From E-Government to We-Government: an analysis towards participatory public services in the context of the H2020 WeGovNow project

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ABSTRACT

The idea that digital innovation increasingly shifts power from the supply- to the demand-side (or to the "customers") is becoming ever more popular. And this holds true not only for the private sector but also for the public sector. At the same time, emerging technologies - notably the so-called SMAC technologies (social, mobile, analytics, cloud technologies) - are making a transformational impact on public services, with the potential of becoming ever more powerful.

KEYWORDS

e-Government, Participatory public services, Local authorities, Participatory Governance, Citizen-centric services, Smart City, WeGovNow project

1 INTRODUCTION

Achieving digital innovation in the public sector, is anything else but a self-fulfilling prophecy. Different organisational cultures, obsolescent or poorly designed technology, and the legal realm of public administrations limit, slow down or prevent e-Government development. And that at a point in time where "e-Government" should be undergoing its first major transformation, from simple transactional online services (citizen as customer) to citizen co-production, local issues reporting and collective opinion formation; "We-Government", the citizen as partner. From the technical perspective, this paper aims to describe the applied best practices towards the seamless interconnection of various participatory public services and software solutions under a consolidated common framework and the guidelines to follow for connecting third party services. Additionally, some concerns of adopting such a citizen engagement platform by the local authorities are described based on the outcomes of meetings with various stakeholders that took place on three pilot cities of the WeGovNow EU project consortium.

2 THE IMPORTANCE OF "WE" IN GOVERNANCE

Participatory governance, aka We-Governance, is one of the building blocks of a Smart City, being also a major element towards the transformation process of a city into Smart City. We-Governance is related both to the concept of a "bottom-up" design of a Smart City, and to the better diffusion of the results across the city's population (Tsarchopoulos et al, 2018). The adaptation of participatory public services can radically change the way citizens interact with government and thus, the public authorities have already begun to leverage these technical solutions to inform and encourage civic engagement and participation in the process of decision-making. Ansell and Gash (2008) define participatory governance as "a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets". Facilitating smart city initiatives through participatory public services is of great importance according to Chourabi et al. (2012) and Lombard et al. (2011). Nam & Pardo (2011) and Scholl & Scholl (2014) also highlight that the success or failure of smart city initiatives is partly determined by the ability of stakeholders to cooperate. Meijer & Rodriguez Bolivar (2013) point out that cities need to organise strong collaborations between government and its citizens, organisations and companies to drive forward smart initiatives and that policy making itself is not enough. In addition, the importance of transparency and openness of We-Gov is accented by Meijer & Rodriguez Bolivar (2015) as well. We-Governance means that the existing governance morphology and structures of the city need to be transformed, either radically or incrementally, to facilitate collaborative decision-making (Nam & Pardo, 2011, Meijer & Rodriguez Bolivar, 2016). At highest transformation level, this would lead to a community-based

model of governance with inter-stakeholder connections supported by new technologies according to Meijer & Rodriguez Bolivar (2016).

WeGovNow, a Horizon 2020 EU-funded project involving twelve partners from Germany, Sweden, Greece, Italy and United Kingdom, as a new type of citizen engagement platform, aims to be an essential enabler, towards this transformation, by expanding the viability of, and the capacity for citizen coproduction in the public sector. Participatory innovation platforms, such as WeGovNow, typically have four primary functions: 1) to provide open access and encourage broad-based stakeholder involvement, 2) to enhance individual, group, and community creativity, 3) to facilitate open dialogue and sharing and 4) to support convergent thinking (Anttiroiko, 2016). To this end, WeGovNow which was initially based on earlier research and development work of its core components that are mainly consist of mature market-ready solutions, has managed to deliver a citizen-driven digital solution prototype to improve local public services. It is a joint effort platform made of several software solutions which allow people to report issues and suggest improvements, to discuss their relevance, explore ways to fix problems through collective action, find solutions to compensate for resource shortages, debate topics of strategic nature, and develop and vote upon concrete suggestions for local policy action under a common umbrella. Saughet (2017) refers, also, to participatory democracy and emphasizes the involvement of citizens in the decision-making about public problems. This is in line with Nam & Pardo (2011) and many others who see that smart governance ultimately means making operations and services truly citizen-centric. In accordance to this line, WeGovNow platform tries to give citizens a primary role in the decision-making process because it enables them to play a much more active role in the functioning of governance. In WeGovNow, citizens act as partners rather than just passive customers in the provision of public services.

3 WEGOVNOW

3.1 The platform

WeGovNow is a platform to allow integration of software tools and solutions to facilitate, promote and encourage participatory governance. It tries to provide a unified integration framework for existing and new applications to allow them to be easily embedded in an overall digital solution for citizen-centric governance.

The platform combines various software solutions to allow components to interact with each other via ontological concept mappings (OnToMap), shapes a volunteered geographic information (VGI) system and enables the integration and presentation of open public-sector information (PSI)

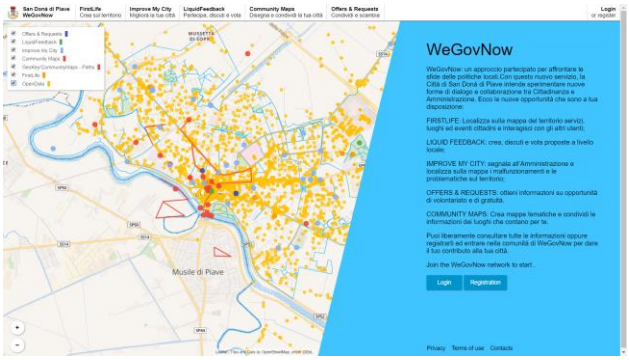

Figure 1: **Consolidated map (AreaViewer) in landing page of Città di San Donà di Piave instance**

Local authorities are allowed to select any combination of the available integrated application and create their own instances. The platform creates dynamically the navigation bar and the map-based interface based on this selection.

3.2 Component integration approach

The WeGovNow platform environment is meant to be modular, extensible and principally open towards additional software components. The goal is to allow existing functional software tools to be part of the WeGovNow ecosystem which, for the local authorities, could act as a repository of digital solutions to choose and deploy according to their needs. Each WeGovNow instance could have different setup based on any selection of available tools. The added value is that the WeGovNow platform offers, to the integrated applications, a set of common features and modules such as: dynamic navigation, user management, user authentication and secure communication based on digitally signed certificates, logging facilities based on ontological concept mappings (OnToMap), personalised notification mechanism, advanced map-based input mechanism (InputMap) and a consolidated map-based user interface (AreaViewer) based on OpenStreetMap. At higher level, WeGovNow also offers a set of guidelines and good practices concerning accessibility and design-for-all approach based on the expertise of the consortium. The adaptation of components to these guidelines is highly

recommended in order to achieve a unified user experience but will not be considered a blocking factor for future components.

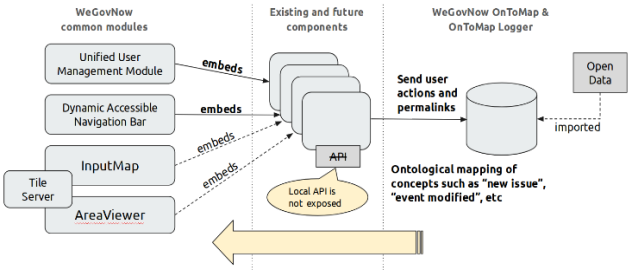

Figure 2: **WeGovNow abstract architecture**

System integration under a common framework is not always an easy task. It usually involves calling the framework's API to push data based on actions triggered internally or to create a centralised mechanism to pull data from each component by calling their API. The latter implies that an API is available and exposed for each component and that new requests should be implemented for every additional component. WeGovNow does not follow this approach because it would have caused difficulties on future (and beyond the end of the project) components integration thus making the system less extendable.

Instead, the WeGovNow approach demands no API exposure, since no API is invoked by the framework. Each component though, needs to push a set of metadata and permalinks to the actual data into WeGovNow OnToMap Logger which acts as a collector of the history of actions performed by WeGovNow users when interacting with the various WeGovNow applications. For the applications to start pushing metadata, a one-off mapping procedure is necessary. This integration approach allows a unified perspective on user behaviour and allows to provide a unified view on the data shared in the WeGovNow platform, including the Open Data which are also managed by OnToMap. This way, WeGovNow applications indirectly, can retrieve information collected about geographical objects, initiatives, issues, and so forth. The OnToMap Logger enables the applications to push streams of events to be logged, and to retrieve filtered log information; e.g., the activities performed by a certain user in all the WeGovNow applications on a certain date. To make things easier, the consolidated map, aka the "AreaViewer", communicates with OnToMap and delivers map-based presentation of the pushed events of all applications including dynamic filtering (see Fig. 1).

3.3 Incorporated components

Following the WeGovNow integration approach, the following components have been already integrated in the platform.

FirstLife: a map-based interface for collecting and visualize public information about the urban life from institutions organizations and users. The platform supports two types of users: citizen and organizations. Users can create places, events, news, posts and groups on maps. The entities can be interconnected creating a representation of real structures. Groups can share group maps for specific purposes. Users can extract the map of their contents. The platform offers a multidimensional filtering system through map and timeline interaction and category selection.

Community Maps and GeoKey: supports constructing digital representations of physical space through participatory action. Community Maps provides a map-based interface to create, edit and visualise geographic information. Its map-based interface provides means to add new data as well as editing and deleting existing data. The applications further provide a search to find contributions matching a given keyword and filtering according to the status of a contribution, also by the category. GeoKey provides a database-driven backend storage, together with a custom API that allows two main tasks namely interaction with data (data creation, editing, deleting) and the creation of projects which group data together.

LiquidFeedback is a collective opinion formation and participatory decision-making component to organise discussions among stakeholders and allow citizens to express their opinions. This is done in a transparent process (credibility) using collective moderation (self-organising process; no need for a moderator), proxy voting/Liquid Democracy (mutual empowerment; dynamic division of labour, scalability), and preferential voting (no encouragement for tactical voting).

ImproveMyCity: enables residents to directly report local issues about their neighbourhood. The reported issues are automatically transmitted to the appropriate department in the public administration to schedule their settlement, while their progress is publicly traceable. ImproveMyCity includes also the administration backend and an analytics dashboard (Tsampoulatidis et al, 2013).

Offers & Requests: (former "Trusted marketplace") implements a marketplace for goods (items), that can be offered and requested by the citizens for free. Based on the content, the component proposes relative organisations that

might be of interest. It also creates and pushes personalised information (timeline) in the landing page. In addition, the component acts as an authorised yellow-page like inventory of official city organisations, charities, volunteered associations and services.

Guido et al (2018) provide further details on the features and characteristics of each of the WeGovNow incorporated components.

4 PILOTS & CONCLUSIONS

Three cities are going to pilot the platform; 1) Città di Torino, 2) London Borough of Southwark and 3) Città di San Donà di Piave. These pilot cities are different in terms of size and technological maturity, a fact that will lead to more robust conclusions on the level of success of the WeGovNow approach. Since the actual pilot phase has not yet started, it is of quite importance to highlight some pre-piloting concerns and issues based on the WeGovNow experience. Some of the pilots have faced difficulties to include all applications of the platform in their current workflow due to overlaps and conflicts with other solutions. – Tailored-made instances solved this issue. All pilots preferred not to directly mediate volunteered services under their auspices. This mainly concerned the former "Trusted Marketplace" (implemented for the project) component which initially included such services. – Redesigning the component to exclude personal data collection from social media networks and focusing only on items (goods) rather than services solved this issue. Some pilots, due to GDPR, might need to slightly delay the beginning of the pilot phase due to the need of bilateral data agreements syntax and signatures. – Starting the pilot phase gradually with only the components who signs the agreement could mitigate the issue.

The article argued the importance of citizen-centric approach in modern E-Gov solutions which transitions them to the We-Gov era. The WeGovNow approach towards participatory governance and component integration is presented and some key issues and concerns during the pre-pilot phase are highlighted.

ACKNOWLEDGMENTS

This work has been funded by the European Union's Horizon 2020 research and innovation programme under grant agreement n. 693514 ("WeGovNow"). The article reflects only the authors' view and the European Commission is not responsible for any use that may be made of the information it contains.

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