

# Η ΠΕΡΙΦΕΡΕΙΑ ΣΕ ΚΑΜΠΗ

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## Digital tools for participatory governance

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### Abstract

The paper<sup>1</sup> explores the increasing role of digital tools and platforms in participatory governance. Participatory governance, an essential element in the strategic frameworks for the innovation-driven economic transformation of the cities and regions, is related to the concept of a "bottom-up" design, as well as to the better diffusion of the transformation's results across the local population. Digital tools and platforms are essential enablers to this process as they allow local authorities to establish new communication channels with citizens, organisations and companies so that they are engaged in governance in various ways. The landscape of the digital tools for participatory governance is wide, as they enable citizens' participation in problem identification, ideation and co-creation, proposals' drafting, selection of proposals and finally the assessment the solution's deployment process and the extent that the solution solves the problem identified in the beginning. Two case studies are examined: the "Improve My City" application, which allows citizens to report local problems and to propose improvements and the "Action Plan Co-design" application, which enables citizens and stakeholders to participate in the co-creation of the actions that included in an action plan. Both applications shed light on the way that the digital tools support the participatory governance process.

**Keywords:** Participatory governance, Digital tools, Decision-making process, Smart cities.

### 1. Introduction

Participatory governance is one of the building blocks and a necessary condition in the strategic frameworks for the innovation-driven economic transformation of the cities and regions. Participatory governance is related, first, to the concept of a strategy's "bottom-up" design, and secondly to the better diffusion of the results across the local population. As technology has the potential to radically change the way citizens interact with government, the public authorities have begun to leverage it to inform and encourage civic engagement and participation in the decision-making process. In this context, a variety of digital tools and platforms enables local authorities to establish new communication channels with citizens, organizations and companies, so that they are engaged in governance in various ways.

The paper first explores the concept of participatory governance within Internet-enabled environments. The analysis of the decision-making process in a series of key steps helps to identify digital tools that can support the process. Subsequently, indicative digital tools for participatory governance from around the world are presented. The aim is to be understood both the wide field of solutions and the different levels of citizen participation, which range from just notifying them

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about the government's activities to the possibility that citizens themselves take the final decision. In the third and largest part of the article, two case studies are presented. These are digital participatory governance tools developed within European research projects and used by many municipalities and regions: 1) the "Improve My City" application enables citizens to report non-emergency local problems, as well as to suggest solutions for improving the environment of their neighbourhood. 2) The "Action Plan Co-design" application enables citizens and stakeholders to participate in the co-creation of the actions included in a city's or region's action plan. The paper concludes with the assessment of the effectiveness of digital tools in the participatory governance process and with guidelines to governance bodies on how to select the appropriate ones from a wide range of available applications.

## 2. Participatory governance and digital tools

In the literature, governance typically refers to the increased collaboration among stakeholders and the facilitation of citizen participation, thus emphasizing the bottom-up design of smart city (Castelnovo *et al.*, 2016). Ansell and Gash (2008, 544) define participatory (collaborative) 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". The participatory governance also forms a crucial element for facilitating smart city initiatives (Chourabi *et al.*, 2012; Lombard *et al.*, 2011; Nam and Pardo, 2011; Scholl and Scholl, 2014). Indeed, the success or failure of such initiatives is partly determined by the ability of stakeholders to cooperate. It is not enough to develop good policies; the cities need to organize strong collaborations between government and their stakeholder groups (citizens, organizations and companies) to drive forward smart initiatives. (Meijer and Rodríguez-Bolívar, 2013). At the end, participatory governance should lead to better outcomes and more open and transparent governance process (Meijer and Rodríguez-Bolívar, 2015).

Participatory governance means that the existing governance structures need to be transformed, either radically or incrementally, to facilitate collaborative decision-making (Nam and Pardo, 2011; Meijer and Rodríguez Bolívar, 2016). At highest transformation level, this would lead to a community-based model of governance with inter-stakeholder connections facilitated by new technologies (Meijer and Rodríguez Bolívar, 2016). Digital tools and platforms are indeed essential enablers of this transformation. Participatory innovation platforms typically have four primary functions: 1) provide open access and encourage broad-based stakeholder involvement, 2) enhance individual, group, and community creativity, 3) facilitate open dialogue and sharing and 4) support convergent thinking (Anttiroiko, 2016). Participatory innovation platforms enhance local knowledge creation processes and thus have potential to lead to increased innovativeness and local economic performance (Anttiroiko, 2016).

Saughet (2017) refers 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. Saughet (2017) provide a series of key steps that guide the transformation process to facilitate participatory governance (democracy). The steps are the following: 1) Problem identification, 2) Ideation and co-creation, 3) Proposals' drafting based on the suggested solutions, 4) Selection of proposals through voting and 5) Assessment of both, the solution's deployment process and the extent that the solution actually solves the problem identified in the first step. United Nations (2016) defined a framework for e-participation with 3 steps: that includes: (i) e-information – provision of information on the Internet, (ii) e-consultation – organizing public consultations online, and (iii) e-decision-making – involving citizens directly in decision processes.

Digital tools act either as facilitators either as enablers in a wide range of activities within the participatory governance process. Although most of them are tailored made for specific cases and initiatives, they are also generic solutions that can be implemented by organisations to support governance process in different cities or regions. These tools cover a wide field of solutions and support different levels of citizen participation, which range from just notifying them about the government's activities to the possibility that citizens themselves take the final decision.

SeeClickFix ([www.seeclickfix.com](http://www.seeclickfix.com)) and FixMyStreet ([www.fixmystreet.org](http://www.fixmystreet.org)) are request and work management systems that allows citizens to report non-emergency neighbourhood issues to local government bodies. Users may add comments, suggest courses of action, or add video and picture documentation. The issues are presented on a map, while the users can receive notifications based on selected areas and keywords.

Councilmatic ([www.councilmatic.org](http://www.councilmatic.org)) is a web application that tracks all issues related to a region's or city's Council: the legislation introduced and passed, its various committees and the meetings they hold, and the aldermen themselves.

WeGovern ([www.accela.com/civic-apps/we-govern](http://www.accela.com/civic-apps/we-govern)) is an application that improves the way citizen engage through "Town Hall" meetings. Citizens can view agendas, minutes and video of government meetings. They can search meeting documents and research historical legislation. Board members & citizens can make comments related to agenda items.

CitizenLab ([www.citizenlab.co](http://www.citizenlab.co)) is a civic engagement platform. The platform facilitates a two-way communication between the city and its citizens. The city uses CitizenLab to consult the opinion of its citizens and to crowdsource their creative solutions to an existing problem.

Your Priorities ([www.yrpri.org](http://www.yrpri.org)) is a social network application designed specifically for citizens. Citizens can propose their own ideas and open them up for discussion. Ideas can be debated, with points awarded for and against and debate points prioritised.

Consul ([github.com/consul/consul](https://github.com/consul/consul)) is an open government and e-participation platform that allows users to launch collective debates, to propose and support proposals, to organise physical meetings, to run citizen surveys, to organise votes on how investment should be distributed, or to write laws in a collaborative way.

U-Report ([www.ureport.in](http://www.ureport.in)), Twilio ([www.twilio.org](http://www.twilio.org)) and Interactive Text ([www.textizen.com](http://www.textizen.com)) are applications that enable community participation through text messaging. Polls and alerts are sent via Direct Message and real-time responses are collected. Results and ideas are shared back with the community.

Idea Spotlight ([www.wazoku.com/products/idea-spotlight/](http://www.wazoku.com/products/idea-spotlight/)) and Discuto ([www.discuto.io](http://www.discuto.io)) are collaborative idea management software that allow communities to reach consensus and make better decisions with crowd collaboration. The integrated ideation and discussion platforms provide structure to capture, evaluate, prioritise and select ideas. The built-in analytics suites provide insight for data-driven decision-making.

Dialogue ([www.dialogue-app.com](http://www.dialogue-app.com)) is a platform for opening up challenges to the ideas of the public. Citizens can take part, at the level that works for them (i.e. create a fully-fledged idea, comment on those from others or quickly add their support to existing contributions).

Citizen Space ([www.citizenspace.com](http://www.citizenspace.com)) is a platform for creating online consultations. Organisations can build surveys, complete with contextual information. Tools are available for tracking, coordinating and auditing all consultation and engagement activity. The response analysis is supported by a qualitative tagging system, quantitative summary reports and top-line statistics dashboards.

Loomio ([www.loomio.org](http://www.loomio.org)) is an app for collaborative decision-making. Loomio lets organisations to host discussions online, invite the right people to participate, come to timely decisions and transform deliberation into real-world action.

Civici ([io.civici.com](http://io.civici.com)) platform offers a single environment in which any organisation can promote user participation. The platform offers advanced surveys, secure digital consultations, participatory budgeting, proposals' discussion, open data, and data Analysis and reporting.

Piazza ([www.piazza.eu](http://www.piazza.eu)) is a Digital Living Lab platform for cities that allows city authorities and service providers to design and test new urban infrastructure or services with citizen before entering the planning or implementation phase.

LiquidFeedback ([www.liquidfeedback.org/](http://www.liquidfeedback.org/)) is an application for proposition development and decision making, merging the direct and representative democracy approach. It provides a delegated voting system which takes into account the knowledge disparity of its participants.

EngagementHQ ([www.bangthetable.com/engagementhq/](http://www.bangthetable.com/engagementhq/)) is a community engagement platform that includes listening tools (i.e. Ideas, Surveys, Forums, Questions, Guestbook, Stories, and Polls), information tools, reporting tools and participation management.

Citizen Budget ([www.citizenbudget.com/](http://www.citizenbudget.com/)) and Budget Simulator ([www.budgetsimulator.com](http://www.budgetsimulator.com)) are tools for budget consultation. They show the financial impacts of participants' choices in real time, educating them about the trade-offs and constraints faced by their municipality.

DemocracyOS ([www.democracyos.org](http://www.democracyos.org)) is an online platform for deliberation and voting on political proposals. It is a platform for a more open and participatory government. The software aims to stimulate better arguments and come to better rulings, as peers.

nVotes (previously Agora Voting) ([www.nvotes.com](http://www.nvotes.com)), OpaVote ([www.opavote.com](http://www.opavote.com)) and Democracy 21 ([www.d21.me](http://www.d21.me)) are secure online voting platforms that protect the privacy of the vote and make elections end-to-end verifiable. The tools allow organisations to carry out secure, flexible and transparent elections online. Moreover, they support most well-known counting methods (e.g. traditional election, ranked-choice voting election and approval voting).

### 3. Supporting participatory governance at an urban and a regional level: Two case studies

The following case studies present in detail two digital participatory governance tools that have been developed within European research projects and are used by many municipalities and regions. The case studies aim to shed light on the way that the digital tools support the participatory governance process.

#### *The “Improve My City” application*

The “Improve My City” (IMC) application ([www.improve-my-city.com](http://www.improve-my-city.com)) is an open source software solution that enables citizens to report non-emergency local issues, about their neighbourhood, such as discarded trash bins, potholes, faulty street lights, etc. The reported issues are automatically transmitted to the appropriate local department and office, based on location and category. Their settlement is scheduled via a highly transparent mechanism where citizens can check at any time the progress and actions taken by the local authorities. Besides issues and problems, citizens can suggest solutions and ideas for improving the territory and environment of their district and collect positive votes from registered locals to gain attention. Commenting is publicly available under moderation or privately between officials and citizens (Tsampoulatidis, *et al.*, 2013).

Reporting is feasible both through web and mobile app that adopts a map-based layout, which makes reporting a user-friendly and intriguing process. Native mobile applications (for Android and iOS) allows the uploading of multiple photos directly from the camera of the mobile, while the geo-location is automatically pulled from the GPS sensor. The web-based application allows, in addition, to upload documents in various formats. Mobile apps can operate offline and they are synchronised with the server when Wi-Fi is available. The interface of IMC is map-driven, based on Google Maps (web-based app also supports OSM - Open Street Map) and it is possible to display issues either on list- or card-layout mode, side by side with the map.

The management and routing of incoming issues are performed through the backend administration infrastructure that serves as an integrated management system with easy to use interfaces that also include an advanced interactive analytics dashboard. Each administrator has his/her own credentials and belongs to one or more departments. Each department administers one or more hierarchical categories. It is possible to define rules and restrictions even at field level and thus allow only privileged users to reply on comments or allow supervisors only to moderate issues. IMC is modular, and all modules and plugins can be parameterised through GUI. According to the permissions, the administration interface is dynamically adapted, hiding unnecessary complexity and thus enhance the user experience.

To facilitate the integration of IMC with the IT infrastructure of the local authorities, IMC is available either as extension package for Joomla! and WordPress Content Management Systems (CMS) or as Software-as-a-Service (SaaS) using REST based API and OAuth2.0 for user authentication. The mobile apps, in each case, are using the same API for interacting with the backend.

The IMC solution has multiple impacts and benefits. Citizens become part of an innovative and interactive ecosystem, affecting everyday living, by actively participating to the local community course of action. Awareness of detailed activities and responses towards the solution of a problem, or the promotion of a suggestion, in a fully transparent manner, is of great importance too. Additionally, IMC mitigates bureaucracy and saves time, since all the procedures (reporting – administration – analysis) are handled electronically and online.

Local authorities benefit as well. Less paperwork and better organisation is attained, since IMC merges seamlessly to their existing workflow. Direct communication with the citizens is feasible through rule-based automated notification system. IMC also provides better progress monitoring based on issue status (e.g. submitted – acknowledged – on progress – solved – closed) in the form of a timeline (actions log). The integrated reporting mechanism allows the officials to check the overall condition by applying composite filters such as categories, departments, areas, date-range and others. Moreover, discovering hidden patterns through data aggregation and visualisation and translating patterns into insights is feasible through the analytics dashboard. The latter, offers to the local authorities the necessary tools to identify areas with dissatisfied citizens, under-performing departments due to heavy workload, seasonal burden on city infrastructures, etc.

User engagement and participation are improved on local authorities that are using IMC, especially after the adoption of the native mobile applications. A real case scenario is the Municipality of Thessaloniki that operates IMC for the last 23 months ([opengov.thessaloniki.gr/imc](http://opengov.thessaloniki.gr/imc)). The user registrations have significantly increased by 500% comparing to their previous reporting system. The reported issues are constantly increasing, counting, so far, more than 23.000 issues from which almost half of them are reported just the last 6 months, from almost 10.000 users. The trend indicates that reporting of new issues will be steadily continuing to increase. Almost 73% of the reported issues are arranged (closed) and more than 400.000 notifications have been sent to locals and in-house, empowering the interaction between citizens and the local government.

*The “Action Plan Co-design” application*

The Action Plan Co-Design application ([actionplan.s3platform.eu/](http://actionplan.s3platform.eu/)) enables regional authorities to receive feedback from the public on their Action Plans. For the European regions, the action plan is a key element in the implementation of their regional research and innovation strategies for smart specialisation (RIS3). The overall objective of the application is to provide a framework that facilitates stakeholders’ and citizens’ involvement in the design of the RIS3 Action Plan, so that it is better adjusted to their needs and priorities.

The regional authorities can implement the co-design process in three steps: 1. Setup a RIS3 Action Plan Co-design process. As a RIS3 Action Plan is a set of actions, each authority has to create, in the application, the action plan and its specific actions, based on a template that contains certain characteristics. 2. Receive feedback from citizens: Citizens can express their opinion regarding each action of the RIS3 plan and its specific details through rating, commenting, voting and suggesting modifications. 3. Update the RIS3 Action Plan according to citizens’ contribution: After receiving feedback from users, regional authorities can update the action plan to meet users’ needs and priorities and achieve the desirable outcomes.

The functionality of the application differs depending on the user’s role, which means there are different features for regional authorities and for citizens and stakeholders (Table 1).

**Table 1:** Application’s features for regional authorities, citizens and stakeholders

<b>Public authorities</b>	<b>Citizens and stakeholders</b>
<p><b>Create an Action Plan</b> by providing a short description and defining the consultation period.</p> <p><b>Add Actions to an Action Plan</b> by providing specific details for each action separately that include (i) region and country, (ii) thematic objective or challenge addressed, (iii) investment priority under which the action is placed, (iv) short description of the action, (v) delivery mechanism(s), (vi) target groups/beneficiaries, (vii) actors involved, (viii) measurable targets, (ix) timeframes, (x) funding source(s) and (xii) budget.</p> <p><b>Receive feedback from citizens</b> by considering the overall voting and comments on each action.</p> <p><b>Update the Action Plan</b>, so that it addresses more adequately citizens’ needs and priorities.</p>	<p><b>Find an Action Plan</b> by browsing the European countries and regions or by searching.</p> <p><b>Comment and rate an action</b> by a) rating according to a number of criteria such as completeness of the description, effectiveness, popularity, innovativeness and maturity, using a 5-star rating scale, b) approving, disapproving or approving under conditions the action, and c) providing suggestions for improvement.</p> <p><b>Find similar actions</b>, so get inspired from other regions. All actions are saved in the platform, and the users can search and browse actions based on their thematic objectives/investment priorities, their beneficiaries, their involved actors as well as their funding sources.</p>

The main output of this process (Figure 1) is a co-designed Action Plan, where citizens' opinion regarding specific details for each action of the RIS3 strategy has been considered.

**Figure 1:** Action plan co-design process



The application is currently under pilot testing in four European regions (Eastern Scotland, UK; Central Macedonia Greece; Galicia, Spain and Northern Netherlands). The pilot testing will lead to the improvement of the application. The preliminary results show that the co-design of the RIS3 Action Plan can significantly contribute to maximising the successful implementation of the overall RIS3 strategy.

#### 4. Conclusion

The article argued that the participatory governance, an essential element in the strategic frameworks for the innovation-driven economic transformation of the cities and regions, is radically improved by the use of digital tools and platforms, which are indeed critical enablers in the citizens' engagement process. Public authorities, communities and organisations can leverage a wide range of tools to support the entire participatory governance process; from providing relevant information on the Internet (e-information), to organising public consultations online(e-consultation) and to involving citizens directly in decision processes (e-decision making).

The presented case studies provide evidence on the improvement of citizen participation in governance procedures. On one side, the Improve My City application introduces a digital tool in an already established process (i.e. citizens requests on non-emergency government services), while on the other side, the Action Plan Co-Design application enables public authorities to set up a new collaborative process (i.e. the co-design of a regional action plan). In the first case, the use of the digital tool has multiple impacts and benefits to both, citizens and the Municipality. Moreover, it improves the problem-solving process significantly. In the second case, the use of the digital tool is necessary to maximise the number of stakeholders and citizens involved in the consultation. In both cases, success depends not only on the quality of the tool but also on the degree of involvement of public authorities in the process (i.e. respond to citizens requests or incorporate user comments to action plan).

Public authorities that aim to establish a participatory governance should select carefully the digital tools that will use to support the process. The tools must not only lower the barriers to participation by making it easy to everyone to contribute but they should be designed to improve the quality of the discussion, as there is the possibility of failure due to a low response on the side of the crowd and/or poor quality of submitted ideas. Open-source tools are an excellent choice, as they do not only offer a low-cost solution but also are optimal for transparency, enabling anyone to verify the code behind voting and other mechanisms.

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