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Collaborative approaches to public sector innovation: A scoping study

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ABSTRACT

In the last 15 years, European countries have invested considerable resources to provide e-government services. Despite of its increasing availability, its level of adoption has not been satisfying. On the other hand, over the last years, coinciding with the web 2.0 trend, the e-government services co-produced by citizens start to appear, often without the support, acknowledgement and even awareness of the government. This trend stems from a well-established tradition of offline co-production of public services, i.e. services provided by the voluntary sector, but brought to an unprecedented scale thanks to the advent of web 2.0. Still, the concept remains not well-defined and its impact is not yet well studied. The paper explores on a limited sets of cases what does it mean to collaboratively deliver online public services; what are the success factors based on the cases under study and what are the incentives for service providers (other than public administration), citizens as users and public administration. The authors propose an ostensive definition of the collaborative delivery of public services: collaborative public services are created and run by government, civil society or by private sector building on the re-use of government data or citizens data. Those services are focused on public goods delivery (e.g. health, education, public transport) and are meant to change the traditional government services by engaging in an open dialogue with public administration about the best way to deliver those services. The analysis of six case studies of innovative collaborative online public services suggests that the online collaborative public service delivery increases its quality with the users' growth contrary to the traditional offline service delivery. The study results indicate that the current developers interest lies in delivering complementary services to the government run services rather than substitutive services. The authors propose also the initial list of success factors, enabling conditions, and benefits for all main stakeholders (users, innovators and public administration).

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1. Introduction

In the last 15 years the e-government became an important component of the public sector modernisation agenda. Yet, e-government has not lived up to expectations and did not transform the public sector. While significant progress has been made over the last years in terms of e-government service provision, the take-up of those services is still disappointing. As late as 2012, only 43% of European citizens made use of e-government services, a percentage that drops off to 21% when

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one looks at transactional features, i.e. submitting filled forms (source: Eurostat and Digital Agenda Scoreboard¹). Moreover, the numbers stagnate, barely changing from 2008.

In authors' view one of the reasons for this sluggish growth may be the lack of user-centeredness of the current e-government services. Still, the European governments have for long struggled to become more user-oriented. User orientation of e-government services has been a goal in European policy documents since the Manchester Ministerial Declaration in 2005. Notwithstanding in most of the Member States this goal is far from being achieved. Especially in times of crisis, governments face problems to justify the reasons for investing in e-government when results remain disappointing with respect to earlier promises.

Notably, we are observing an increasing interest in the innovation in the public sector and once again the times of crisis make this interest even more vocal. At the same time the advent of web 2.0 services that build on knowledge and users skills (O'Reilly, 2005) prepared citizens for a more pro-active role. The collaborative production of e-government services appears therefore as a significant opportunity to allow users to directly design public services according to their real needs.

This article presents partial results of a wider study on Collaborative Production in e-Government commissioned by the European Commission (SMART 2010-0075) and carried out throughout 2011. (see Osimo et al., 2011)²

2. Research on collaborative e-government

The collaborative production in e-government (also collaborative) e-government is a novel research field with little literature available. Therefore, the literature overview will introduce the overall framework of innovation in the public sector and discuss the research results in the two neighbouring research fields, e-democracy and co-production of offline public services.

Public sector innovation, i.e. “new ideas that create value for society” (Bason, 2010), is not new a new concept nor practice. Still, it has gained a new perspective in the last 10–15 years when the research showed that effective innovation is related to a more direct involvement of users in the innovation process (von Hippel, 2005). Further to that successful projects are rarely designed using top-down approach and often require permission to disobey the existing rules (Albury, 2005). Hartley (2005) examining the evolution of paradigm of governance and public management (from traditional public administration through new public management to networked governance) observed that the co-producers role of the population is a main factor of recent transformation towards networked governance. Windrum (2008) underlines the importance of public sector entrepreneurship (intrapreneurship) and its role in the development of innovation in the public organisations.

This new role of users in public service innovation processes demands from public sector organisations a more systematic approach in innovation processes. More specifically, building innovation capabilities at all levels of the system, the “co-creation” of services “with” users and not “for” them and the development of improved leadership capabilities (Bason, 2010).

Needless to say, that this new perspective in the public service innovation has received a major impulse from the development of ICT tools. Osimo (2008) reviewing the relevance of web 2.0 applications in the government context also highlights that the impact of web 2.0 on public services is mainly characterised by a more active user role.

In order to fully understand the phenomenon of collaborative e-government the authors position it towards the e-democracy and co-production of public services research field.

2.1. e-democracy

e-democracy refers to the use of information and communication technology (ICT) in order to involve citizens in the political debate and more broadly in the policy-making process. e-democracy has been seen as a cure for results of the democratic deficit (increasing number of citizens not interested in following the political debate and even abdicating from their basic democratic right, e.g. voting) (Coleman, Macintosh, & Laljee, 2005). More recently, it is perceived also as a way to empower citizens (with a new label, namely e-participation) by offering them a possibility to actively participate in the decision-making process in contrary to the more passive e-voting concept (use of ICT to simplify and make more efficient the voting process). Currently, e-democracy remains a strongly practice-oriented field. Therefore there are a number of reports and studies aimed at collecting and analysing practices under different perspective to identify directions and trend of developments. Yet, Coleman et al. (2005) literature review shows that there is very little objective evidence about success factors of e-democracy initiatives. Rather, literature tends to provide some basic principles and recommendations for best practices (Kearns, Bend, & Stern, 2002).

¹ <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tin00079&plugin=1> and http://scoreboard.lod2.eu/index.php?scenario=2&indicators%5B%5D=i_igov12rt+IND_TOTAL+%25_ind&countries%5B%5D=EU27#_chart.

² The study aimed to define the collaborative e-Government, answer how Europe is positioned against the US and Australia; how the collaborative production is implemented in practice and what are its barriers and drivers; why it is important in terms of socio-economic impact; and finally what should be done by government to increase its positive impact.

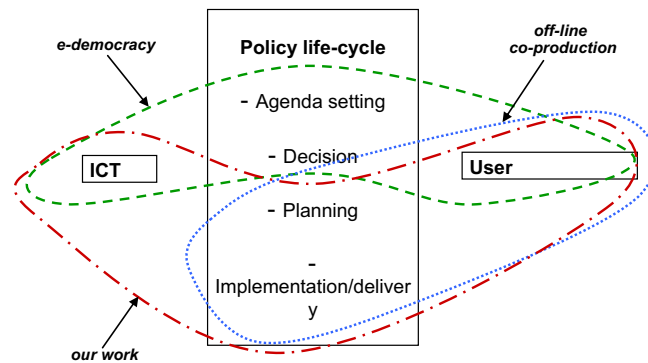


Fig. 1. Collaborative production of online public services vs e-democracy and offline co-production of public services.

2.2. Co-production in public services

Co-production emerged as a concept as early as the 70s to identify an approach where services are delivered with a high degree of users' involvement. Recently, with the advent of e-services, the researchers showed a renewed interest in this idea (Bovaird, 2007). It can be defined as “delivering public services in an equal and reciprocal relationship between professionals, people using services, their families and their neighbours. Where activities are coproduced in this way, both services and neighbourhoods become far more effective agents of change.” (Boyle & Harris, 2009).

Horne and Shirley (2009) argue that co-production is more suitable for relational services (i.e., services in which there is direct personal interaction between public officials and service users) rather than transactional services (very often delivered electronically). Others disagree demonstrating that the focus of co-production is on improving effectiveness of services and exploiting the users' collaboration and that both can be obtained also in transactional services (Alford, 2009).

An important for this article purposes typology of co-production of public services is introduced by Loffler and Watt (2009) who distinguish additive co-production and substitutive co-production. The former services add more user and community support to professionals' interventions and the latter substitute professional works and resources by user and community' efforts. In other words, additive co-production introduces new services, potentially making the public sector more responsive to the users needs. Substitutive co-production is the potential source of savings in public services delivery, where paid resources (professionals) are substituted by volunteers (interested citizens).

Another dimension, orthogonal to the two dimensions presented above discerns between personal and collaborative co-production. In personal (or individual) co-production the greatest benefits are gained by individual users of the services (Barker, 2010; Needham, 2009). Collective (or community) co-production benefits communities (particularly local ones) and social networks (Griffiths & Foley, 2009). The latter form, more pertinent for this research, adds to the vertical relation with public administration, the horizontal relationships between citizens, e.g. patients running peer support groups or participative budgeting initiatives where citizens collaboratively create local budgets (Griffiths & Foley, 2009). This kind of co-production underlines the equal relationship between the administration and the users/co-producers as well as recognises the additional relationships created between citizens thanks to the collaboration. Therefore, Griffiths and Foley (2009) claim that the collective co-production shows the highest potential of transformation in the public service delivery because of social capital increase.

The potential high impact of co-production is related also to the unique skills that citizens can bring into this enhanced collaboration, e.g. in health and medicine services (Eysenbach, 2008).

To summarise, the section introduced the concept of e-democracy as the use of ICT for enhanced citizen engagement in the early phases of the policy lifecycle (i.e., agenda setting and decision processes). Subsequently the section discussed the role of co-production in traditional public services, highlighting its role in promoting the active role of service users in the middle part of policy lifecycle (particularly implementation/service delivery). It allows the authors to suitably position the collaborative as complementary to the two fields discussed above (Fig. 1).

3. Defining collaborative e-government

The notion of collaborative production in e-government is a loose concept that unites different interrelated aspects. As presented in previous sections it stems from the recent developments in web-enabled co-production as well as deeply rooted in the offline co-production tradition.

Collaborative production in e-government has been defined in several overlapping ways and terms, namely Government 2.0 (Eggers, 2005), Open Government,³ Public Services 2.0,⁴ government as a platform (O' Reilly, 2005), Tao government

³ <http://www.whitehouse.gov/open/documents/open-government-directive>.

⁴ <http://www.charlesleadbeater.net/archive/public-services-20.aspx>.

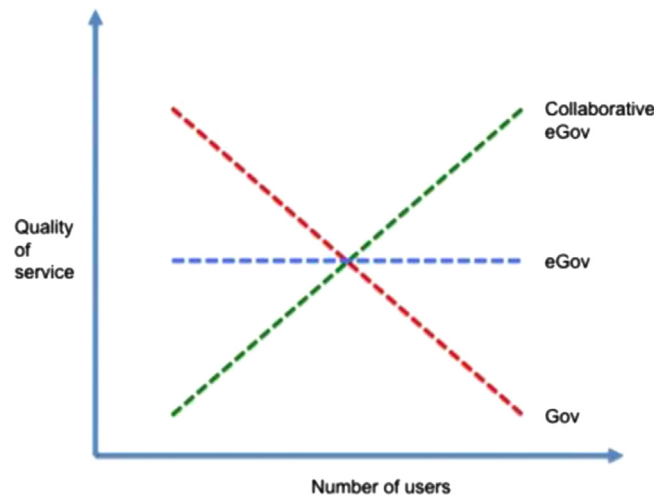


Fig. 2. Relation between quality of services and number of users in government, e-government and collaborative e-government services.

(Codagnone & Osimo, 2008), networked government (Goldsmith & Eggers, 2004), and Wiki Government (Noveck, 2010). All those definitions, if one tailors them to suit only the service production (and not other stages of the policy cycle) list a set of common characteristics. Those services form an open, participative and equal government–citizen relation, are proactive and user-focused (rather than provider-focused and passive), innovative and based on low costs of entry for external innovation (rarely originated by the government itself). Yet, those definitions miss one important point of the web 2.0 service delivery, namely that those services use public data.

Since the authors do not believe that at this stage of research and practice, collaborative approaches to online public sector services delivery can be minutely defined, they provide only an ostensive definition of the phenomenon by proposing a taxonomy, scoping the breadth of collaborative production.

This initial taxonomy of collaborative e-government services underlines the two architectural components: data production and service provision. This taxonomy is therefore built on two axes – type of the service provider (government, civil society or business) and type of the data source (government, citizens). In the realm of collaborative e-government as defined by authors, there are three initiators of the collaborative services: created and run by government, by civil society (individuals or NGOs) or by private sector with the aim of profit. Those services use two types of data – government data or data provided by citizens (see Table 1).

The paper explores on a limited sets of cases what does it mean to collaboratively deliver public services, what are the success factors based on the cases under study and what are the incentives for service providers (other than public administration); citizens as users and public administration. Our paper is meant as a scoping study before a more quantitative research on this phenomenon, and refers to the following research question:

What are the most important incentives and success factors in various types of collaborative approaches to public sector innovation?

4. Research design

Given the scoping aim of the exercise, the case study approach was deemed most appropriate. Therefore methodology for data collection comprised six limited case studies. The case studies were instrumental to obtain an in-depth view of the collaborative production and draw first conclusions (Stake, 1995). In this research method, the relevance of the case study is more important than its generalisation force (Strauss & Corbin, 1990). The case studies were therefore chosen to represent different facets of collaborative production as presented in Table 1. The authors acknowledge that due to limited set of case studies and their non-representativeness the conclusions should be taken with care and have to be verified in future quantitative research.

Table 1
Taxonomy of collaborative e-government

Data source	Service provider		
	Government	Civil society	Private sector
Government	Civil servants' innovation	Online and mobile apps and visualisations	Private–public partnerships
Citizens	Crowdsourcing	Self-help and social innovation	Crowdsourcing

The data for the case studies were obtained through desk research and semi-structured phone interviews with project initiators (at least one per case) and users (emails exchanges or phone interviews, at least two users per case). The case studies reports were sent back to the interviewees and revised accordingly.

The study team identified six examples of collaborative production to use as case studies, each representing one box of the table (see Table 1). Those case studies are subsequently described in more detail.

5. Case studies

- A. Services initiated by government built on government data are a particular type of collaborative production, as they are initiated either by the governmental structure (top-down approach) or by an inspired civil servant (middle layer approach). The example under study was a widget displaying statistical government data. ISTAT widget is a sidebar plug-in for Wordpress displaying real-time data on residents' population (total, per gender, net migration, etc.) from ISTAT – Italian Statistics Office⁵ in Italian municipalities. It was created by Vincenzo Patrino, an IT and Web Technologies specialist at Italian National Statistical Office (ISTAT) at his own initiative. At the time of the analysis, the application has been downloaded 343 times (2011). Yet, since as a widget it was installed on several Italian websites, its up-take is much higher since users are making use of the data on different location sites. The widget was created as a proof of concept to show new dissemination channels, ways of engaging citizens' with data overlooked by public administration.
- B. Services initiated by government and making use of citizens' data are often based on crowdsourcing principle. This strategy is often used in the beginning and end of the policy cycle (policy design and policy evaluation). The case study presents an example from cultural heritage services – Digitalkoot.⁶ Digitalkoot is a crowdsourcing platform based on two Internet games helping to correct digitalised historical content of the National Library of Finland archives. It combines entertainment and volunteer work using the crowdsourcing effort of the wider public. Microtask, an innovative SME offering microtasking services designed it for the National Library of Finland and both organisation worked on the development of the services as a joint project. Online volunteers playing online games helped to correct digitalised historical content. Over nearly two years the project attracted 110,000 participants who completed over 8 million word fixing tasks. The service was discontinued in November 2012.
- C. Services initiated by civil society built on open government data are first and foremost online and mobile applications and visualisations. The example under study was a repository of local government data – OpenlyLocal developed by Chris Taggart. Openly Local (UK) is a project aimed to develop an open and unified way of accessing Local Government information with the local government spending dashboard (openlylocal.com). It is a website offering information on local councils' data in an open free for re-use format (including commercial re-use). The website had three thousand visitors a day in 2011.
- D. Collaborative e-government includes also services provided by private companies that make use of government data (mostly data available for free but sometimes also available upon paid licences). This case study focuses on private–public partnership initiative – Google Transit.⁷ Google Transit on Google Maps is a public transportation planning tool offering information from public transport agencies combined with Google maps localisation. In March 2013 it was covering more than 500 cities worldwide⁷. STIB (Brussels public transport provider) join the Partner Programme in 2011. As Google does not make available its traffic data, the take-up is difficult to estimated. Nevertheless, in 2011 50% of surveyed passengers in Brussels who used journey planning tools chose the Google tool, another 50% – STIB's own journey planner (based on STIB internal user survey).
- E. Another type of e-government online collaborative services are run by civil society and based on citizen data. The identified case study was a self-help social network – Activemobs⁸ designed to nudge positive behaviour (UK). It was created through partnership between the Design Council (enterprising charity), organisation promoting design and innovation for the public good, and Kent County Council (KCC). The network helps people to form groups, or mobs, of friends, relatives and neighbours to support a sustainable change to a healthier lifestyle. Initially, Activemobs was conceived as an open platform that provided web-based tools to help people find, suggest and start 'mobs' as well as to set collective goals, record activity and schedule meetings (www.activemob.com). Nevertheless, when the project management was handed over to KCC, it has transformed into a more controlled and targeted service with an emphasis on commissioned interventions (defined by the government and not by the citizens).
- F. Finally, there are services provided by private sector that make use of citizen data. Those services are often crowdsourced. The case study was an example of a public complaint system – SeeClickFix. SeeClickFix.com (SCF) is a US web-based service designed to help citizens report non-emergency issues in their neighbourhood. The service is integrated into the social networking services Twitter and Facebook and provides map-based reporting widgets for government and newspaper websites. Governments receive an automated email alert when an issue is reported and can chose to respond directly on the SeeClickFix.com platform. Over 100,000 issues reports were submitted in 2011 and the numbers were doubled every year until 2011.

⁵ The application is on Wordpress wordpress.org/extend/plugins/resident-population-in-italian-municipalities.

⁶ www.digitalkoot.fi.

⁷ www.google.com/intl/en/landing/transit/#mdy.

⁸ www.participle.net/projects/view/7/104.

Table 2

The case studies inscribed into the taxonomy.

Data source	Service provider		
	Government	Civil society (citizens and NGOs)	Private sector
Government	ISTAT widget (IT)	Openly Local (UK)	Google Transit (global/BE case)
Citizens	Digitalkoot (FI)	Activemobs (UK)	SeeClickfix (US)

Table 3

Enabling conditions for collaborative e-government services.

Enabling conditions
<ul style="list-style-type: none"> ● Low cost of setup ● Low cost of failure and fast failure (fail small, fast and forward) ● Often no need for permission (open data)

Table 4

Incentives for innovators.

Incentives for innovators
<ul style="list-style-type: none"> ● Desire to make a difference ● Opportunities for visibility ● Possible financial gain

6. Results and discussion

The case studies give a very wide picture of collaborative production, from small individual initiatives targeted at specific type of users, such as the small ISTAT widget to soaring business projects aimed at all citizens (SeeClickFix) (see Table 2). This section highlights some characteristics of collaborative services, as based on the cases analysis, focusing on enabling conditions for those services, incentives for the participating parties and initiatives' success factors. The discussion closes with an attempt to define the specific place of the collaborative e-government services in collaborative production of e-services and its transformative potential for traditional e-government services.

6.1. Enabling conditions

The low cost of online and mobile application set-up allows for testing new ideas in a beta version. Current technology enables creating a full-fledge service during one-day hackathon. This approach largely differs from the public sector IT projects. Contrary to costly and prolonged government undertakings, the developing process is very fast and agile. In case of low user interest, the decision of discontinuing a services can be made quickly as not a lot of investment has been made (fail fast approach). Digitalkoot managed to engage 8000 citizens during first four months of the service, SeeClickFix issued over 100,000 reports in 2011 and its results doubled every year. Yet, their success was possible also thanks to hundreds of trials that did not succeed.

What is very interesting developers of new collaborative e-government services consciously apply *don't ask for permission; apologize later* rule in order not to be trapped into an endless process of approvals and changes into their initial idea. Chris Taggart from OpenlyLocal thought that he would be forced to shut the website down just after its launch but to his surprise he received a lot of good feedback not only from citizens (local bloggers, interested citizens) but also from civil servants from local councils. Other initiatives prove that the collaboration with public administration may be a long process. Digitalkoot developers needed 4–5 months in to kick off the services but the initial negotiations with the public service party took twice this time (for a summary of enabling conditions see Table 3).

6.2. Incentives for innovators and service providers

The advent of web and mobile applications and its roaring success encouraged developers to experiment with services targeted at citizens. The innovators are often driven by the desire to make a difference – Chris Taggart set up the OpenlyLocal website a proof of concept after having problems to find data on the local councils websites. Also ISTAT widget was created in the spare time to prove that a more user-friendly and viral way of presenting statistical data is possible. SeeClickfix, a public complaint report and track system first version was set up over a weekend by friends who were

Table 5
Incentives for citizen.

Incentives for citizens
<ul style="list-style-type: none"> ● benefits are tangible ● low barrier to entry ● gamification ● social and local anchor ● different ways of demonstrating citizenship ● building a community of users – strong affinity ● more control over the service

disheartened by the lack of responsiveness of their local government. It shows that those services are sparked by a non-fulfilled need or a badly designed public service.

After all, those merely back-of-the-envelope projects were transformed into popular and innovative services that often have transformed the way we envisaged public service delivery. For example, SeeClickFix brought a greater transparency in citizens–government communications thanks to a clear system of complaint reporting combined with an effective tracking system. It offered an alternative of the blackbox of the citizen–government correspondence inherent to the internal public administration channels. Google Transit thanks to a multi-modal functionality (car, public transport, walking directions) facilitates day-to-day transport puzzle.

Apart from unsatisfied needs, there is also an even more personal driver that incentivises web developers. The successful services give their founders a lot of visibility, e.g. Digitalkoot was proposed as a free service by a private company who wanted to test an innovative solution in a non-commercial environment in return for some publicity. Last but not least those services may offer a possibility of a financial gain, SeeClickFix operates with profit thanks to its premium system and Digitalkoot's success prompted the company to open negotiations with interested libraries from other European countries (for a summary of incentives see Table 4).

6.3. Incentives for users

Services most prone to collaboration are those “where the benefits are felt mainly by the individual citizens taking part in them, such as health and social care, education, housing and employment and other welfare services” (Barker, 2010). All the services presented offer citizens tangible benefits felt directly by their users – instant information about traffic (Google Transit) or a fast response from government on SeeClickFix. Most of the projects under study managed to capture users that were not interested in participation in public services or public policy before. The only exception being OpenlyLocal that mostly engages with citizens (bloggers, data journalists, open data activists) that are already interested in local government proceedings or open data in general. Still, no service demanded prerequisite knowledge or prior interest in policy-making and even OpenlyLocal offering local policy information had a chance in attracting non policy-savvy citizens.

Thus services such as Google Transit, SeeClickFix or ISTAT widget attract users by its local anchor. A big driver for a high take-up is also the gamification of a service. The Digitalkoot case owes its success to features already tested in the commercial field – games with a purpose (GWP) (van Ahn & Dabbish, 2008). Thanks to the use of simple web-based games combined with a players ranking, Finnish citizens were prompt to volunteer to digitalise the content of the National Library.⁹ SeeClickFix also rewards the most active contributors by displaying a ranking.

Also those collaborative online tools provide the citizens with choices of different level of participation and “allow citizens to demonstrate citizenship in diverse ways” (Chadwick, 2009).

Therefore those who are not directly interested in public service innovation may insofar add their contribution. Some citizens would be content with staying on the e-enabling level, i.e. having access to the information they need (use the ISTAT widget, browse through OpenlyLocal, SeeClickFix or GoogleTransit). Other users would actively help to digitalise the Finnish National Library collection, signal a problem in their vicinity on the SeeClickFix platform or organise a self-help group on ActiveMobs. Ultimately, some of them may become service innovators and build an entirely new service.

Collaborative services create also relations between its users. As mentioned before, they add to the vertical relation of a citizen with public administration (Griffiths & Foley, 2009), the horizontal relationships between citizens, which are formed during this activity. For example, Activmobs participants while exercising together were building at the same time social capital and increasing the social wellbeing.

Finally, electronic collaborative services give the citizens the notion of control over the process. The information and even the communication process becomes public and instantaneous (for a summary of incentives see Table 5).

⁹ Even if similar initiatives have been already introduced in Australia, the US and Netherlands (Oomen & Aroyo, 2010) still, this initiative had a different approach to motivating users. The Australian programme shows full articles to volunteers, who then fix them line by line whereby the Finnish project lured the users by offering a game experience.

Table 6
Incentives for public administration.

Incentives for public administration
<ul style="list-style-type: none"> ● better definition of users needs ● higher take-up than traditional e-government services ● new or better public services ● taking advantage of a free resources – citizens' knowledge, skills and time ● more trust in government

6.4. Specific incentives for public administration

Even though public administration share the incentives already discussed in the section *Incentives for providers*, there are some incentives that are intrinsic for public administration. The first benefit comes from the better definition of users needs as the online service is co-designed by citizens. As mentioned before, one of the main problems in the introduction of digital technologies in public services (e-government) is the low level of adoption. Public sector has struggled in the recent years to increase the take-up. The co-production-based services, especially those developed in a bottom-up approach, start from a well-identified user need. The ideation and development of the service is already driven by the user need and the participative collaboration of the users make sure the user-centered approach is maintained, and possibly improved during the service life-cycle.

The collaborative e-government services may also bring significant reduction of costs. Participation of users in the delivery process can bring potential savings as citizens can execute part of the work as it was in case of Digitalkoot volunteers.

What is also important, public services can benefit from a unique set of skills that citizens can offer. Collaborative e-government service delivery enables to tap into this potential. Innovative developers have proficient IT skills. Wide take-up guarantees access to very specific, niche knowledge (patients self-help groups, see for example Eysenbach, 2008). Further to that, this often tacit and informal knowledge is the important source of innovation (Polanyi, 1966). Individuals are able to share and build on this kind of knowledge in particular through communities of practices as shows the example of Activmobs or SeeClickFix. Seeclickfix is an example of the benefits of pervasive geographic coverage that citizens can bring into the day-to-day management of the public space. Those services produce also a lot of data that are normally used for this specific service (e.g. alert the administration about something to be fixed) but can be also used for long-term planning (refurbishment plan for entire city areas) or understanding of other phenomena (e.g. areas in which vandalism is more concentrated need more attention from social services). In consequence, government can make use of this unique knowledge to improve the quality of its other services. Needless to say that another citizens' strength lies in the sheer amount of contributions they are able to provide. Digitalkoot players in only first four months have completed tasks that amounted to three person-years. Finally, the civic participation in the public service delivery may result at the end in more trust in government (for a summary of incentives see Table 6).

6.5. Success factors

After the analysis of the incentives for each of the groups of participants, the authors identify success factors for the collaborative e-government projects. Before we list the success factors, a caveat has to be made. The sheer numbers of a service take-up should not be treated as a good measure of its success. It may be argued that the number of collaborative e-government adopters is low. Well known examples such as Peer-to-patent or PatientOpinion engage only a few thousand users (Osimo, 2008) and the case studies take-up numbers concur with those low estimations. Still, one has to consider that the use of collaborative approach in service delivery is still in its infancy and that sometime the numbers may not represent the overall impact. For example in Activemobs, even if the numbers of people in a specific mob is not very high, their influence (about healthier lifestyle) on other people connected through other social relations, can be very high (spread of obesity in social networks). It is also important to look at intangible issues (which touch upon wider group of citizens) such as democracy, trust, legitimacy and social well-being.

The most important success factor, in authors view, is to begin from a well-defined need. All of the analysed services (with the exception of Goggle Transit) tend not to replace a government service (and even Google service adds the multi-modal functionality to a simple public transport planner). Those services have to represent a direct benefit for users, i.e. offer them tangible rewards in exchange for their engagement (resolving a local problem in SeeClickFix or having a good time playing an amusing game). The public services in order to become popular similar to other online and mobile applications should offer local and contextual information, have a social factor and offer real-time feedback (The IDC and Appcelerator 2011 survey showed that the emerging trend of apps is the rule of always connected, personal, and contextual¹⁰).

¹⁰ <http://www.appcelerator.com/company/survey-results/mobile-developer-report-january-2011>.

Table 7
Success factors.

Success factors
<ul style="list-style-type: none"> ● Well-defined need ● Direct benefits for citizens ● Fail fast approach ● Local and/or social anchor ● Real-time feedback ● Getting better with increasing number of users ● Leveraging unique contribution from citizens

Yet, one of the most interesting success factors of the collaborative services is also its unique characteristic. Above all, those services exist, grow and improve thanks to users' collaboration. The users input has a big impact on service quality and its outcome. For example, the more citizens play with Digitalkoot the better catalogue the Library of Finland can provide. The more information is provided by citizens on the SeeClickFix website, the more information the public administration gets on the problems in the public space. Also the increase of take-up and transparency of the process puts more pressure on the public administration and problems are solved faster. OpenlyLocal also counts on users' input linking local governments budgets and businesses and charities benefiting from public contracts.

Eventually, online collaboration permits users to contribute at their convenience time convenient irrespective of government's working hours. All those services thrive thanks to the citizens' adoption and not by a pro-active use by governments.

Traditionally, the quality of an offline public service is inversely proportional to number of users. In the domain of health or education, countries are compared in terms of hospital beds per inhabitant, or teachers per number of pupils. In this case, when expenditure remains constant, increase in usage decreases the quality of the services. In the e-government case, this increase in uptake does not have a negative impact on service levels. The quality of an online training is not affected by the upsurge of users. With the same expenditure, the quality of service remains constant even with increase in uptake (see Fig. 2).

In collaborative e-services, including collaborative e-government services, additional usage increases its quality. The continuous beta mode of collaborative e-services, i.e. that products and services are continually under construction, exemplifies well this relation.

Finally, as discussed already, the collaborative services thrive if they can leverage the unique contribution of citizens (IT skills of developers, micro-expertise, user experience, pervasive geographic coverage, trust in networks and free and scalable source of human effort) (for a summary of success factors see Table 7).

7. Conclusions

Collaborative production of e-government services is very similar to other collaborative e-services that are part of the growing digital social innovation phenomenon. They are all designed in the way that effectively harnesses the citizens' potential. Services susceptible to collaboration are those that require human computing efforts, i.e. many non-complicated tasks (e.g. citizen science projects – Zooniverse¹¹) or citizens' free time in general (e.g. time banks). Those services also profit from unique citizens' skills and their propensity to share their competencies. Finally, they build social capital by creating dense social relations based on reciprocity. Still, the collaborative e-government services have a special characteristic in the collaborative e-services realm. Those services are focused on public goods delivery (health, education, public transport) and are meant to change the traditional government services by engaging in an open dialogue with public administration about the best way to deliver those services. The potential of collaborative e-government services leads to the question: how to turn traditional e-government services into more collaborative projects? From the scoping research of the authors, one can see that the collaborative services are currently of rather additive nature, i.e. are results of efforts aiming at extending the “portfolio” of public services, capturing new group of users and citizens and/or satisfying needs not currently covered by the public sector. Therefore, the transforming power of collaborative production of services lies not (yet) in replacing the traditional services but in building additional (more focused) services on top of general services directed at all citizens.

What is more, the collaboration concentrates on tangible and almost immediate results for citizens. Therefore it spans not the whole spectrum of public service delivery but those services that can best benefit from the citizens' engagement and provide them with concrete benefits (better information, evidence-made decisions, better health or simply pleasure of an online game). This new innovation model for public services does not rely on large scale, long-term projects that struggle to meet the users' needs and aim at transforming the entire service delivery process. The web innovation models are smaller, with rapid development cycles and short feedback loops with users (“permanent beta”). The technological costs are kept to the minimum, thanks to free and open sources software and low costs of hardware, software and hosting. Even if most of

¹¹ <https://www.zooniverse.org>.

these projects will fail and will not be sustainable in the long term, related costs of failure are very low. This is even more important in times of crisis. Collaborative e-government services offer governments a way to increase the quality of services without substantial additional investments. They are also sandboxes for learning best solutions for spending public money and avoiding bad investments.

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