WP2 Governance Models

# D2.2- Advanced Governance Model

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# Glossary

| ENTRY | DEFINITION |
|---|---|
| Co-production | Co-production refers to the generally voluntary (not regulated nor mandated) and active involvement of citizens alongside public employees in the co-engagement, co-design, co-implementation and/or co-sustainability of public services (Loeffler & Bovaird, 2020; Brandsen & Honingh, 2018). |
| Co-engagement | During the engagement phase, suitable participants are identified, screened, and engaged systematically, in relation to the underlying problem that needs to be addressed (Trischler et al., 2019). Subsequently, the participants try to gain an initial impression of the underlying problem that needs to be addressed. |
| Co-design | Co-design can be defined as a method to address complex societal problems and drive public sector innovation collaboratively (Dudau et al., 2019; Voorberg et al., 2015). During a co-design process, users are allowed to take part in a design team since they are the experts of their experience (Sanders & Stappen, 2008). |
| Co-implementation | During the implementation subphase, the public service is first piloted, evaluated and if necessary re-designed. It is hereby important to note that we can only speak of "co-"implementation if users are actively involved. |
| Co-sustainability | The most crucial question during the sub-phase of service handover/maintenance is how to continuously ensure clarity about ownership and responsibilities, in order for a co-production initiative to become viable and sustainable. |

## ACRONYMS

| ABBREVIATED | EXTENDED |
| --- | --- |
| C2C | Citizen-to-citizen ('Do-it-yourself Government') |
| C2G | Citizen-to-government ('Citizen Sourcing') |
| G2C | Government-to-citizen ('Government as a Platform') |
| P+C | Public-civic partnership |
| GMB | Group Model Building |

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# 1 Introduction

The overall goal of the INTERLINK project is to overcome the barriers preventing public administrations from efficiently sharing services across European borders. The ambition is to combine the advantages of bottom-up initiatives with those of top-down (e-) government frameworks. As part of this, the Work Package 'Governance Models' (WP2) developed a collaborative governance model, with the aim of highlighting key issues in the co-production between stakeholders (such as citizens, businesses and civil society) and public administrations. This report presents the advanced governance model as it has been developed during the project. The Preliminary Governance Model, which was the basis for the advanced version, was presented in deliverable 2.1.

The purpose of the model is to make co-production in public services through digital platforms more effective. Co-production is a promising avenue for the redevelopment and new development of public services, but it is often difficult for public administrations to realise effectively and there is little reliable material on how to do it in relation to digital platforms. Our model here offers both a conceptual framework on how to organise the process and concrete recommendations on how to deal with the most frequently encountered governance issues. This makes it a useful resource both for public administrations and their stakeholders when developing a platform-based service. Each context is unique, but awareness of lessons learnt from earlier experiences can help public administrations make their own initiative more effective and avoid unnecessary loss of public resources.

Fortunately, we did not have to start entirely from scratch. Social scientists have long studied how collective action takes shape and there is a solid theoretical basis at a general level (see section 2). The contribution of the INTERLINK project has been to translate these general insights towards the context of public services delivered through digital platforms. Accordingly, during the first phase of the project, we conducted a short literature review to collect the available conceptualisations and empirical studies. On this basis, through interdisciplinary collaboration within the INTERLINK consortium, we developed the initial conceptual framework underneath the governance model. This resulted in the preliminary model (see deliverable 2.1). The conceptual approach central to the model was one of the key drivers of the socio-technical requirements for the INTERLINK platform (task 4.1) and was thus integrated into the platform's architecture (task 4.2). The conceptual model also fed into governance performance indicators, presented in deliverable 2.3.

After this first phase, we proceeded to validate the preliminary model through a number of methods. Within the project, the progress of the use-cases was evaluated, which yielded useful input (task 5.4). We then conducted a more extensive study of relevant case studies (task 2.2) to check whether our conceptualisation was sufficiently in line with practice and to examine which governance issues emerged in the context of digital platforms, in addition to those already signalled in the literature. We also conducted two group model building sessions to help us in the process of developing a coherent narrative for the model. We refer to subsection 2.2 for a more detailed description of the methodology. The research not only generated more content for the model, but also helped us to make it more in line with the preferences of stakeholders. The steps undertaken are summarized in table 1.

*Table 1: Steps in the development of the Advanced Governance Model*

1) **Development of a Preliminary Governance Model (T2.1)**
The initial phase involved an extensive literature review to establish a preliminary governance model. Drawing from the state of the art in governance literature, a conceptual framework was constructed, outlining phases, subphases, and associated questions and challenges. This model provided a foundational structure for subsequent refinement.

2) **Selection of cases for comprehensive case research (T.2.1)**
Next to the INTERLINK pilots, external cases were carefully selected to ensure a comprehensive coverage of digital platforms with varying characteristics. Cases were chosen to represent a diverse range of governance scenarios and challenges, facilitating a holistic understanding of platform governance dynamics (see 2.2 and 2.3.9).

3) **Qualitative Case Research (T2.1)**
A qualitative approach was adopted to investigate the selected cases. Document analysis, focus groups, and expert interviews were conducted (see 2.2). Document analysis provided historical and formal context, while focus groups and interviews gathered qualitative data from key stakeholders, enhancing the depth of understanding of governance processes.

4) **Group Model Building (GMB) Sessions**
In addition to the research planned in the INTERLINK proposal, two Group Model Building (GMB) sessions were conducted with both Interlink partners

and an external case, Pleio. These sessions facilitated interactive discussions and collective sense-making. Visualisation tools were employed to iteratively refine the governance model based on participants' insights and expertise (see 2.4).

5) **Cross-case and cross-methods synthesis (T2.4)**
    Findings were synthesised across the cases under investigation as well across various methods and data sources, identifying patterns and joint insights. Lessons learned from the governance process were integrated and structured according to the different phases and subphases. The presentation of key findings was further differentiated into key questions to help navigate the reader throughout the lessons learned (see chapter 3).

6) **Recommendations (T.2.4)**
    The synthesised findings were distilled into actionable recommendations. These recommendations were grounded in empirical evidence gathered from case research, peer feedback, and GMB sessions. They enhance the relevance and effectiveness of the Advanced Governance Model.

In section 2, we will start by describing the definitions and theoretical framework of the model, as well as the methodology we used to validate it. In section 3, we describe the key governance issues identified as part of the model, with a concise description of lessons learned from the literature and our own research. In section 4, we summarise these lessons and use them to define practical recommendations on how to organise co-production in platform-based public services effectively, as well as exemplify how these recommendations have materialised in the development of the INTERLINK collaborative environment.

# 2 Definitions and methods

## 2.1 Definitions and theoretical approach

In this paragraph we clarify the key terms of 'public service' and 'co-production' and outline the theoretical approach to the design of the governance model.

### 2.1.1 Public services and co-production: definitions

The term 'public services' can be found in several disciplines and has various interpretations. According to Guarino (2017), there is still no standard way of describing and documenting public services. Basic definitions on what constitutes a public service differ and there is no standard global interpretation of what types of public services exist. Here we need to reduce the conceptual fuzziness around the term 'public services', by capturing the core notion that underlies this concept.

There are some complications in pinning down its meaning. It is not particularly helpful to start from the premise that public services affect the public interest. Bozeman (1987) famously noted, 'all organisations are public'. Meaning that all activities can be said to have an element that touches upon the public interest. Think for example about the pollution produced by private industries. In a similar vein, when we refer to the source of funding it is not possible to make an unambiguous distinction. Not all public services are publicly funded. The past decades have seen a growing use of market mechanisms (Osborne, 2010). While public funding is important, it is often complemented by other funding streams. Public authorities can initiate or support the development of services which are then taken up by businesses (the Internet being an illustrative and famous example). Moreover, the idea that public services are state-provided is incorrect. In many countries this was never true as private non-profits played a large role in the provision of public services. And again, over the last decades we have witnessed an increasing involvement of private actors (businesses, civil society) in the provision of public services.

The three criteria illustrate that it is impossible to come up with a set of universal straightforward criteria to define public services. Anyhow, the role of public authorities in public services has shifted towards one of systemic responsibility: even where they do not fund or provide a concrete service directly, they may commit to ensuring or supporting that such a service is provided.

Guarino (2017) offers a refined definition of (public) services, which we will follow here, which emphasises the continuous commitment of public authorities in making services available: *"A public service is an aggregation of all activities that realize a public authority's commitment to make available to individuals, businesses, or other public authorities some capabilities intended to answer their needs, giving them some possibilities to control whether, how and when such capabilities are manifested"* (Guarino, 2017).

One can think of numerous public services like safety, education or childcare. In INTERLINK particular emphasis is given to e-services (or services relying on digital technologies). Kvasnicova et al. (2016) define e-services as *"activities provided by a provider to a recipient; these services are non-material; they are provided by means of information and communication devices and the result of their consumption can be a benefit, service or acquisition of property"* (p. 193). A distinction can be made between wholly digital services and human services that are digitally supported, but which also rely heavily on 'social technologies'. An important challenge for the project is to clarify to what extent a service depends weakly or deeply on particular software to be provided effectively. Evanschitzky et al. (2007) further distinguish different types of e-services by the degree to which a service can be digitised (1) and the ability for co-creation (2), involving citizens in aspects of the (co-)design and (co-)delivery of the service.

Given our focus on public e-services and the emphasis that is on the commitment of public authorities to ensuring or supporting the availability of e-services we need to look at the notion of co-production.

The use of the term 'co-production' is varied and there is no uniformly accepted standard, although some definitions are regularly used. This is not the place for an elaborate discussion, for which we refer to existing literature (e.g., Bovaird & Loeffler, 2020; Brandsen et.al., 2018). In this deliverable, co-production will refer to a process in which services are jointly designed and/or delivered by public authorities and other stakeholders. The term is in practice often used interchangeably with co-creation, with the former more often referring to the delivery stages of a service, the latter to its design (Brandsen & Honingh, 2018).

### – *2.1.2 Theoretical approach to the Governance Model*

There have already been various attempts to develop governance models in the relevant literature (see deliverable 2.1 for a more in-depth discussion of the state-of-the-art). Among the best-known are Linders' (2011) four ideal types: public-civic partnership (P+C),

government as a platform (G2C), citizen sourcing (C2G) and 'do-it-yourself' government (C2C). These were the starting-point of the project's conceptual model and we have accordingly developed our perspective on governance on that basis. Those models are relatively coherent conceptualisations of what the government–stakeholder relationship could look like. However, they do not necessarily conform to reality, for various reasons (which, to be fair, is not necessarily how Linders intended them, but it is how they are often interpreted, as happens with many ideal types).

To begin with, the models are static, whereas an initiative may over the course of its lifetime adopt different models. For instance, we often see that a project evolves from sourcing with citizens at an early stage (engagement/design phase) to partnership with an organisation at a later stage (sustainability phase). At each stage, not only can the nature of the relationship change, but also the set of stakeholders. In each case and stage the responsible parties must choose the type and extent of co-production. Also, the phases are in practice less a sequential decision-making timeline than clusters of decisions. One should, for example, consider how to include recursiveness and feedback loops in a model. This idea implies a need to consider a model less a 'funnel' than a web of links and constraints between different decisions.

Moreover, the case study research has shown that stakeholders usually do not wish to choose which model to use from menu options, but aim to assemble a model of their own that fits their particular situation, with elements from the ideal types. Hybrids will therefore be the standard. Models such as G2C and others would not be destinations, but 'landmarks' by which to chart the course towards an individual model, which would always be a hybrid. Public administrations can thus develop a model of their own that fits their unique contexts. Our model helps to structure this process of developing a unique model, by (1) dividing the process of platform development into four distinct phases, (2) identifying governance issues related to those phases.

Our conceptualisation of development in terms of phases draws on concepts developed earlier, especially the business cycle and to a lesser extent the policy cycle. Drawing on these, we identified two main phases in the process: (1) one during which the service is (re-) designed and (2) one during which it is delivered: design and delivery, respectively. When the prefix 'co' is added, it signifies active involvement of users of a service at one or several points in the process. *Co-design* concerns activities that incorporate "the experience of users and their communities" into the creation, planning, or arrangements of public services" (Bovaird & Loeffler, 2012). *Co-delivery* is a joint effort by public authorities and stakeholders to provide and improve public services (Alford, 2014; Nabatchi et.al., 2017). However, it became clear while developing the Preliminary

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Governance Model that this categorisation was too broad from the perspective of co-production, since the phases contained different types of activities that were radically different in terms of ambitions and social dynamics. In the design phase, there can be both an open, participatory part that involves many actors as well as one focused on the development of concrete service design and tools within smaller teams. Delivery can consist of an active piloting/testing phase and a routine phase in which the original participants are less or no longer involved. To take account of this, we have divided the two phases into four subphases: engagement, design, implementation, and sustainability. In our view, this balances simplicity and practicality (see table 2).

*Table 2. Phases of co-production*

| Phase | What occurs during each phase |
| --- | --- |
| Engagement | This is an open process during which users and/or other stakeholders interact to define the nature of the problems and the direction of the solution. |
| Design | This is a closed process in which the solution is developed within a smaller team, which may or may not include stakeholders, from a basic concept towards tools and modules (instantiation). |
| Implementation | The service is first piloted, evaluated, and if necessary re-designed. Users may have a role in producing the service. |
| Sustainability | The service is continued as a routine process and is periodically evaluated. |

In conclusion, the services upon which INTERLINK focuses have the following characteristics:

1. *They are public services, in the sense that public authorities have committed to realising them or making them available.*

*2. They have an element of co-production, meaning that stakeholders such as private organisations and citizens collaborate with public governments in their design and/or their delivery.*

*3. The services are realised through the use of digital platforms, either as a fully digital service or as a human service supported digitally.*

The INTERLINK project has supported the development of such services, with the aim of making them sustainable and replicable by all stakeholders.

## – 2.2 Case study methodology

The Preliminary Governance Model (deliverable 2.1) offers a comprehensive discussion of the literature and a theory-based conceptualization of the governance process. However, to arrive at a comprehensive governance model, the conceptualisation needed to be applied to the empirical field. Thus, and as explained in the research steps earlier, we developed the Preliminary Governance Model into an Advanced Governance Model and concrete recommendations through a thorough empirical research on the perspectives, concrete experiences and lessons-learned. At the core of the empirical analysis was the research strategy of a multiple case design (Gerring & Cojocaru 2016; Thomas 2011). A multiple case design offers a robust and comprehensive approach for investigating the governance process of digital collaborative platforms. By examining multiple cases, i.e. different types of collaborative platforms with distinct governance structures, we were able to identify patterns, variations, and commonalities in the governance processes. This approach facilitates a more nuanced understanding of how diverse contextual factors influence governance decisions, ensuring that the findings are not confined to a single platform or specific circumstances. Furthermore, a multiple case design enabled the triangulation of findings, strengthening the validity and reliability of the results.  Through cross-case comparisons, we were further able to highlight best practices, challenges, and lessons learned in the governance process.

Overall, the analysis is thus based on eight cases of digital collaborative platforms (the Interlink case as well as seven external cases), covering eleven countries as well as  all levels of government with a predominance of the local one. The case selection was based on the dimensions of co-production identified in the literature and summarised by Linders (2011) (see table 3 for the questions that guided our case selection). By applying these dimensions during the case selection, we tried to include cases that show different values in each dimension to arrive at a broad and multi-faceted empirical basis for the

development of the advanced governance model (see the subsequent chapter on case descriptions and Table 4 for more insights and an overview respectively). The dimensions/guiding questions were also used during the analysis of the cases to better understand the contextual factors influencing the perspectives and experiences.

*Table 3. Case selection dimensions and questions based on Linders (2011)*

| Dimension: Questions |
| --- |
| *Actor versus beneficiary*: Who is leveraging whom? |
| *Organisational versus individual:* Is there collective or individual action? |
| *Stages of service delivery cycle:* At which phase is the activity occurring? |
| *Physical versus virtual*: Where does the action take place? |
| *Citizen power and responsibility:* Consulting, advising, or co-producing? |
| *Level of Connectedness:* What is the frequency of interaction? |
| *Entrepreneurial versus prescribed:* Is the process bottom-up or top-down? |

The empirical investigation was based on 1) the collection of documents, 2) focus groups and 3) semi-structured interviews. Documents included relevant digitalisation policies and strategies, organisational charts, action plans as well as reports. Here, we predominantly looked at the formal side of both the embeddedness of stakeholder collaboration as well as influencing factors (e.g. rules and regulations, mission, resources, organisational structures and processes).

In contrast, focus groups and semi-structured interviews were rather focused on the lived experiences of stakeholders. Two focus groups were conducted with representatives of the INTERLINK pilots. Here, we focused on first insights on the governance process of the development of a digital platform. The structure of the focus groups was threefold: 1) Understanding the story of the co-production initiative from the idea to the current status quo of the realisation; 2) Sharing the experiences, challenges and strategies following our conceptual notion and the process perspective on the co-production process; 3) inhibiting and promoting factors encountered (or expected) in the co-production process regarding the actors involved, the institutional framework and technological aspects.

Subsequently, we conducted 15 interviews among all cases. Based on the Preliminary Governance Model (deliverable 2.1) and its four phases, we developed an interview guide to ensure the lesson-drawing across cases (see Appendix 2). Here again, a threefold structure was applied: 1) Understanding the governance context, 2) Reflecting on the mission of the digital platform, 3) Understanding the governance process and respective challenges and coping strategies. Interview respondents included public officials at both the managerial and working level of the public organisations under investigation as well as external experts on the respective platforms and the process of their development.

The data was analysed in two steps guided by the conceptualisation of the Preliminary Governance Model dividing it into four distinct yet interrelated phases: Engagement, Design, Implementation, and Sustainability. In the initial step, a comprehensive examination of the data commenced with a focus on individual cases (see 2.3 for an overview). This exploration involved a deep dive into the individual governance processes of the platforms under investigation and focused on an understanding of the specifics in each case within the context of the defined phases. Guided by a set of key questions for each phase, a harmonious convergence of observations and analyses took place. This process ensured that the diverse data points from the individual cases were not only unified under the umbrella of each phase but also woven together into a coherent narrative reflecting the multifaceted nature of the study. Subsequently, the second step of the analysis process involved a synthesis of the insights from the diverse case experiences. Here, the emphasis shifted towards extracting valuable lessons from the cases, transcending their individual contexts. Through a discerning lens, these lessons were distilled into essential findings, illuminating the common threads across the cases in each phase. To enhance accessibility and facilitate a deeper understanding of the core findings, illustrative examples were carefully chosen. Both the distilled findings and illustrative examples are presented in chapter 3. The interplay between these two steps yielded a holistic and multifaceted understanding of the governance process of digital collaborative platforms. This approach not only provided a comprehensive application of the preliminary governance model's conceptual framework but also traced the underlying dynamics that shape the experiences in and across the Engagement, Design, Implementation, and Sustainability phases. The Advanced Governance Model is thus a robust framework incorporating both the conceptualisation of the Preliminary Governance Model and the comprehensive findings of the empirical analysis.

## - 2.3 Context and description of the cases

As described above, the cases researched in the use case analysis are all examples of co-production activities enabled or supported by a digital platform. To understand the variety of the cases, both in regard to similarities and differences in the context and set-up of the platform, a brief description of all included cases is necessary and thus provided in this chapter. The presentation of each question is structured based on the dimensions and questions provided in table 3. Please also see appendix 4 for links to further material on the platforms.

### - *2.3.1 INTERLINK (Italy, Latvia & Spain)*

INTERLINK aims at developing a collaborative platform that will facilitate co-production processes between public administrations and their stakeholders (citizens, companies, other public administrations), and will provide tools to monitor service customization and delivery (see deliverable 4.1 -list and description of the socio-technical requirements). The INTERLINK platform will facilitate frequent exchanges between PAs and private stakeholders, and will allow PAs tools to monitor service customization and delivery so as to grant accountability and legitimacy to the co-delivered services. This is accompanied by the design and implementation of so-called Interlinkers, i.e. well-documented core digital enablers to allow users to adopt standardized, interoperable and user-friendly tools to solve the common issue of co-delivery such as resource organizations, task scheduling, communication (e.g., for when the service needs to treat personal data that do not allow the use of a commercial product), monitoring. At the core of the development of these Interlinkers is the design and implementation of a set of templates, which tackle the legal, social and business aspects of service co-production, and deploy a collaborative environment, leveraging on web and mobile accessible tools, where users will be able to ask and offer specific competences needed to operate the service.

Regarding the **actors versus beneficiaries**, INTERLINK pilots vary. Overall, both public administrations and citizens can make use of the collaborative platforms. Pilots differ however in regard to whether they lean towards government-to-citizen (government as a platform) or citizen-to-government (citizen sourcing).

The **co-production activities** taking place on the INTERLINK platform (i.e., the collaborative environment) can be collective as well as individual. For example, public

organisations can use it to collaborate internally (e.g., in terms of strategic planning) or to enable individual citizens to provide feedback or organise collective spaces through the platform.

Regarding the **service delivery cycle**, INTERLINK focuses on both the co-design phase and delivery phase. Collaboration in planning (e.g., strategic planning) as well as for the improvement of service delivery (e.g., feedback on forms, organisation of collective space, citizen science) is covered by the pilot cases. Respective activities are predominantly organised digitally but can be accompanied by physical ones allowing the possibility for hybridity.

**Stakeholders' responsibilities** in the collaboration touch elements of both consulting/advising and co-producing. For example, transparency about strategic planning processes can be established through the platform and the digital tool can simultaneously be used to organise input and information from stakeholders to improve respective processes. Another example is the active consultation of citizens to improve forms and processes during the delivery of public services.

The **frequency of interaction** on the platform varies according to the purposes of the pilot cases. Single-purpose actions that only require one interaction, such as providing feedback to initiatives, as well as activities that require multiple moments of interaction, such as managing a collective space, are visible in the INTERLINK project. Processes within the INTERLINK platform are - so far - mainly top-down in the pilots as the public organisations initiating the co-production initiative also decide on the scope of collaboration, the levels of involvement and the incorporation of the results. At a later stage, however, the digital platform can also be used for bottom-up initiatives.

Overall, stakeholders involved in the INTERLINK platform are diverse and representative of a range of stakeholder groups including public organisations at different levels of government and citizens with various backgrounds. Furthermore, the INTERLINK platform and related activities are aimed at realising stability over time and long-term engagement of stakeholders. Linked to this, the platform serves both single-purpose and broad-focused goals. The control vis-à-vis the government is formally (and not unusual compared to other cases) relatively low. Outcomes of initiatives using the platform are mainly not binding, giving public administrations the highest influence over the handling of respective results and their consequences.

### - *2.3.2 WeGovNow & CO3 (France, Italy & Greece)*

WeGovNow (2017-2019) and CO3 (2019-2021) are European Horizon2020 projects focused on the development and ongoing maintenance of five disruptive technologies. One of the

disruptive technologies concerns a digital platform called 'FirstLife'. The FirstLife platform aims to support (self-)organization of citizens and/or collaboration of citizens with their local public administration, aimed at implementing initiatives related to the local community. In order to realise this, the FirstLife platform integrates crowd mapping functionalities and social network functionalities. FirstLife also engages in collaborative partnerships with various open-source platforms that offer additional functionalities, including LiquidFeedback. At its core, LiquidFeedback enables users to propose, discuss, and vote on various issues and topics. It differs from traditional voting systems by allowing users to express not just their agreement or disagreement with a proposal but also their preferences and nuances. This is achieved through a system of "liquid democracy," where participants can delegate their votes to others they trust or have expertise in specific areas. This delegation can be changed at any time, allowing for a dynamic distribution of decision-making power.

In terms of **actor versus beneficiary**, both public administrations and citizens can leverage the co-production initiative in the FirstLife platform. This means that both government-to-citizen (government as a platform) and citizen-to-government (citizen sourcing) modes of government are applicable.

The **co-production activities** taking place on the FirstLife platform can be collective as well as individual. Individuals can, for instance, share experiences, provide feedback on undertakings of their city administration, offer and discover free services in their local area, and contribute information on local issues. On the other hand, citizens can collectively share experiences and news with others, organise working groups, discuss ideas with fellow citizens, and create themed maps in collaboration with their community (representing collective actions).

Moreover, the activities can cover all phases of the **service delivery cycle**. Different activities are performed during different phases, such as proposition development, decision-making, civic and digital education, urban development, and participatory planning.

Activities can be characterised as hybrid, involving **both virtual and physical elements**. Various software components are involved, such as an interactive map with social functions. People can virtually report issues, collect and share information on local issues, debate and collectively make decisions through online voting. Many of these software components are, however, aimed at supporting physical activities (e.g., working groups).

**The processes within FirstLife** can be described as both consulting and advising. For example, individuals can discover what is happening in their neighbourhood, contribute

information on local issues, and share experiences with others, representing consulting. They can also vote, provide feedback on undertakings, share their views on planned developments, and discuss other map topics, which represents advising.

As regards the **frequency of interaction**, this varies from low to intermediate. Many single-purpose actions only require one interaction, such as providing feedback, reporting local issues, and voting. However, some undertakings require multiple moments of interaction, such as managing and promoting events and projects.

**Processes within the FirstLife platform** can be best characterised as bottom-up, emphasising collective proposition development and democratic decision-making (e.g., by voting). Examples of bottom-up processes involve citizens identifying problems and bringing attention to the responsible party, creating a local newsfeed, posting service offers, and presenting volunteering opportunities.

Overall, the stakeholders involved in the initiatives in FirstLife are diverse and representative. Collaboration takes place with various local stakeholder groups, including residents, civil society, and local companies. The platform also offers opportunities for online engagement when offline engagement is impossible. However, the risk remains that some people, such as digital illiterates, may be excluded. The initiatives can be both short-term and long-term. FirstLife offers an online ecosystem that supports the co-creation of solutions to local policy challenges, which vary from simple and easily fixed to rather complex and enduring. Consistently, the initiatives serve both single-purpose and broad-focused goals. They address local policy challenges while also encompassing community networking and self-organization, problem identification and tracking, democratic proposition development and decision-making, crowdsourcing knowledge and ideas, and the exchange of volunteering opportunities and free items. Regarding control vis-à-vis the government, this is relatively low. Public administrations are in control, given that the outcomes of the initiatives are not binding. Finally, the network is quite open, designed to enable open and participatory policy development processes.

### – *2.3.3 Pleio (Netherlands)*

Pleio is a platform that provides a robust and modern technical infrastructure catering to diverse target groups (ranging from government institutions to healthcare organizations within the Netherlands and across the European Union). Pleio's main focus is facilitating user-friendly collaboration and enabling people to work together on important societal challenges. Regardless of their physical location or the nature of the

tasks at hand, Pleio enables users to engage in participatory activities, share and enrich knowledge, and foster (internal) collaboration.

In the context of the Pleio platform, various aspects can be observed regarding its **functioning**. Firstly, the platform facilitates government-to-citizen interaction, acting as a platform where users can create groups to unite people around specific themes, projects, or cases. On the other hand, public organizations can actively search for local residents and experts who can contribute to policy-making processes. This feature allows for citizen sourcing (citizen-to-government).

Regarding the **nature of action on the platform**, it encompasses both collective and individual actions. Pleio enables activities within and across public organizations, as well as with private actors (such as non-governmental partners and citizens). It operates in a cloud-based environment, allowing access and collaboration beyond the traditional boundaries of organizations.

Regarding the **service delivery cycle**, Pleio primarily focuses on the co-design phase. Users have the ability to create or join online communities in which they can collaborate, share files, update statuses, manage agendas, and engage in various knowledge-sharing activities such as discussion forums and collaborative document creation.

The **platform operates** in a hybrid manner, encompassing virtual and physical interactions. Pleio combines online and offline participation to gather opinions and knowledge from, for example, local residents. It allows public organizations to create an online presence for existing offline functions or establish new ones.

In terms of the **nature of citizen engagement**, Pleio primarily functions as a consulting platform. It aims to improve collaboration within public organizations and between public organizations and private actors by offering innovative channels of communication and novel ways to collect feedback.

Moreover, the **frequency of interaction** on Pleio varies, ranging from high to low. The platform supports diverse projects, from coordinating large government programs (e.g. the Delta project) to facilitating daily communication between administrators of small municipalities (e.g. the municipality of Haarlem).

The platform is mostly **driven by** top-down initiatives, initiated and maintained by public organisations. While users can express their wishes and demands, the outcomes are not binding. Public employees are responsible for translating and considering these inputs in their decision-making processes, which suggests that they remain in control.

Overall, the diversity and representativeness of stakeholders highly depend on the specific activity performed in the Pleio platform. In some cases, collaboration may not

involve a significant number of people or a diverse, representative group. Moreover, Pleio operates in both open and closed modes. While individual user registration is free, organizations are required to pay an annual contribution based on the functionalities they wish to utilize. Furthermore, Pleio is focused on long-term sustainability and aims to create lasting partnerships within public organizations or between public organizations and private actors. In terms of its purpose, Pleio has a broad focus, supporting partnerships and collaboration between public organizations and various stakeholders.

### – 2.3.4 meinBerlin (Germany)

*MeinBerlin* aims to be the e-participation platform of the entire state of Berlin both at the regional (*Land*) and local *(Bezirk)* level. It works through a 'tool box' system providing the digital opportunity to realize citizen participation processes by all administrative units, e.g. surveys/consultation, participatory budgeting or feedback on planning processes.

In terms of **actor versus beneficiary**, only public administrations and state-owned companies can leverage initiatives making this case corresponding with a citizen-to-government (citizen sourcing) mode of government. Within this overall approach, differences can be found in regard to the stakeholder groups depending on the concrete initiative meaning that both the involved units of the public administrations and the addressed citizens differ. Furthermore, the purpose of citizen sourcing differs ranging from an informal collecting of citizen opinions (e.g., in cases of renaming streets) to the digitalization of more formal processes (e.g., planning permission procedures).

In the **individual versus collective actor dimension**, *meinBerlin* is characterised by collective action on the public administration side which however does not use it as a means for collaboration within the executive. Instead, the objective is to reach individual citizens. The inclusion of collective actors, like private companies, non-governmental organisations or political associations is not envisioned in the platform.

Looking at the **service delivery cycle**, the initiatives on the platform are almost entirely focussed on the design phase. The objective is hereby to facilitate some centralization of respective efforts, also meaning the standardization of similar collaboration processes and of a systematic data storage. Furthermore, this is thought to provide better orientation for inexperienced citizens by reducing the threshold for (digital) participation and to thus lead to the engagement of underrepresented stakeholder groups.

All **initiatives are carried out digitally** on the platform. Due to documentation regulations and sometimes necessary analogue processes in the 'back office' (e.g. due to the absence of a fully implemented e-filing system in Berlin), some initiatives do however show hybrid characteristics to some extent. It is furthermore important to note that the collaborative platform did not replace 'traditional' forms of co-production but aims to be a supplement.

**Citizen engagement** takes mainly place in the realm of consultation and advice. The processes and their outcome are not legally binding leaving all moments of the collaboration, i.e. the initiative, the design/structure, and the use of the results, in the hands of the public organisations. There might be some legitimacy pressure to incorporate the outcome of the initiatives on the platform but these are difficult to observe in their impact.

The **frequency of interaction** on *meinBerlin* is rather low as the overall majority of initiatives are single-purposed ones with one moment of interaction. Citizen representation on the platform depends on the respective purpose. However, the objective to reach marginalized groups has been difficult to achieve. Difficulties of representation that have been also visible in other platforms (e.g. regarding the education background, gender and age), have also been reported in this case.

Regarding the **impulse for initiatives**, the establishment of the platform and the concrete collaboration projects have to be distinguished. The former shows both characteristics of a top-down and bottom-up initiative within the public administration as at the same time two Senate Departments as well as one district were thinking about an online collaboration platform for citizens and subsequently joint forces. Regarding the initiatives by public administrations, this characteristic continues as units at all hierarchical levels can and do set-up collaborative projects via the platform. Vis à vis citizens, a top-down approach dominates due to the very nature of the platform as described above. The network thus needs to be characterised as rather closed.

Overall, the platform was conceptualized to be long-term and has its roots already back in 2013. However, it is mentioned that the stability (and its sustainability respectively) of the platform depends on a) it becoming better known among units in the Berlin public administrations as well as among citizens and b) the continued support of the governing political parties.

### - *2.3.5 InGov (Croatia)*

For the residents of the city of Bjelovar, the Croatian InGov pilot is developing a platform for shared public services and a mobile virtual assistant powered by AI. This pilot project intends to imagine, build, and deploy a universal virtual assistant for the City of Bjelovar's public services that would act as a platform for current services as well as a framework for the creation and integration of all future services. The mobile app created as the product of this pilot will interact with current, disjointed services and incorporate them in a consistent, straightforward, and delightful user experience. The pilot will also lead to the co-development of future service roadmaps, policies, and governance structures.

Regarding the **platform's activities**, they are driven by individual action. The goal is for citizens to use the platform to gather information about any queries they may have about public services or for any requirements they may have to register.

The platform is entirely **virtual in operation**. The chatbot may be used by citizens to ask inquiries about any public service and will respond with the information they require. They may accomplish that by downloading an app. Thus, citizens are no longer required to be physically present in any particular location.

The **procedures used** by InGov may be categorised as co-producing, consulting, and advising. The chatbot needs to gather information from residents, government employees, and other sources in order to enable it to provide users with accurate information (advising). Following that

The **frequency of interaction** is dependent on the individual and extensiveness of services provided. Users needing general information will have a lower frequency of interaction due to the chatbot being able to quicker provide the needed data, compared to users needing more specific information or service compared to users needing more detailed information or services which require more particular data.

Most of the platform is **top-down driven**. The platform collects data from individuals, government employees, and NGO's and processes it in the app. But because it is up to civil servants to take these factors into account when making decisions, they are in charge.

Overall for the diversity of the platform, anyone may join. All Bjelovar residents are welcome to use the platform. However, due to the relatively high degree of computer literacy required, it is designed in a way that excludes those with less education, those with accessibility concerns, and notably the elderly population. InGov has an open

network, meaning that anyone may utilise the InGov platform. However, there is no option for further development. The platform has a long-term outlook. The pilot is expected to be extensively reused by Croatia's cities and local (municipal) governments. The City of Bjelovar will support the pilot, and through the connections made at the mayoral level, it is likely that other communities will follow its lead. InGov is broad-focused. The platform covers a wide range of issues, from the requirement for licences to knowing where the nearest hospital is. The chatbot offers knowledge on a variety of subjects.

### - *2.3.6 Min Stad (Sweden)*

In Göteborg, Sweden, a platform called Min Stad enables locals to interactively explore the city, write messages, and publish their own ideas, thoughts, and recommendations in three dimensions. The purpose of Min Stad is to include Gothenburg people in urban development concerns to improve engagement, knowledge, and open discourse. The service is intended for anybody with an interest in urban planning concerns, including citizens, public officials, architectural companies, and others.

Min Stad may be categorized as a government platform in terms of **platform type**. The platform promotes citizen-government interaction by allowing users to collaborate on discussions on a particular subject, like cycling or culture.

The platform **observes both group and individual action**. People can, for example, discuss ideas with other citizens, exchange experiences with others, and give feedback on suggestions made by other citizens all at the same time.

Co-design is the phase in the **service delivery cycle** in Min Stad. Users can offer input on ideas from other residents and offer suggestions for improving the growth of cities in a variety of areas, including cultural, recreation, cycling, and socializing.

The platform runs entirely **virtually**. The only way that citizens may contribute is by suggesting urban development proposals on the 3D map. As a result, participants can contribute by sending suggestions using the online map before their contributions are received. It is not possible for citizens to join physically.

The platform is viewed as a whiteboard for citizens to scrawl down any thoughts, experiences, or proposals in terms of the **power and responsibility** they wield. It gives

residents the chance to advise the municipality and take part in Göthenburg's urban development.

Low **levels of contact** occur often. The majority of platform operations have a single function, necessitating only one contact. This indicates that users must perform a particular sort of action in order to submit their own remarks or on another user's suggestion. The amount of comments and active users on the platform are also low.

The platform is mostly driven by **top-down initiatives**. Users can make requests, but the results are not legally enforceable. Civil servants are in charge since it is their responsibility to take these inputs into account when making decisions.

Overall, the platform's results are all non-binding. The municipality may take the proposals into consideration, but there is no proof that any of the public suggestions have been taken up. When it comes to type of network, the platform is open for anyone to use. However, the project around the platform has finished, meaning that there is no further option for development. As for the diversity on the platform, anyone can join so long as they have a Facebook account. Facebook is used to manage login and identity for those who want to post in the Min Stad web portal. This implies that a certain degree of computer literacy is required, which may exclude certain individuals from participation. The platform is available for usage by anybody regardless of the network type. However, the platform's project is already complete, thus there are no more options for development. The platform is both single and broad focused. Urban development is the objective of any effort that may be included in the platform, giving it a singular purpose. However, there are other categories under the issue of urban development that people might choose to remark on.

### - *2.3.7 Smarticipate (Germany, Italy and the United Kingdom)*

The Smarticipate platform provides open data to citizens in an understandable format. On a 2D/3D map of their city, users may view suggested urban planning improvements and interact with them. The Smarticipate platform enables residents to participate in talks about urban planning, especially those who would not have done so in any other way. Entrepreneurs may more quickly obtain people's opinions and be informed of fresh growth opportunities. Three European cities, Hamburg, Rome, and London hosted this platform.

The Smarticipate platform enables **individuals** to participate in conversations about urban planning. Inhabitants would be able to actively participate in influencing their surroundings as well as validating and enhancing open data, giving local governments access to their inhabitants' innovative ideas. This is therefore a type of citizen sourcing.

The co-design and implementation phases make up the **service delivery cycle** of Smarticipate. Each of the three partner cities held a session called a "Smartathon" where locals were asked to participate and offer their thoughts on how Smarticipate should be developed and used locally. Regarding implementation, users make an urban development proposal (and carry it out) based on the input they get.

The Smarticipate platform **enables users** to upload their own. The platform works in a virtual and physical environment. Citizens engaged in offline participation throughout platform construction, but now that the platform is complete, they may only contribute online by suggesting urban development projects on the 3D map.

The platform works in a **virtual and physical environment**. Citizens engaged in offline participation throughout platform development, but now that the platform is complete, they only contribute online.

The **frequency of interaction** is intermediate. Most of the actions on the platform require multiple steps for the user to take.

The platform is mostly driven by **bottom-up initiatives**. Users use the design feature of Smarticipate to produce (alternative) proposals. The system provides automatic feedback that they use to improve their proposal.

Overall for the diversity on the platform, it depends on the pilot. For London, RBKC's postal code notification system for planning applications notifies citizens about a proposal. For the pilots in Hamburg and Rome, it is up to the citizens to reach the platform and use it.

### - *2.3.8 Smart Kalasatama (Finland)*

A platform for innovation called Smart Kalasatama is run by Forum Virium Helsinki, an enterprise owned by the City of Helsinki. With an emphasis on three themes—smart transportation, smart energy solutions, and smart daily life—Smart Kalasatama wants to increase the viability of the urban ecosystem by providing a platform for open inventions,

open data and interfaces, as well as open participation and customership. The following features of Smart Kalasatama have been available: Smart trash cans, Smart trash mobility, Niffty Neighbour, Foller, Fit Friends, Auntie, City Oasis, Smart minigrid, Rent-a-Park, Home Carbon, Healthskills, and Kalasatama on the move.

Both I**ndividual and collective action** is observed on the platform. People may exchange ideas with other citizens, trade products with other citizens, and provide and find free services in their community. They can also submit information about local concerns.

The **co-delivery phase of the service** is where citizens are most actively involved. They make advantage of one of the platform's functions during this stage by using one of the offered services. One functionality does offer citizens to carry out and fund bottom-up services and activities in their local neighbourhood (Niffty Neighbour).

The platform **operates in both a virtual and real world**. Citizens start out on the platform by using a service that is offered on the platform but which they then use offline. One such service is Kalasatama Healthskills, which gives people the tools they need to live an active lifestyle through online coaching programs and in-person group sessions with a wellness mentor.

The pilot itself determines **how frequently** people interact on the platform. The several capabilities that make up Smart Kalasatama each serve a distinct purpose and necessitate a different type of engagement. Some need users to take action often because they get additional information (such as the Auntie functionality), while others just require users to take action once (such as MealLogger).

The platform is **bottom-up driven**. Citizens may use the platform to highlight issues, share local expertise and suggestions, and both publish and use service offerings.

In terms of platform diversity, it is diversified. Collaboration with a variety of stakeholders, including residents of Kalasatama as well as energy corporations, colleges, software firms, and housing companies. Overall, The platform looks to the future. The main objective was to hasten the development of smart services in an urban environment that has often been sluggish. Giving small business owners the chance to test their solutions in a real setting was another objective. The pilots selected for the program were responses to upcoming problems and closely aligned with the objectives of the City of Helsinki.Smart Kalasatama hereby has a broad focus. The platform covers a wide range of topics, including sustainable energy, stress management, food waste, transportation, and wellness.

The following table (table 4) presents a comprehensive overview of the diverse cases under examination, categorised according to the dimensions of co-production, as articulated by Linders (2012). Following the above described multiple case design,  each case was chosen to cover different characteristics across the various dimensions, shedding light on the intricate interplay of important contextual factors, i.e. actors, beneficiaries, service delivery stages, the nature of the collaboration, the role of citizens, the connectedness of actors through the platform as well as driving forces for the development. This overview serves as a crucial lens through which to analyse the complex landscape of co-production and the resulting governance process, providing a structured framework that facilitates a deeper understanding of the diverse characteristics and nuances inherent in each case. By delineating these dimensions, the table offers a visual map that guides us through the landscape of digital collaborative platforms, forming an essential foundation for the subsequent analysis and interpretation of the data.

Within the dimension of "Actor versus Beneficiary," examining the intricate dynamics of who leverages whom, several distinct categories emerge. In the category of "Government-to-citizen," exemplified by platforms such as InGov in Croatia and MinStad in Sweden, government entities take on the role of platforms, facilitating interactions and collaborations with citizens. On the other hand, in the category of "Citizen-to-government," platforms like meinBerlin in Germany and Smarticipate across Germany, Italy, and the United Kingdom showcase citizens as active contributors, sourcing innovative ideas and solutions for governmental challenges. A unique hybrid category, represented by platforms like WeGovNow & CO3 spanning France, Italy, and Greece, Pleio in the Netherlands, Smart Kalasatama in Finland and INTERLINK spanning Italy, Spain and Latvia embodies a combination of both government and citizen as beneficiaries, fostering a collaborative environment for co-creation and problem-solving. These findings illuminate the diverse ways in which actors and beneficiaries engage within the governance process, highlighting the evolving nature of roles and relationships in contemporary collaborative platforms.

Within the "organisational versus Individual" dimension, which probes the nature of collective versus individual action, the findings reveal a spectrum of engagement patterns across different categories. In the "Individual" category, platforms like meinBerlin in Germany, InGov in Croatia, and Smarticipate spanning Germany, Italy, and

the United Kingdom, underscore the significance of individual (usually citizens) contributions in shaping governance outcomes. Conversely, the "Hybrid" category, represented by platforms including WeGovNow & CO3 across France, Italy, and Greece, Pleio in the Netherlands, MinStad in Sweden, Smart Kalasatama in Finland, and INTERLINK across Italy, Latvia, and Spain, showcases a balanced fusion of both organisational and individual involvement. Notably, the "Collective" category appears unrepresented in the findings, hinting at the predominance of individual and hybrid forms of engagement within contemporary digital collaborative platforms.

Within the "Stages of Service Delivery Cycle" dimension, which examines the phase at which activities occur, the findings underscore the diversity of engagement across the different phases in the governance process. In the "Co-design" category, platforms such as Pleio in the Netherlands, meinBerlin in Germany, and MinStad in Sweden emphasise collaborative efforts in shaping and designing services. Conversely, the "Co-delivery" category, embodied by Smart Kalasatama in Finland, places emphasis on collaborative execution and delivery of services. A "Hybrid" category emerges, represented by platforms including WeGovNow & CO3 spanning France, Italy, and Greece, InGov in Croatia, Smarticipate across Germany, Italy, and the United Kingdom, as well as INTERLINK across Italy, Latvia, and Spain. These platforms exhibit a diverse range of activities occurring across multiple stages of the service delivery cycle, highlighting the multidimensional nature of engagement within collaborative platforms. This categorization illuminates the dynamic roles played by different platforms in various phases of the governance process in the evolving landscape of digital co-production.

Within the "Physical versus Virtual" dimension, which probes the location of action, the findings reveal a distinctive spectrum of across the visible categories. In the "Virtual" category, platforms such as InGov in Croatia and MinStad in Sweden exemplify the platforms with a pure digital nature of interactions, showcasing collaborative activities solely unfolding in virtual spaces. In contrast, the "Physical" category is unrepresented in the findings, suggesting a notable absence of platforms solely centered around physical interactions. This is, of course, not surprising given our focus on digital platforms. Interestingly however, the "Hybrid" category  emerges as the most prominent, encompassing platforms like WeGovNow & CO3 across France, Italy, and Greece, Pleio in the Netherlands, meinBerlin in Germany, Smarticipate spanning Germany, Italy, and the United Kingdom, Kalasatama in Finland, as well as INTERLINK across Italy, Latvia, and Spain. These platforms embody a blend of physical and virtual interactions, showcasing the adaptable and flexible nature of digital collaborative platforms and related initiatives. This categorization underscores the evolving dynamics of engagement spaces,

emphasising the significant role of technology in shaping the modern landscape of co-production.

Within the "Citizen Power and Responsibility" dimension, which probes the level of engagement ranging from consulting and advising to co-producing, the findings shed light on the diverse roles citizens play in collaborative initiatives. In the "Consulting/Advising" category, platforms such as WeGovNow & CO3 spanning France, Italy, and Greece, Pleio in the Netherlands, and MinStad in Sweden highlight citizen involvement primarily in the capacity of providing insights and recommendations. The "Co-producing" category, represented by Smarticipate across Germany, Italy, and the United Kingdom, and Smart Kalasatama in Finland, exemplifies platforms where citizens actively co-create and contribute to the development and delivery of solutions. A "Hybrid" category emerges, embodied by platforms like meinBerlin in Germany, InGov in Croatia, and INTERLINK across Italy, Latvia, and Spain, signifying a combination of both consulting/advising and co-producing roles. These findings underscore the varying degrees of citizen empowerment and collaboration, revealing the intricate ways citizens participate in shaping the governance process, from offering input to actively co-designing outcomes.

Within the "Level of Connectedness" dimension, which gauges the frequency of interaction within collaborative initiatives, the findings unveil a range of engagement levels across diverse categories. In the "Low" category, platforms like meinBerlin in Germany and MinStad in Sweden exhibit instances where the frequency of interaction is relatively limited (e.g. a one-time input or vote). The "Intermediate" category, represented by platforms such as WeGovNow & CO3 spanning France, Italy, and Greece, as well as Smarticipate across Germany, Italy, and the United Kingdom, highlights platforms with moderate levels of interaction. Notably, the "High" category is unrepresented in the findings, suggesting a potential gap in platforms characterised by frequent interactions. The "Hybrid" category, however, emerges as a dominant category, encompassing platforms like Pleio in the Netherlands, InGov in Croatia, Smart Kalasatama in Finland, and INTERLINK across Italy, Latvia, and Spain. These platforms illustrate a blend of interaction frequencies depending on the concrete initiative for which the platform is used, underscoring the dynamic nature of engagement within collaborative governance endeavours in the context of digital collaborative platforms. This categorization underscores the importance of diverse levels of interaction in shaping co-production and governance processes.

Within the "Entrepreneurial versus Prescribed" dimension, which delineates the nature of processes as either bottom-up or top-down, the findings offer insights into the contrasting dynamics that drive collaborative initiatives in the context of digital collaborative platforms. In the "Bottom-up" category, platforms like WeGovNow & CO3 across France, Italy, and Greece, Smarticipate spanning Germany, Italy, and the United Kingdom, and Smart Kalasatama in Finland exemplify initiatives from the ground, reflecting the influence of and efforts by citizens and stakeholders in shaping the process. In contrast, the "Top-down" category, represented by platforms including Pleio in the Netherlands, meinBerlin in Germany, InGov in Croatia, MinStad in Sweden, and INTERLINK across Italy, Latvia, and Spain, underscores processes directed by public organisations at various levels of government. These platforms reflect the deliberate initiation, design and influence of governmental or organisational actors in driving the course of action. These categorizations illuminate the dynamic interplay between bottom-up and top-down dynamics in collaborative governance processes of digital platforms.

*Table 4. Overview of cases according to dimensions of co-production as in Linders (2012)*

| Dimension (Question) | Case characteristics |
|---|---|
| Actor versus beneficiary (Who is leveraging whom?) | *Government-to-citizen (government as a platform)*: InGov (Croatia), MinStad (Sweden)<br><br>*Citizen-to-government (citizen sourcing)*: meinBerlin (Germany), Smarticipate (Germany, Italy, United Kingdom)<br><br>*Hybrid:* WeGovNow & CO3 (France, Italy, Greece), Pleio (Netherlands), Smart Kalasatama (Finland), INTERLINK (Italy, Latvia, Spain) |
| Organisational versus individual (Is there collective or individual action?) | *Collective: -*<br><br>*Individual:* meinBerlin (Germany), InGov (Croatia), Smarticipate (Germany, Italy, United Kingdom) |

| | |
|---|---|
| | *Hybrid:* WeGovNow & CO3 (France, Italy, Greece), Pleio (Netherlands), MinStad (Sweden), Smart Kalasatama (Finland), INTERLINK (Italy, Latvia, Spain) |
| Stages of service delivery cycle (At which phase is the activity occurring?) | *Co-design*: Pleio (Netherlands), meinBerlin (Germany), MinStad (Sweden)<br><br>*Co-delivery*: Smart Kalasatama (Finland)<br><br>*Hybrid*: WeGovNow & CO3 (France, Italy, Greece), InGov (Croatia), Smarticipate (Germany, Italy, United Kingdom), INTERLINK (Italy, Latvia, Spain) |
| Physical versus virtual (Where does the action take place?) | *Physical:*                    -<br><br>*Virtual:* InGov (Croatia), MinStad (Sweden)<br><br>*Hybrid:* WeGovNow & CO3 (France, Italy, Greece), Pleio (Netherlands), meinBerlin (Germany), Smarticipate (Germany, Italy, United Kingdom), Kalasatama (Finland), INTERLINK (Italy, Latvia, Spain) |
| Citizen power and responsibility (Consulting, advising, or co-producing?) | *Consulting/Advising:* WeGovNow & CO3 (France, Italy, Greece), Pleio (Netherlands), MinStad (Sweden)<br><br>*Co-producing:* Smarticipate (Germany, Italy, United Kingdom), Smart Kalasatama (Finland)<br><br>*Hybrid:* meinBerlin (Germany), InGov (Croatia), INTERLINK (Italy, Latvia, Spain) |
| Level of Connectedness (What is the frequency of interaction?) | *Low:* meinBerlin (Germany), MinStad (Sweden)<br><br>*Intermediate:* WeGovNow & CO3 (France, Italy, Greece), Smarticipate (Germany, Italy, United Kingdom) |

| | |
|---|---|
| | *High:* – <br><br> *Hybrid:* Pleio (Netherlands), InGov (Croatia), Smart Kalasatama (Finland), INTERLINK (Italy, Latvia, Spain) |
| Entrepreneurial versus prescribed <br>(Is the process bottom-up or top-down?) | *Bottom-up:* WeGovNow & CO3 (France, Italy, Greece), Smarticipate (Germany, Italy, United Kingdom), Smart Kalasatama (Finland) <br><br> *Top-down:* Pleio (Netherlands), meinBerlin (Germany), InGov (Croatia), MinStad (Sweden) , INTERLINK (Italy, Latvia, Spain) |

## – 2.4 Group Model Building (GMB) sessions

### – *2.4.1 GMB methodology*

In addition to the comprehensive and context-sensitive research through the multiple case analysis, we conducted two Group Model Building (GMB) sessions focused on the functioning and quality of digital platforms as means to enable and support the governance process during co-production. In the context of developing the Advanced Governance Model, the GMB sessions thus functioned as magnifying glasses on factors that influence the quality of digital platforms. As previously argued (Radtke et al. 2023), the quality of the digital platforms is of utmost importance to any understanding of digital co-production processes. This method thus was an additional contribution to bridging the gap between the conceptualisation and practical implications for enhancing the governance processes of digital collaborative platforms.

In order to get comprehensive insights, we selected two digital platforms that are most different in regard to their maturity, i.e. Pleio and INTERLINK. The development of Pleio traces back to 2009 as the development of the  INTERLINK collaborative environment started within the start of the INTERLINK project in 2021.

In the GMB sessions, we investigated factors that influence the quality of digital platforms (enabling and supporting the governance process of digital co-production). We adopted a group model building approach, in which group discussions are structured in terms of the process. This method revolves around open and divergent group

discussions with practitioners (Richardson & Andersen, 1995; Vennix 1999), which allows us to find unexpected and unintended mechanisms and variables that are not yet covered by earlier studies about digital platforms and digital co-production. Whereas the case study research followed a rather deductive approach based on the Preliminary Governance Model, the GMB sessions thus rather followed an inductive approach. It was an important addition to the development of the Advanced Governance Model as it allowed to trace blindspots in the literature and to build knowledge substantively from the experiences in the field.

We organised two workshops, lasting about two and half to three hours, carried out by the same team of three researchers (two of the authors of this deliverable). One facilitator led the group discussion and one modeller changed the model presented on a screen based on the group discussion. In the first session, we met in Nijmegen with a group that is responsible for a platform (i.e. Pleio[1] - see description in Section 5.3 ) that has been up and running for more than ten years. The second session was a digital one during which we asked the designers of the INTERLINK platform to reflect on the development of the collaborative environment and to identify mechanisms affecting the quality of the digital platform. The sessions consisted of two steps (based on Hovmand et al., 2012, see Appendix 3 for the conduct of the Group Model Building sessions):

1. *Drawing the reference mode of behaviour.* In the first step, participants described the development of the platform over the past years, in terms of quality.
2. *Building the causal relationship diagram.* The second step involved building a causal loop diagram (De Gooyert, 2019): a diagram showing the various causal relationships between variables, including their polarity, using a plus sign for a positive causal relationship and a minus sign for a negative one. Closed circles of causal relationships are identified as either a balancing feedback loop (a mechanism where an initial increase of a variable will lead, via the other variables, to a decrease of that same variable) or a reinforcing feedback loop (a mechanism where an initial increase of a variable will lead, via the other variables, to a further increase of that same variable). The causal models were built on the basis of a very small seed model comprising the factor platform quality. Each of the participants was then asked to write down variables they consider to be relevant in the context of platform quality, followed by eliciting these variables in a round-robin fashion, resembling the 'Nominal Group Technique' script. This stage can be seen as the construction of a dynamic hypothesis for the reference mode behaviour as identified in the first stage.

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[1] https://pleio.nl/

The workshops were recorded, with the permission of the group members, and transcribed to incorporate the exact meaning that participants gave to the variables included in the model, and, in a later stage, to evaluate whether participants in different workshops gave different meanings.

The data analysis of the Group Model Building (GMB) sessions followed a thorough two-step process, enhancing the depth and applicability of the governance model. In the first step, we conducted an individual analysis of the cases, meticulously dissecting causal loops of factors that influence the quality of digital platforms within the context of co-production governance. This in-depth examination allowed us to unravel complex interdependencies and feedback mechanisms, providing invaluable insights into the multifaceted dynamics that shape platform quality. In the second step, we seamlessly integrated these GMB session findings into the advanced governance model. This integration was achieved by establishing links between the GMB results and the broader case study research outcomes. By aligning these insights, we ensured a holistic understanding of the factors impacting governance processes. Furthermore, the GMB results were thoughtfully embedded into the various phases of the governance process, from engagement and design to implementation and sustainability. This integration acted as a conduit, bridging theoretical conceptualizations with practical implementation strategies, thereby bolstering the utility of our research in guiding governance processes of digital collaborative platforms.

### - 2.4.2    GMB data: Causal relationship diagram

The results of the individual GMB sessions are visualised in causal relationship diagrams. The diagrams show that the quality of the collaborative environment is influenced by several variables, and the quality, simultaneously, affects several variables. Below, the outline of both models and the causal loop diagrams are presented subsequently (see figures 1 and 2). In the next paragraph, we explain how to make sense of the model by explaining some of the variables and discussing the most important findings. Additional findings and explanations are included in Appendix 3.

***Causal loops Pleio***

In this causal diagram we will find a number of loops leading to the central variable: the quality of the platform. Here we will explain the development of the diagram, some key variables and mechanisms, and some of the loops.

The stability of the platform is first and foremost mentioned as a key variable to guarantee quality. A system has to be stable to be reliable and otherwise, there is an immediate quality issue. In fact, system stability is a basic requirement for quality. The thing is however that it is the number of functionalities that can be a threat to stability. In daily practice this requires designers to be firm and also say "'no!" in response to new suggestions and or questions from clients. Moreover, to keep the system stable, it is important to have an appropriate number of technicians working on one product. They have to make sure that the processes remain up and running. To do so, they need to know precisely what they have to do, and this should be clearly aligned.

Stability of the platform benefits from the requirements that come with certification. The requirements in certification processes (such as ISO certification) stimulate debate and reflection which is relevant. Next to this, certification also increases customer trust which may lead to a growth in the number of customers and if there are many customers, it also makes others trust the platform.

The higher the focus on accessibility, the better the quality of the platform. Interestingly, it is found that the number of functionalities has a negative effect on accessibility. More functionalities decrease accessibility. Here it is important that it is in most cases not the end users (citizens or other actors) themselves talking to the technicians and platform designers. Usually, there is a party in between: a public service-providing organisation. It usually starts with a wish from the end users (citizens or other actors). The service provider listens and that wish is then translated and introduced to the platform developers and technicians. A dialogue starts and the customer is involved in the process. When there are no more questions and the wish is clear, the design can be started. In the second stage there is a test phase to determine its functionality and integration in the platform. As it is crucial that each new element increases the quality of the platform.
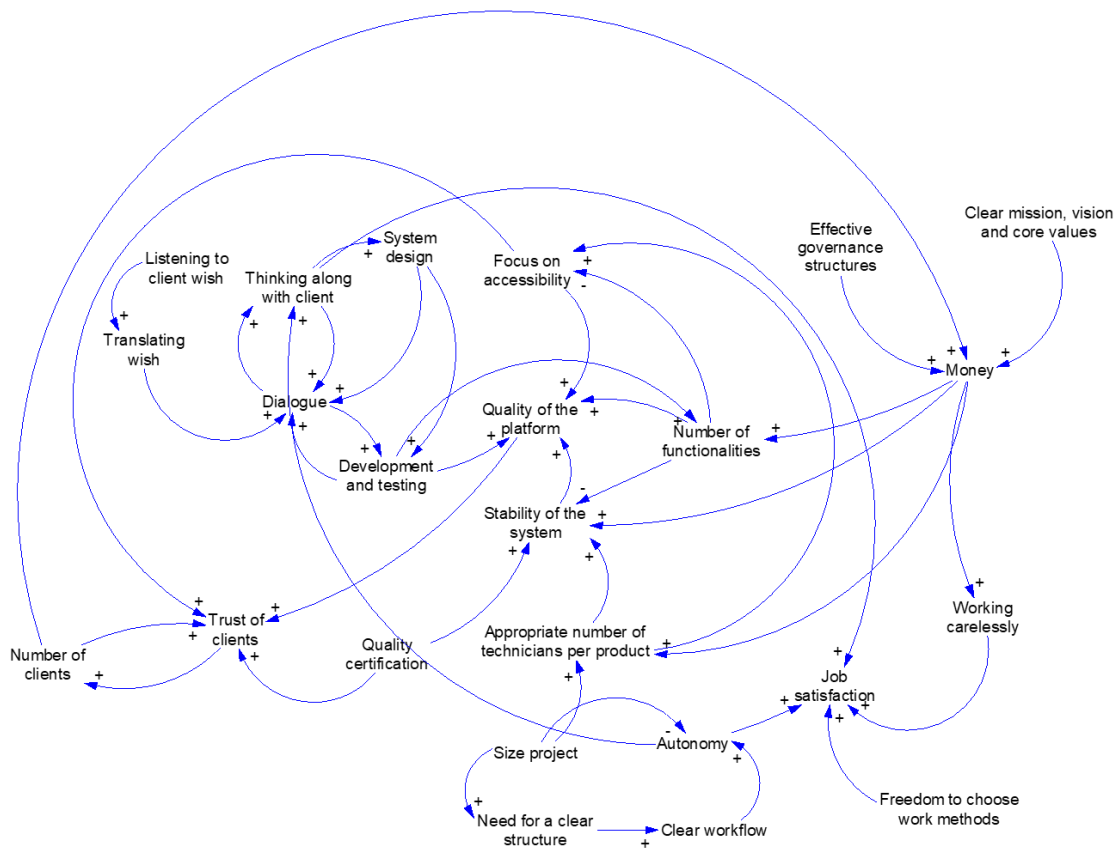
*Figure 1. Causal relationship diagram Pleio*

By drawing arrows that indicate relationships, a number of loops emerged. These loops reinforce themselves. For example, a strong customer trust leads to more customers, these customers will bring in money, this money will ensure stability and If everything else in the system remains the same, this will lead to enhanced quality. This is an example of a reinforcing loop back and forth that will continue to strengthen itself. In practice, this does not always happen, because more money can also lead to the development of more functionalities, and thus the system can also become less stable (see Figure 3) or, because the number of functionalities may reduce accessibility and then the quality of the platform also decreases.

The causal loop diagram shows a number of alternative loops pointing at the need for a tailored approach. Money could also be used to guarantee an appropriate number of technicians, leading to the often-mentioned need for stability. This is a relevant premise in this model and worth mentioning because it is not about more or less, but really about the appropriate number. Or in other words, about a tailored approach to keep the balance

right. How to guarantee a stable system that is healthy, financially speaking and easily accessible for its users? This causal diagram reveals that there is not just one solution.

***Causal loops INTERLINK***

For the second causal diagram (see figure 2), we first highlight two loops related to the central variable: the quality of the platform (hereafter also referred to as the collaborative environment). The first loop demonstrates the reinforcing relationship(s) between the quality of the collaborative environment, the quality of the co-production process, motivation, community involvement, and diverse input. In the first loop, the quality of the collaborative environment increases the quality of a co-production process. The enhanced quality of a co-production process, in turn, increases the levels of motivation of those involved. Subsequently, high levels of motivation stimulate community involvement, signifying the active participation of community members. Next, more community involvement leads to more diverse input. Lastly, diverse input contributes to the quality of the collaborative environment.

The loop shows that improvements in any of these variables contribute to the enhanced quality of the collaborative environment, and vice versa, leading to a positive feedback loop. On the other hand, a low-quality collaborative environment can negatively impact the co-production process, reduce motivation levels, decrease community involvement, and also reduce diverse input. This, in turn, further reduces the quality of the collaborative environment.

The second loop demonstrates the reinforcing relationships between the quality of the collaborative environment, usability, acceptance, adoption, community involvement, diverse input, quality of the co-production process, quality of the co-produced service, and visibility of the solution. More specifically, it shows that the quality of the collaborative environment directly influences the usability of the platform. A high-quality collaborative environment thus enhances usability, making it more user-friendly for participants. Improved usability, in turn, contributes to the acceptance of the platform. When users find the collaborative environment easy to use and navigate, they are more likely to accept it as a valuable tool for their needs. The higher the acceptance, the greater the likelihood of adoption, as users become willing to integrate the platform into their regular workflow or activities. With increased adoption, community involvement grows. As more individuals make use of the platform, they actively contribute their perspectives, ideas, and expertise. This increased community involvement enriches the diversity of input (in the design). Subsequently, the quality of the co-production process

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benefits from the diverse input. Next, participants agreed that the quality of the co-production process improves the quality of the co-produced service. When the co-production process is of high quality, it leads to high-quality services. Lastly, as the quality of the co-produced service increases, the visibility of the solution grows. This, in turn, further enhances the perceived quality of the collaborative environment, as the positive impact of the solution becomes more widely acknowledged.
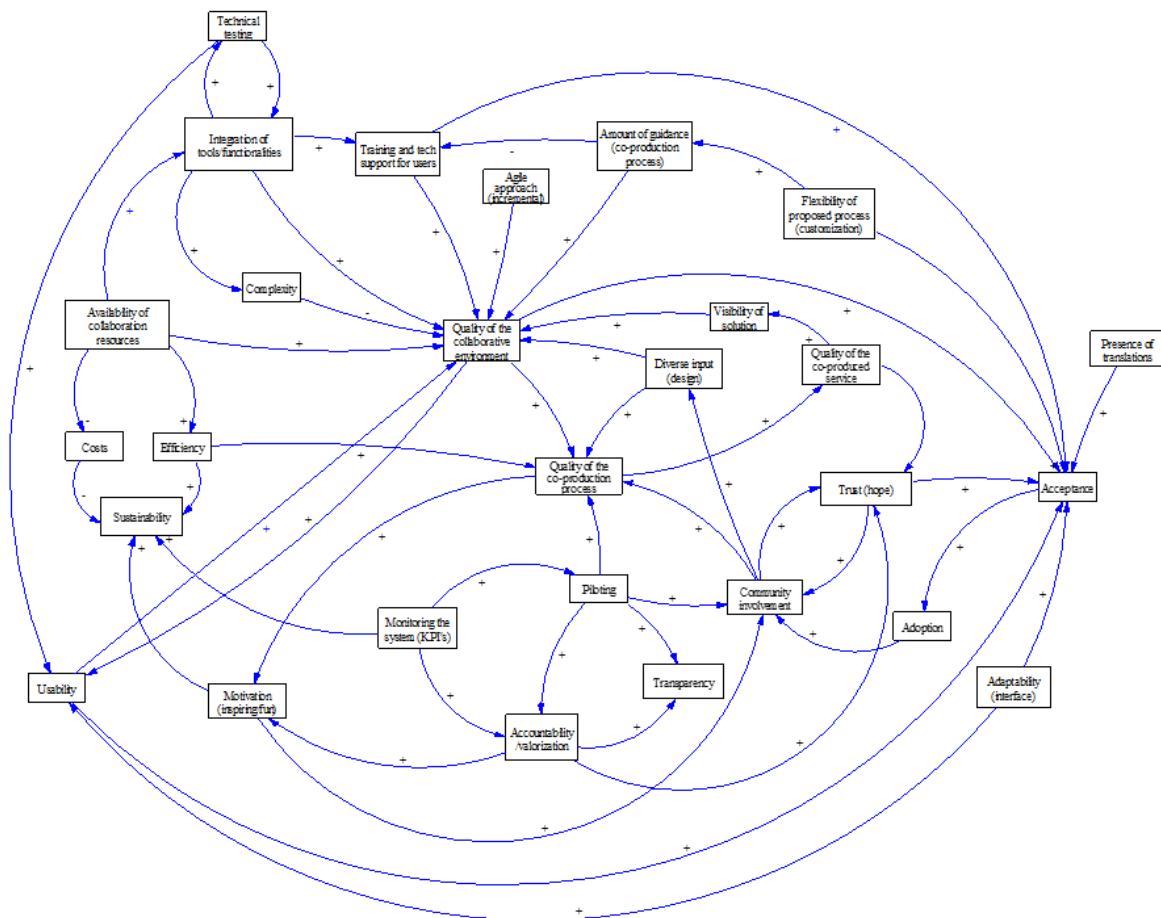


***Figure 2. Causal relationship diagram INTERLINK***

### Overall findings across the cases

Overall, the outcomes of the GMB sessions show that practitioners identify many factors that were also found in the co-production literature and case research, such as the importance of creating a dialogue between designers and (potential) end-users, ensuring system stability, maintaining a continuous inflow of money, and increasing usability and

thereby acceptance and adoption. This emphasises the importance of these factors for co-production activities enabled or supported by a digital platform. Additionally, the practitioners identified some factors that were not yet taken into consideration. For instance, appointing the appropriate number of technicians and following an agile approach appeared to be essential for the quality of a digital platform.

While looking at the models once more it is important to be aware of the fact that most of the variables have simultaneously mutual effects and turn out to be a cause as well as an effect. As such we need to reflect on the functioning of this platform as a dynamic system and not so much as a linear model. Another important insight that was gained during the sessions is how factors are perceived to be related to each other. The results highlight the complexity that is inherent to co-production through a digital platform, especially in relation to the development or usage of the platform. The presence of loops suggests that improvement in one area can have spill-over effects on other variables. This shows that possible interdependencies among different variables should be recognized and taken into consideration. In addition, the loops also highlight the interconnectedness of various variables that influence and are influenced by the quality of the platforms. This points to the importance of a holistic approach when seeking to enhance the quality of a digital platform. Consistently, simply focusing on one aspect (i.e. one part of the causal relationship diagram), may not yield the desired results if other factors are neglected. Instead, efforts should be made to address the multiple interconnected variables simultaneously. Furthermore, both causal loop diagrams show a number of alternative loops, which emphasises the need for a tailored approach when co-production is enabled or supported by a digital platform.

# ● 3 Governance issues

The governance of a platform-based service requires many decisions, not all of which can be covered here. Here we will focus on governance issues relating to co-production, which emerged from the literature review, the case study research and the GMB sessions. In other words, the issues have been identified on the basis of a combination of past studies and primary research conducted as part of the INTERLINK project.

## – 3.1 Engagement

### – *Q1.1: Which stakeholders should be involved?*

It is crucial to gain insights into the potential set of stakeholders that might be involved in the project, to attract the right people. Stakeholders can have various levels of involvement and influence in the matter at hand, and it is vital to consider their interests and concerns. Accordingly, it is essential to map who would provide (1), use (2), and be affected by (3) a co-produced service. It is important to dedicate time to carefully looking for partners who could contribute to providing the service. In addition, it is necessary to dedicate time to perform a detailed stakeholder analysis.

For public services, it is particularly important to consider which organisational units need to be included. This includes considerations about (1) which units and public officials to include at managerial level - as this is both important to ensure support and resources as well as the consideration of broader strategic decisions in the set-up of the collaborative platform, (2) whom to involve at the working level to ensure the sufficient expertise on the service, previous collaborative practices, and related challenges, (3) to what extent the initiative needs to include further public organisations as a boundary-spanning approach due to the division of competencies, expertise and experiences. The establishment of a digital collaborative platform usually questions traditional structures and processes of public administrations and public services. It is thus vital to the success of respective initiatives, that all relevant actors across levels of hierarchy and organisational boundaries are identified and involved.

An important further consideration is what non-governmental actors to include. For example, some of the cases under investigation depend on external technical support whereas others used in-house expertise for respective questions. If aspects of the platform-building process are outsourced, it is vital to purposefully engage in such a collaboration and to carefully weigh potential advantages and disadvantages for the successful completion of the project.

For collaborative platforms in the context of public services, a third and final consideration revolves around the question if and to what extent future users of the platform should be included. Our cases show and confirm the positive aspects of a user-centric approach. At the same time, sensitivity to different needs of certain user groups, especially with regard to marginalised groups, is needed.

*EXAMPLES*

Even though time is limited, the *WeGovNow & CO3 (Italian) case* highlighted the importance of elaborately exploring different types of potential stakeholders and gathering their various needs and possible contributions, also to attract the right (local) partners. According to the respondents, it is crucial to identify and address the needs, expectations, and potential impacts of different stakeholders, for a co-production initiative to be successful.

*meinBerlin* shows how important it is to include a variety of stakeholders within public administrations itself. By being both initiated at the regional (*Land*) and district (*Bezirk*) level and by ensuring early support by political and managerial stakeholders, the successful establishment of the collaborative platform could be ensured. At the same time, the case also shows the difficulties to engage stakeholders in actively using the platform for respective initiatives. This indicates that efforts to advocate for the (use of the) platform must be seen as a continuous need that does not stop with the implementation of the digital tool.

Similarly, the *INTERLINK case* highlights the complexities of defining the stakeholders to be involved. In the project's initial stages, considerable discussions and divergent perspectives among pilots and partners emerged regarding the precise meaning of co-production through digital platforms. This instance underscores the evolving nature of stakeholder identification and engagement, demonstrating the necessity for finding a common language and understanding of actors with diverging academic and professional backgrounds.

- *Q1.2: When to involve stakeholders?*

Our case study research further shows that engagement is a crucial aspect issue, not only at the beginning of a respective initiative, but also throughout the entire process of building and implementing a digital collaborative platform. Theoretically, stakeholders can and need to be involved at any stage of the project. However, past research as well as our case study analysis show that there are limits to the freedom of choice:

- An agile approach, in which a (digital) service is visible early and improved in several loops through the feedback of stakeholders, has been shown to be generally more effective.
- Even if users are involved only at a later stage, the design should be such that it fits their needs and capacities (user-centric approach). In other words, a strong involvement of stakeholders as (potential) users at a late stage requires at least some form of involvement of their perspective at an early stage (the reverse is not necessarily the case).

This suggests that some form of co-production is desirable at all stages, although the intensity may vary. If so, then the following conditions are shown to be relevant:

- Management of expectations is crucial. If stakeholders are expecting to have an influence on the design of a process, but it turns out they are only involved in implementation, they will not be supportive. It must be clear what the co-production is about (and what it is not about).
- With the number and variety of included stakeholders comes the increased need to coordinate and negotiate different perspectives, which impacts the need for resources (financial but also time, staff, etc.). Sufficient resources must be allocated to handle co-production throughout the entire process).

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*EXAMPLES*

There are many cases where citizens have protested against initiatives despite prior attempts at co-production. When controversial interventions are made (for example, a road through a park or the opening of an asylum centre) and citizens have been led to believe that they could still influence whether the intervention is made (stop the road from being built), whereas they are only consulted about how it is made (say the exact route) co-production may in fact worsen the public mood.

The case on *Min Stad* illustrates the importance of managing expectations. The expectations of stakeholders may not match the project if the co-production process is not adequately explained to them. Min Stad saw stakeholders dropping out of the project due to different expectations regarding their involvement. Setting the record straight from the start of the endeavour is crucial. Stakeholders can alter their expectations in this way as they are aware of what is expected of them. This might help to avoid dissatisfaction.

*MEF's use case (INTERLINK)* demonstrates how relevant it is to adopt a detailed engagement plan so to keep the stakeholders (public servants at different levels of administration) involved, informed and aware concerning the whole co-production process. To do so, MEF periodically sent out communications (possibly in a report format) including detailed information on the objectives, progresses and co-creation activities performed and to be performed during the whole process. This effort has been demanding in the public administration environment and having a structured communication and engagement plan contributed to serving the dual purpose of maintaining a satisfactory level of readiness concerning co-production activities and awareness of the INTERLINK Project as a whole. Reports were sent out after Webinars and Workshops with stakeholders including Satisfaction Surveys that allowed them to collect further inputs on their expectations and organise the activities accordingly.

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- ### *Q1.3: How to engage stakeholders?*

Regardless of the stage in which stakeholders will be involved in the process, engagement of stakeholders can take different forms. In practice, digital types of engagement (for example, electronic surveys or pilot testing) are complemented by a variety of analogue forms. There is a rich toolbox of engagement from which a careful selection is necessary.

The involvement of different stakeholders is likely to complicate the framing of the problem to be solved, as they may have different perceptions of the problem (which, in turn, influences the solution). The engagement phase will have to resolve these differences to at least some degree, to ultimately arrive at a solution that invites broad support and engagement. This can be especially difficult with groups of citizens, who compared to organisations are less likely to adopt a single, coherent view. It is unlikely that the problem can be formulated in such a way that there is complete consensus. Nevertheless, when different perspectives are taken into account, it is generally possible to arrive at a solution. Research shows that in co-production participants are most motivated by considerations of public interest, relating to values such as equity, accountability, and concern for future generations (Neumann & Schott, 2022).

Research also shows that a well-managed process is important in achieving a basic consensus (Steiner et.al, 2022). Stakeholders are more likely to accept alternative perspectives if they sense that theirs have been taken seriously. Another important point is that discussions should stay pragmatic and concrete because it is there that different perceptions can be most easily shared.

Furthermore, it is essential that the co-production initiative is based on a clear, concrete idea. Initiatives based on abstract and intangible ideas are not likely to attract people. People need to know how a co-production initiative relates to their daily lives, in order for them to decide whether it is worthwhile to get engaged.

> *EXAMPLES*
> The *Zaragoza case (INTERLINK)* highlights the importance of addressing resistance to change in co-production processes. People can be resistant to get engaged in a co-production process if the ideas or plans on which the co-production initiative is based are too abstract. Since abstract ideas can be difficult for people to grasp and relate to, it is important to make ideas tangible and concrete. In this way, it will become easier for people to see how the co-production initiative might benefit their daily lives, which will lead to increased engagement. Part of this resistance is believed to be caused by the use of new technologies. Especially when employees or potential end-users are not familiar with how this new technology should be used, they are less likely to get engaged.
>
> The *Smart Kalasatama* case emphasised the importance of communication amongst stakeholders to foster engagement. The motivation for different stakeholders to participate may vary. You will need to communicate clearly, and in a captivating way. Active involvement requires open, proactive communication, which is also necessary for organising and coordinating tasks.

## – 3.2 Design

### – Q2.1: How to co-design with users?

While the engagement phase helps to define a shared definition of the problems services address and encourages early commitment on the part of stakeholders, the design phase must at a more detailed level work towards solutions. There are various ways to realise this, ranging from inclusion of selected stakeholders in the design team; conducting user research through small-scale, intensive methods such as interviews, focus groups to observations; to extensive surveys with minimal input from a large population. Whatever approach is chosen, it should result in a comprehensive and differentiated picture of their preferences, needs, motivations and misgivings.

An intermediate form is to create user personas as fictional characters that represent different user backgrounds, needs and motivation, in order to create a structure of multiple perspectives within the design of the platform. Artificial Intelligence will greatly facilitate this. Another approach is to use customer/user journey mapping, a step-by-step process a customer/user goes through while interacting with the platforms. Respective similarities and differences in user experiences based on their background, needs and motivation can thus be traced. Subsequently, functionalities and features of the service can be designed and improved based on the different maps.

Again, different, diverging perspectives can arise in such a process, leading to tensions. This will be especially likely if such differences have not been identified and/or resolved at the engagement phase. Generally, regardless of what kind of approach is chosen, a gradual (agile) approach makes it easier to resolve such tensions. Should there nevertheless be strong disagreements within the design team, mediators can play a helpful role in resolving conflicts and facilitating effective communication and collaboration between the stakeholders.

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*EXAMPLES*

In the *Pleio case*, co-design often begins with end-users expressing their desires. Consequently, a dialogue between the service provider and the end user(s) is initiated. The service provider listens and tries to translate and align the desires, often requiring further dialogue.

Particularly in the case of new digital services, it can be difficult to engage stakeholders during the design stages, as there is often no clear idea of what the service will look like. However, the *WeGovNow & CO3 (Italian) case* shows that stakeholder engagement becomes more feasible and effective when early versions of the service are operational and visible for users to provide feedback on, as part of an iterative process.

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The *VARAM (INTERLINK) case* further shows that co-designing needs to be perceived as an iterative process that is not limited to only one moment in time. VARAM aims to continuously update and enhance the Latvian State portal so that the public services published are increasingly adopted towards a portal that provides easy access to services delivered by state and local government institutions. This makes a reflection on structures and processes of such a continuous citizen sourcing necessary.

- *Q2.2: What are the organisational requirements to make the co-produced design work?*

Based on the prior phase of engagement, the organisation(s) providing the service should develop a clear vision of what service they wish to achieve and what core values they aim to represent. This plays a vital role in guiding and aligning the objectives and activities of the organisations involved in a co-production process, which in turn affects the process. By having a clear vision of what it wants, an organisation facilitates the process of developing a shared understanding and purpose internally and among the stakeholders involved in the coproduction process. This alignment helps in setting common goals, making strategic decisions and fostering collaboration. For example, ensuring accessibility is believed to be crucial for co-production endeavours. By prioritising this value, it is possible to enhance user experience, reach a wider audience, and ultimately improve the overall quality and effectiveness of a co-production process.

Furthermore, clear governance structures need to be developed for the design and implementation process. Within public administrations, a key decision is whether to organise within the line of an organisation, for instance, by giving a department the lead and a coordinating role, or as a staff organisation, for example, a project group or task force. Whereas the former can have the advantage of following an already established division of tasks and competencies and thus a smoother integration of the new or revised service into organisational routines, the latter might, however, be more helpful to foster boundary-spanning thinking. It cannot be emphasised enough that next to such structural considerations, 'softer' ones, e.g. the organisational culture or sufficient training and knowledge of the ones involved in the development, cannot be underestimated.

Effective governance fosters streamlined workflows, most crucial, timely responses to user needs. It also minimises duplication of efforts, reduces operational inefficiencies, and enhances the overall user experience. When actors collaborate harmoniously, data sharing becomes more accessible, allowing for data-driven decision-making and

improved service customization. However, tensions between data sharing needs and advantages on the one hand, and privacy and data protection regulations on the other hand, can easily arise, especially in the public sector where the latter are usually considered more important. This is an especially important consideration for platform-based services.

> *EXAMPLES*
>
> The significance of accessibility as one of the core values was emphasised by respondents in the *Pleio case*, who felt that a higher focus on accessibility automatically leads to an improved digital platform and thereby a better co-production process. This highlights the importance of considering and addressing accessibility needs and requirements when developing or improving a digital platform that enables or supports co-production processes. An understanding of the core values needs to be depicted in the mission and vision of a platform building initiative.
>
> Accessibility is emphasised by *Smarticipate* as well. Platforms are frequently only usable by those who know where to look for them and how to use them. A platform's user experience may be improved and engagement levels may rise as a result of making it more accessible.
>
> To make work in the design phase effectively, the *INTERLINK case* further emphasises the significance of cultivating a high-quality collaborative environment. A crucial loop highlights that an improved quality of the collaborative environment positively influences the quality of the co-production process. This underscores the importance of creating an environment that fosters open communication, active participation, and effective collaboration among stakeholders.

- *Q2.3: What are the technical requirements to make the co-production process/ service work?*

It is important to determine the role of digital technologies in the co-production process. Are digital technologies used to support physical activities? Or are they used to facilitate virtual activities, such as online discussions or voting? There may be a tendency in the design to focus only on the digital part, ignoring the analogue (informal, social) processes that are in practice intertwined with the actual use of the service. For instance, most communication about the service may be by word of mouth, while the developers are focusing their attention on digital communication. It is important to have a clear sense of how digital and analogue complement one another before defining the technical specificities. But in many public services, a combination of analogue and digital processes is inevitable. Success hinges on a comprehensive understanding of how the digital element complements existing analogue processes. Failure to grasp this synergy may result in the inclusion of digital functionalities that are underused or redundant in practice. Engaging stakeholders early during the implementation for feedback, but also later on, allows for a holistic view of the service delivery landscape, facilitating the

identification of seamless integration points and ensuring that digital features enhance rather than disrupt the overall service flow.

Usability plays a critical role in user engagement with digital technologies. Usability refers to the ease with which users can interact with technology to achieve their goals effectively and efficiently. If a digital platform scores high on usability, users are more likely to stay engaged in a co-production process. Research has shown that even small changes can have a major impact on inclusivity (Van den Berg, 2022). A platform that is difficult to use may lead to users becoming frustrated or confused, which can negatively impact engagement levels and even cause users to quit. Therefore, it is crucial to prioritise a high level of usability by investing in the user-friendliness of technology. Also, the stability of the system enabling these activities is crucial.

There is a trade-off between standard functionalities and customization in the context of the technical development of a digital platform. On the one hand, standard functionalities cater to a broad audience and ensure a general concept. This concept can be applied across different contexts, ensuring cost-effectiveness and flexibility. On the other hand, customization can be necessary to meet specific requirements. Different stakeholders often have diverging and highly specific needs. Customization entails tailoring the platform to fit the unique requirements of a particular context. This approach is, however, time-consuming and costly. It is, therefore, essential to find the right balance between standard functionalities and customization.

Finally, co-production processes that are enabled or supported by a digital platform can be considered as reflecting relatively novel approaches. Hereby it is important to recognize that people need to adapt to new approaches gradually. By allowing users to engage with the platform and provide feedback, the platform can be adjusted to be better aligned with their expectations and preferences.

From a technical perspective, the stability of a system represents a fundamental prerequisite for the quality of a platform. The *Pleio case* showed that if a system (i.e. the digital platform and its functionalities) lacks stability, it undermines stakeholders' reliance on the system and immediately poses a threat to the quality of the digital platform, as well as the co-production activities taking place via this platform.

According to the respondents from the *WeGovNow & CO3 (Italian) case*, users have high expectations towards digital technologies but low levels of engagement. For this reason, it is critical to ensure a high level of usability. If it is too difficult for users to interact with certain functionalities or navigate within a platform, they will simply stop. One solution mentioned is to hire user experience experts. These professionals specialise in understanding user behaviour, needs, and preferences. They can apply their expertise to enhance the usability of a digital platform, by optimising its design, layout, navigation, and functionality. Iit also became apparent that a basic version of a digital platform with standard functionalities might not always be sufficient for local public administration. In their case, targeted customization was necessary to meet specific needs. The respondents emphasise that it is important to prevent too much complexity and excessive costs. It is, therefore, essential to assess the required level of customization and estimate the potential impact in relation to its costs (in time and resources). This approach might help to manage the costs whilst also addressing the diverse needs of users in different contexts.

*Smarticipate* also showed the importance of usability in user engagement. Due to the higher level of interaction needed from users with the platform, Smarticipate needed to customise their platform in a way that was simple enough to use but still engaging. Too much complexity can lead to users deciding to not use the platform anymore.

The *INTERLINK case* further shows that organisational aspects and technological factors go hand in hand. A high-quality collaborative environment directly influences usability, which in turn drives platform acceptance. Organisational attention to designing a user-friendly interface and ensuring that the platform meets participants' needs can enhance usability and facilitate platform adoption.

## 3.3 Implementation

### Q3.1: Are the organisational and regulatory requirements in place in order to launch the co-produced service?

One of the most important prerequisites for the successful launch of a service is to ensure that the regulatory and organisational environment is in place and well-prepared to support its implementation. Here, it is particularly crucial to align the decisions made during the co-delivery phase with available resources and used service implementation practices within the organisation. This is not self-evident, as implementation may be (partly) driven by other organisational units and staff than those involved in the design.

Engaging stakeholders throughout early implementation and the further process of development fosters a culture of user-centricity. Through feedback loops and co-production opportunities, stakeholders become invested in the success of the initiative

and are more likely to advocate for its adoption and usage. As in the other phases, commitment to engagement should be reflected in short- as well as long-term considerations regarding financial resources, time, transactional costs, and the availability of qualified staff. Linked to the latter are evaluations of the expertise, but also the mindset required to successfully implement the design in collaboration with stakeholders. Research shows that co-production works only if public officials believe that it will work, so they need to be convinced of the benefits both of the new services and of stakeholder engagement. This may require selecting organisational units and staff members that could benefit the most from the newly designed service and to provide adequate training.

Moreover, the process of service implementation might entail the need to enact changes and adjustments to the existing regulatory framework to ensure the legal compliance of the service deployment. For a more elaborate discussion on the regulatory requirements, see INTERLINK deliverable 6.6.

*EXAMPLE(S)*
For the *INTERLINK case*, it was checked whether national regulations imposed any additional specifications or requirements in order to realise co-production activities enabled or supported by a digital platform. It was hereby concluded that national and local rules indicate a strong emphasis on the digitalization of public services and their co-production, without providing any strict requirements. Moreover, the cases proved to be in line with the requirements of existing EU law (such as the General Data Protection Regulation), which shows that the regulatory requirements are in place to launch the services.

- *Q3.2: What are the technological requirements for the implementation phase, from the perspective of co-production?*

As regards the technological requirements, it is necessary to make a distinction between two types of technology: technology as a product of a co-production process (e.g. a co-produced digital service) and technology that supports co-production processes (e.g. a digital platform). Each type of technology comes with its own potential governance issues.

With regard to the first type, the timely availability and visibility of co-produced technology are crucial for maintaining engagement and interest on the part of

stakeholders during the implementation phase. This may of course run counter to technical considerations on the part of developers, who may wish to launch a product only at a later point in time. However, if the technology is not available in a timely manner, it can lead to delays and reduced levels of enthusiasm among employees and potential end-users, which in turn might lead to lower-quality contributions. Even worse, it may cause people to lose interest in the project altogether and quit. Technology that is visible and available can serve as a catalyst for collaboration. When stakeholders can see and experience the potential benefits of the technology, they are more likely to actively contribute throughout the implementation phase. Overall, it is essential to prioritise the timely development and availability, and thereby visibility, of technology when co-producing a digital service. In other words, implementation should follow closely upon the previous phases. Regular updates, prototypes, or even minimal viable products can be used to engage stakeholders early on and maintain their interest and commitment.

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*EXAMPLES*

The *Spanish (Zaragoza) INTERLINK case* shows that engaging employees and potential end-users without something tangible to show (i.e., the technology and its functionalities), is rather challenging. If the digital tool is only available late in the co-production process, it might affect the overall engagement and progress of the co-production initiative. Consistently, the respondents state that people are more likely to be interested and invested during the implementation phase when they can interact with the technology in a meaningful way. This implies that the success of the implementation phase heavily relies on the timely delivery of technology.

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Considering the second type of technology, earlier research shows that users are more likely to engage when they can relate to the technology supporting the co-production process. For instance, it has been shown that users will be more active when a co-production process is based on commonly used software (Perikangas and Tuurnas, 2023). For a more elaborate discussion on the socio-technical requirements, we refer to INTERLINK deliverable 4.1.

- *Q3.3: How should stakeholders be engaged in service delivery?*

It is crucial to balance the engagement of new stakeholders with the continuous involvement of a core group of stakeholders. The challenge is to keep actors engaged throughout the whole co-production endeavour, which is acknowledged as a general problem of participatory processes. To address this challenge, involving new stakeholders at each stage can help sustain enthusiasm, bring fresh perspectives, and

even avoid potential stagnation. However, it is also important to benefit from previous experiences, which can only be realised by retaining a continuous set of stakeholders. Retaining a 'core group' of stakeholders throughout the entire co-production process also allows for the accumulation of knowledge and avoids the repetition of mistakes. Therefore, a balance between new stakeholders for enthusiasm and a core group of stakeholders for continuity is vital.

Earlier, it was noted that an intuitive and user-friendly interface both in regard to navigation and interaction is very important. In particular, marginalised and underrepresented groups might have specific needs that need to be incorporated, e.g. simple language or translations or text as audio. The successful design and specification of the interaction between the users and the service depends on sufficient feedback loops, even after the initial implementation. It is accordingly also an important governance issue in the implementation phase. Sufficient resources should be available throughout the whole co-production process, not just to maintain, but continually update the interface, making this issue transversal to all phases in which stakeholders are engaged.

*EXAMPLE(S)*

The *WeGovNow & CO3 (Italian) case* highlighted that it is difficult to maintain high levels of engagement over time. If the initial enthusiasm decreases, it is rather challenging to keep people actively participating and contributing.

The *MinStad case* also showcased the importance of maintaining enthusiasm. The case showed the effect lower levels of engagement had on newer people wanting to participate. The lack of enthusiasm after a while can cause others to be hesitant to participate or further contribute.

The *INTERLINK case* suggests that effective engagement of stakeholders in service delivery demands a holistic approach, driven by the quality of the collaborative environment. By stimulating motivation, promoting stakeholder involvement, enhancing usability and acceptance, encouraging adoption, leveraging diverse input and fostering the quality of co-production processes, organisations can optimise stakeholder engagement and enhance the success of co-produced service delivery. Helpful tools that offer guidance, so-called Interlinkers, are thought to be vital for navigating through respective activities.

## 3.4 Sustainability

### Q4.1: How will the service be kept running while continuing to engage stakeholders?

Following the initial implementation of a service, it is often necessary to switch to a different type of organisational model to unlock the stable resource base and capacity to

maintain it (for a more elaborate discussion on this, see INTERLINK deliverable 2.4). The service may be outsourced to a new business, adopted by an existing one, integrated into the supply of public services or adopted by a non-profit entity (for example, a citizen-run cooperative). In all such cases, the relationship with the stakeholders who were involved in the original conception and development is likely to change. Even if the original parties remain involved, the relationship will evolve as people move on. Within public administrations, there may be personnel shifts, or another department may become responsible. Citizens who participated in the design process may move on or take a step back. It is then important to keep in mind that it is necessary to continually re-engage with relevant stakeholders, if the intention is to keep them actively involved.

This is not only true between stakeholders, but in the case of larger organisations, also within them. Over the course of a longer project, it is likely that there will be many personnel changes. Even if formal responsibilities are transferred adequately, it is necessary to secure continued commitment. Therefore it is important not to rely too strongly on sole 'boundary spanners' and establish broader support, finding a means to communicate with stakeholders regularly.

If that is the case, it may help to make someone, a public digital facilitator for example, explicitly responsible for addressing technical challenges and concerns (related to the digital platform) and for maintaining high levels of engagement and motivation amongst stakeholders throughout the duration of a co-production process. Not only will such continuity partly offset personal changes elsewhere, but it will also help ensure the technical support and motivation efforts are maintained consistently.

*EXAMPLE(S)*

In the *Croatian InGov case*, the internal contact person within the responsible public administration changed several times. Each time, the developers needed to explain the initiative again. Eventually, they decided to 're-boot' and organise a larger session within the public administration to discuss the project and everyone's expectations and reservations. Afterward, a mailing list was set up so the developers could get in touch with a larger number of people quickly.

Within the *WeGovNow & CO3 (Italian) case*, public digital facilitators proved to be crucial for ensuring service sustainability. Public facilitators are often social workers or educators with digital expertise, who work closely with (local) public administrations and communities. Their role is to (technically) support stakeholders in each stage of a co-production process, but especially in the last stages. To give an illustration, a public facilitator helps stakeholders to effectively engage with a digital platform and address any technical concerns that may arise. This also allows public facilitators to keep stakeholders motivated, which is also part of their role.

# ● 4 Conclusions and recommendations

## - 4.1. Conclusions

The purpose of the Advanced Governance Model developed by the INTERLINK project is to make co-production in public services through digital platforms more effective. In this report, we have offered a conceptual framework on how to organise the process and described the governance issues that are most likely to be encountered during such a process, based on a review of existing research and primary research of our own. In this chapter, we will end by defining a number of concrete recommendations on how to organise co-production in the development of platform-based public services effectively. We will also mention functionalities and knowledge resources in the INTERLINK collaborative environment that can help implement these recommendations.

Some governance issues appear to recur throughout the process. Since during the development of platforms control is often transferred to other departments or organisations, the risk of losing the commitment on the part of stakeholders is relatively high. Therefore continuity should be created in another way, by allocating dedicated and sustainable resources to the co-production effort. Also, co-production with stakeholders is generally hybrid, making it understand the interaction between analogue and digital elements of the process. If this is not the case, platforms are likely to end up with many underused functionalities. Another issue is that stakeholders, especially individual citizens, are more motivated when they are involved in something concrete and user-friendly. It can therefore be relatively hard to involve stakeholders at an early stage of platform development, because there is little to show. Yet if potential users are not involved at an early stage, they may be confronted with prior choices they are not happy with, but which are hard to reverse.

Ultimately, each process is unique. At the start of (re)developing a platform-based service, public administrations should develop a model that fits their context and their vision of how closely stakeholders should be involved. If a clear model is developed and if lessons from prior experiences are taken into account, then co-production can strongly increase the support of stakeholders for the platform and thus its chances of becoming successful and sustainable.

The INTERLINK collaborative environment can support co-production in different ways. It provides a live archive and offers process support by facilitating the navigation between different co-production phases, for example the handovers, allowing decisions

to be structured based on these different phases. In addition, the collaborative environment supports both online and offline activities, allowing for synchronous and asynchronous collaboration on digital resources, as well as the planning, preparing, reporting, and rewarding of analogue activities. Through the cloning functionality included in the collaborative environment, past success stories can be taken as the starting-point, to be customised to reflect the specific co-production process.

## – 4.2 Recommendations

**Engagement**

***Q1.1: Which stakeholders should be involved?***

Which stakeholders are involved ultimately depends on the model deemed desirable by the initiators. However, if stakeholders with a significant influence on the success of a service are not included, this will affect performance negatively. Therefore the choice for models such as G2C or C2G is not simply a question of preference or ideology, but also of practicality. For instance, more effort invested in engagement in an early phase may pay off by encountering less resistance later.

***The choice of model should be based on a systematic stakeholder analysis***, rather than convention or visibility. There are various tools for stakeholder analysis available, such as the Mendelow Matrix, which can be easily found online. The choice of governance model should be based on an understanding of which stakeholders are crucial to success.

An important point arising from the evidence is to avoid a holistic view of stakeholders. Citizens have various views and interests, so if they are involved, care must be taken to involve a representative sample. But even when working with organisations (a public administration, a large firm) commitment from one person/department may not guarantee the support of another. Therefore ***gaining commitment from stakeholders means being sure that their representatives have sufficient mandate to discuss on behalf of their organisation or group***.

The INTERLINK collaborative environment presents various knowledge Interlinkers that guide stakeholder analysis in deliverable 3.3 (INTERLINK Catalogue).

*Q1.2: When to involve stakeholders?*

The timing of stakeholder involvement obviously depends on the governance model chosen by the initiators. Stakeholders can be strongly or lightly involved at all stages, and only at some stages. Different stakeholders can be involved differently. For instance, it is possible design is controlled by public administrations collaborating with businesses (G+C), but that citizens are involved through sourcing (C2G) at the delivery stage. Depending on the service, everything is possible theoretically. However, there are some limitations to the freedom of choice:

- *Strong involvement of stakeholders at a late stage will require at least involvement at an earlier stage*. Users and other stakeholders are less likely to participate actively if a service is designed in a way they fundamentally disagree with, so their perspectives must be included at least to some degree earlier in the process.
- *Communication about the limits of stakeholder involvement must be clear*. It is tempting to avoid hard truths, but the credibility of the process can be severely damaged if stakeholders are left to believe they can influence decisions that they cannot. This is regardless of the chosen model.
- *Sufficient resources must be allocated to realise the process effectively.* Co-production with stakeholders is usually a time-consuming and often lengthy process, which should be built into the resource allocation at an early stage, even if it is implemented much later. This is regardless of the chosen model.

The INTERLINK collaborative environment allows grouping participants by stages, different types of activities and expected levels of engagement. Groups of participants can be invited to participate at different stages and be given selective access to shared resources. The environment thus supports multiple entry points for participants, at different times and at different levels of engagement (crowdsourcing, collaborative resource creation, voting, simply observing and staying informed). The collaborative environment also includes a knowledge Interlinker that helps to define a communication strategy (see deliverable 3.3).

*Q1.3: How to engage stakeholders and frame problems?*

There is a wide variety of methods to engage stakeholders. As with the stakeholder analysis, it is important not to slip into routine, but to make a conscious choice what input

is requested. If the aim of the engagement process is to work towards a shared solution of which the rough contours are already visible, this may call for a structured approach in which the limits of the decisions are continually pushed forward. However, if the aim is to reach a shared understanding of the problem to be solved, or if the solution is entirely unknown, this calls for a more open process with room for brainstorming, dead ends and reversals. ***It is essential to have a clear view of the kind of input that is needed***.

Especially when working with citizens, it is important to consider the method carefully. Commonly used methods are classical consultations ('tell us what you think of our proposal') or online surveys, but both are known to have severe drawbacks. One is that the people who attend or respond are not representative of the general population of users. This is especially when a large section of prospective users/clients are not at the table. Another disadvantage is that they do not encourage people to give constructive feedback, instead inviting resistance. Generally, when the subject is relatively complex and when it is essential to incorporate all perspectives, small-scale, physical interactions still tend to be the most effective.

The INTERLINK platform offers various knowledge Interlinkers created to guide engagement activities. In addition, there are multiple online resources on how to organise effective participation. In English, there is the methods overview of Involve (Involve). However, there are many resources in other languages.

**Design**

*Q2.1: How to co-design with users?*

Whereas the engagement phase is more open, the design phase is meant to close down options as it progresses, until the best possible solution is arrived at. As with engagement, there are various options on how to organise the process, although at this stage a more classical decision-making setup may be effective. It is customary, especially in projects with a strong IT component, to work for rather than with stakeholders. However, ***including stakeholders, including users, in the design team is the most direct way of guaranteeing usability***. Although detailed features and functionalities can be tested through lighter methods such as user surveys, ensuring that there are no fundamental mistakes in the initial design requires a more intensive, time-consuming approach, because the life-worlds of designers are often very different from those of users.

If users are not directly represented on the design team, their perspectives should still be adequately represented. Tools such as surveys are generally too crude to bridge this divide. Therefore it is possible to **consider approaches that describe the user perspective more accurately**, such as digital persona or customer/user journey mapping.

The INTERLINK collaborative environment shows coordinators which steps can be taken, while also allowing users to adjust the process flow according to their needs. The collaborative environment also provides knowledge Interlinkers that support the co-design of services in deliverable 3.3, such as templates and guidelines for creating and using personas and to develop customer journeys.

### Q2.2: What are the organisational requirements to make the co-production process / co-produced service work?

In this and subsequent phases, maintaining continuity becomes a challenge and measures must be taken to safeguard the process as it evolves towards its ultimate goal. A first important recommendation is for the lead organisation to *define a clear and explicit vision* of the expected service. This should not be so detailed as to hinder an iterative process, but it should give sufficient guidance even as the parties and people involved change. This also facilitates the co-production process, because a clear articulation of the core goals and values of the lead organisation helps stakeholders to reach consensus more quickly.

Likewise, a significant decision is where to embed the initiative. Especially in the case of complex services, it is likely that several departments will be involved. A common complaint among stakeholders in co-production processes is that an organisation has 'many heads' and that there is no-one clearly responsible. Both for the sake of an effective design process and for successful co-production, it is important *to devise a clear governance structure that unambiguously allocates responsibility for coordination*.

The INTERLINK collaborative environment allows users to group stakeholders by organisation, distinguishing between the coordinator and other participants, granting participants differentiated access rights to phases of the process and to resources, thus ensuring a clear governance structure.

***Q2.3: What are the technical requirements to make the co-production process/ service work?***

In many if not most cases, services will rely on a combination of analogue and digital processes. In the design, **it is essential to understand how the digital element of services complements analogue processes**, because otherwise the design may include functionalities that in practice remain underused.

Generally, research tends to show that **the usability of digital tools must be a key concern, from the beginning**. Even small changes can have a major impact. In other words, this is not an issue that can be deferred to the implementation stage, because it is central to the initiative's success. Again, a close connection with stakeholders at the design stage will help address this.

The INTERLINK collaborative environment offers resources for testing the usability of digital tools in deliverable 3.3.

**Implementation**

***Q3.1: Are the organisational and regulatory requirements in place in order to launch the co-produced service?***

Since it is likely that new people and organisational units will be involved in the implementation phase, **care should be taken to carry over agreements and (tacit) understandings about roles and responsibilities from previous phases**. It is very damaging to stakeholders' trust if earlier promises are not kept, because those responsible are not entirely aware of what was agreed before.

As in the other phases, allocating sufficient resources is an important condition for success. In particular, **it is important to select staff who are motivated to coordinate the co-production process and, if necessary, provide training**.

The INTERLINK collaborative environment includes operational knowledge about co-production processes and offers additional training material.

***Q3.2: What are the technological requirements for the implementation phase, from the perspective of co-production?***

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From the perspective of co-production, it is difficult to sustain engagement when technology exists only in the abstracts. ***It is recommended to launch the implementation and make the technology visible as soon as possible.*** Although there may be other reasons to delay until issues have been resolved, this is not desirable if stakeholders are to remain engaged.

### Q3.3: How should stakeholders be engaged during the service delivery phase?

Compared to the preceding phases, delivery presents a longer-term activity, during which it is harder to keep stakeholders engaged. Therefore it is recommended to ***invest effort in retaining a core group of stakeholders***, who will pass on the accumulated knowledge and commitment. One way to do this is to build in an element of gamification (also integrated in the INTERLINK collaborative environment; see D2.5 and D3.3). However, there should also be possibilities for new members to join, to prevent the collaboration from being too rigid and excluding new entrants. Moreover, the ***effective engagement of stakeholders in service delivery demands a holistic approach***. This entails continuous and simultaneous attention for the enhancement of motivation, stakeholder involvement, usability and acceptance, adoption, leveraging diverse input and fostering the quality of the co-production process.

The INTERLINK collaborative environment offers various resources that introduce public administrations and private actors to gamification and explain how to take advantage of gamification elements (see deliverable 3.3).

**Sustainability**

### Q4.1: How will the service be kept running while continuing to engage stakeholders?

Over time, even if there is continuity on paper, ***it is necessary to periodically re-boot the collaboration***. This can be done, for instance, by organising larger sessions beyond immediate contacts, to make sure that others are also familiar with what was originally discussed and agreed during the engagement, design and implementation phases. Flexible management of the network of participants is crucial to realise this. It can help to appoint someone who is explicitly tasked with this: to maintain engagement.

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## ● **Appendix 1:** Interview guide case study research

As described above in the methods section, the interview guide was designed to comprehensively explore various dimensions of the governance process, stakeholder engagement, and collaboration within the context of a digital platform. The guide encompasses a series of thought-provoking questions that aim to capture participants' insights and perspectives on key aspects of the platform's governance structure, stakeholder dynamics, objectives, successes, challenges, and potential improvements. By delving into stakeholders' perceptions and experiences, the interview guide aims to provide a nuanced understanding of the governance process in the light of the specific context of the digital platform. Through a holistic exploration of formal and informal collaboration elements, the guide facilitates a comprehensive examination of the platform's function, impact, and potential for future enhancements. The guide's reflective and open-ended nature encourages participants to share their valuable experiences, enabling the study to draw rich insights that contribute to a deeper comprehension of effective governance processes and strategies. Thus, it applied the Preliminary Governance Model to the empirical field and, as described above, the results were vital to develop it further into the Advanced Governance Model.

*Understanding the governance context*

1. What do you perceive to be the main stakeholders?
   - Who would provide the service (or platform) vs. who would use it?
   - When and how to involve stakeholders?
2. What do you consider to be the responsibilities of the stakeholders involved?
   - How much control/responsibility do citizens have (vis-a-vis the government)?
3. How is the collaboration formally embedded (e.g. structures, rules)?
4. What are the informal elements of the collaboration you experience?

*Reflecting on the platform*

5. In your understanding, what are the main overall objectives of the [platform]?

***The governance process***

6. What do you consider to be the main successes (in each phase)?
   - Which parts are more successful than others?

7. What makes them successful?

8. What do you consider to be the main challenges (in each phase)?
   - Can you name some examples?

9. Could you tell us some of your experiences addressing the challenges?
   - How are those situations coped with/resolved?

10. To what extent have you experienced or do you envision tensions among stakeholders (e.g. in regard to interests, perspectives)?

11. If you started a similar project, what would you do differently in the process?
    - What are the lessons/improvements that you take from this?
    - What would you recommend for future projects?

## ● Appendix 2: Conduct of Group Model Building sessions

*Group Model Building session Pleio*

Welcome!

- Introduction and acquaintance

- Informed consent: we will record the session and you will receive a report afterward

We are conducting a Group Model Building session to gather information on the functioning of the digital platform 'Pleio' and its quality development. The purpose of this session is to uncover the mechanisms that determine whether a digital platform is successful or not. There are no right or wrong answers here. Participants from both Pleio (platform provider) and the Dutch Tax Authority (end-user) are present during this session. First, we want to understand the function of the platform for the Tax Authority, in other words, how does the Tax Authority utilize the platform? We would like to learn the goals and which functionalities are used.

The understanding of the digital platform: functionalities that come together (open source)

The outcomes of this session will provide us with insights into the mechanisms that are crucial for the quality of the platform. Quality is the reference point that the participants themselves will define. We want to know:

- How long has the platform been in use, and has its quality increased or decreased over time?

- What does the quality trend look like?

The central variable we aim to explain is the quality of the forum.

In the script development, it is important to identify the mechanisms that explain the quality (as defined by the participants). We will present the reference line that indicates the quality level. Then we will ask the respondents: "Which variables and processes explain this trend?"

We will work on reconstructing retrospective processes and mechanisms that account for this quality trend. Respondents will be asked to individually brainstorm and name one

variable per minute. This should cover aspects related to development and ongoing operation.

Hereby, the variables must be explained. Then we will have a discussion about the position of these mechanisms and proceed to create visual representations (i.e. the model). If applicable, we will also explore external factors that may influence the quality.

*Group Model Building session INTERLINK*

Welcome!

Today's session aims to uncover the mechanisms that determine whether a digital platform, in this case, the collaborative environment, is successful. There are no right or wrong answers, only perceptions.

- Ask for informed consent for audio recording

- Within the INTERLINK project, various partners have been collaborating to jointly develop a digital platform that enables collaboration between public administration and private actors, including citizens. This digital platform is called 'the collaborative environment' and will hereafter be referred to as such.

Before we start with the Group Model Building session, it is important to learn more about the perceptions of the participants on the function (1) of the platform, the usage (2) of the platform and participants' view on the quality (3) of the platform. Hereby, we would like to know the answers from each partner.

Accordingly, we will address the following questions:

1.  What is the function of the platform?

2. How do government organizations and private actors (including citizens) use the platform?

3.  What is quality, and what is needed to develop a high-quality platform?

The outcomes of this session will provide us with an understanding of the mechanisms that determine the quality of the collaborative environment. Quality is the reference line that participants will define themselves. They will do this by answering the following question:

4.  In the time [two-and-a-half-years] that INTERLINK project has been running, has the quality of the collaborative environment increased or decreased?

- In other words, what does the quality line look like?

We could ask respondents to distinguish between the development of the platform, the launch, and the two testing phases.

During this group model building session, the central explanatory variable is the quality of the digital platform (i.e. the line). In script development, we want to identify the mechanisms that explain the quality, as defined by the participants, and how it developed. Therefore, we will present the reference line that demonstrates whether the quality has increased/decreased (to be determined). Then we will ask the respondents:

5. Which variables and processes explain this trend?

Respondents are asked to individually brainstorm one variable per minute. This involves a retrospective reconstruction, where we want to work out the processes and mechanisms that explain the change in quality (and thus the quality line).

Note: It can vary, and all the variables should be explained.

Then we will discuss the position of those mechanisms and proceed to draw. Additionally, we can consider external factors that may have an influence on the quality of the platform.

## • Appendix 3: Additional results of Group Model Building sessions

*Development of Quality*

The GMB session started with the preliminary task of graphically illustrating the progression of the quality line of the digital platform. In order to contextualise this trajectory within a historical framework, the analysis in the first session (on Pleio) started in the year 2009 and in the second one in 2021.

In Figure 3 we can identify three distinctive phases. In the first period, the quality improved gradually due to the identification of diverse groups of customers. Between 2017 and 2019 there were clear improvements because the platform members were able to formulate a strong vision and did not have to doubt any longer about the continuity of the platform. From 2019 onwards there has been exponential growth. The group members have confidence that the direction of this line will not bend in the upcoming period.
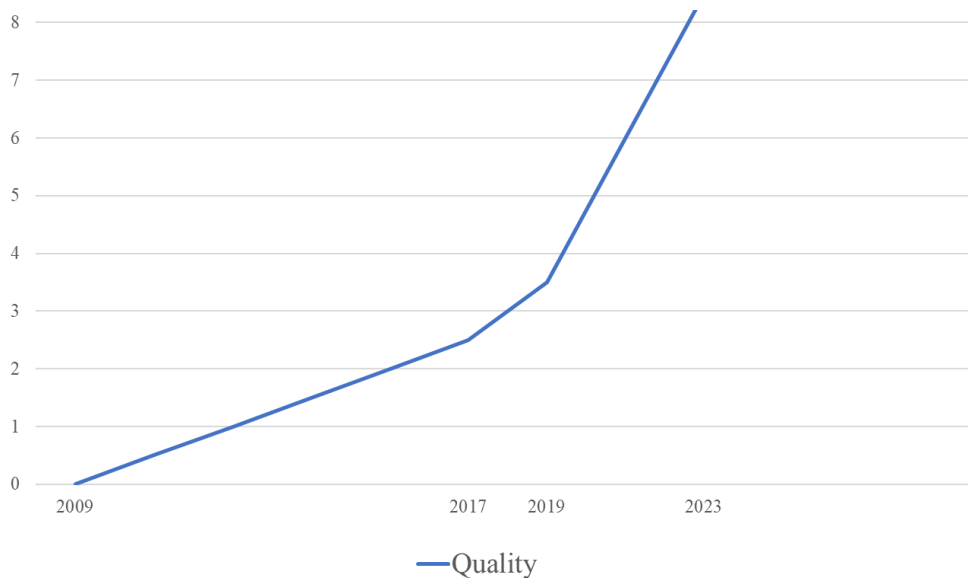


***Figure 3. The reference line regarding quality development Pleio***

As for the INTERLINK platform (see figure 4), the initial six-month period was primarily dedicated to the comprehensive elaboration of the grant agreement, with the aim of conceptualizing the desired technical solution. The platform's development was in its early stages during this phase, characterized by a preparatory phase rather than active advancement, and thereby visualized as a flat line. However, after approximately six months, the technological development of the collaborative environment started,

coinciding with the emergence of noticeable improvements in its quality. Subsequently, considerable time and effort were devoted to technological advancement, yielding favourable outcomes in terms of the platform's overall quality. Following a span of 1.5 years, the platform was first launched and deployed during the initial testing phase. Consequently, a period of exponential growth in relation to the platform's quality followed, mostly driven by valuable user feedback. After the first testing phase, the quality progressed gradually, attributable to the continuous refinement of the collaborative environment.

Drawing from this developmental trajectory, an upward trend is depicted, visualizing exponential growth starting after six months and again after 1,5 years, as illustrated below.
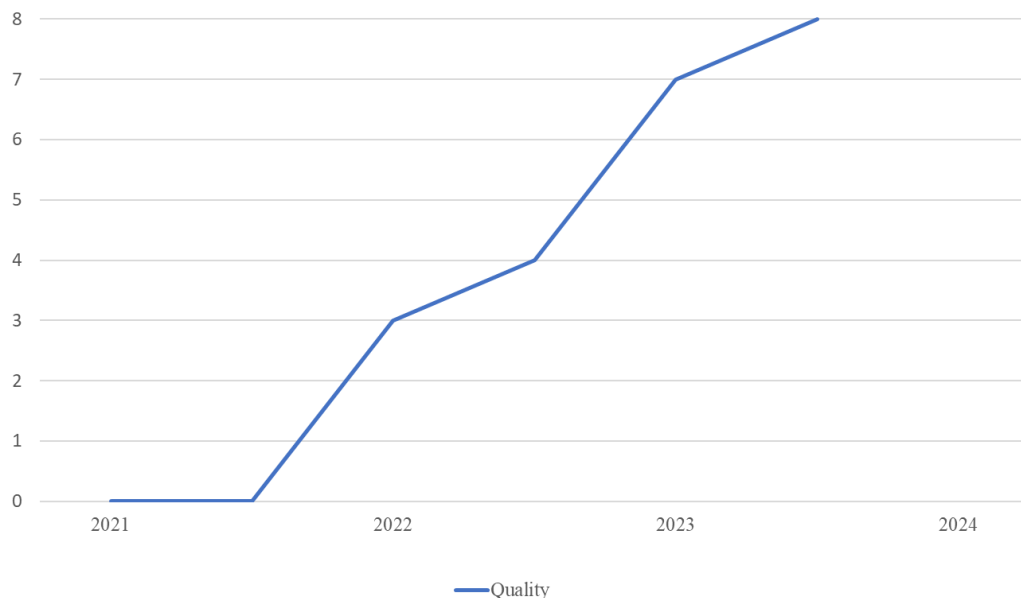


*Figure 4. The reference line regarding quality development INTERLINK*

In the second step the Group Model Building sessions we focused on explaining reference models (figures 3 and 4). The main question focused on finding the explanation for the lines that have been drawn in the first step illustrating the quality development of the platform (collaborative environment).

*Causes tree and uses tree Pleio*

Next to this circular diagram with loops, as presented in paragraph 7.1, we include an alternative visualisation (see figure 5). Here the focus is on the variables leading to the

quality of the platform. In the development and testing phase, there are two crucial variables: the amount of dialogue and system design. Secondly, there is the need to focus on accessibility which is determined to a large extent by the appropriate number of technicians per product and the number of functionalities. The number of functionalities plays a key role as it directly affects the quality of the platform. The number of functionalities that are in play depends on the outcome of the development and testing phase and the money that is available. The stability of the system, as we can read in the tree, depends on the appropriate number of technicians per product, money, the number of functionalities, and quality certification.
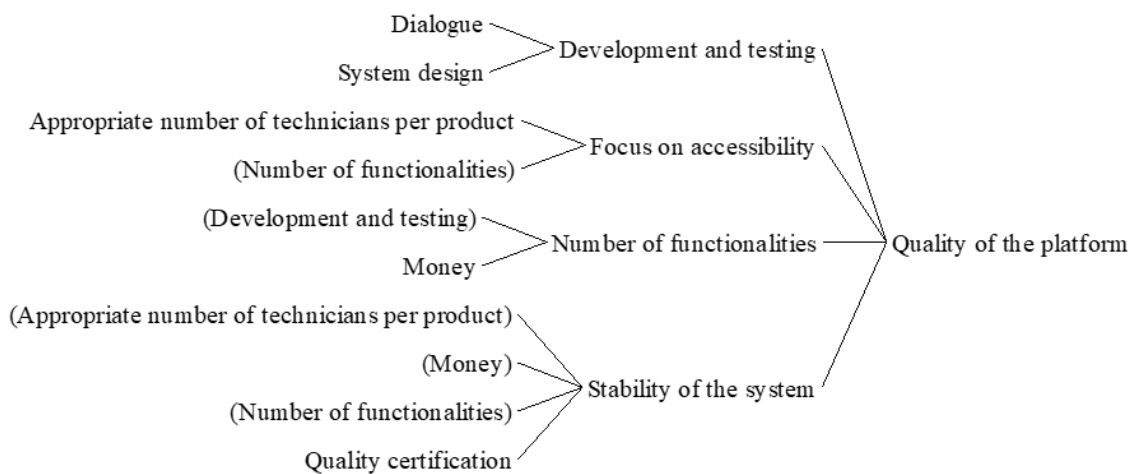


*Figure 5. Causes tree of the central variable Pleio*

Secondly, the variables that are believed to be influenced by the central variable can also be visualized in a use tree (see figure 6). The figure shows that the quality of the platform increases the trust of clients. Intuitive, client trust, in turn contributes to an increase in the number of clients. Thus, the quality of the platform is appreciated by clients, leading to trust and leading to growth.
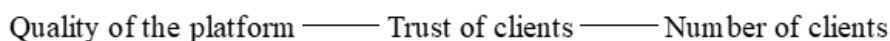


*Figure 6. Uses tree of the central variable Pleio*

All in all, we have seen that the growth of the number of clients leads to the challenge to keep the balance right between accessibility, the number of functionalities, and the stability of the platform.

*Causes tree and uses tree INTERLINK*

The variables that are believed to influence the central variable 'quality of the collaborative environment' are also be visualized in a causes tree (see figure 7). First, the participants acknowledge that the adoption of an agile approach improves the quality of the collaborative environment. They emphasize that the iterative nature of the agile approach fosters adaptability, responsiveness, and continuous improvement, which positively influence the quality of the collaborative environment. In addition, the availability of adequate collaboration resources (such as communication tools) also improves the quality of the collaborative environment. Accessible and well-equipped collaboration resources enhance the abilities of users to collaborate through a digital platform. Third, the participants suggest that higher levels of guidance (related to the process) within the collaborative environment can reduce the need for extensive training and technical support for users. The provision of training and tech support is, however, believed to be positively associated with an enhanced quality of the collaborative environment.
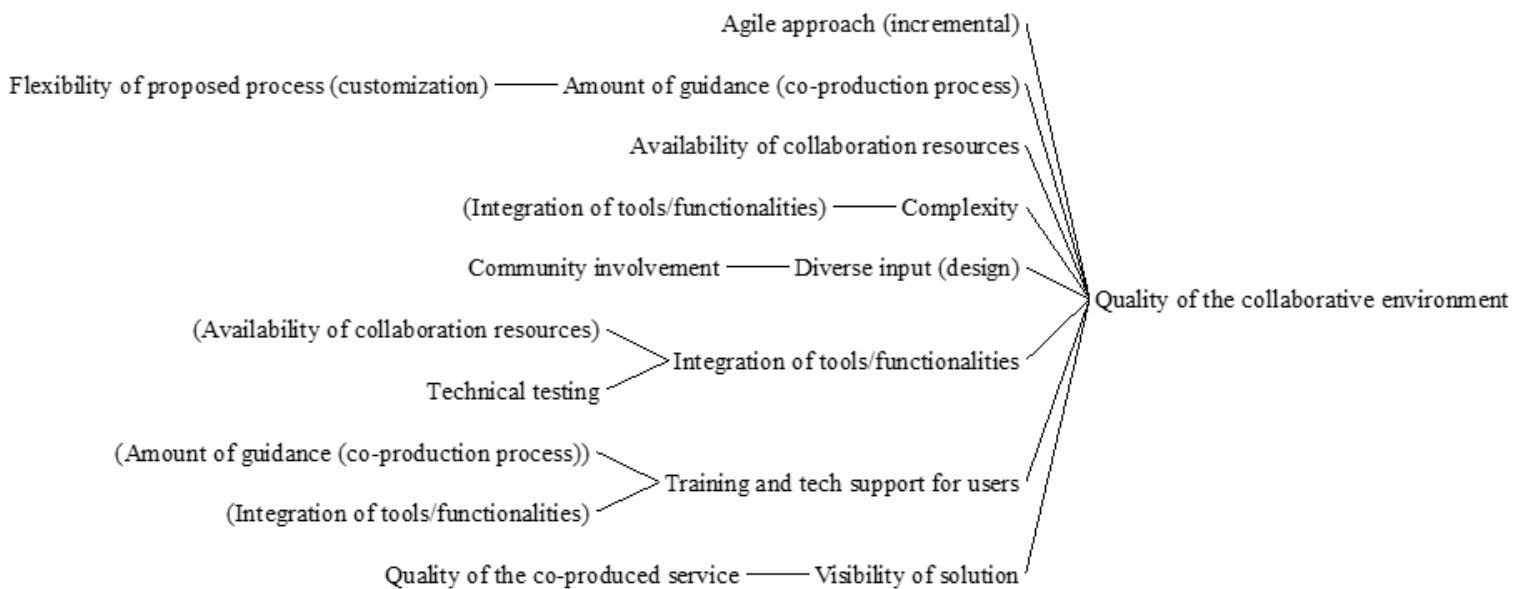


***Figure 7. Causes tree of the central variable INTERLINK***

On the other hand, variables might be negatively associated with the quality of the collaborative environment as well. To give an illustration, the integration of numerous tools and functionalities within the platform may introduce complexities. This increased

complexity has been observed to negatively impact the quality of the collaborative environment since complexity can lead to confusion, inefficiencies, and challenges in navigation and utilization. This shows that higher levels of complexity diminish the overall quality of the collaborative environment.

Finally, the variables believed to be influenced by the central variable are also visualized in a 'uses tree' (see figure 8). The figure shows that the quality of the collaborative environment increases the usability of the platform, as discussed earlier. Intuitive interfaces, clear navigation, and user-friendly features enhance the usability for users. This improved usability, in turn, contributes to the acceptance of the platform. Increased acceptance subsequently leads to a greater number of individuals adopting the platform. Thus, the quality of the collaborative environment increases the usability leading to more acceptance, which improves the adoption. Moreover, the quality of the collaborative environment has a direct impact on the quality of the co-production process. Subsequently, a high-quality co-production process is believed to result in higher levels of motivation, as well as enhance the quality of the co-produced service.
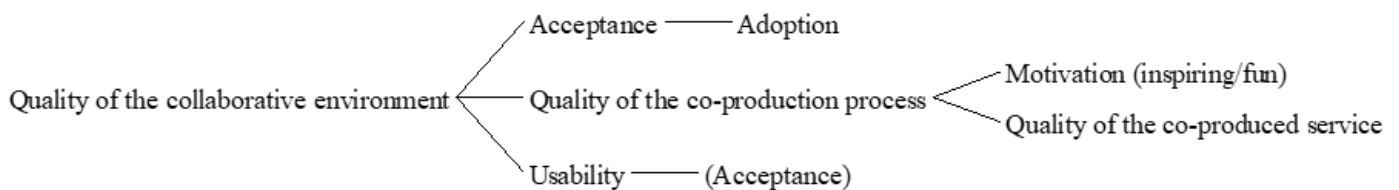


***Figure 8. Uses tree of the central variable INTERLINK***

In summary, the uses tree shows that prioritizing the variables that contribute to a high-quality collaborative environment is crucial for facilitating usability, acceptance, adoption, the quality of a co-production process, motivation, and the quality of the co-produced service.

## ● Appendix 4: Links to the platforms

| Platforms | Links |
|---|---|
| Interlink | https://interlink-project.eu/ |
| | https://interlink-project.eu/pilots/ |
| WeGovNow | https://iris.unito.it/bitstream/2318/1693782/4/icities2018.pdf |
| | https://wegovnow.eu/index.php?id=1845 |
| | https://cordis.europa.eu/project/id/693514/results |
| Pleio | https://tropico-project.eu/cases/administration-costs-for-bureaucracy/pleio-an-open-source-collaboration-platform-for-public-administrations-and-public-policy-in-the-netherlands/ |
| | https://tropico-project.eu/download/d4-3-research-report-on-comparative-case-studies/?wpdmdl=1052&refresh=603771627fc6e1614246242 |
| MeinBerlin | https://tropico-project.eu/cases/administration-costs-for-bureaucracy/meinberlin-an-integrative-eparticipation-platform-for-all-administrative-levels-in-berlin/ |
| | https://tropico-project.eu/download/d5-1-comparative-case-studies/?wpdmdl=1155&refresh=6037716284682161424 6242 |
| | Https://mein.berlin.de/ |
| InGov | https://ingov-project.eu/about/pilots-croatia/ |
| | https://cordis.europa.eu/project/id/962563/results |
| | https://ceur-ws.org/Vol-3049/Paper9.pdf |
| Min Stad | https://minstad.goteborg.se/ |
| | https://www.investingothenburg.com/node/5402 |
| Smarticipate | https://www.smarticipate.eu/ |
| | https://www.smarticipate.eu/wp-content/uploads/smarticipate_D2.2-Citizen-dialog-design-requirements.pdf |
| | https://www.smarticipate.eu/platform/ |

| Smart Kalasatama | https://fiksukalasatama.fi/ |
| --- | --- |
| | https://fiksukalasatama.fi/en/smart-city/ |
| | https://fiksukalasatama.fi/en/agile-piloting-programme/get-to-know-the-pilots/ |



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