose your answer here
	Level 8: Product/service is complete and qualified In this phase, the innovation takes its final shape. You have tested the technological operation and it has been proven that it meets set expectations, qualifications and standards (certification). In addition, you determine the financial frameworks for (mass) production and launch and you are ready for the next step.	Does the innovation meet all expectations, qualifications and standards?	Choose your answer here
	Is there a financial framework for scaling up?	Choose your answer here	
Marktintrouductie	Level 9: Actual system proven in operational environment The innovation is technically and commercially ready; Production-ready and ready for launch in the desired market environment. Now that the entire development process has been completed, you know how to get your product to the desired target group in the right market.	Has the innovation been introduced/operational in the market?	Choose your answer here

Table 4 GovTech4All Maturity Scan - Technology Readiness Level (TRLs)

Societal Readiness Levels (SRL)

The SRLs indicate the degree of integration of the 'solution' (i.e. technology, product, process or intervention) into society. This is about the social acceptance of the intended/chosen 'solution'. The idea behind this is that every innovative 'solution', whether technical or social, should be integrated into society, the higher the SRL levels, the better integration into society has been taken into account in the development of a 'solution'.

Level (1-9)	Question	Answer option: Yes or No	Explanation - Why 'NO' or why 'YES'
Level 1: Social task identified You have identified the social need and underlying question/task in relation to the overarching innovation task.	Have societal needs been identified?	Choose your answer here	
	Has the overarching innovation task been identified?	Choose your answer here	
Level 2: Draft proposal for the proposed solution formulated You have formulated the draft proposal for a proposed solution, taking into account various components: 1. the potential impact of the solution on society; 2. an assessment of society's willingness to adopt the solution; 3. Identification of relevant stakeholders for the development of the solution.	Has the potential social impact been mapped out?	Choose your answer here	
	Has the potential social willingness been mapped out?	Choose your answer here	
	Have the relevant stakeholders/interested parties been identified?	Choose your answer here	
	Is there a draft proposal describing the proposed solution?	Choose your answer here	
Level 3: First round of testing of the proposed solution together with relevant stakeholders You have shared the first sketches of the proposed solution (e.g. through visual mock-ups) with relevant stakeholders. In this way, a selected group from society/target group gets to know the solution (read: technology, product, process or intervention).	Are the first sketches of the proposed solution divisible?	Choose your answer here	
	Has there been a first round of testing with a small selection of stakeholders?	Choose your answer here	
Level 4: Proposed solution validated by testing in a closed relevant environment The intended impact and social readiness were measured because the proposed solution was tested in a closed environment with a selected group from society/target group.	Have you measured the intended impact of the solution with a selected group from society/target group?	Choose your answer here	
	Have you measured the social readiness of the solution among a selected group from society/target group?	Choose your answer here	
Level 5: Proposed solution validated by testing in the 'real' living environment in collaboration with relevant stakeholders/stakeholders Society is familiar with the proposed solution or similar initiatives, but is not yet aware of its benefits.	Has the proposed solution been introduced into the 'real' living environment?	Choose your answer here	
	Has the proposed solution been validated by stakeholders in the 'real' living environment?	Choose your answer here	
Level 6: Solution demonstrated in the living environment and feedback collected on the impact of the solution Solution demonstrated in the 'real' living environment in collaboration with relevant stakeholders/target group to get feedback on the potential impact: society is familiar with the 'solution' or similar initiatives, and awareness of its benefits is increasing.	Has the solution been demonstrated in the living environment in collaboration with relevant stakeholders?	Choose your answer here	
	Has feedback been collected on the potential impact of the solution from the relevant stakeholders?	Choose your answer here	
Level 7: Refinement of the solution, and if necessary, retest in the living environment with relevant stakeholders/target group Society is fully aware of the benefits of the solution, part of society is beginning to adopt similar solutions.	Based on the feedback in level 6, has the solution been further developed?	Choose your answer here	
	Has the further developed solution been retested in the living environment with the relevant stakeholders/target group?	Choose your answer here	
Level 8: Targeted solution including a plan for social integration, fully and practically applicable Society is ready to integrate the solution and has already made use of similar solutions from the market.	Has a complete and practically applicable plan been drawn up to integrate the solution into society?	Choose your answer here	
	Has society already made use of similar solutions?	Choose your answer here	
Level 9: Actual solution proven in relevant environment after market introduction The solution that is available is used by society.	Is the solution available and accessible to society?	Choose your answer here	
	Is the solution actively used by society?	Choose your answer here	

Table 5 GovTech4All Maturity Scan - Societal Readiness Level (SRL)

Community Readiness Levels (CRL)

The community refers to the collaborating parties who, after development and construction of the solution, are jointly responsible for the management and operation of the solution.

	Level (1-7)	Question	Answer option: Yes or No	Explanation - Why 'NO' or why 'YES'
Verkennen	Level 1: Organizational Needs Identified Based on the concept of the intended solution, it has been determined which parties will produce and manage the intended solution together after implementation. In addition, the organisational needs of the parties have been identified, both internally and among themselves in the collaboration (what needs to be arranged?).	Has an assignment been formulated to get started with this innovation task?	Choose your answer here	
		Are all (future) cooperating parties known and involved?	Choose your answer here	
		Have the organizational needs of the collaborating parties been identified?	Choose your answer here	
	Level 2: Inventory of possible effects established Based on the concept of the arc solution, it was determined which possible effects on roles, processes, functions and structures for the solution are recognized.	Has an inventory of the possible effects on roles, processes, functions, structures for solution been done both within and between the collaborating parties?	Choose your answer here	
		Has an assignment been given at the administrative level to develop a detailed design?	Choose your answer here	
	Level 3: Detailed elaboration of impact on organizations established The possible effects have been translated into a detailed elaboration of the impact on roles, processes, functions, structures for resolution.	Has a detailed elaboration of the impact of the proposed solution within the organization in terms of roles, competencies and skills, physical infrastructures required, etc., been identified?	Choose your answer here	
Has an assignment been given at the administrative level to realize the detailed design?		Choose your answer here		
Ontwikkelen	Level 4: Solution validated in simulation The detailed elaboration was validated by simulation in a shielded environment.	Has the solution been validated by simulating the intended changes?	Choose your answer here	
		Has the proposed solution been validated through pilot testing (chain test) in real or realistic organizational environments with all stakeholders?	Choose your answer here	
Demonstreren	Level 5: Solution validated in chain/integration test The solution has been validated in a production-like chain/integration test	Has the proposed solution been validated through pilot testing (chain test) in real or realistic organizational environments with all stakeholders?	Choose your answer here	
Marktproductie	Level 6: Solution Released to Production After validation, the solution is formally released for production: end users can start working with it.	Has the proposed solution been formally released (administrative decision) for production and actual use?	Choose your answer here	
		Level 7: Solution proven in production Has the solution proven itself in production?	Choose your answer here	

Table 6 GovTech4All Maturity Scan - Community Readiness Level (CRL)