

Strategic partnership funded by Interreg Baltic Sea Region Programme

Project: “Empowering Participatory Budgeting in the Baltic Sea Region – EmPaci”

Selecting the Right Software for Supporting Participatory Budgeting in Local Government – Reviewing Suitable Solutions

Group of activities 4.2: Output 1

Responsible Partner: University of Rostock



EUROPEAN
REGIONAL
DEVELOPMENT
FUND

EmPaci

December 2021

Status: Final (English)

Responsible for the content solely publisher/presenter; it does not reflect the views of the European Commission or any related financial body. Those institutions do not bear responsibility for the information set out in the material.

List of abbreviations

ICT	Information and Communication Technology	PB	Participatory Budgeting
		SaaS	Software as a Service

Table of Figures

Figure 1: Stereotypical PB Process	5
Figure 10: Overview on Assessment of the Software Solutions. The Interactive Version is Available for Download.....	14
Figure 11: Excerpt of Online Tool for PB Assessment (Top Half): Weight and Must-Criteria.....	15
Figure 12: Excerpt of Online Tool for PB Assessment (Bottom Half): Calculated Ranking of the Tools Based on the Provided Weights and Must-Criteria	16
Figure 2: Screenshot of Riihimäki's decidim-based PB-System	19

Tables

Table 1: Analyzed Features for Process Item "Informing"	9
Table 2: Analyzed Features for Process Item "Request for Proposals"	10
Table 3: Analyzed Features for Process Item "Validating Proposals"	11
Table 4: Analyzed Features for Process Item "Presentation"	11
Table 5: Analyzed Features for Process Item "Feasibility Audit & Public Discussion"	12
Table 6: Analyzed Features for Process Item "Voting"	12
Table 7: Analyzed Features for Process Item "Realization"	12

Table of Contents

- 1 INTRODUCTION..... 4**
- 2 ANALYZED SOFTWARE AND FEATURES 7**
 - 2.1 ANALYZED PB SOFTWARE..... 7
 - 2.2 CHECKED FEATURES 9
- 3 ANALYSIS OF THE PB SOFTWARE AND CASE EXAMPLES 13**
 - 3.1 ASSESSMENT METHODOLOGY 13
 - 3.2 THE ASSESSMENT RESULTS 13
 - 3.3 CHOOSING THE RIGHT TOOL 14
- 4 CASE EXAMPLES FROM FINLAND..... 16**
- 5 CONCLUSION AND OUTLOOK 21**
- 6 REFERENCESFEHLER! TEXTMARKE NICHT DEFINIERT.**

1 Introduction

Participatory budgeting (PB) puts a part of the cities' budget in the responsibility of the constituents. This idea of PB as a democratic process which gives people real power over real money is crossing continents with various experiments and experiences from different parts of the world¹. Since its origins in 1989 in Porto Alegre, Brazil, PB has spread to over 7 000 cities worldwide, and interest continues to grow². In PB, the citizens can craft proposals for allocating the budget, and these proposals are later voted on by the whole community, with the proposals receiving the most votes getting implemented³. While a commonly accepted definition for a PB is missing, Sintomer et al.⁴ defined five criteria for participatory budgeting:

1. PB is in its core concerned with questions on how a limited budget should be used.
2. The city level with some power over administration and resources has to be involved.
3. Participatory Budgeting is not a one-time event but repeated over the years.
4. PB includes a form of public deliberation. A simple survey without a public forum is not deemed sufficient.
5. Accountability is a vital part of PB. Accepted projects get implemented, and the public must be informed regarding implementation progress.

In detail, a PB process could look like the following⁵: At first, citizens are informed on the rules of the upcoming participatory budget and how to participate. In the following step, they are asked to create proposals on how and what to spend the money. If a given proposal passes a first check, where the city staff validates the eligibility criteria (meaning it conforms to the set PB rules and falls into the city's jurisdiction), it moves to the presentation stage, where all proposals are shown on a website. After the "request for proposal" stage closes, the city performs a final and very detailed feasibility check. The costs are checked carefully, as potential conflicts with other stakeholders. As soon as the final list of eligible and realistic proposals are crafted, these proposals are

¹ Sintomer, Y. et al. (2012); Pinnington, E./Lerner, J./Schugurensky, D. (2009); Sintomer, Y./Herzberg, C./Röcke, A. (2008).

² Dias, N./Enriquez, S./Júlio, S. (2019).

³ Ebdon, C./Franklin, A. (2006).

⁴ Sintomer, Y. et al. (2012).

⁵ Dias, N./Enriquez, S./Júlio, S. (2019).

allowed to the public discussion and voting phase. After the voting is concluded and the constituents pick the best ideas, the realization follows, and the public is informed on the implementation progress.

The process depicted in **Fehler! Verweisquelle konnte nicht gefunden werden.** is just an example of a PB process. As a participatory budget has to fit into the cultural and jurisdictional environment in which it is implemented, the process has to be adapted as well. Universally, however, it is believed that PB can strengthen democracy and improve state performance⁶. The former through citizen participation in open and public debates, which increases their understanding of public affairs. The latter through constraining the municipal government and their prerogatives and the increased opportunities for citizens to be engaged in public policy debates⁷.

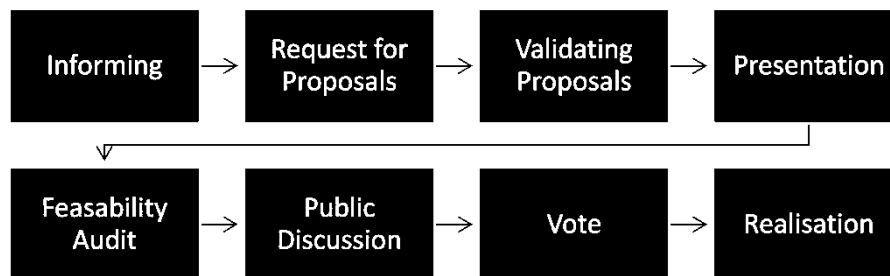


Figure 1: Stereotypical PB Process⁸

These processes can be strongly supported using information and communication technology (ICT)⁹. As PB is a rising phenomenon worldwide, more applications for the electronic support of these participatory processes were developed. However, these software solutions differ widely in their functionality. This diversity can make the software selection for an administration difficult.

Moreover, the prior literature is limited in investigating PB processes from an ICT perspective. In 2011, IBM gathered examples for public engagement initiatives in a technical report¹⁰. While it

⁶ Lehtonen, P. (2018).

⁷ Lerner, J. (2017); Shah, A. (2007).

⁸ Rostock University (2020).

⁹ Kapoor, K./Omar, A./Sivarajah, U. (2017); Rose, J./Rios, J./Lippa, B. (2010).

¹⁰ Leighninger, M. (2011).

also contains tool descriptions, it mainly outlines when to use which kind of engagement tactic. In 2016, the developer of AppCivist (a software solution that is also analyzed in this report) examines a sample of currently available solutions for civic participation¹¹. We fill the research and knowledge gap by focusing on the software solutions supporting the PB process. This study aims to provide a review of suitable software solutions for PB.

Consequently, we pose two research questions:

- (1) What are the main features of suitable software solutions for PB?
- (2) How successfully do these solutions support the implementation of the PB process in local governments?

The research questions are answered by conducting a subsequent analysis and a review of software solutions. To illustrate the process of finding suitable solutions for PB, empirical case examples from Finland are provided and discussed. In a previous report¹², two of the authors presented a feature repository for PB applications. This feature repository is the foundation for the subsequent analysis of PB software presented here.

In total, we analyzed eleven PB solutions. The result is captured in an Excel-Sheet and available online¹³. In addition, the report includes two empirical case examples of the ICT solutions in PB processes in Finnish municipalities. The first one, the city of Riihimäki, utilized the Decidim platform in their PB process. The second city, Lahti, utilized their existing ICT platforms not explicitly designed for PB, Maptionnaire, and Webropol. These empirical cases illustrate different approaches to ICT solutions in PB, showing that the PB process can benefit from ICT tools and that finding an ICT solution is a versatile issue. In both of these cases, empirical data are collected through semi-structured thematic interviews (8 interviews in Riihimäki, 17 interviews in Lahti) and surveys targeted for members of organization and citizens (in Riihimäki n=75 in citizen survey

¹¹ Holston, J./Issarny, V./Parra, C. (2016).

¹² Rostock University (2020).

¹³ <http://empaci.eu/index.php?id=49>

and n=30 respondents from members of citizens' organization, in Lahti n=243 and n=39). The empirical data is analyzed with methods of content analysis.

The rest of this report is structured as follows. The following section is concerned with a description of the analyzed PB software and the feature list the software is checked for. Section three presents the results of the analysis, followed by the Finnish case studies. Afterwards, the research is concluded, and we give an outlook on future activities. This report is also published in a peer reviewed conference proceedings¹⁴.

2 Analyzed Software and Features

2.1 Analyzed PB Software

The following section gives an overview of the analyzed PB software. It presents, in a short description, the different target groups and pricing models of the software. As not all software is also featured in academic literature, the list of analyzed tools is based on an internet search for software that supports public decision-making processes.

AppCivist.¹⁵ PB-suite by the University of California. Even though stated as open-source, commercial use is not permitted and requires permission. The tool is available as Software as a Service (SaaS¹⁶).

Citizenlab.¹⁷ E-democracy platform. Offers a range of features like polls, survey, proposals, information and also PB. Source code is available but under a proprietary license. Offers SaaS. Developed by a private company in Brussels (Belgium).

Consider.it.¹⁸ The application is not a PB-, but a vote polling platform. The users can share an idea, and others can agree or disagree using a slider. U.S.-based; it is open source. SaaS and customization are available.

¹⁴ Reiz, A. et al. (2021).

¹⁵ <https://pb.appcivist.org/>

¹⁶ In a Software as a Service (SaaS) delivery model, the hosting of the application is provided by the Vendor

¹⁷ <https://www.citizenlab.co>

¹⁸ <https://consider.it/>

Consul.¹⁹ Citizen participation software. It supports PB, collaborative legislation, debating, proposals and voting. It is developed by a European nonprofit organization. It is offered open-source; but certified companies offer installation and development on SaaS or on individual infrastructure.

Decidim.²⁰ The Decidim software is a digital democracy platform that facilitates PB, citizen consultations, digital assemblies, communication, and strategic planning. It is an extensive software solution; PB is just one part of it. The software is open-source and managed by an NGO in Barcelona (Spain).

DemocracyOS.²¹ Developed by Argentinian-based development team “democracia en red”. They provide several democracy-related applications, e.g., PB, public consultation, crowd law-making, and goals tracking. All software is available open-source, though they provide an installation and customization service.

Loomio.²² A decision-making platform. It is targeted not only at governments but also at NGOs and private companies. The software is open-source, though a paid SaaS is offered.

Maptionnaire.²³ Not a PB-Tool, but developed for community engagement. Provides polling, surveys, and a form of gamified decision making. Developed by a for-profit company in Helsinki (Finland).

OpenDCN.²⁴ Developed by Milano University (Italy). Integrated platform for PB, events, petitioning, and other e-democracy related use cases. Software is available as open-source. Not regularly updated (last update from November 2018), parts of the description are just available in Italian.

¹⁹ <https://consulproject.org>

²⁰ <https://decidim.org>

²¹ <https://democraciaos.org/en/>

²² <https://www.loomio.com>

²³ <https://maptionnaire.com>

²⁴ <http://www.opendcn.org>

Placespeak.²⁵ Location-based consultation software. Developed by a private company in Vancouver (Canada). Provides the possibility to give feedback to local developments. Not a full-grown PB tool. Commercial, SaaS tool.

Polis.²⁶ Not a PB tool in the classical sense. Implements a system for gathering opinions based on the resonance of comments in a discussion. Developed by a nonprofit organization in Seattle, open-source.

Your Priorities.²⁷ A PB software that was made by the Icelandic nonprofit “Citizens Foundation”. Open-source, can be self-hosted or purchased as SaaS.

2.2 Checked Features

The following section presents the features that are the basis for the analysis of the software. These features are structured along the process shown in **Fehler! Verweisquelle konnte nicht gefunden werden.** Please note that these steps are not strictly subsequent but sometimes overlap.

Informing. The first phase captures how much information on PB is given on a software’s website. It shall enable aspiring administration to see relevant use cases for a given application.

Table 1: Analyzed Features for Process Item “Informing”

Item	Description
Participation process	Provide information on how to participate in the PB process using the presented software.
Goals for PB	Display the desired outcomes for a PB implementation on the software’s web-page.
Success stories	The web pages give examples for success stories of other municipalities.

²⁵ <https://www.placespeak.co>

²⁶ <https://pol.is/home>

²⁷ <https://citizens.is/>

Request for Proposal. In this stage, the citizens are asked to hand in proposals to improve their city. The analyzed capabilities are, thus, related to the upload of proposals on the participatory budget’s website and the registration requirements.

Table 2: Analyzed Features for Process Item “Request for Proposals”

Item	Description
Mandatory registration	The software supports a mandatory registration before the handing in of proposals.
Registration requirements	The software supports additional, formal registration requirements, e.g., issued code, citizen registration number.
Predefined categories	To further structure the submitted proposals, they can be categorized (e.g., in “playground” or “landscaping”).
Upload a file	The PB website implements a file storage. It is possible to upload a picture or a document smaller than 5 MB.
Cost estimation	Citizens can include a cost estimation with their proposals.
Locational data	The position of the proposal can be chosen/displayed on a map.

Validating Proposals. Not every idea proposed by citizens is eligible. While the specific design of the proposal check is often highly customized, the chosen software has to provide the required assessment capabilities.

Table 3: Analyzed Features for Process Item “Validating Proposals”

Item	Description
Status management	Every submitted proposal is associated with the processing status (e.g., “waiting for validation”, “ready for voting”).
Pre-moderation	The administration checks if a proposal fits into the given rules of the PB. It can also decline a proposal.
Administrative feedback	The administration can write a short statement to the proposal. It is essential if a proposal is getting declined.
Notification	Submitters are updated regarding comments and status updates of their proposals by e-mail.

Presentation. As soon as a proposal passes the first check by the municipality, it is displayed on the participatory budget’s website. This stage comprises the capabilities for a user-friendly presentation of the data.

Table 4: Analyzed Features for Process Item “Presentation”

Item	Description
Proposal list	The list of published proposals is shown on the web page.
Search capability	The web page has a function to search the published list of proposals.
List filtering	A user can filter the list for the predefined categories (e.g., implementation status, rating).
Export functionality	The list of published proposals can be downloaded (e.g., in an Excel or PowerPoint file).
Rating	Users can publicly rate a proposal (e.g., through “likes”). These ratings are independent of the binding voting process.
Comments in the reviewing process	Users of the platform can comment on each other’s submitted and published proposals.

Feasibility Audit & Public Discussion. The administration does a final feasibility check as soon as the “request for proposal” stage is closed. It also allows a discussion board for a general debate not only on specific proposals but on the participatory budget in general. The latter, thus, is not bound to a specific timeline but can coexist throughout the whole PB timeline.

Table 5: Analyzed Features for Process Item “Feasibility Audit & Public Discussion”

Item	Description
Estimate costs	The list of published proposals is shown on the web page.
Debate tool	Users of the platform can discuss in a general forum and comment on each other’s submitted and published proposals.

Voting. With the list of eligible proposals finalized, the constituents now vote on the proposals they like best.

Table 6: Analyzed Features for Process Item “Voting”

Item	Description
Voting implementation	The PB software provides a voting capability.
Voting codes	The voter eligibility is captured through the issue of a unique code.

Realization. The realization stage accompanies the implementation of the voted proposals.

Table 7: Analyzed Features for Process Item “Realization”

Item	Description
Media involvement	The PB website informs citizens on the progress of the implementation of accepted proposals.

Not all of these features are equally important regarding building a participatory budget– while it might be possible to build a participatory budget without filtering capabilities for the list of proposals, supporting a voting process is mandatory. EmPaci output 4.1.3²⁸ further categorizes these elements into “mandatory”, “recommended”, and “optional”.

3 Analysis of the PB Software and Case Examples

3.1 Assessment Methodology

The evaluation builds upon the software’s documentation. In cases where the documentation was insufficient, additional resources like reference implementations or blog posts were taken into account. The assessment is translated into discrete “yes” or “no” values for the prevalence of capabilities. While one could argue that, for some of the assessed capabilities, a further breakdown of the assessment into gradual values enables the encoding of more information, the authors decided for a binary encoding to limit the influence of subjective perceiving and to circumvent possible scaling issues.

Possible dependencies between capability items were not considered. As these tools have to fit into an existing IT landscape, the possible dependency resolutions are manifold. For example, even though we can consider a voting capability mandatory, which heavily influences the rest of the PB software, a municipality might have such a system already in place that it wants to use. It, thus, is able to resolve the dependencies without the need for an individual capability. The selection of what is essential and what is not is, therefore, up to the user.

3.2 The Assessment Results scenarios.

presents the assessment of the software using the capabilities presented in section 2.2. The specialized tools Maptionnaire and Polis fulfill the smallest number of capabilities. This lack of functionality is explained by the fact that both do not focus on the PB use case but on gathering public opinions. The other tool that does not originate from a PB background is Consider.it. However, this application covers a surprising amount of PB capabilities.

²⁸ <http://empaci.eu/photo/Files/Empaci%20-%20Output%204.1.3.pdf>

The most extensive software is Decidim. It is shortly followed by Citizenlab and Placespeak. These software solutions cover a wide range of PB scenarios and are highly versatile in their possible application scenarios.

Type	Item	DemocracyOS	OpenDCN	AppCivist	PlaceSpeak	Polis	Your priorities	Loomio	Consider.it	Consul	Decidim	Maptionnaire	Citizenlab
Informing	Participation Process	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Goals for PB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Success Stories	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓
Request for proposals	Mandatory Registration	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓
	Registration Requirements	✗	✓	✓	✗	✓	✓	✗	✗	✓	✗	✓	✓
	Predefined Categories	✓	✓	✗	✗	✓	✓	✓	✓	✓	✗	✓	✓
	Upload a File	✗	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
	Cost Estimation	✓	✗	✓	✗	✗	✓	✓	✓	✓	✗	✗	✓
Validating proposals	Locational data	✗	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
	Status Management	✓	✓	✗	✗	✓	✓	✓	✓	✓	✗	✓	✓
	Pre-Moderation	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓
	Administrative Feedback Notification	✗	✗	✗	✓	✓	✓	✓	✓	✓	✗	✓	✓
Presentation	Proposal List	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓
	Search Capability	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓
	List filtering	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓
	Export functionality	✓	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗	✓
	Rating	✗	✓	✓	✗	✓	✓	✓	✓	✓	✗	✗	✓
Feasibility Audit & Public Discussion	Comments in the reviewing process	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓
	Estimate costs	✓	✓	✓	✗	✗	✓	✓	✓	✓	✗	✓	✓
Voting	Debate Tool	✓	✓	✓	✗	✓	✓	✗	✓	✓	✗	✓	✗
	Voting Implementation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Realisation	Voting Codes	✗	✗	✗	✗	✓	✓	✗	✗	✗	✗	✓	✓
	Media involvement	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓

Figure 2: Overview on Assessment of the Software Solutions. The Interactive Version is Available for Download.

3.3 Choosing the Right Tool

Choosing the right software tool is far from a trivial task. Not all functionalities have the same relevance for an administration. Also, the needs and capabilities of citizens vary. To assist municipalities in selecting the right software, the authors developed a tool to help them make an informed choice. It incorporates a rating based on the multi-attribute decision theory and implements a weighted sum model to calculate the best-fitted software²⁹.

The user provides weights to the importance of each capability item, and the tool calculates the PB software that best fits the needs in a given situation. A weight can be any number between 0 and 100 (thus, it is also possible to use percentage values). The software then evaluates the PB-

²⁹ Ishizaka, A./Nemery, P. (2013).

tools by multiplying the capability rating with the weights (thus, summing up the weights for the capabilities that the software provides). At the last step, the summed up values are normalized to a percentage value, and a rank is created. The program is based on Microsoft Excel and is available online³⁰.

To use the tool, the user should provide a weight for each capability item and state if it must be fulfilled or not. The range of the weights is up to the user. The weights shall represent the individual assessment of the importance of each item in comparison to the others. They can be assigned any number above zero. A weight of zero constitutes that a capability is not considered in the ranking of the software.

Item	Description	Weight	Must-Criteria	DemocracyOS	OpenDCN	AppCivist
Participation Process	Provide information on how to participate in the PB process using the presented software.	0	No	Yes	Yes	Yes
Goals for PB	Display the desired outcomes for a PB implementation on the web page.	0	No	Yes	Yes	Yes
Success Stories	The web-pages give examples for success stories of other municipalities.	1	No	No	No	No
Mandatory Registration	The software supports a mandatory registration before the handing in of proposals.	3	No	Yes	Yes	Yes
Registration Requirements	The software supports additional, formal registration requirements, e.g., issued code, citizen registration number.	0	Yes	No	Yes	Yes
Predefined Categories	To further structure the submitted proposals, they can be categorized (e.g., in "playground" or "landscaping").	2	No	Yes	Yes	No
Upload a File	The PB-website implements an object storage. It is possible to upload a picture smaller than 5 MB.	2	No	No	Yes	Yes

Figure 3: Excerpt of Online Tool for PB Assessment (Top Half): Weight and Must-Criteria

While some capabilities are nice to have and optional, others are mandatory. These mandatory categories can be filtered using the column "Must-Criteria". If a capability is set to be a "Must-Criteria", all items that do not fulfill this criterion are not further considered in the ranking. If such filtering occurs, the cell fills red.

An example of the ranking is shown in Figure 4. As – in this fictive example – DemocracyOS does not fulfill a Must-Criterion; it is not further considered in the comparison of the available tools.

³⁰ <http://empaci.eu/index.php?id=49>

Debate Tool	Users of the platform can comment not only on each submitted and published proposal, but also in a general forum for discussion on a broader perspective (not only related to proposals).	3	Yes	Yes	Yes	Yes
Voting Implementation	The PB software provides a voting capability.	5	Yes	Yes	Yes	Yes
Voting Codes	The voter eligibility is captured through the issue of a unique code.	3	No	No	No	No
Media involvement	The PB-website informs citizens on the progress of the implementation of accepted proposals.	2	No	Yes	Yes	No
				0%	84%	71%
				☆ 7	★ 5	☆ 6

Figure 4: Excerpt of Online Tool for PB Assessment (Bottom Half): Calculated Ranking of the Tools Based on the Provided Weights and Must-Criteria

While the fulfilment level of the selected capabilities is a valid criterion for the nomination of a tool, one should not be overly concerned with the prevalence of additional capabilities. Simply selecting the tool with the most extensive set of capabilities available might create a bulky overhead regarding implementation and maintenance. Rather than looking for a tool that fits as many capabilities as possible, it is likely better to look for the tool that best fits the municipality's individual needs. Furthermore, besides the hard factors of the fulfilment level, soft factors should also influence the tool selection process.

Depending on the size and utilization of the local IT department, a government might choose a SaaS tool or run the applications themselves. Municipalities from smaller countries might face obstacles in the availability of language packs. Moreover, as PB initiatives happen in a highly local environment and are often bound to local laws, selecting a tool from a vendor who has experience with the local cultural and jurisdictional environment might also prove helpful, especially if there are already existing relationships between the vendor and the municipality, as the next section will show.

4 Case Examples from Finland

PB has sparked broad interest in Finland, especially in local government, ever since 2012 (e.g., by Lehtonen, P.³¹). Finnish municipalities are active in promoting PB as a method of strengthening citizen participation. Municipalities are not obligated to run PB, but it is mentioned as a suggestion of one method of participation in the Finnish Local Government Act. Both of the Finnish empirical case examples have run their first rounds of city-level participatory budgets. The data was collected after the first round of PB in Lahti in November-December 2020 and after a second

³¹ Lehtonen, P. (2018).

round of PB in Riihimäki in February-March 2021. In addition, in Lahti, a first citizen survey was conducted before the first round of PB in September-October 2019. As our case examples illustrate, each pilot process is as unique as are the IT tools used in them.

A citizen survey conducted in 2019 in the city of Lahti – the first EmPaci PB pilot in Finland - showed an interest in PB and especially taking part by using electronic services. Lahti ran their first city-level PB process in 2020 and used existing ICT platforms for the process. Ideas were gathered using Maptionnaire – a map-based platform previously mainly used in city planning. Voting was conducted using Webropol. There was a strong political will to try out PB in Lahti, but the same will was not shared in the city organization. Also, Lahti was simultaneously making difficult cutback management decisions which affected the resources for PB. There were no financial resources available for investing in a separate participatory ICT platform. Also, the financial resources to be allocated through PB were taken from the operational resources of the department responsible for coordinating PB. This created difficulties in the adequacy of resources for service operations and affected the interest and attitudes to try out PB.

The Maptionnaire platform provided a possibility to put ones' idea on the map and then clarify it with text and by adding documents. It was also used to gather background information on those leaving ideas such as age, gender, or household income level. This type of data is important for process evaluation purposes, even though collecting it can raise questions among citizens. The end-use and necessity need to be well communicated to avoid misunderstandings that can hinder participation. A downside of this platform was that the ideas were not publicly on show during the process. This resulted in overlapping ideas that needed to be processed by the city personnel in the pre-checking phase and took up citizens' time, possibly affecting their satisfaction with the process.

In the citizen survey conducted after the PB, respondents were relatively satisfied with the use of the tools. The tools were seen as easy to use. Feedback from the city PB personnel was also positive. The map-based solution received positive responses. The main criticism was addressed to the fact that ideas were not on public display. Only those ideas that passed the pre-check phase and moved on to voting were published. This limited the transparency of the process, leaving citizens unaware of the result of their submitted idea. Also, using two different platforms received

criticism. While both platforms were relatively easy to use, this created unnecessary hindrances for the agility and transparency of the process. It is also essential to recognize that different citizen groups find using ICT tools convenient or difficult. As an example, the majority of the citizens involved in PB, in this case, were working-aged women.

The second Finnish PB pilot, the city of Riihimäki, had begun their participatory budget in 2019. They had decided to invest in a separate platform: A Decidim based solution, a rather popular choice among Finnish benchmark municipalities of different sizes such as Tuusula and the capital city Helsinki. It was also used in the second run in 2020, although some changes were made to the first model after feedback received from citizens and staff on the first round. Similar to Lahti, also local politicians in Riihimäki supported the implementation of PB. However, the starting point for PB in Riihimäki was different than in Lahti. As the city council decided to implement PB, they allocated financial resources of 1 million EUR for PB into a fund that was established specifically for PB and to be used in multiple years to come. Simultaneously, they decided to invest in a new, customized PB software - Decidim.

This platform offers necessary functionalities and can be easily altered to suit individual needs but with extra cost for tailoring. The Riihimäki platform hosted the entire process from leaving ideas to voting, providing a transparent process as citizens had access to each other's ideas. To leave an idea or vote, one had to register on the platform, but data about the individuals were not gathered. This meant that process evaluation could not be conducted at the same level as, for example, in the Lahti case. This is also something municipalities should take into consideration when choosing and using a platform. One of the changes the city made after the first process was to include a Like-function in their process. For an idea to make it through to the final voting, it had to gather at least 10 Likes on the platform. This was done to activate citizens and encourage them to visit between leaving ideas and voting.

OSALLISTUVA BUDJETOINTI 2021

Osallistuvassa budjetoinnissa ideoidaan, päätetään ja tehdään yhdessä Riihimäestä entistä parempi ja toimivampi kotipaikka. Riihimäellä osallistuvaan budjettiin on varattu miljoona euroa, josta syksyllä 2021 jaetaan 100 000 euroa.

VAIHE 2 / 4

Ehdotusten työstäminen ja arviointi

20.9.2021 - 19.12.2021

[Prosessin vaiheet](#)

TIETOA EHDOTUKSET

Ohjeet ?

Osallistuvassa budjetoinnissa ideoidaan, päätetään ja tehdään yhdessä Riihimäestä entistä parempi ja toimivampi kotipaikka. Riihimäellä osallistuvaan budjettiin on varattu miljoona euroa, josta syksyllä 2021 jaetaan 100 000 euroa.

Osallistuvan budjetoinnin aikataulu 2021–22:

- Ideahaku 20.9.–24.10.2021
- Toteutusarviointi ja ehdotusten työstäminen suunnitelmiksi 25.10–19.12.2021
- Äänestys 10.1.2022–30.1.2022

7 Seuraa

ALKAMISPÄIVÄ
maanantai 20. syyskuuta
2021

PÄÄTTYMISPÄIVÄ
lauantai 31. joulukuuta
2022

Figure 5: Screenshot of Riihimäkis decidim-based PB-System

Citizen feedback on the use of the platform was divided as nearly 50% of respondents found leaving their ideas poor or satisfactory in the citizen survey. The newly introduced Like-system also raised questions as the process was somewhat unclear to many respondents. All in all, here, like in Lahti, the most active participants were working-aged women. The respondents of the surveys were concerned that the IT platform does not reach all citizen groups – for instance, the elderly were seen to be left out.

City personnel, in turn, pointed out some technical difficulties they had encountered in the platform and hoped for improvements on it to make it easier to use/clearer and make voting more see-through for future processes. Also, the platform did not support the collection of user data. This created difficulties in contacting citizens that submitted their idea. Many of the ideas were drafts that needed clarifications in order to be evaluated by the city personnel.

In both of the case examples, PB was run during the outbreak of the COVID-19 pandemic. The role of ICT solutions became more evident than it was initially expected. Face-to-face meetings and campaigns were cancelled, and PB was promoted mainly by using social media. Especially in Riihimäki, the second round of PB laid heavily on the Decidim platform. Due to the change in staff but also to the impact of the COVID-19 pandemic on city personnel, PB was caught in the middle. However, Lahti chose a different approach and focused on still offering something positive for citizens during the volatile times in the form of PB, even though their initial plans would have focused more on live meetings, not a separate platform. Thus, in Lahti, the PB process was considered a success with 713 ideas and 3,896 votes. While in Riihimäki, interviewees regarded the PB process “a technical implementation” of PB without the live meetings and face-to-face promotions of the first round of PB. The turnout of the second round of PB in Riihimäki was fewer ideas and votes than the first round of PB.

Based on the findings in the analysis of the empirical data, it can be said that different ICT models and tools can work even if a municipality cannot choose an ideal tool due to, for example, financial, availability, or timeline constraints. Some tools take more financial commitment, others are more labor-intensive, but each PB is different, as are the municipalities running them and the citizens taking part. It is worth keeping in mind that PB should be an ever-evolving process by nature. Bold trials and continuous development have a place also in finding the right tools. Another noteworthy point is that the process of PB cannot merely rest on the ICT tool. As the Riihimäki case illustrates, PB cannot solely be run with the ICT platform³². It needs human and financial resources. While an ICT platform is designed for PB, there might still appear during the PB such needs that the platform cannot meet, which might create hindrances for PB process and limit the successful turnout of PB. ICT tools can support the process at its best, but it cannot be the whole process. To limit the effects of digital divide, offline channels will still play a role in the future.

³² For more best practices on the connection of online and offline channels, see output document 4.2.3

5 Conclusion and Outlook

The presented report compared various available software solutions for supporting participatory budgeting. A PB process can take various shapes, thus differ the requirements of a PB software tool. The analyzed data and evaluation framework can help cities that aspire to implement a PB to pick the right tool that best fits their individual PB process.

However, as seen by the case examples, there is more to selecting software than a mere list of features. Equally important are “soft” factors like previous usage experience, the will and knowledge (or not) to adapt and develop open-source software, or the willingness to pay a commercial vendor. Choosing a more extensive software with more supported features might, on the one hand, provide enough reserve for future extensions. On the other hand, this extensive range of functions also brings a higher level of complexity. Thus, the tool’s strategy should fit into the strategy of the city.

This research falls into a larger perspective of investigating the use of IT for PB and the success factors of PB in general within the EmPaci project. More information is available on the projects homepage at empaci.eu.

6 References

Dias, N./Enriquez, S./Júlio, S. (2019): Participatory Budgeting World Atlas, Portugal 2019.

Ebdon, C./Franklin, A. (2006): Citizen Participation in Budgeting Theory, *Public Administration Review*, Vol. 66, Issue 3/2006, pp. 437-447.

Holston, J./Issarny, V./Parra, C. (2016): Engineering software assemblies for participatory democracy, in: Dillon, L./Visser, W./Williams, L. (Hrsg.): *Proceedings of the 38th International Conference on Software Engineering Companion*, New York, NY, USA 2016, pp. 573-582.

Ishizaka, A./Nemery, P. (2013): *Multi-criteria decision analysis - Methods and software*, Chichester West Sussex United Kingdom 2013.

Kapoor, K./Omar, A./Sivarajah, U. (2017): Enabling Multichannel Participation Through ICT Adaptation, *International Journal of Electronic Government Research*, Vol. 13, Issue 2/2017, pp. 66-80.

Lehtonen, P. (2018): Shifting the Power to People : Opening the practices of governance with participatory budgeting, *NORDICOM INFORMATION*, Vol. 40, Issue 1/2018, pp. 63-69.

Leighninger, M. (2011): *Using Online Tools to Engage – and be Engaged by –The Public*, 2011.

Lerner, J. (2017): Conclusion: Time for Participatory Budgeting to Grow Up, *New Political Science*, Vol. 39, Issue 1/2017, pp. 156-160.

Pinnington, E./Lerner, J./Schugurensky, D. (2009): Participatory budgeting in north america: the case of guelph, canada, *Journal of Public Budgeting, Accounting & Financial Management*, Vol. 21, Issue 3/2009, pp. 454-483.

Reiz, A./Fellmann, M./Sinervo, L.-M./Heinonen, A. (2021): Selecting the Right Software for Supporting Participatory Budgeting in Local Government – Reviewing Suitable Solutions, in: *Electronic Governance and Open Society - Challenges in Eurasia*, 2021.

Rose, J./Rios, J./Lippa, B. (2010): Technology support for participatory budgeting, *International Journal of Electronic Governance*, Vol. 3, Issue 1/2010, pp. 3.

Rostock University (2020): *Feature Repository & Recommendations - Group of activities 4.1: Output 3*, Rostock, Germany 2020.

Shah, A. (2007): *Participatory budgeting*, Washington D.C. 2007.

Sintomer, Y./Herzberg, C./Röcke, A. (2008): Participatory Budgeting in Europe: Potentials and Challenges, *International Journal of Urban and Regional Research*, Vol. 32, Issue 1/2008, pp. 164-178.

Sintomer, Y./Herzberg, C./Röcke, A./Allegretti, G. (2012): Transnational Models of Citizen Participation: The Case of Participatory Budgeting, *Journal of Public Deliberation*, Vol. 8, Issue 2/2012.