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**FLEXPUB**

Crompvoets, Joep; Bouckaert, Geert; Snoeck, Monique; HABRA, Naji; De Terwangne, Cecile; Vanden Berghe, Ingrid; Chantillon, Maxim; Kruk, Rink ; Simonofski, Anthony; Tombal, Thomas; Kruk, Rink W.

*Publication date:*
2020

*Document Version*
Publisher's PDF, also known as Version of record

*Citation for pulished version (HARVARD):*
Crompvoets, J (ed.), Bouckaert, G, Snoeck, M, HABRA, N, De Terwangne, C, Vanden Berghe, I, Chantillon, M, Kruk, R, Simonofski, A, Tombal, T & Kruk, RW 2020, *FLEXPUB: Public E-Service Strategy : Report WP8. FLEXPUB : Work Package 8 : Toolbox.* Belgium Science Policy , Bruxelles.

Download date: 25. May. 2021

# BRAIN-be

BELGIAN RESEARCH ACTION THROUGH INTERDISCIPLINARY NETWORKS
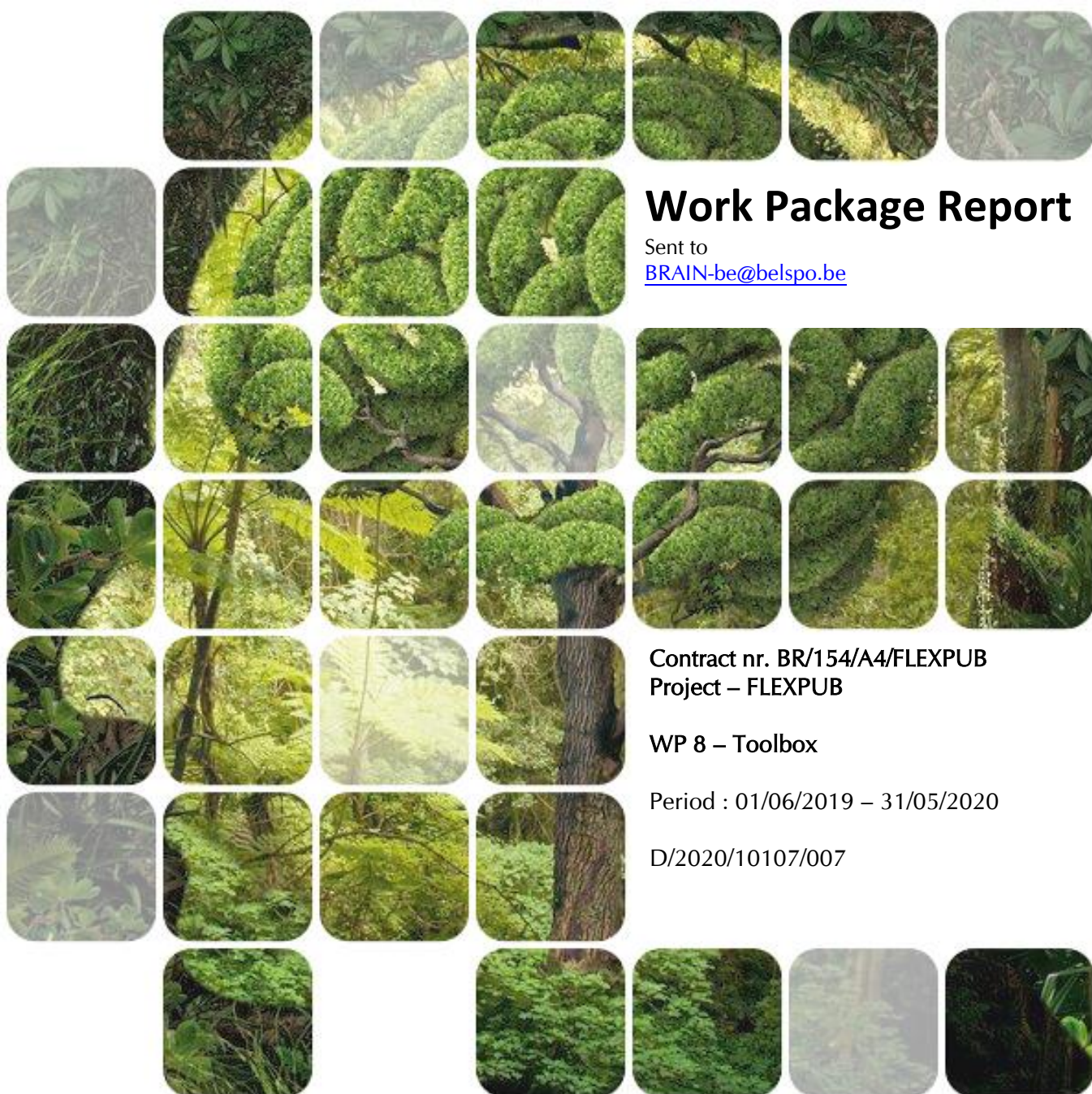
## Work Package Report

Sent to
BRAIN-be@belspo.be

Contract nr. BR/154/A4/FLEXPUB
Project – FLEXPUB

WP 8 – Toolbox

Period : 01/06/2019 – 31/05/2020

D/2020/10107/007

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FLEXPUB aims to contribute to the development of a federal strategy for enabling flexibility, adaptability and innovation in the public sector with a focus on a next generation of geospatial electronic services (e-services). It is expected that the public e-services will continuously change as citizens have higher expectations towards them and technological developments provide new possibilities. During the last two decades, the Belgian federal government and administration have taken significant steps to satisfy (tomorrow's) stakeholders, i.e. citizens, businesses and public organisations.

One of the key goals of the FLEXPUB Research Project is to provide civil servants with hands-on tools and information on how to make use of the recommendations that are put forward in the Strategic Vision (WP 6) and the Blueprint (WP 7). Accordingly, this Work Package aims to deliver a Toolkit that is useful for the relevant stakeholders, in particular the e-service developers. Via this Report, which functions as a Toolkit Handbook, the research team aims to support the various stakeholders in the development of flexible and innovative e-services and to offer to stakeholders a highly practical tool, in contrast with the WP6 Strategy and WP7 Blueprint, which have a more strategic nature.

This report functions as a Handbook that compiles different guidelines, instructions, protocols and/or specifications dealing with the flexible management of geospatial e-services or issues related to adaptive or innovative governments. It is written in such a way that it can be easily consulted and provide quick answers to key questions. The three pillars of the WP6 Strategy, i.e. Openness, Participation and Collaboration, are used to structure this report. For each of the pillars, the research team develops a specific tool that can be applied by the stakeholders. Furthermore, for each of the pillars, an overview of good international and national e-service delivery practices is included, as well as a summary of the various recommendations made in the other WP reports.

For the Openness pillar, a guide to raise awareness about the benefits of Open Data is presented. On the one hand, it aims at providing "Open Data officers" with initiatives that could be used in order to raise awareness about the benefits of Open Data within their own administration. On the other hand, it suggests the creation of a structured network involving these "Open Data officers" (sometimes named "Open Data champions"), in order to ensure the better exchange of good practices and success stories between the administrations. Moreover, additional guidance and best practices examples on the articulation between Open Data and personal data protection are provided, as well as a tool pertaining to the elaboration digital-ready legislation.

For the Participation pillar, we suggest a tool to manage the participation of users in e-government service development. More specifically, we take the practical viewpoint of a public project manager that has to make decisions about user participation in the development of e-government services as a point of departure for designing a decision support guide. This decision support guide should help them decide: (1) whether they need to organise for user participation in e-government service development; and (2) on the modalities of user participation, with regard to the context specificities. We also present how we derived from this model a second management tool: the UParticipate Decision Support Guide. Lastly, we present an empirical validation of the decision support guide, which provides insights and feedback about its use.

For the Collaboration pillar, the research team has designed two FLEXPUB collaboration tools. Both contain three mandatory steps and a fourth optional step. The first one supports the involved stakeholders in the definition of the balance to be reached between the various public values that are pursued. The second one presents potentially relevant coordination instruments. Additionnaly to those two FLEXPUB collaboration tools, an overview of other relevant tools that are connected with the pillar Collaboration are also provided.

This report is structured as follows. First, an introduction on how to use this Handbook is provided. Afterwards, an overview of the relevant tools for the pillars Openness, Participation and Collaboration is provided. Finally, a Conclusion follows.

FLEXPUB aims to contribute to the development of a federal strategy for enabling flexibility, adaptability and innovation in the public sector with a focus on a next generation of geospatial electronic services (e-services). It is expected that the public e-services will continuously change as citizens have higher expectations towards them and technological developments provide new possibilities. During the last two decades, the Belgian federal government and administration have taken significant steps to satisfy (tomorrow's) stakeholders, i.e. citizens, businesses and public organisations. Work Package 8 aims to deliver a Toolkit that is useful for the relevant stakeholders, in particular the e-service developers. Via this Report, which functions as a Toolkit Handbook, the research team aims to support the various stakeholders in the development of flexible and innovative e-services and to offer to stakeholders a highly practical tool, in contrast with the WP6 Strategy and WP7 Blueprint, which have a more strategic nature. The combination of the WP6 and WP7 outcomes on the one hand, and the WP8 outcomes on the other hand, provides stakeholders with basis to support their e-service development.

*Figure 1: Developing flexible and innovative e-services on the basis of three pillars*
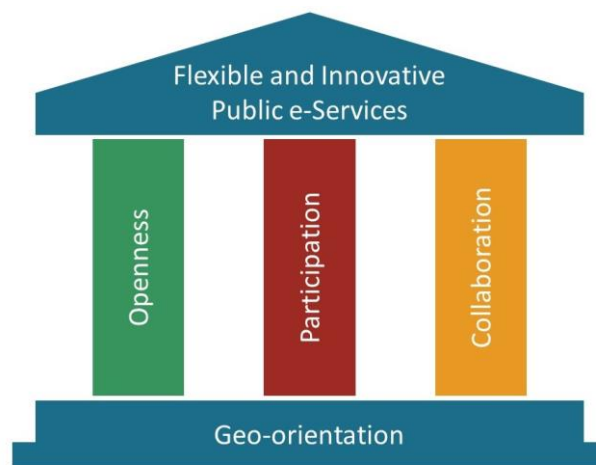


**Source: Personal Research**

This report functions as a Handbook that compiles different guidelines, instructions, protocols and/or specifications dealing with the flexible management of geospatial e-services or issues related to adaptive or innovative governments. It is written in such a way that it can be easily consulted and provide quick answers to key questions. The three pillars of the WP6 Strategy, i.e. Openness, Participation, Collaboration are used to structure this report. Figure 1, retrieved from the WP6 Strategy, shows a visual representation of the importance of the pillars for the development of flexible and innovative e-services. For each of the three pillars, the research team develops a specific tool that can be applied by the stakeholders. Furthermore, for each of the pillars, an overview of good international and national e-service delivery practices is included, as well as a summary of the various recommendations made in the other WP reports. Also, a direct link is made to WP4 Enablers, and how to deal with the possible positive and negative aspects of the various suggested policy options. As such, this report covers Task 8.1, Task 8.2, Task 8.3, Task 8.4 and Task 8.5.

This Handbook can be used by any public administration with an interest in finding relevant tools (1) on creating more openness in the data it possesses, (2) on stimulating the participation of both internal and external public administration actors (e.g. citizens), and (3) on discovering potential avenues for stimulating the collaboration within the public administration. Each tool in this handbook can be directly used, as there is always a clear explanation of how the tool has been developed, what the methodological approach is behind the tool and how it can be used in practice. Furthermore, the tools will be taken up by the Belgian Federal Public Service BOSA (Policy and Support Federal Public Service) and will be digitally available via the **Digital Playbook** of the organisation (FPS BOSA, 2019a). More specifically, it will be included in the Toolbox of this Playbook, which offers do-it-yourself

tools, which can be accessed via the following website: https://digitalplaybook.belgium.be/nl/tools/tools (FPS BOSA, 2019b).

### INTRODUCTION

In the context of the FLEXPUB project, "Openness" is about sharing information and services as broadly as possible, when possible for free, in a secure and privacy compliant manner, in order to increase transparency and foster economic growth through collaboration and data re-use, and to generate value-added services (see WP 6 – Strategy).

This implies fundamental data governance reflections, as rethinking the whole information management system is a pre-requisite to achieve efficient and effective openness. While this process has been started by the administration, it is a constant work in progress to reflect on how the information infrastructure should serve the administration's goals. Indeed, integrated information systems can enable better decision-making and help improve on the public values that the federal administration pursues. Moreover, it can help to identify, in a timelier fashion, relevant datasets requested by re-users. Being "Open" thus requires much more than uploading data on an Open Data portal; it is a mind-set.

In this regard, and as outlined in Work Package 4 – Enablers, it is fundamental to raise awareness about the benefits of Open Data within the administrations. Indeed, opening up public information is a major change requiring a great deal of time and resources. Nevertheless, the public sector is the first beneficiary of Open Data because it forces the administration to invest in its information management systems and in structures that will facilitate its work, and it also allows to break silos within the administration as the various departments are thereby made aware of the informational resources that already exists internally elsewhere. Moreover, Open Data is also highly useful for the re-users, i.e. private sector, NGOs, citizens etc. Accordingly, it is of the utmost importance to be able to guide and motivate the administration to engage in such a revolution. Because of the natural reaction of resistance to change, failure to raise awareness about the benefits of Open Data and about the high-value and initiatives that can potentially derive from the civil servants' efforts, entails a risk that they will not invest sufficient time in the upload, maintenance and update of open datasets. This is because they will not see the benefit but only the costs it incurs. As a consequence, the quality of the data made available will likely be low.

In light of the above, we suggest, in this section, a guide to raise awareness about the benefits of Open Data. More specifically, we take the practical viewpoint of an "Open Data officer" within the administration, which has to motivate the other members of his administration to work on the administration's Open Data policy. To do so, raising awareness about the benefits of Open Data is a key challenge, as the civil servants will be more willing to invest their time in this task if they see the positive impact that it has on society at large.

### FLEXPUB OPENNESS TOOL

This guide to raise awareness about the benefits of Open Data focusses on two aspects. On the one hand, it aims at providing "Open Data officers" with initiatives that could be used in order to raise awareness about the benefits of Open Data within their own administration. On the other hand, it suggests the creation of a structured network involving these "Open Data officers" (sometimes named "Open Data champions"), in order to ensure the better exchange of good practices and success stories between the administrations.

#### INITIATIVES TO RAISE AWARENESS ABOUT THE BENEFITS OF OPEN DATA

While a wide array of initiatives could be taken by "Open Data officers" in their awareness-raising efforts, this guide will focus on six of them, which are summarised in the figure below (Figure 2) and are then each presented in a dedicated sub-section. As an introductory remark, it should be mentioned that choosing the right tool will be function of the specific environment of the administration, and that there is no "one-size-fits all" solution. Rather, the below initiatives are constructed as a "Menu" in which the "Open Data officers" could select one or several initiatives in light of the specific circumstances of the case.

*Figure 2: Initiatives to raise awareness about the benefits of Open Data*

Feedback loops and success stories

Re-use awards

Collaboration with the academic sector

Hackathons

User-friendly Open Data Portals

Public-Private Partnerships (PPPs)
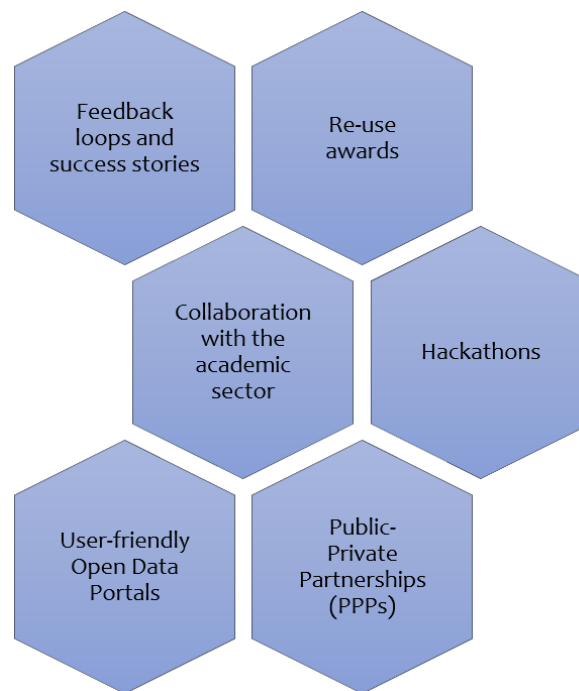
**Source: Personal Research**

## FEEDBACK LOOPS AND SUCCESS STORIES

A first way to enable the awareness raising about the benefits of Open Data is to facilitate the administrations' ability to track the data re-use, via API (Application Programming Interface) logs or attribution clauses in licences. Such clause implies that the re-user has to indicate the source of the data he has acquired, and is commonly used in the Creative Commons Licences (see, for instance, the CC-BY Licence: https://creativecommons.org/licenses/by/4.0/).

Indeed, creating such a feedback loop in order to obtain more information about what re-users do with the data could increase the civil servants' motivation to engage in Open Data due to the identification of "Re-use success stories". This is because shining some light on "Re-use success stories" would allow the administrations to give positive feedback not only to their civil servants, but also to the political deciders in order to justify the need for constant Open Data funding.

This could also be done by asking re-users to indicate links to their re-use applications in a specific section on the Open Data portal, from which they have downloaded the data. For example, this is done on the Federal Open Data portal – see Figure 3 (Federale Overheid, n.d.).

*Figure 3: Federal Open Data Portal - Example*
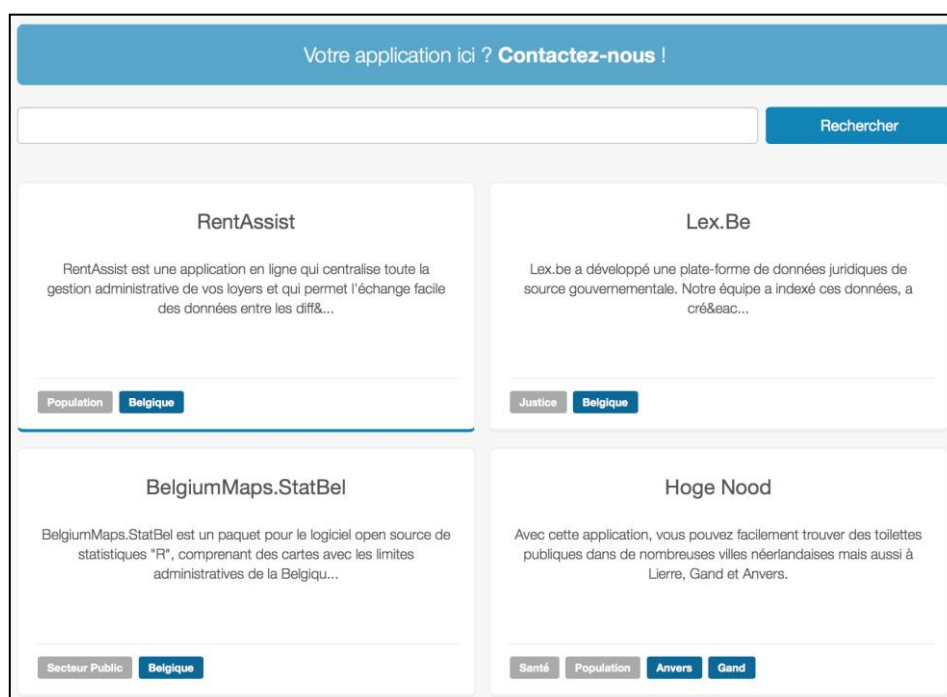
Source: Federale Overheid (n.d.)

## RE-USE AWARDS

In order to stimulate the feedback loop mentioned above, these "Re-use success stories" could be combined with "Re-use awards". Indeed, a finding that resulted from the interviews conducted in the context of Work Package 3, and from the Focus groups conducted in the context of Work Package 4, is that re-users rarely take the initiative to inform the administrations about their re-use. Therefore, re-users need to be incentivised to share this information with the administrations.

One way to do this would be to have annual "Re-use awards", where re-users would submit their "Re-use success stories" to the administration in order to earn an award. Indeed, it would not only provide more visibility to the re-user's product or service, but it would also provide more visibility to the administrations on what is done with the opened data. In this regard, inspiration could be taken from the "Smart city awards" organised by Agoria or Belfius, which reward each year Belgian local communities who have taken concrete initiatives in order to become "Smart cities".

## COLLABORATION WITH THE ACADEMIC SECTOR

A third way to enable the awareness raising about the benefits of Open Data is to collaborate with the academic sector, in order to develop synergies. For example, Master students in computer science, mathematics and business of the University of Namur were asked, in the context of a data science class, to create an App on the basis of the Open Data from the city of Namur, Paris or London (see: https://www.namur.be/fr/actualite/open-data-les-travaux-dinteret-public-des-etudiants-de-lunamur).

These projects were then presented to the Open Data managers of the city of Namur, and allowed them to see what can be concretely done with the Open Data of the city. They could then relay this information in their administration, in order to show the benefits of Open Data and to get support in order to improve the quality of the data and of the portal. For example, one of the groups of students reflected on the creation of an App called PicturiT, where the users would be provided with old building pictures of the city of Namur and would have to find them in the city, using geo-localisation tools. Once the building was found, the users would be provided with information

about the buildings (see Figure 4).

Figure 4: Example of collaboration with the academic sector – PicturiT
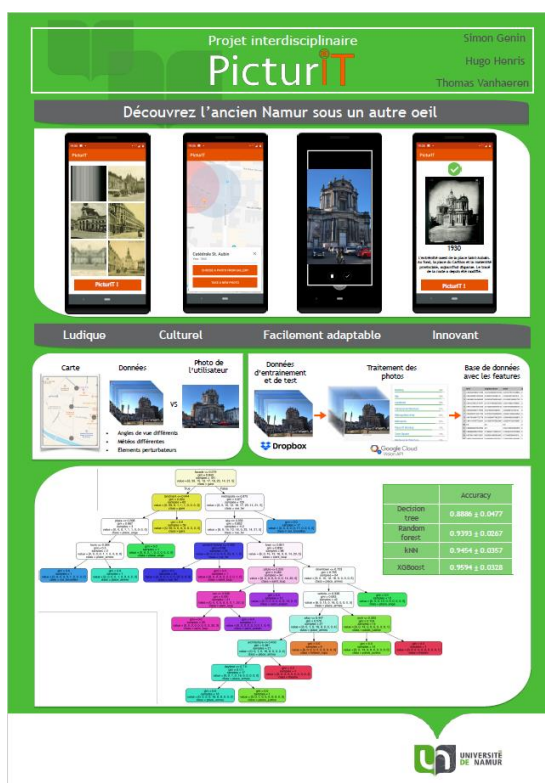


Source: Poster by Simon Genin, Hugo Henris and Thomas Vanhaeren (former students of the University of Namur)

In light of the success of this first experience, the University of Namur and the city of Namur have repeated the project a second time, this time focussing on the development of apps to tackle environmental challenges through the use of Open Data (see: https://nouvelles.unamur.be/upnews.2019-12-10.9165726751).

## HACKATHONS

A fourth way to enable the awareness raising about the benefits of Open Data is to contribute to the organisation of hackathons, which can be defined as: "a design sprint-like event (…) in which computer programmers and others involved in software development, including graphic designers, interface designers, project managers, domain experts, and others collaborate intensively on software projects" (https://en.wikipedia.org/wiki/Hackathon).

Indeed, all around the world, administrations are starting to combine the distribution of Open Data with the organisation of civic hackathons, during which computer program developers interact with citizens (usually for a very short timespan – a weekend), in order to spur innovative uses of Open Data (Johnson & Robinson, 2014) . Although, according to the interviews conducted in the context of Work Package 3 and the Focus groups conducted in the context of Work Package 4, hackathons tend to attract a specific profile of citizens (mostly computer developers and tech-savvy citizens) and although the cost-benefit balance of those events is not always positive, they present a real opportunity to raise awareness about the benefits that could stem from the use of Open Data.

In light of the above, it comes as no surprise that many hackathons initiatives already exist in Belgium (see for example Hack4gov (http://www.hack4gov.be), Open Summer of Code (https://2019.summerofcode.be/), Citizens of Wallonia Hackathon (https://www.citizensofwallonia.be/), Hope for Climate Hackathon (https://hackathon.cslabs.be), etc.). However, the communication on the positive outcomes, in terms of innovation, that derive from them should be reinforced within the administrations, in order to raise awareness about the benefits

of Open Data.

## USER-FRIENDLY OPEN DATA PORTALS

A fifth way to enable the awareness raising about the benefits of Open Data is to create more user-friendly open data portals. Indeed, by making them more usable, this stimulates their use by non-experts. In turn, this motivates the civil servants as they realise that Open Data does not only benefit tech-savvy people, but also the "common citizen". A good example of this is the 3D representation of the city of Namur on its open data portal (https://www.pavillon-namur.be/3d). Indeed, this creates an intuitive portal on which the citizen can click on the building of its choice in order to get access to the Open Data relating to that specific building.

In this regard, the administrations should provide tools and instruments facilitating the re-use. The goal is to make sure that Open Data policies benefit to all and not only to private companies. One way to do so would be to create a single point of contact to help re-users know where to find the specific information that they look for (which administrations produces it, where can they access it, etc.). There is also a need for standardisation, in order to facilitate the re-use of the data.

## PUBLIC-PRIVATE-PARTNERSHIPS (PPPS)

A final way to enable the awareness raising about the benefits of Open Data is to increase the collaboration with the private sector through the use of public-private-partnerships (PPPs). Indeed, administrations need to collaborate with their re-users, in order to ensure that the public sector data is always of the utmost quality and timeliness. While the administrations use data for their own functioning, they might not always need this data to be of a perfect quality or perfectly up-to-date to be able to provide their public services. Thus, they might not have the incentive to "go the extra-mile" to increase the quality and up-to-dateness for the re-users that require it for their own services.

A way to solve this issue would be to create an ecosystem where public-private-partnerships (PPPs) are entered into in order for re-users to increase this quality and up-to-dateness of public data not only for their own benefit, but also for the benefit of the administrations (e.g. the FPS Mobility could enter into a partnership with applications such as Waze in order to get real-time data about the status of traffic jams in order to re-orient drivers, via interactive screens on the road).

A specific example of a successful PPP is the collaboration between the private agency "Nextmoov" and the public transportation operators STIB/MIVB and TEC, in order to create the "NextRide" mobile App, which offers a real-time access to bus, trams and metro schedules, in order to increase the attractivity and the use of multi-modal transportation (https://nextride.be/about). Examples like this one are precious, as they allow the administrations to see the added-value of Open Data initiatives.

In the same vein, administrations could think about making public calls to invite private parties to develop a product or a service that the administration needs, on the basis of the administration's Open Data. This could be done via a contest (in the form of re-use awards, hackathons or any other type of initiative) and the winner could be granted a public procurement contract in order to implement concretely the product or service that it offered to design. Once again, receiving proposals for re-use from the private sector would allow the administrations to see the added-value of Open Data initiatives.

## FLEXPUB TOOL ON THE BENEFITS OF OPEN DATA

In order to assist the Open Data managers in defining the actions that they could undertake in order to raise awareness, within their administration, about the benefits of Open Data, a specific tool has been developed by the research team. It will be made available on the **Digital Playbook of the FPS BOSA,** which offers valuable tools that are specifically designed for the public administration's staff and can be freely accessed via the following website: https://digitalplaybook.belgium.be/nl (FPS BOSA, 2019a). More specifically, it will be included in the Toolbox of this Playbook, which offers do-it-yourself tools, which can be accessed via the following website: https://digitalplaybook.belgium.be/nl/tools/tools (FPS BOSA, 2019b).

This tool aims at providing a brainstorming framework that can be used by an administration's Open Data officer and selected colleagues in order to come up with, and prioritise, actions that could be used in order to raise awareness about the benefits of Open Data within their own administration. It is designed for 3 to 6 participants and the brainstorming activity should last about one hour. To perform this brainstorming, the participants will need post-its, pens and a projector or whiteboard or flipchart or printed A1 or A2 version of the template poster (see Figure 5).

*Figure 5: Template Poster for FLEXPUB Tool on the benefits of Open Data*



Source: Personal Research

## Preparation

Project the template poster for the "Benefits of Open Data" on a white surface or print an A1 or A2 version of it. You can also draw the template poster on a whiteboard or on a flipchart.

Provide each participant with post-its and a pen, and ask them to write on these post-its any idea that they might have in order to raise awareness about the benefits of Open Data within your administration (one idea per post-it; each participant can write as many ideas as they want).

## Use

1. All the participants put their post-its with ideas in the "Idea box" on the top right. Each of these ideas will be presented by the person that suggested it.

2. The group then sorts these ideas based on the category they belong to in the "Categorisation" table on the bottom left. These six categories were determined on the basis of existing good practices that were identified during the FLEXPUB research project (www.flexpub.be) funded by BELSPO. These categories are: "Feedback

loops and success stories"[1]; "Re-use awards"[2]; "Collaboration with academia"[3]; "Hackathons"[4]; "User-friendly Open Data portals"[5]; and "Private-Public partnerships"[6]). If the idea does not fit in any of these six categories, it can be placed in "Others". This sorting exercise creates clusters of ideas. The sorting can be done once all ideas are presented, or during the presentation of the ideas.

3. For each of these clusters, the group selects up to four actions (or groups of actions) that seem to be the more promising or efficient and rank them in the "Actions" table on the bottom right.

4. Based on the ranking done in the "Actions" table, the group determines the (clusters of) actions that will be prioritised in order to raise awareness about the benefits of Open Data within their administration.

5. The participants can further refine the prioritised actions, and prepare them for presentation towards others in the organisation.

## Implementation

The result of this prioritisation can be discussed with the management. Once it is validated, the Open Data officer can launch the implementation of the selected actions, by mobilising the relevant people internally, and by taking contact with the appropriate external stakeholders (if relevant). The positive results deriving from these actions can then be shared internally in order to outline the benefits of Open Data. They can also be shared with Open Data officers from other administrations, in order to circulate good practices and success stories.

## CREATION OF A STRUCTURED NETWORK OF "OPEN DATA OFFICERS"/ "OPEN DATA CHAMPIONS"

While the first aim of this guide was to provide "Open Data officers" with initiatives that could be used in order to raise awareness about the benefits of Open Data within their own administration, this guide's second aim is to encourage the creation of a structured network involving these "Open Data officers", in order to ensure the better exchange of good practices and success stories between the administrations.

Indeed, there is a clear lack of communication about Open Data in general, and the benefits of Open Data in particular. For example, at the Federal level, each administration has an "Open Data Champion" who is in charge, within its administration, of the valorisation Open Data. Yet, this is not well known and there is very little communication about it (often the people in the administrations do not even know that they have an "Open Data Champion", and even less who that person is).

However, the idea is promising and should be extended to all administrations in general. Moreover, the problem with the "Champions" today is that they are often designated (by force) and are not volunteers. This has an impact on their motivation.

Therefore, and in order to increase this communication and to reinforce their motivation, a structured network of "Open Data officers"/ "Open Data champions" should be promoted. Indeed, this network could become a place where good practices and success stories could be exchanged between "Champions", which would then be tasked to relay these best practices in their own administrations, in order to raise awareness about the benefits of Open Data.

## OTHER RELEVANT OPENNESS TOOLS

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[1] Various types of actions where the re-users inform the administration about the successful product or service they have developed on the basis of the re-used data.

[2] Organisation, at regular intervals, of "Re-use awards", where re-users submit their "Re-use success stories" to the administration in order to earn an award.

[3] Collaboration with the academic sector, in order to develop synergies and identify re-use possibilities.

[4] "A design sprint-like event (…) in which computer programmers and others involved in software development, including graphic designers, interface designers, project managers, domain experts, and others collaborate intensively on software projects" (https://en.wikipedia.org/wiki/Hackathon).

[5] Creation of more user-friendly open data portals, which makes them more accessible and stimulates their use by non-experts.

[6] Increase the collaboration with the private sector through the use of public-private-partnerships (PPPs).

In terms of Open Data, a practical difficulty that administrations often face – and which can discourage them from engaging further in Open Data initiatives – is the complex articulation between Open Data and personal data protection.

Indeed, on the one hand, the administrations have to comply with the European Directive 2013/37 ("PSI Directive"), transposed at the Belgian Federal level by a Law of 4 May 2016, according to which they have to allow the re-use of their data for both commercial and non-commercial purposes. On the 20th of June 2019, a recast version of the PSI Directive was adopted (European Regulation 2019/1024) and it will have to be transposed in Belgium by July 2021.

On the other hand, the administrations have to comply with the rules on personal data processing contained in the European Regulation 2016/679 ("General Data Protection Regulation - GDPR"), applicable since the 25th of May 2018. In Belgium, the GDPR was complemented by a Law of 3 December 2017 creating the Data Protection Authority and a Law of 30 July 2018 pertaining to the protection of natural persons regarding the processing of personal data.

Reconciling these two seemingly contradictory fields of law (GDPR limits data sharing while the PSI Directive calls for more data openness and sharing) in their data governance is a key challenge for these administrations. In this regard, it should be pointed out that, on the 5th of June 2013, the "**Article 29 Data protection working party**" (today the European Data Protection Board) has adopted an "**Opinion 06/2013 on open data and public sector information (PSI) reuse**" (WP207 – 1021/00, available at https://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2013/wp207_en.pdf), which aims at offering consistent guidance and best practices examples on the articulation between Open Data and personal data protection.

Another useful resource, in this regard, is the **JRC's Technical Report "Guidelines for public administrations on location privacy"** (available at https://publications.jrc.ec.europa.eu/repository/bitstream/JRC103110/jrc103110_1-dc246-d3.2%20eulf%20guideline%20on%20location%20privacy_v1.00_final%20-%20pubsy.pdf).

For more general tools on the application of personal data protection in the public sector, see:

- De Terwangne C., Degrave E., Delforge A. & Gérard L., *La protection des données à caractère personnel en Belgique: manuel de base*, Bruxelles, Politeia, 2019.

- De Terwangne C., *Vie privée et données à caractère personnel: code general*, Bruxelles, Politeia, 2014.

- The website of the Belgian Data Protection Authority: https://www.autoriteprotectiondonnees.be/

- The website of the French Data Protection Authority: https://www.cnil.fr/

- The website of the Dutch Data Protection Authority: https://autoriteitpersoonsgegevens.nl

Finally, as openness implies the adoption of legislation that is adapted to the digital environment, it is relevant, in the context of this Toolbox Handbook, to revert to the Danish Ministry's "*Guidance on digital-ready legislation on incorporating digitisation and implementation in the preparation of legislation*", adopted in 2018 and available at https://en.digst.dk/media/20206/en_guidance-regarding-digital-ready-legislation-2018.pdf.

The goal of this initiative is to "ensure a simpler, clearer legal framework which is easy to understand and translate into secure and user-friendly digital solutions. [It] describes the new requirements to be fulfilled by the ministries in connection with the preparation of new legislation in order to support digital-ready legislation" (p. 4). Such digital-ready legislation should create the basis for more up-to-dateness and contribute to a more user-friendly, easily accessible and transparent public sector, in order to ensure a more modern and effective public service (p. 4).

In essence, the Danish government has reached a political agreement according to which any new legislation must be digital-by-default and according to which the relevant ministry is compelled to assess and describe, for each law proposal, the technical and public implementation impacts of the law in an explanatory note. These public implementation impacts imply verifying:

- The compliance with the seven principles for digital-ready legislation, meaning that any new legislation must:

a. Be simple and clear so that it is easy to understand for citizens as well as businesses (pp. 8-9);

b. Support digital communication with citizens and businesses (pp. 9-10));

c. Support complete or partial digital administration of the legislation with due consideration for the legal rights of citizens and businesses (pp. 11-13);

d. Rely on uniform concepts and means for data re-use, by looking at what already exists in other legislations, in order to create coherence and consistency across the public sector and to support an effective public service (pp. 13-14);

e. Provide for a high degree of data security (pp. 14-15);

f. Use, to the extent possible, existing public infrastructure to ensure the largest degree of reuse and cohesion across authorities (p. 15); and

g. Consider, already during the preparation of the legislation, the possibility of subsequent control and prevention of fraud and errors (pp. 15-16);

- The compliance with data protection and data re-use considerations (p. 19);
- The organisational conditions and administrative transitional and operating impacts (pp. 16-17); and
- The IT support and management requirements as well as the risks (pp. 17-18).

In terms of procedure, the Guidance provides that law proposals "which, in the assessment of the specific ministry, involve implementation impacts, (…) should be submitted for consultation with the *Secretariat for digital-ready legislation under the Danish Agency for Digitisation*, preferably 6 weeks before public consultation" (p. 22 – emphasis added). The Secretariat then reviews the draft law proposals in order to assess the implementation impacts of the law proposals, and issues a consultation letter that may include recommendations on the preparation of the law text. Moreover, it should also be pointed out that the Secretariat receives every year, before the summer holidays, the legislative programme for the year to come, which allows it to do a first screening of the future law proposals for which it will be particularly relevant to initiate an early dialogue with the specific ministry on digital-ready legislation (p. 23).

This good practice stemming from Denmark could be replicated in Belgium and such a "Secretariat for digital-ready legislation" could, for instance, be created within the DG Digital Transformation of the FPS BOSA.

## SUMMARY OF THE VARIOUS RECOMMENDATIONS MADE IN THE OTHER WP REPORTS

To conclude this chapter on Openness, a summary of the recommendations made in the other "Work Package reports" of the FLEXPUB project is provided below. In order to ensure Openness, we recommend:

- that the federal government foresees a sustainable "Open Data funding" of the fixed and marginal costs linked to the quality, the continuity and the maintenance of the opened data at the federal level, via a global federal budgetary envelope, or via the creation of "Freemium models" (data would be shared freely, but administrations could sell the services built on top of this data to third parties), and that the same is done within each level of power (Regions and Communities);

- that the federal government tackles this "Open Data funding" issue before July 2021, as by then, it will have to transpose the amended version of the PSI Directive (Directive (EU) 2019/1024 of 20 June 2019) in Belgian law, and that this Directive imposes the obligation to share "High-value datasets" for free, without any exceptions, and this will have a significant impact on federal administrations that are not funded at 100% by tax-payer money. The Directive also imposes to set up APIs for these data, and this should be implemented in a uniform and standardised way at the Federal level;

- that priorities should be defined in order to determine on which open datasets it should be invested the most. To do so, the organisations could take both a passive and active approach. The passive approach would consist in monitoring the number of downloads that the various datasets have had, in order to identify those that are re-used the most. The active approach would consist in setting an "Open Data working group" with representatives of the re-users (citizens, private sector, NGOs) in order to identify use cases and potential re-users, to define data quality requirements and to identify public datasets that are not

yet open, but have a major economic or societal value (this could especially be relevant for authoritative data sources);

- that the FPS Chancellery of the Prime Minister – Service for Administrative Simplification and the FPS BOSA – DG DT launches awareness raising campaigns about the benefits of Open Data, as the public sector is the first beneficiary of Open Data, because it forces the organisations to invest in their information management systems and in structures that will facilitate their work;

- that the federal administrations should strive towards implementing the FAIR (Findable, Accessible, Interoperable, Reusable) principles to their data, in order to improve its quality for internal use but also in order to increase data re-use through Open Data;

- that the federal organisations provide tools and instruments facilitating data re-use, notably via standardisation and interoperability, and via the creation of a single point of contact to help re-users know where to find the specific information that they look for;

- that the federal organisations work on making their data available via Application Programming Interfaces (APIs);

- that the federal, regional's and communities' governments agree on a set of common licences for all the Open data services of the Federal, Regional and Community entities, which would replace the current licence fragmentation in order to avoid licensing incompatibilities' issues. The standard for such licences should be based on supra-national standards, namely the CC-BY  or the CC0 Creative Commons licences;

- that the Data Protection Authority, with the support of the FPS BOSA, trains the civil servants on how to implement the EU General Data Protection Regulation in their daily work (documents, templates, workshops, traineeships…);

- that the federal organisations take personal data protection and security concerns into consideration from the start when designing public e-services (Privacy-by-design), and adopt strict policies in this regard.

# 3. PARTICIPATION

## INTRODUCTION

In the context of the FLEXPUB project, "Participation" is about involving all the stakeholders impacted by the digitalisation strategy, by taking into account their evolving requirements, needs, ideas or necessary training. This participation is essential to be able to match the expectations of the stakeholders regarding the e-services (see WP 6 – Strategy).

As outlined in Work Package 4 – Enablers, it is fundamental to stimulate the participation of internal and external users in the development of e-government services. Indeed, users can have a more active role in e-government in general and e-service development in particular (Axelsson et al., 2010; Holgersson et al., 2012). A wide range of user participation approaches and methods have been described in detail in the literature. However, project managers within public organisations are sometimes reluctant to involve the users in the development process and need more support when making decisions on this matter (Simonofski, Snoeck, et al., 2019). Several reasons have been identified, e.g., lack of knowledge of potential methodological approaches; lack of time and other resources; additional complex requirements to integrate, and so forth. Another key challenge, aligned with the lack of knowledge of potential methodologies, is the wide variety of existing participation methods. Indeed, some methods are more relevant than others, depending on the specific context, users' characteristics, their motivation, the organisational culture, or the project stage (Simonofski, Snoeck, et al., 2019). This is aligned with studies that question the preconception that more participation is always for the better and reflect on the tension between the positive findings from the general Information Systems Research (ISR) and the opinions of project managers (Heeks, 1999; Holgersson et al., 2018), and is relevant both for research and for practice. For instance, Heeks (1999) challenges the consideration of user participation as a "silver bullet" that can solve everything without taking into account the context or the target users. Without an appropriate ex-ante analysis, user participation could prove to be useless or even negative for the project manager in the public organisation.

Here, we suggest a tool to manage the participation of users in e-government service development. It will be made available on the Digital Playbook of the FPS BOSA. More specifically, it will be included in the Toolbox of this Playbook, which offers do-it-yourself tools, which can be accessed via the following website: https://digitalplaybook.belgium.be/nl/tools/tools (FPS BOSA, 2019b).

Concretely, we take the practical viewpoint of a public project manager that has to make decisions about user participation in the development of e-government services as a point of departure for designing a decision support guide.

In light of the above, the following decision support guide aims to help public project managers decide: (1) whether they need to organise for user participation in e-government service development; and (2) on the modalities of user participation, with regard to the context specificities. In order to reach that goal of *situated* user participation (participation that takes into account the context), this section presents a conceptual model that constitutes an essential theoretical basis for a decision guide. We also present how we derived from this model a second management tool: the UParticipate Decision Support Guide. Lastly, we present an empirical validation of the decision support guide, which provides insights and feedback about its use.

## FLEXPUB PARTICIPATION TOOL: UPARTICIPATE

From the literature and the empirical activities, we have chosen to study the influence of four factors (Organisational context, Project Stage, Users' Characteristics and Public Values) on user participation decisions (method and degree) from the viewpoint of a project manager in charge of e-government service development. By factor, we mean "any element, that the project manager may or may not influence, that impacts user participation decisions". The Conceptual Model and its factors are summarised in the figure below (Figure 6).

*Figure 6: Theoretical Model of UParticipate*
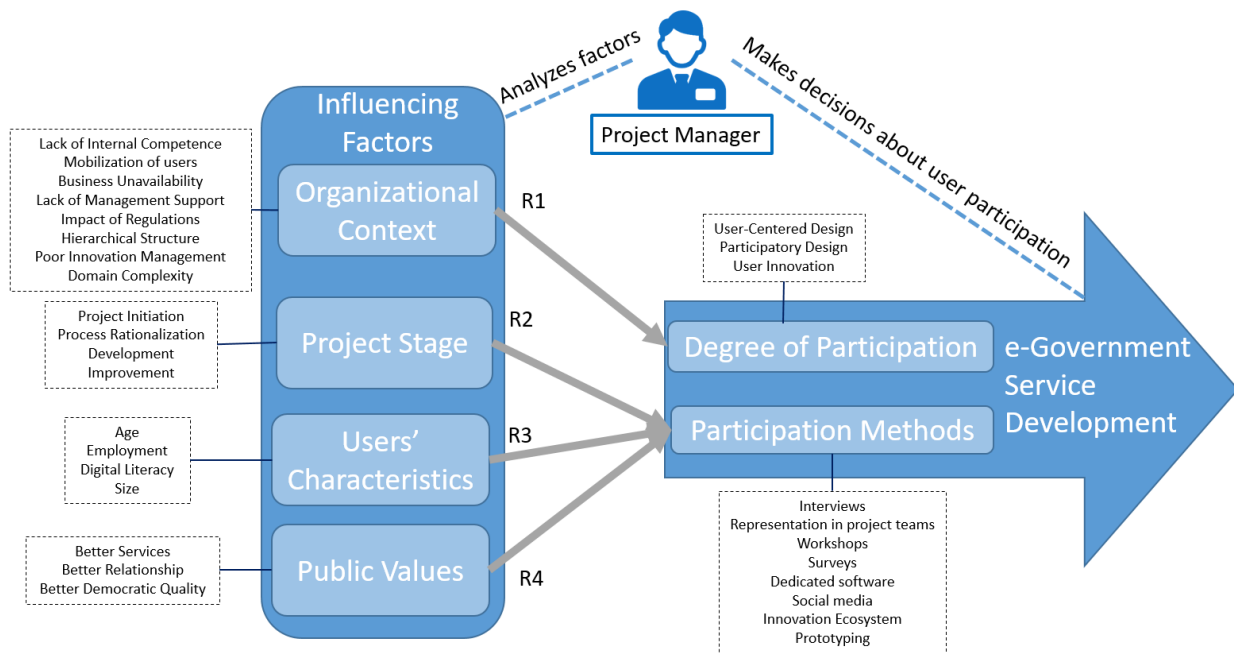
Source: Simonofski, Melin, Lindgren, Vanderose, & Snoeck (2019)

## CONCEPTUAL MODEL

### PARTICIPATION METHODS

There are different methods to collect the input of users in the development of information systems. For the specific case of e-government, eight different methods have been identified and are summarised here:

- **Interviews**: Software developers often rely on this direct and simple method to gather input from users during the requirements engineering phase of the development.

- **Workshops**: This method allows interaction with a group of representative users with the aid of innovative techniques such as improvisation principles.

- **Representation in the project team**: Salient users can be considered as partners and intermediaries at different stages.

- **Dedicated Software:** Dedicated software can also be used to support development, such as Crowd-centric Requirements Engineering platforms for requirements elicitation, prioritisation and negotiation.

- **Innovation Ecosystem**: Insights from potential users can also be collected thanks to new user-driven open innovation ecosystems such as living labs or hackathons.

- **Usability tests on prototypes**: This method allows for the presentation of unfinished software to its potential users to collect feedback and thereby improve it.

- **Social Media**: Social media is often considered as an enabler of political participation but can also be a lead to improve software development practices

- **Surveys**: Surveys can be used to collect insights from a large number of users through online surveys, phone or in person surveys.

We use these methods as a point of departure for the model, as they constitute an abstraction that can be further refined and instantiated according the specificities of the project.

## DEGREE OF PARTICIPATION

The degree to which users are actively involved in the development process and the actual e-government service design (as a result of the various methods above) is also an important element for the project manager to consider. In order to explain this degree, we rely on the taxonomy from (Holgersson et al., 2012) that describes user participation along a spectrum of three approaches:

- **User-Centered Design** is an approach that underlines the important impact of users' needs on the design of an interface (Abras et al., 2004). Users remain passive as they only provide information to developers that hold the decision power.

- **Participatory Design** is an approach where developers and users are more equal partners in the process (Schuler & Namioka, 1993) and where users can act as advisors or representatives.

- **User Innovation** is an approach where the solutions reside within "lead" user groups that are willing and capable to develop solutions themselves (von Hippel, 1986).

The main argument for using taxonomy is that it relies on well-established approaches that constitute a spectrum in the participation from low degrees of user involvement to high degrees of involvement.

## INFLUENCING FACTOR 1: ORGANISATIONAL CONTEXT

A growing body of research focuses on the impact of the organisational context and associated challenges on software development practices. Among other studies, Ayed et al. (2012) study how agile methods should be customised according to the specificities of the organisation in order to tackle the context-specific challenges. We reported eight barriers that can impede the implementation of agile methods in a governmental context (Simonofski, Ayed, et al., 2018):

- **Lack of Internal Competences**: Unavailability of specific profiles in e-government service development teams (IT, Business Analysts, Agile specialist, etc.).

- **Mobilisation of users**: Difficulty in mobilising and motivating the specific users targeted by the organisation

- **Business Unavailability**: Siloed structure that impedes the internal alignment between business experts and IT stakeholders.

- **Lack of Management Support**: Lack of support from high-level, mid-level and operational employees as well as from political representatives to support the change in development practices.

- **Impact of Regulations**: Impact of regulatory compliance and political agendas on development practices.

- **Hierarchical Structure**: Presence of a hierarchical decision-making process.

- **Poor Innovation Management**: Lack of innovation due to budget constraints.

- **Domain Complexity**: Complexity of the project in terms of interoperability, security, quality, size, partners, etc.

As user participation is an essential principle of agile methods, we rely on these challenges to understand the organisational context, as the more present these challenges are, the more difficult it is to increase collaboration and participation in existing processes. The organisational context impacts the decision to make use of user participation methods or not. Indeed, if the organisational context is very hostile to user participation (with, for instance, a highly hierarchical structure and low management support), then user participation can be useless (if it is not considered afterwards), inapplicable (the project manager is not allowed to take time to implement participation) or even detrimental (waste of resources). On the other hand, if these challenges are not saliently present in the organisation of interest, the organisation is likely to be more inclined towards welcoming users' input. Acknowledging the specificities of the organisational context is important based on the study above, and in

line with the situated perspective in this study, we include this in the framework so that the project manager is aware of the challenges of his/her organisational context.

## INFLUENCING FACTOR 2: PROJECT STAGE

Another influencing factor on which user participation method can be implemented is the project stage. We reflected upon the e-government stages followed by a local community and synthesised them as follows:

- **Project Initiation**: The e-government strategy was formulated by the stakeholders in terms of scope, objectives and resources.

- **Process Rationalisation**: The as-is processes of government were rationalised before engaging in any IT investments to evaluate if they needed to be adapted, transformed or even deleted.

- **Development**: The different software development stages of the new service take place in this step to simplify the internal processes as well as the services offered to users.

- **Improvement**: Feedback mechanisms allow the different stakeholders to give their opinion and ideas on the whole strategy in order to facilitate continuous improvement.

The Project Stage has an impact on the choice of participation methods by the manager. Some methods are more appropriate than others, depending on the project stage. The full range of hypotheses has been formulated in a previous work and (Simonofski, Vanderose, et al., 2018) constitutes the basis for the recommendations in this study. For instance, prototyping is helpful in the development of the solution but is not necessarily applicable in the strategy formulation stage. Including the project stage is important for the project managers to understand the relevance of each method. These four stages are also broad enough to be further refined if necessary (e.g. the different software development stages under the "Development" stage).

## INFLUENCING FACTOR 3: USERS' CHARACTERISTICS

Wijnhoven et al. (2015) studied the motivations of citizens to engage in Open Government projects. Among the different themes for analysis, they focused on socio-economic characteristics such as Age and Employment. We rely on these two characteristics to understand which user base the practitioners will target with their e-government service and their participation activities. On top of these characteristics, we can also add two other potentially interesting factors: the digital literacy (Distel & Becker, 2017; Hargittai & Hsieh, 2012) and the size of the user group (Oostveen & Van Den Besselaar, 2004). The characteristics included are thus:

- **Age:** The user base can either be Young (under 20), Adults (between 21 and 59) or Seniors (above 60)

- **Employment:** The target users can be students, employed or unemployed. If they are employed, they can work in governmental bodies or not.

- **Digital Literacy:** The targeted users can have a high-level, medium-level or low-level understanding of digital artifacts.

- **Size:** The potential user population may differ in size depending on whether the service is intended for use by a small town, a city, a region or at the national level.

Users' Characteristics also have an impact on the choice of methods. Indeed, depending on the targeted users, different methods should be used. At this stage, different hypotheses were formulated in a citizens' survey reported in (Chantillon et al., 2018). Acknowledging user characteristics in the e-government service development is important for understanding the specificities of the target users and how it impacts their participation. Additional characteristics can be added to the model to refine the understanding of the user base.

## INFLUENCING FACTOR 4: PUBLIC VALUES

Public values are extensively discussed within the public administration literature, as they have an impact on the processes and strategies of governments. Rose et al., (2018) formulate several "ideals" to understand the underlying

public values that can influence ICT development in an e-government context. In line with the service, engagement and efficiency ideals previously formulated, (Jaspers & Steen, 2018) provide three main categories of public values:

- **Better services:** This category refers to a better service delivery through values such as efficiency, effectiveness, quality, satisfaction or sustainability.

- **Better relationship:** This category refers to a better relationship between public servants and users through value such as trust, mutual learning, consideration for users' needs and capacities, reciprocity, transparency or individual freedom.

- **Better democratic quality:** This category refers to the democratic quality of the service delivery through values such as participation, empowerment, inclusion, diversity or social capital.

The inclusion of Public Value as an influencing factor on user participation practices rests on the idea of 'public value' being a proxy for the 'type' (or underlying purpose) of the project. Project managers often experience tensions between the values presented above and need to balance them in terms of their development project (de Graaf et al., 2016; Melin & Wihlborg, 2018). Therefore, they have an impact on the user participation decisions when it comes to developing e-government services.

## USE OF THE GUIDE

The conceptual model helped us build a decision support guide for project managers. This guide was created and improved in close collaboration with project managers through in-depth interviews in order to increase its usability. These interviews helped us understand the requirements of practitioners regarding the guide. These requirements related to the process of the guide, the way to formulate questions and the presentation of the output of the guide. The process for using the decision support guide contains two parts as presented in Figure 7; (1) the influencing factors analysis, and (2) the participation methods matrix. The logic of the guide is as follows. First, each of the influencing factors will be presented to the project managers from the relevant governmental bodies in order to perform an **influencing factors analysis**. This analysis can take the form of a questionnaire on which the project manager has to enter the necessary information for each of the influencing factors. The output of these questions are labels matching the situation of the project managers, as well as scores assigned to each method, ranking them from most recommended to least recommended. Then, the decision support guide issues recommendations in the shape of a **participation methods matrix,** showing which user participation method(s) to use and to which extent the users should be actively involved in this process. These recommendations are for now based on hypotheses resulting from prior research, but can be adjusted as the guide gets used and more insight in the relationships are obtained.

*Figure 7: UParticipate Decision Support Guide Process*
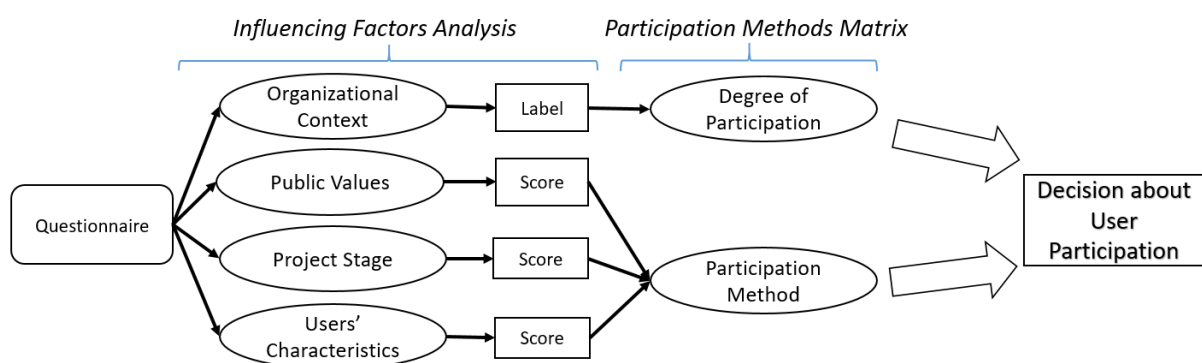


**Source: Simonofski, Melin, et al. (2019)**

## INFLUENCING FACTORS ANALYSIS

The **Organisational context** is formulated on a three-point scale question ranging from "Not important" to "Important" with the following template: *"To what extent is the challenge "X" important in your organisation?".*

Detailed thresholds are formulated to determine if an organisation scores low, middle or high to these questions.

- If, on average, the different challenges score Low, this results in assigning the label "F" (Favorable) and recommends user innovation or high levels of participatory design due to an appropriate environment.

- If, on average, the different challenges score Middle, the label "M" (Medium Favorable) is assigned and the recommendation is to focus on participatory design on small scale.

- If, on average, the different challenges score High, this results in assigning the "U" (Unfavorable) label and suggests focusing on user-centered design or not using participation methods at all.

Then, the project manager will be asked to report the **Project Stage(s)** at which he/she wishes to invoke a user participation method. Based on the hypotheses from Simonofski et al., (2018b), The following table (Table 1) reports the translation of the hypotheses into scores for each entry following this taxonomy: 0 = Not Applicable / 1 = Not suggested / 2 = Applicable / 3 = Recommended.

*Table 1: Input scores for "Project Stages"*

|  | ITW | WS | REP | SOFT | INNOV | PROT | SOCIAL | SURV |
|---|---|---|---|---|---|---|---|---|
| Project initiation | 3 | 3 | 3 | 1 | 1 | 0 | 2 | 2 |
| Process Rationalisation | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 2 |
| Development | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Improvement | 1 | 1 | 1 | 3 | 3 | 0 | 3 | 3 |

Source: Personal Research

The same taxonomy is then applied to the public values in the table above (Table 1). The questions about the Public Values are also formulated on a three-point scale question ranging from "Not important" to "Important" with the following template: *"To which extent is the value of "X" important to your organisation?"*. These questions will deliver an aggregate score about the three main categories of values previously described. An alternative to this formulation would be to ask the respondent to rank the values from most important to least important to avoid a high score for all categories. Depending on the values targeted by the managers, the recommendations from the table below (Table 2) will be applied.

*Table 2: Input scores for "Public Values"*

|  | ITW | WS | REP | SOFT | INNOV | PROT | SOCIAL | SURV |
|---|---|---|---|---|---|---|---|---|
| Better Services | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Better Relationship | 0 | 3 | 3 | 0 | 0 | 0 | 3 | 0 |
| Better Democratic Quality | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 3 |

Source: Personal Research

Finally, the taxonomy is applied to the Users' Characteristics in the table below (Table 3). The hypotheses of this table are sample values at this stage. They are based on tendencies identified from the citizens' surveys performed by Chantillon et al. (2018) and Wijnhoven et al. (2015), as well as from the three group discussions with researchers and practitioners.

Table 3: Input scores for "User Characteristics"

| | | ITW | WS | REP | SOFT | INNOV | PROT | SOCIAL | SURV |
|---|---|---|---|---|---|---|---|---|---|
| **Age** | Senior | 3 | 3 | 1 | 1 | 1 | 3 | 1 | 1 |
| | Middle | 1 | 1 | 3 | 2 | 2 | 2 | 2 | 2 |
| | Young | 2 | 2 | 2 | 3 | 3 | 1 | 3 | 3 |
| **Employment** | Employed Public | 3 | 3 | 3 | 2 | 1 | 3 | 1 | 1 |
| | Employed | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| | Students | 2 | 2 | 2 | 3 | 3 | 1 | 3 | 3 |
| **Digital Literacy** | High | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 1 |
| | Middle | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | Low | 3 | 3 | 3 | 1 | 3 | 3 | 1 | 3 |
| **Size** | Large | 1 | 1 | 1 | 3 | 2 | 1 | 3 | 3 |
| | Middle | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 |
| | Small | 3 | 3 | 3 | 1 | 1 | 2 | 1 | 1 |

Source: Personal Research

## PARTICIPATION METHODS MATRIX

After the influencing factors analysis, the outcome is a participation method matrix, summarised in Table 4, that recommends which method (row) to use and to what degree (column). Within each box of the matrix, two pieces of information will be found: a label and a score. The label refers to the organisational context factors, whereas the score is derived from the public values, project stage and users' characteristics factors of the model. The degree of participation (column) will be recommended depending on the assigned label. Within the recommended boxes, the higher the participation method scores, the higher the recommendation. For instance, if the influencing factors' analysis reveals an unfavorable organisational context (equivalent to the U Label), we recommend the use of User Centered Design. Then, if within the User Centered Design column, the "Interview" method scores the highest, this method will be recommended. The U label could also lead to the use of no participation method for the moment or to experimently take advantages of proxies (public servants assuming up the role of regular citizens). Indeed, this is consistent with the previous argument from the literature that user participation is no "silver bullet" and may not be appropriate in some cases. We thus recommend the user of the guide to first tackle the challenges present in his/her organisation before recomputing the guide.

Table 4: Participation Methods Matrix

| | User-Centered Design (or Tackle challenges) | Participatory Design | User Innovation |
|---|---|---|---|
| Interview | U + Score | M + Score | F + Score |

| | | U + Score | M + Score | F + Score |
|---|---|---|---|---|
| Workshops | | U + Score | M + Score | F + Score |
| Representation in Project Team | | U + Score | M + Score | F + Score |
| Dedicated Software | | U + Score | M + Score | F + Score |
| Innovation Ecosystem | | U + Score | M + Score | F + Score |
| Prototyping | | U + Score | M + Score | F + Score |
| Social Media | | U + Score | M + Score | F + Score |
| Survey | | U + Score | M + Score | F + Score |

**Legend for Labels**: **U** = Unfavorable organisation, **M** = Medium favorable organisation, **F** = Favorable organisation

Source: Personal Research

## ILLUSTRATIVE EXAMPLE

To test the usability and utility of the guide, we first applied it to the case of La Louvière, Belgium. We were able to complete the factor analysis in collaboration with the e-government manager of the city. We asked her questions from the guide from the perspective of possible user participation in the development of an online portal. The answers revealed a medium (M) favourable organisational trend, which suggests a participatory design approach with low degree of citizen involvement. The public values analysis revealed that the city was aiming for better services. In terms of users' characteristics, they were targeting a large middle-aged population with low digital literacy that are employed outside the public sector.

*Table 5: Scores for illustrative example : La Louvière (Belgium)*

| | | ITW | WS | REP | SOFT | INNOV | PROT | SOCIAL | SURV |
|---|---|---|---|---|---|---|---|---|---|
| Improvement **Phase** | | 1 | 1 | 1 | 3 | 3 | 0 | 3 | 3 |
| **Users' Characteristics** | Age: Middle-Aged | 1 | 1 | 3 | 2 | 2 | 2 | 2 | 2 |
| | Employed | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| | Low Digital Literacy | 3 | 3 | 3 | 1 | 3 | 3 | 1 | 3 |
| | Large Size | 1 | 1 | 1 | 3 | 2 | 1 | 3 | 3 |
| Average **Users' Characteristics** | | 2 | 1.5 | 2 | 1.75 | 2.25 | 2 | 2 | 2.5 |
| **Public Values**: Better Services | | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| **Total** | | 6 | 2.5 | 3 | 4.75 | 5.25 | 5 | 5 | 5.5 |

Source: Personal Research

The computation of the scores, shown in the table above (Table 5), ranks the three participation methods as follows:

Interviews (6), Survey (5.5) and Innovation Ecosystem (5.25). Since the stakeholders from La Louvière had efficiency objectives driving their strategy, they assumed that the interviews would be too time-consuming and used an online survey to get feedback on the portal and on the e-government strategy at the same time. They did not follow the Participatory Design methodology *per se* but still considered the feedback (and phoned the persons directly if necessary) into their strategy and to improve the portal. However, the users did not have an impact in the decision-making process. This strategy showed promise as, to this day, 313 forms were completed by the citizens. This enabled the city to have more ideas about their e-government portal and to know about all the problems that users faced when using it.

## OTHER RELEVANT PARTICIPATION TOOLS

Other tools have been developed to manage participation under the FLEXPUB research project.

Firstly, the CitiVoice Framework summarises several means of enabling citizen participation from different research fields and categorises it under three categories: citizens as democratic participants, citizens as co-creators and citizens as ICT users. Furthermore, these different means of participation are bundled into a framework to compare and evaluate citizen participation in smart cities. This framework has three main uses to manage participation at large scale: it can be an evaluation tool to determine if a city has implemented participation properly; it can be a governance tool to guide practitioners in their decisions relating to participation; and it can be a comparison and creativity tool to compare best practices among smart cities. More info about this framework can be found in:

- Simonofski, A., Serral Asensio, E., De Smedt, J., & Snoeck, M. (2017). Citizen Participation in Smart Cities: Evaluation Framework Proposal. In *Business Informatics (CBI), 2017 IEEE 19th Conference on Business Informatics* (Vol. 1, pp. 227-236). IEEE.

- Simonofski, A., Serral Asensio, E.., De Smedt, J., & Snoeck, M. (2018). Hearing the Voice of Citizens in Smart City Design: The CitiVoice Framework. *Business & Information Systems Engineering* (1-14), Springer

Secondly, the SmartCity4All Workshop constitutes an innovative small-scale participation method for involving children (or non-experts) in the smart city. It has three main reported benefits. First, the workshop can impact the children's understanding of the smart city concept. Second, it enables children to debate about their ideal city they would like to inhabit and prepares them to engage in adult participation in the future. Third, it teaches children technological tools to solve urban issues and improve the lives of their fellow citizens. More info about this workshop can be found in:

- Simonofski A., Dumas B., Clarinval A. (2019), Engaging Children in the Smart City: A Participatory Design Workshop. In *Proceedings of the 1st ACM SIGSOFT International Workshop on Education through Advanced Software Engineering and Artificial Intelligence (EASEAI '19),*Tallinn, Estonia. ACM,

- Material available online: https://school-it.info.unamur.be/smart-city/

In addition to the FLEXPUB tools, the **Digital Playbook of the FPS BOSA** also offers valuable tools that are specifically designed for the public administration 's staff and can be freely accessed via the following website: https://digitalplaybook.belgium.be/nl (FPS BOSA, 2019a). The Toolbox of this Playbook offers support from experts, and also do-it-yourself tools. The following tools have a close connection to the Participation pillar of the FLEXPUB research project: (1) Stakeholder map, (2) Stakeholder engagement plan, (3) Stakeholder dimensions, (4) Stakeholder profiles, (5) User journey and (6) User stories. The tools can be accessed via this website: https://digitalplaybook.belgium.be/nl/tools/tools (FPS BOSA, 2019b).

## SUMMARY OF THE VARIOUS RECOMMENDATIONS MADE IN THE OTHER WP REPORTS

To conclude this chapter on Participation, a summary of the recommendations made in the other "Work Package reports" of the FLEXPUB project is provided below. Actions points have been developed for the participation of both external and internal stakeholders.

In order to stimulate the participation of external stakeholders, we recommend:

- that federal organisations adopt an Agile way of working when developing their e-services. These methods allow for a more collaborative work environment between stakeholders, and will allow the integration of the input from customers and users more easily. We recommend the tailoring of an existing Agile methodology (e.g. SCRUM), in order to be more adapted to the specificities of the federal administration and its e-services;

- that the gathering of insights on key issues from external stakeholders is collected through a bi-annual assembly of participants from public administrations, the private sector, universities and civil society in general (NGOs, non-profits, etc);

- that, in light of gaining constructive feedback, federal organisations particularly focus on the participation of potential users in the development of e-services, to make the e-services more user-friendly, more aligned with users' requirements and to potentially increase its usage afterwards;

- that the public administrations implement participation through complementary methods (offline and online) and make the processing of the requirements transparent so that their impact on the public e-service is clear to users;

- that the digital-by-default approach has to be complemented with a "multi-channel service delivery" approach, allowing citizens to access the administrative services according to their own preferences;

- that appropriate steps are taken by the federal government to improve data literacy, in order to provide people with the necessary skills to interpret and use data;

- that, in order to ensure that every citizen has access to e-services offered by the federal administration, "Public Internet Access Points" (PIAPs) and "One-stop shops" (OSS) are created, where citizens can initiate, process and complete administrative tasks of various organisations from different administrative levels in one single building or webpage (based on a catalogue of services, ideally structured based on "life events"), with the help of trained supporting staff who can guide the users through the process;

- that recruitment procedures are adapted, in order to provide more flexibility in terms of diploma requirements, salaries, length of contracts or selection procedures;

- that FPS BOSA – DG DT supports federal organisations' communication campaigns (re-branding initiatives, work with newspapers, attendance to "Job days" for students, more traineeship offers for students) in order to shine more light on all the innovative projects of the federal administration.

In order to stimulate the participation of internal stakeholders, we recommend:

- that each federal organisation reflects about the continuous and flexible training and re-orientation possibilities that it offers, for instance via the creation of "Internal IT Academies" or e-learning platforms, where civil servants can be taught new skills (IT, managerial, legal, digital transformation, Agile way of working, etc.);

- that appropriate training is suggested to public servants, also at the local level, to enable them to participate in the e-service development and to work with digital tools in general. This training could draw from innovative principles such as SCRUM methods, drawings, improvisation principles, etc.;

- that – given that our attention was drawn to the need for stronger involvement, ownership, responsibility and accountability of civil servants in e-services and the development process – the civil servants are to be actively supported by their top- and middle-management to participate in the development of those e-services;

- that organisations analyse, with the support of the DG DT and the DG Recruitment and Development of the FPS BOSA, what organisational culture is present among the management, the civil servants and in their (e-)services. Indeed, if a mismatch appears between those three, an active reordering of the organisational culture and/or of the (e-)services offered by the organisation will be necessary;

- that, as e-services are part of the broader organisation and not a self-standing development, the culture around an e-services is not to be treated as self-standing either, and that an overall approach towards organisational cultural reform, including digital aspects, would be more beneficial for organisations;

- that the DG DT and the DG Recruitment and Development of the FPS BOSA develop a platform serving as a repository of good practices, of which the different federal organisations could make use when (re)developing an e-service, to guide civil servants in the e-service transition process. This toolbox can be made available via the federal intranet or FEDWEB website.

### INTRODUCTION

As described in WP6 Strategy, *Collaboration* "is about the administration's organisations embracing an ever more globalising world and society, in which they no longer act as single actors, but strive from an administration wide perspective towards alliances, cooperation and the sharing of data, tools and capacity to fulfil their tasks and duties towards a variety of stakeholders (public, private and citizens)". In WP6 Strategy and WP7 Blueprint, action points and strategic actions are suggested. For the pillar Collaboration, those action points and strategic actions focus on the need to establish coordinated partnerships and a common strategy, while at the same time allowing for sufficient organisational leeway and freedom.

As outlined in Work Package 4 – Enablers, it is of fundamental importance that public administrations strengthen their knowledge on coordination and public values. It is also fundamental that they understand what type of coordination is required in their organisation – also in relation towards other public administration organisations – as well as what kind of public values are present in their organisation, among their staff and in relation towards other public administration organisations. Therefore, this toolbox includes exercises that will allow the staff of organisations to gain a deeper knowledge on public values and coordination, as well as to gain insights on what type of coordination instruments should be used, and what type of public values' balance they have. Whereas coordination, and the application of coordination instruments, is the fundament of any cooperation between organisations, the public values are the fundament on which any kind of cooperation can be built. The public values of an individual, team or organisation can provide information on what type of cooperation is preferred, and this information can as such lead to the establishment of a cooperation with another organisation. Therefore, it has been decided to include in this toolbox a number of tools to gain a deeper understanding of:

- the degree to which the public values individuals/teams/organisations strive for in the execution of their tasks is in line with the public values of their partners; and

- the potentially relevant coordination instruments to organise the relationship between teams and/or organisations.

Therefore, the research team has designed three FLEXPUB collaboration tools. The first one supports the involved stakeholders in the definition of the balance to be reached between the various public values that are pursued. The second one presents potentially relevant coordination instruments. The third is a public values' definition tool. Additionnaly to those three FLEXPUB collaboration tools, an overview of other relevant tools that are connected with the pillar Collaboration are also provided in the second part of this chapter.

### FLEXPUB COLLABORATION TOOL

#### TOOL 1: DEFINITION OF THE BALANCE BETWEEN PUBLIC VALUES

Hereunder the aim of the tool, the methodological approach and the tool itself will be described. Also, an example is provided to show the added value of the tool. The tool will be made available on the Digital Playbook of the FPS BOSA, which offers valuable tools that are specifically designed for the public administration's staff and can be freely accessed via the following website: https://digitalplaybook.belgium.be/nl (FPS BOSA, 2019a). More specifically, it will be included in the Toolbox of this Playbook, which offers do-it-yourself tools, which can be accessed via the following website: https://digitalplaybook.belgium.be/nl/tools/tools (FPS BOSA, 2019b).

#### AIM OF THE TOOL

This first tool aims to provide the respondent with an analysis of the balance of public values. By applying this tool, the respondent receives an overview of which public values are least/most important to him/her. Also, this tool is connected to the second tool, which provides advise on the coordination instruments. All public values that are included in this tool have a connection to a coordination mechanism. The tool itself will be digitalised and, as such, will be easy to use for the stakeholder(s).

The tool can be used by several actors:

- **Individuals**: Applying this tool as an individual will provide the respondent with an advice on the public values' balance of the respondent as an individual. This can be useful in the respondents' daily work environment.

- **Several individuals of the same organisation**: If several individuals of the same organisations (or team) apply this tool, they will be able to compare their public values' balance, and identify similarities and differences. Those results can be used in the daily work environment.

- **Several individuals of two or more organisations**: If several individuals of two or more organisations apply this tool, they will be able to compare their public values' balance, and identify similarities and differences. Those results can then be used in the daily work environement and for the establishment and/or redesign of inter-organisational relationships.

This tool has high value if several individuals of the same organisation (or team) apply it, and then calculate their overall public values' balance. Indeed, this result provides the team with information on how the public values' balance in the organisation (or team) is structured. This tool has the highest value if the average public values' balance of the organisation (or team) is compared to the average public values' balance of another organisation (or team).

The tool has been developed for civil servants working in a public administration. Therefore, all statements used in the tool itself refer to the public administration.

## METHODOLOGIAL APPROACH

This tool consists of a number of steps that need to be followed. Those steps are described hereunder, and as can be seen, include also an extra optional step. This step is not mandatory but will provide the individual with more relevant information.

- **Step 1**: Individual replies to all the statements.

- **Step 2**: The data provided by the individual is automatically analysed and the public values' balance calculated.

- **Step 3**: The individual receives a public values' balance, which is connected to the coordination mechanisms.

- **Step 4** (optional – only possible if two or more individuals of the same organisation (or team) applied the tool): The average public values' balance for the organisation (or team) is calculated.

## TOOL AND EXAMPLE

### Step 1 – Individual replies to all the statements

In this step, the respondent will indicate for each of the value statement how important it is to him/her. There are five possible option, ranging from 1 (not important) to 5 (important), whereby the respondent can only reply seven times with each of the possible scores (7 times with 1, 7 times with 2, and so on).

The respondent receives the following description: Please indicate for each of the below statements to what extent it is important to you. Note that you can only reply seven times with each of the possible scores. For example, you can only indicate seven times important.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Not important | | | | Important |

The questions are phrased as follows: "It is [Not important/Important – 1 to 5 scale] for me that the administration [see statements in table below]" (Table 6).

*Table 6: Statements*

| Statement | Score |
|---|---|
| acts in a morally correct way. | |
| acts in accordance with laws, rules and standards. | |
| acts without being led by personal preferences. | |
| balances different interests in correct proportions. | |
| carefully manages the available public funds. | |
| consults citizens when services are developed or evaluated. | |
| consults undertakings when services are developed or evaluated. | |
| consults other administrative levels when services are developed or evaluated. | |
| consults societal organisations when services are developed or evaluated. | |
| develops networks with other organisations and actors. | |
| ensures that all citizens can participate in society. | |
| is accountable towards society for its actions. | |
| is accountable towards the government for its actions. | |
| is effective. | |
| is efficient. | |
| is innovation-oriented. | |
| is productive. | |
| reacts in a quick way. | |
| respects the choices of the individual citizens. | |
| respects the judicial rights and right of a due process for each individual. | |
| respects the policies of elected politicians. | |
| respects the will of citizens. | |
| respects the will of undertakings. | |

| | |
|---|---|
| respects the will of societal organisations. | |
| satisfies the user's needs. | |
| serves the undertakings as clients. | |
| serves the societal organisations as clients. | |
| services the citizens as clients. | |
| shows support to the political level. | |
| treats all citizens in an equal way. | |
| tries to protect citizens from exploitation. | |
| tries to protect the security of its citizens. | |
| tries to protect the security of its undertakings. | |
| tries to protect the security of society. | |
| uses public funds in the most productive way and with a minimum of waste. | |

Source: Based on Chantillon et al. (2020)

**Step 2 – The data provided by the individual is automatically analysed and the public values' balance calculated**

The table hereunder (Table 7) provides an overview of the three coordination mechanisms outlined in our second tool (Hierarchy, Market and Network), with the public values related to each of the three coordination mechanisms. On the right side of the table, the assigned score (representing the importance of each individual public value) can be found. On the top of each coordination mechanism, the total score can be found. Table 7 shows the conversion of the absolute unweighted score to the relative weighted score. This data provides the balance of public values for each of the respondents.

*Table 7: Overview of public values structured via coordination mechanism with assigned score and total score*

| Hierarchy related Statements | 42 |
|---|---|
| respects the will of citizens. | 1 |
| respects the policies of elected politicians. | 4 |
| acts in accordance with laws, rules and standards. | 1 |
| is accountable towards the government for its actions. | 1 |
| acts in a morally correct way. | 3 |
| respects the will of undertakings. | 5 |
| respects the will of societal organisations. | 2 |

| | |
|---|---|
| tries to protect citizens from exploitation. | 3 |
| tries to protect the security of its citizens. | 2 |
| tries to protect the security of its undertakings. | 4 |
| tries to protect the security of society. | 2 |
| acts without being led by personal preferences. | 5 |
| shows support to the political level. | 3 |
| respects the judicial rights and right of a due process for each individual. | 5 |
| is accountable towards society for its actions. | 3 |
| **Market related Statements** | **39** |
| uses public funds in the most productive way and with a minimum of waste. | 5 |
| carefully manages the available public funds. | 2 |
| serves the citizens as clients. | 3 |
| respects the choices of the individual citizens. | 4 |
| reacts in a quick way. | 2 |
| is effective. | 5 |
| is efficient. | 4 |
| serves the undertakings as clients. | 2 |
| satisfies the user's needs. | 1 |
| is productive. | 5 |
| is innovation-oriented. | 1 |
| serves the societal organisations as clients. | 5 |
| **Network related Statements** | **21** |
| treats all citizens in an equal way. | 4 |
| consults societal organisations when services are developed or evaluated. | 1 |
| balances different interests in correct proportions. | 3 |
| consults citizens when services are developed or evaluated. | 1 |

| | |
|---|---|
| consults undertakings when services are developed or evaluated. | 2 |
| ensures that all citizens can participate in society | 2 |
| develops networks with other organisations and actors. | 4 |
| consults other administrative levels when services are developed or evaluated. | 4 |

Source: Based on Chantillon et al. (2020)

*Table 8: Absolute unweighted score, absolute weighted score and relative weighted score for the public values, structured according to the three coordination mechanisms*

| | Absolute unweighted score | Absolute weighted score | Relative weighted score |
|---|---|---|---|
| **Hierarchy related public values** | 42 | 42*0,77 = 32,34 | (32,34/102)*100 = **31,7%** |
| **Market related public values** | 39 | 39*0,97 = 37,83 | (37,83/102)*100 = **37,1%** |
| **Network related public values** | 21 | 21*1,45 = 30,45 | (30,45/102)*100 = **29,9%** |

Source: Personal Research

**Step 3 – The individual receives a public values' balance, which is connected to the coordination mechanisms**

The data presented above, in Table 8, gives an overview of the public values' balance for the respondent, structured according to the coordination mechanisms, namely Hierarchy, Market and Network. Those results can be used to further guide the policy making process and/or service development.

**Step 4 (optional – only possible if two or more individuals of the same organisation (or team) applied the tool) – The average public values' balance for the organisation (or team) is calculated**

Also, as indicated above, there is an optional Step 4. In this step, the individual's data is compared to the data of other respondents, or average results can be calculated for teams, organisations and cross-organisational cooperation.

## TOOL 2: COORDINATION INSTRUMENTS' TOOL

### AIM OF THE TOOL

This second tool aims to provide the respondent with an overview of coordination instruments that can be used. By applying this tool, the respondent will, in the first place, be familiarised with the different existing coordination instruments, and, secondly, will also receive advice on what kind of coordination instruments can be useful for the execution of an e-service project. This tool is strongly connected to the first tool, which provides advice on the public values' balance of the respondent. Indeed, the public values in the first tool are connected to three coordination mechanisms (Hierarchy, Market and Network) and the coordination instruments presented in this tool are connected to the same three coordination mechanisms. As the coordination instruments need to be applied in a specific context, it is important that the respondents answer to the questions of the tool with that specific context, mostly a project, in mind. The tool itself will be digitalised and will be easy to use for the respondents.

The tool can be used by several actors:

- **Individuals**: Applying this tool as an individual will provide the respondent with an advice on the coordination instruments that best suit the respondent' preferences, given the specific context.

- **Several individuals of the same organisation**: If several individuals of the same organisations (or team) apply this tool, they will be able to compare the outcome concerning the coordination instruments, and identify similarities and differences. Importantly, this requires a specific context in which the coordination takes place. Those results can be used in the daily work environment.

- **Several individual of two or more organisations**: If several individuals of two or more organisations apply this tool, they will be able to compare their results, and identify similarities and differences. Again, this requires a specific context in which the coordination takes place. Those results can be used in the daily work environement and in the establishment and/or redesign of inter-organisational relationships.

This tool has high value if several individuals of the same organisation (or team) apply it, and then compare their individual results. It can support organisations in finding the required coordination instruments, in detecting underlying requirements via a discussion that follows after applying the tool, and in gaining a better understanding of the need for coordination and of the available instruments. Indeed, this result provides the team with information on how the public values' balance in the organisation (or team) is structured.

The tool will also be made available on the **Digital Playbook of the FPS BOSA,** which offers valuable tools that are specifically designed for the public administration's staff and can be freely accessed via the following website: https://digitalplaybook.belgium.be/nl (FPS BOSA, 2019a). More specifically, it will be included in the Toolbox of this Playbook, which offers do-it-yourself tools, which can be accessed via the following website: https://digitalplaybook.belgium.be/nl/tools/tools (FPS BOSA, 2019b).

## METHODOLOGICAL APPROACH

This tool consists of three steps that need to be followed. Those steps are described hereunder:

- **Step 1:** Respondents answer to a number of general statements to select potentially relevant instruments.

- **Step 2:** Ranking the statements from most important to least important.

- **Step 3:** Based on the results of Step 2, the respondent can see what coordination mechanism is mostly preferred by him/her. If several respondents have used the tool, they can compare their results and see what is most/least dominant.

## TOOL & EXAMPLE

**Step 1 – Respondents answer to a number of general statements to select potentially relevant instruments**

The statements to which the respondent has to answer are indicated in Table 9. In this table, the connection to each of the coordination mechanisms is also made. The respondent will receive the statement in a table, as is demonstrated in Figure 8 and Figure 9. Note the difference between Table 9 and the Figures 8 and 9. In the Figures 8 and 9, the respondent does not see the connection between the statements and the coordination mechanisms. This is because showing this kind of information can influence the answer of the respondent. The respondents will answer to the statement by making use of a scale with numbers from 0 to 6, whereby "0" refers to 'not necessary' and "6" to 'necessary', as demonstrated in Table 10.

*Table 9: Overview of statements used*

| | Statement: It is necessary for our project… | Coordination Mechanism |
|---|---|---|
| 1 | that the project partners create a new common organisation to perform the joint tasks. | Mainly NTM (creation of a joint organisation) |

| 2 | that the structures of the project partners are changed in order to bring related activities together. Organisations or parts of it can be merged or separated. | Mainly HTM (organisational restructuring by shifting taks and competencies) |
|---|---|---|
| 3 | that the lines and levels of control are reorganised and changed to improve coordination. | Mainly HTM (reorganising and changing lines and levels of control) |
| 4 | that a formal coordination entity between the project partners is created, which can lead the project and streamline, monitor and controle the overall project objectives. | Mainly HTM – NTM (creation of coordinating functions or entities) |
| 5 | to have an entity which can take collective decisions that are binding, and as such enable joint planning and working. | Mainly NTM (entities for collective decision-making) |
| 6 | to apply price and competition and/or offer and demand mechanisms to stimulate the project partners. The use of money and incentives is crucial to steer the actions and behaviour of the project partners. | Mainly MTM (creation of regulated markets) |
| 7 | to set-up systems for information exchange and sharing among the project partners, so that the decision-making organisations can be better informed about the latest developments and activities of other organisations. | Mainly NTM (systems for information exchange and sharing) |
| 8 | that a detailed common planning instrument is available, which integrates the project objectives in terms of effects. The specific contributions of the project partners related to the project objectives need thereby to be taken into account. | NTM (bottom-up strategic management – type 1) |
| 9 | that the budget process defines in great detail which resources should be spend, without much autonomy for those spending the budget. The budget allows to set and communicate project priorities. | HTM (hierarchical, input-oriented budget process) |
| 10 | that the budget process is used for providing incentives to increase the organisational performace, whereby the budget is linked to past or future performance. Financial sanctions are possible when there is an underperformance. | MTM (results-oriented budget process) |
| 11 | that an inter-organisational culture and knowledge management approach is developed among the project partners. This will foster a shared vision, values, norms and knowledge between organisations. | Mainly NTM – MTM (inter-organisational culture and knowledge management) |
| 12 | that project partners themselves can develop strategic partnerships with other project partners in order to achieve objectives for which these organisations are collectively responsible within the project. | NTM (bottom-up strategic management – type 3) |
| 13 | that one or more consultation/negotiation bodies are established, to exchange information and to adjust activities. Decisions need to | Mainly NTM (creation of consultation or negotiation |

| | | |
|---|---|---|
| | be ratified by the members or higher bodies to have a binding effect. | bodies) |
| 14 | that chain-management structures are created among the project partners, to coordinate the production of the service/policy. All project partners are equal and anyone can take a leading role. | Mainly NTM (chain-management structures) |
| 15 | that there is top-down strategic management, ensuring the alignment of activities of the project partners via connected plans, objectives and targets. | HTM (top-down strategic management) |
| 16 | that the overarching service/policy objectives are linked to concrete objective(s) of the individual project partner(s). The project partners make this link themselves, which is then reviewed by a central organisation. | NTM (bottom-up strategic management – type 2) |
| 17 | that a broad collective mission for the entire government is decided upon, which acts as a guidance for the day-to-day work of the project partners. There is no monitoring, and solely depends on the goodwill of the project partners. | NTM (bottom-up strategic management – type 4) |
| 18 | that there are mandatory consultations and/or reviews for our policy proposals, draft legislation and/or other plans. | Mainly HTM – NTM (procedures for mandatory consulation or review) |
| 19 | that the budget management is used to stimulate cooperation via information consolidation and exchange, new budget formats and budgetary focus on horizontal policies. | NTM (cooperation via financial management) |

Legend for abbreviations: NTM = Network Type Mechanism, MTM = Market Type Mechanism, HTM = Hierarchy Type Mechanism

**Source: Statements partially derived from Bouckaert, Peters, & Verhoest (2010)**

*Table 10: Statement scale*

| 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Not necessary | | | | | | Necessary |

**Source: Personal Research**

*Figure 8: Example of Coordination Instruments Selection Exercise (Part I)*



Source: Personal Research

*Figure 9: Example of Coordination Instruments Selection Exercise (Part II)*



Source: Personal Research

**Step 2 – Ranking the statements from most important to least important.**

As it is possible that the respondent gives a similar score to all statements, it is necessary to understand if there is any variation among the different statements. Therefore, the respondent will need to rank the statements, and consequently the suggested coordination instruments in the statement, from most important to least important. In this way, a specific advice can be given on the type of coordination mechanism that is most relevant for the respondent in the specific context. The statements of Table 9 will be used. Figures 10 and 11 give an example of how such a ranking could look like when filled out by a respondent.

*Figure 10: Example of Coordination Instruments Ranking Exercise (Part I)*



Source: Personal Research

*Figure 11: Example of Coordination Instruments Ranking Exercise (Part II)*



Source: Personal Research

## Step 3 - Results understanding & comparison.

Based on the input he/she provided in step 1 and step 2, the respondent can understand what coordination mechanism is most/least dominant. Also, if several respondents have used the tool, they can compare their results and gain a better understanding of what type of coordination mechanism might be suitable for their team, project etc.

## Table 11: Example of Coordination Instruments Selection Exercise

| | Statement: It is necessary for our project… | Coordination Mechanism and Instrument |
|---|---|---|
| 1 | that the project partners create a new common organisation to perform the joint tasks. | Mainly NTM (creation of a joint organisation) |
| 4 | that a formal coordination entity between the project partners is created, which can lead the project and streamline, monitor and controle the overall project objectives. | Mainly HTM – NTM (creation of coordinating functions or entities) |
| 5 | to have an entity which can take collective decisions that are binding, and as such enable joint planning and working. | Mainly NTM (entities for collective decision-making) |
| 7 | to set-up systems for information exchange and sharing among the project partners, so that the decision-making organisations can be better informed about the latest developments and activities of other organisations. | Mainly NTM (systems for information exchange and sharing) |
| 8 | that a detailed common planning instrument is available, which integrates the project objectives in terms of effects. The specific contributions of the project partners related to the project objectives need thereby to be taken into account. | NTM (bottom-up strategic management – type 1) |
| 11 | that an inter-organisational culture and knowledge management approach is developed among the project partners. This will foster a shared vision, values, norms and knowledge between organisations. | Mainly NTM – MTM (inter-organisational culture and knowledge management) |
| 13 | that one or more consultation/negotiation bodies are established, to exchange information and to adjust activities. Decisions need to be ratified by the members or higher bodies to have a binding effect. | Mainly NTM (creation of consultation or negotiation bodies) |
| 15 | that there is top-down strategic management, ensuring the alignment of activities of the project partners via connected plans, objectives and targets. | HTM (top-down strategic management) |
| 17 | that a broad collective mission for the entire government is decided upon, which acts as a guidance for the day-to-day work of the project partners. There is no monitoring, and solely depends on the goodwill of the project partners. | NTM (bottom-up strategic management – type 4) |
| 18 | that there are mandatory consultations and/or reviews for our policy proposals, draft legislation and/or other plans. | Mainly HTM – NTM (procedures for mandatory consulation or review) |

**Source: Personal Research**

The results of exercise 1 can then also be connected to exercise 2 and show that the respondent has a clear preference for network related coordination mechanisms, whereby priority needs to be given to the implementation

of coordination instruments 7, 17, 18, 1, 4 and 8 (in decreasing order of importance).

The use of this tool will, as such, provide the respondent with increased knowledge on the various existing coordination instruments that can be applied in a project context. Both exercises will support respondents in making informed decisions, and in prioritising the activities to be pursued for the governance of their project.

## OTHER RELEVANT COLLABORATION TOOLS

### TOOL 3: PUBLIC VALUES' DEFINITION TOOL

This tool has a strong correlation to the first tool described above, i.e. Tool 1: Definition of the balance between public values. The tool is based on an existing and tested typology, developed by Jaspers & Steen (2018) and applied by Simonofski, Chantillon, Crompvoets, Vanderose, & Snoeck (2020). The focus lies on three public values' clusters, namely "Better Services", "Better Relationship" and "Better Democratic Quality". This tool will help stakeholders to define what is most important for them to reach, and can help them to further structure the development of their policies and/or services. The tool is focused on civil servants. The first cluster, "Better Services", refers to potential actions of public servants that "decide to include users in order to increase the quality of the service that is provided towards the users". This cluster is externally oriented. The second cluster of public values, "Better Relationship", is focused "on the respect between [...] parties in the development of services". This cluster is internally oriented. Finally, the third cluster, "Better Democratic Quality", refers to the importance of ensuring the quality of democracy by civil servants, and takes a more distant approach then the clusters "Better Services" and "Better Relationship". An overview of the three public values' clusters, with their associated public values, can be found in the table hereunder (Table 12).

*Table 12: Public values' clusters and associated public values*

| Public values' cluster | Public values |
|---|---|
| Better Services | Service efficiency |
| | Service effectiveness |
| | Service quality |
| | Service satisfaction |
| | Service sustainability |
| Better Relationship | Learning relationship |
| | Trust relationship |
| | Being considerate of client's needs: accountable, responsive, and transparent |
| | Being considerate of client's capacities |
| | Reciprocial relationship |
| | Individual freedom |
| Better Democratic Quality | Participation |
| | Empowerment |

| | Inclusion |
| --- | --- |
| | Social capital |

<div align="center">Source: Jaspers & Steen (2018); Simonofski et al. (2020)</div>

The users of the tool will receive an overview of the public values, and will have to rank the public values from most important to least important. As such, they are forced to balance the different public values against each other. This will lead to a ranking, whereby the highest ranked public value will receive the highest score, and the lowest ranked public value the lowest score. There are 15 public values in total. The first ranked public value receives 15 points, the second 14 and so on, until the last public value that receives only 1 point. Afterwards, the total sum for each of the public values' clusters is calculated. The results for each of the clusters is then divided by the total sum of all point for the entire public values' list, which is always 420. Afterwards, the results are transformed into a percentage. On the basis of this outcome, the respondent will be able to see which public values' cluster is most important and which is the least important for her. Moreover, the difference in importance between the three public values' clusters will also be visible. This result allows the respondent to quantify, and to compare, its outcome with others who have also applied the tool. It has to be underlined that this tool is developed specifically for civil servants and other staff delivering public services.

An example will clarify the application of the tool. In Figure 12, a filled-out form can be found. It includes an overview of the different public values, without a connection to the three public values' clusters. Behind each public value, the respondent has indicated how important this public value is in comparison to the others by giving a number to each of the public values. Note that this exercise can be easily transformed into a digital exercise. Table 13 summarises this information, and includes also the total sum for each of the three public values' clusters, as well as the percentage. The results show that the cluster "Better Relationship" obtained the highest percentage, follow by the cluster "Better Services", and "Better Democratic Quality". It has to be underlined, however, that the ranking exercise itself pointed clearly to the high importance of the values "Service efficiency" and "Service effectiveness". This finding should also be taken into account.

<div align="center">*Figure 12: Example of ranking exercise sheet - Public values' definition tool*</div>



<div align="center">Source: Personal Research</div>

| Public values' cluster | Public values | Score | Total score per public values' cluster | Percentage |
|---|---|---|---|---|
| | **Table 13: Public values' clusters and associated public values** | | | |
| Better Services | Service efficiency | 15 | 52 | 52/120 = 43,3% |
| | Service effectiveness | 13 | | |
| | Service quality | 10 | | |
| | Service satisfaction | 9 | | |
| | Service sustainability | 5 | | |
| Better Relationship | Learning relationship | 6 | 58 | 58/120 = 48,3 % |
| | Trust relationship | 11 | | |
| | Being considerate of client's needs: accountable, responsive, and transparent | 8 | | |
| | Being considerate of client's capacities | 7 | | |
| | Reciprocial relationship | 12 | | |
| | Individual freedom | 14 | | |
| Better Democratic Quality | Participation | 4 | 10 | 10/120 = 8,3% |
| | Empowerment | 1 | | |
| | Inclusion | 3 | | |
| | Social capital | 2 | | |

Source: Jaspers & Steen (2018); Simonofski et al. (2020)

## TOOL 4: RELEVANT LITERATURE ON COLLABORATION

For stakeholders, it is often difficult to make an informed decision on the coordination instruments and overall mechanisms to be used. The literature has, however, systematically described those applicable coordination instruments and mechanisms, and a reading of this literature can already be a highly helpful tool for various stakeholders. Highly relevant literature on the topic of public values can also be consulted to increase the knowledge on the topic.

The following literature is highly recommended for stakeholders who wish to increase their knowledge on the topic of coordination instruments and/or public values. The detailed bibliographic information can be found in the

Bibliography of this report.

- **Books and book chapters (a full bibliographical description can be found in the Bibliography):**
  - Bouckaert et al. (2010)
  - Meuleman (2008)
  - Pollitt & Bouckaert (2017)

- **Journal articles and conference papers (a full bibliographical description can be found in the Bibliography):**
  - Chantillon, Crompvoets, & Peristeras (2017)
  - Simonofski et al. (2020)
  - Chantillon, Crompvoets, & Peristeras (2020)
  - Bannister & Connolly (2014)
  - Bannister & Connolly (2018)
  - Fukumoto & Bozeman (2019)
  - Janssen & van der Voort (2016)

The **Digital Playbook of the FPS BOSA** also offers valuable tools that are specifically designed for the public administration 's staff. Nevertheless, the Digital Playbook tools can also be used by other interested parties and can be freely accessed via the following website: https://digitalplaybook.belgium.be/nl (FPS BOSA, 2019a). The Toolbox of this Playbook offers support from experts, and also do-it-yourself tools. The following tools have a close connection to the Collaboration pillar of the FLEXPUB research project: (1) Power/importance-matrix, (2) Value scoring table and (3) Roadmap. The tools can be accessed via this website: https://digitalplaybook.belgium.be/nl/tools/tools (FPS BOSA, 2019b).

Moreover, **international good practices** are also valuable. Accordingly, we revert here to a website of the European Commission – Joinup –, that can be used to find relevant tools and examples of interoperability in public sector organisations (European Commission, n.d.). Also, the 2017 Toolbox for Practitioners of the European Commission can be considered as a useful tool for public administrations (European Commission, 2017).

## SUMMARY OF THE VARIOUS RECOMMENDATIONS MADE IN THE OTHER WP REPORTS

To conclude this chapter on Collaboration, a summary of the recommendations made in the other "Work Package reports" of the FLEXPUB project is provided below. In order to meet the demand of federal organisations to remain independent in their e-services development, as well as the demand of federal organisations to create a more structured approach towards e-government, we recommend:

- that the structures and roles of the FPS BOSA – DG DT and the FPS Chancellery – DG Administrative Simplification are further strengthened to ensure that they can provide sufficient support to the federal organisations;

- that the G-Cloud structure and the Board of the Federal Chief Information Officers, which are both voluntary collaboration bodies, are grouped into an officially established coordination body called the "E-Government Board". Membership of this Board should be obligatory for each federal organisation and meetings should take place on a monthly basis. Each organisation decides on the person representing the organisation in the Board. The Secretariat should be organised by the FPS BOSA and the members should choose a Chair among themselves. Financing of this Board and the Secretariat should be foreseen via the "Federal Innovation and Collaboration Fund" (see below).

- that the E-Government Board could:
  - take an advisory non-binding position towards the involved federal organisations, the three

Colleges[7], as well as the government for a number of specific e-government non-project related topics, such as (1) the federal e-government strategy and action plan, (2) the sharing and re-use of data and e-service tools, (3) policies related to e-government,

- o ask the already existing federal Working Groups related to e-services and (geo) data to report to it on a regular basis, to ensure that all federal organisations are kept informed about new developments;

- o have the possibility to create new federal Working Groups related to e-services and (geo) data. As data and e-service standardisation is one of the main challenges for federal organisations, a federal Working Group on Standardisation should be created by the E-Government Board, with representatives of all federal organisations. Membership of this Working Group should be open for each federal organisation. The Working Group can discuss common standards and propose non-binding common standards for the federal organisations, the FPS BOSA – DG DT and the FPS Chancellery – Centre for Cybersecurity (when relevant for those organisations' competences), thereby respecting each federal organisation's competencies;

- o supervise the Task Force that is charged with the implementation of this Strategy (see below),

- o manage and supervise the funds of the "Federal Innovation and Collaboration Fund" (including decisions on the allocation of funds), on the advice of the Board's Secretariat and the Chair;

- that a "Federal Innovation and Collaboration Fund" is created to support (1) the functioning of the E-Government Board and its working groups and (2) federal organisations dealing with innovative and collaborative projects (see above). This Fund should be funded via an annual budget allocation from the federal government and should be managed by the Secretariat of the E-Government Board (see above), under the supervision of the Board;

- that the FPS BOSA – DG DT envisages the possibility to coordinate a decentralised pool of skilled IT people (IT architects, developers, programmers, etc.), consisting of voluntary or appointed civil servants that the organisations are willing to detach to another organisation on a project basis and for a well-defined period of time;

- that the FPS BOSA – DG DT and all federal organisations continue to implement a decentralised information management model, based on the concept of Authoritative Data sources;

- that the FPS BOSA – DG DT and all federal organisations invest stronger in the "once-only" implementation policies, so that organisations collaborate and share information more intensively, thus reducing the burden on citizens and businesses;

- that the federal organisations explore more intensively data sharing solutions (standards, licenses, platforms, etc.) to foster the collaboration between the federal organisations;

- that, in support of various organisations which do not (or only partially) possess the necessary resources to reflect on innovation within their organisation, a multidisciplinary innovation team is set-up, in conjunction with an e-government lab under the auspices of the FPS BOSA – DG DT, which could propose, develop, redesign and implement (location-based) e-services for the organisations of the federal administration. The cost of this multidisciplinary innovation team and e-government lab are to be financed by the organisation(s) making use of this service;

- that, in order to increase the leverage of Belgium in international organisations working on standardisation,

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[7] College van voorzitters van de federale en programmatorische overheidsdiensten; College van afgevaardigd bestuurders van de openbare instellingen van sociale zekerheid; College van afgevaardigd bestuurders van de instellingen van openbaar nut. / Collège des présidents des services publics fédéraux et de programmation; Collège des administrateurs délégués des institutions publiques de sécurité sociale; Collège des administrateurs délégués des organismes d'intérêt public.

the federal government participates more actively in those international standard setting organisations;

- that, for the sake of the future generations' interest in federal (geo) data, and in light of the existing Archiving Law (2009) and the two Royal Decrees (2010) on archiving, the State Archives are more strongly included in the collection and processing of data by the federal organisations, in order to ensure that the data meets the necessary archiving standards.

In order to stimulate the collaboration between the federal administration and the other levels of power, we recommend:

- that, when the different levels of government need to coordinate their policy, an interfederal coordination body is established to stimulate coordination and collaboration across the different levels of government. The tasks and necessary resources of this interfederal coordination body are to be decided by its members;

- that an "Interfederal project fund", financed by the different levels of government, is created to offer the possibility to the participants of an interfederal collaboration project involving the different levels of government, or to the participants that have to implement this project, to file a request to obtain a supporting budget from this fund;

- that for future collaborative projects between different levels of government, it should be reflected on the possibility to designate a specific project facilitator for organisational and coordination tasks, who would be paid to make the project run more efficiently and effectively (possibly through the "Interfederal project fund" mentioned above). This project facilitator could either come from one of the entities participating in the project or could be an external actor. The decisional power should remain in the hands of the participants of the project, as the project facilitator should not have decisional power, but rather provide them with the necessary support and preparatory work.

- that the different Belgian public administrations organise an exchange program for public servants, through which they can work together on projects and objectives of common interest and learn from each other's activities.

## 5. CONCLUSION

Via this report, the research team aimed to create a directly usable toolbox for public administrations. Although the research project is focused on the Belgian federal administration, this Handbook can be used by any public administration with an interest in tools related to openness, participation or collaboration. It is written and structured in such a way that it compiles different guidelines, instructions, protocols and/or specifications dealing with the flexible management of geospatial e-services or issues related to adaptive or innovative governments. It can be easily consulted and provides quick answers to key questions.

The three pillars of the WP6 Strategy, i.e. Openness, Participation and Collaboration, are mobilised in this report. For each of the three pillars, the research team developed a specific tool that can be applied by the stakeholders. Furthermore, for each of the three pillars, an overview of good international and national e-service delivery practices is included, as well as a summary of the various recommendations made in the other WP reports.

The tools will be taken up by the Belgian Federal Public Service BOSA (Policy and Support Federal Public Service) and will be digitally available via the **Digital Playbook** of the organisation (FPS BOSA, 2019a). More specifically, it will be included in the Toolbox of this Playbook, which offers do-it-yourself tools, which can be accessed via the following website: https://digitalplaybook.belgium.be/nl/tools/tools (FPS BOSA, 2019b).

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