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EMPATIA:
A Multichannel Platform for Participatory Budgeting

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ABSTRACT

Participatory budgeting (PB) is currently one of the most widely adopted democratic innovations. ICT platforms are key enablers of PB processes, by supporting citizen engagement. They support the establishment of diverse participation channels to build candidate proposals, for the voting process, and for monitoring proposals' implementation. PB platforms differ from electronic voting systems, reflecting the intrinsic nature of PB processes. While vote secrecy and trustworthiness of voting results is still a major requirement, other factors weight in, such as the focus on the whole process and the need for engaging several citizens by providing multiple participation channels. PB processes take place at multiple scales (municipal, national) requiring flexible deployment and dimensioning approaches. EMPATIA is an ICT platform for PB, based on multiple dimensioning and deployment options that reflect the scenarios where PB tools are expected to operate. The evaluation results provide relevant inputs to the design and implementation of similar participatory and/or voting platforms.

KEYWORDS

EMPATIA, ICT Platform, Multichannel Participation, Participatory Budgeting, Voting Systems

INTRODUCTION

Participatory budgeting (PB) is one of the most adopted democratic innovations for further improving democratic participation, living conditions and wellbeing of involved communities (Paolo, 2016). The PB process, involving public entities such as municipalities, supporting organizations and citizens, includes three distinct phases: the brainstorming phase that envisions the discussion of ideas and the

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identification of potential candidate projects; the project selection phase, which leads to the selection of projects that will have budget for being implemented; and the final phase that includes the monitoring of the project execution – commonly designated as the second cycle of participatory processes.

ICT platforms are key enablers of this democratic innovation process, by supporting social activism and citizen engagement in the participatory process (Animseh, 2015). The tools and applications included in these platforms establish channels that allow citizens to build and discuss candidate proposals, to vote in the candidate projects they believe best suit the needs of their neighborhood and/or their municipality, and to monitor the implementation of winning projects. In this context, multiple tools already exist for enabling the participatory democracy. For instance, Your Priorities (Your Priorities, 2019) aims to foster the participation of citizens, OpenDCN (OpenDCN, 2019) is designed to support participatory budget, and OpenBudgets (OpenBudgets, 2018) enables the tracking and analysis of financial information. The usage of such tools has been proved to promote the engagement of citizens in these democratic processes, since they provide the opportunity for citizens to express their opinion and to better shape the living conditions of their neighborhoods (Margaret, 2016). However, these platforms often fail to promote social inclusion since they are designed for specific groups of people (e.g. younger people or people with higher levels of education, more used to technology). The EMPATIA H2020 project (EMPATIA, 2018) promotes multiple channel participation by defining and implementing new tools, interfaces and best practices for citizen engagement – putting special emphasis on the simplicity and ability of being used by a wide range of actors with different cultural backgrounds and/or degrees of ICT literacy.

While somehow less strict than traditional electronic voting platforms, ICT platforms for PB need to address very specific technical and social requirements. They need to be very modular and extensively reconfigurable, to accommodate very different PB processes, since there is no single standard for implementing PB processes (e.g. voting rules, identification of voting citizens, provided voting channels) and each community follows its own model. They also need to provide flexible and self-managed mechanisms for supporting PB processes of very different scales, from a few hundred citizens (e.g. small neighborhood) to millions of citizens in large cities, regions or even whole nations (Leonardo, 2016). In this scope, the architecture of the EMPATIA platform supports multiple deployment models, including for instance bare metal servers with all the components (all-in-one), cloud infrastructures compliant with the x Software as a Service (xSaaS) paradigm, and containers adhering to DevOps practices that facilitate customization and add-on of new functionalities. This way, community networks and municipalities are not bound to closed platforms, or tools that do not accommodate the customization requirements of PB projects. EMPATIA features a modular architecture where additional functionalities can be added by plugging-in new components following a simple, efficient design with scalable APIs. The functionalities of the EMPATIA platform have been validated with its use in the PB process of many European cities during the last year, with very positive results.

This paper presents an extensive performance evaluation of the EMPATIA platform, based on a set of large-scale experiments in the Fed4FIRE+ testbeds (Fed4Fire, 2016) and considering multiple deployment options. More than the evaluation of the intrinsic performance of the EMPATIA platform, the interest of the paper resides in the inputs it provides to the design and deployment of similar PB and/or voting platforms. In this regard, besides the technical evaluation of the platform, it is also presented the behavioural assessment and the process evaluation, where the opinion of citizens using the platform in diverse participatory events held in several European cities has been collected. We argue that the contribution of this paper is twofold, first it introduces the EMPATIA platform regarding technical and architectural aspects, secondly objective results of the technical, behavioural and process assessment are presented

The remaining sections of the paper include a background section with related project and platform, the EMPATIA platform is described in the next section. The evaluation methodology section includes details of the technical evaluation, of the behavioural assessment and process evaluation