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The story of open public data: exploring the myth of public's interest

1 Introduction

The European commission argues that EU can make economic benefits by up to €40 billion a year by making public data available for re-use (European Commission, 2011). But public open data is not only considered an economic asset that can contribute to 'new products, services, and efficiency gains, it is also seen as a key driver in the promotion of transparency (ibid). By open up public data there will hopefully be an increase in citizen participation in political and social life (ibid). This view on the benefits of public open data is also found in research. Albano (2013) argues for instance that public open data increases transparency, collaboration, participation, economic and social value. These benefits will result from innovative service development (Shadbolt & O'Hara, 2013).

Open public data can be powerful, plentiful, and relevant to citizens' concerns (Shadbolt & O'Hara, 2013) but there is a need to extend knowledge on strategies to facilitate and attract businesses and citizens to participate, collaborate and re-use public data (Chan, 2013). The open data agenda is based on an assumption of citizens' interest and willingness to take part. One strategy proposed for increasing citizen participation and work with the open public data re-use agenda is to arrange innovation competitions where public open data is used for the development of new information services (European Commission, 2011; Hjalmarsson et al. 2012). However, Kuk & Davies (2011) argue that 'Grand claims for the service revolutions that open data may bring about are overstated; though more modest claims can be grounded in evidence.' Following that, previous research has noted a lack of empirical data concerning public open data (Alanzi & Chatfield, 2012). The aim of this paper is therefore to get a better understanding of the challenges of organizing an innovation competition for promoting citizen re-use of open public data. The empirical material is based on a case study where we participated in arranging and following an innovation competition. The data is analysed using a storytelling approach (Kendall & Kendall, 2012) allowing for interpretations of how the project group constructs the challenges of open public data re-use.

2 Innovation competitions and challenges with re-use of open public data

One way of promoting citizens to re-use open public data, and develop new digital products and services, is to arrange innovation competitions (Kuk & Davis, 2011; Hjalmarsson, 2012). Innovation competitions have been used as a way of developing digital innovations, i.e., 'the carrying out of new combinations of digital and physical components to produce novel products' (Yoo et al, 2010). There are a number of reasons why citizens are attracted to the re-use of open data. Kuk & Davies (2011) illustrate how the open data user enter an innovation competition because he or she wants an answer relating to a specific need or problems, improve government services, highlight the potential of re-using public open data, or seek financial rewards (Kuk & Davis, 2011).

However, it is not so easy for citizens to make use open public data. The challenges of open public data re-use are usually concentrated on problems such as citizen's lack of technical competence (Graves and Hendler (2013), or problems understanding the data (e.g., Artigas & Chun, 2013; Graves & Hendler). Graves and Hendler (2013) claim for instance that there is an important portion of the population who could benefit from the use of public data but are unable do so because they cannot perform the essential operations needed to collect, process, merge and make sense of the data. Besides, data are frequently of poor quality (Kuk & Davis, 2011), and offered in heterogeneous formats missing clear semantics that clarify what the data describe (Hoxha & Brahaj, 2011). According to a number of researchers, a key challenge is for users to make sense of the data (Artigas & Chun, 2013; Graves & Hendler, 2013; De Cesare et al., 2013; Cornford et al., 2013; Hoxha & Brahaj, 2011). Use of open data

requires knowledge found in different communities, that is, across core stakeholder groups in the public data community (Ojo & Janssen, 2013). Cornford et al. (2013) stated that the availability of public data solves nothing. The data needs to be interpreted and interpretation is always a function of a collective (Cornford et al., 2013; Ojo & Janssen, 2013). To make it easier to understand the data, one proposed solution is visualization (Artigas & Chun, 2013; Graves & Hendler, 2013).

Apart from challenges related to the citizen, there are also organisational challenges coupled with open public data. There is for instance a challenge due to the complexity of the public information ecosystem (Ding et al., 2012). Many researchers are therefore addressing the need for integration and linking (Heise & Naumann, 2012; Kaschesky & Selmi, 2013; Böhm et al., 2012), where different data sets needs to be linked and connected to other data sets and services. Linking data is seen as fruitful for promoting re-use and transparency (Heise & Naumann, 2012; Böhm et al., 2012). For instance, Lofi and Krestel (2012) proposed combining information processing techniques with micro-blogging to increase transparency in political processes and to encourage internet users to participate in local politics.

3 Research approach

The purpose of this research is to understand the challenges of arranging an open public data competition. Following an interpretative tradition, we have chosen storytelling (Kendall & Kendall, 2012) as a way to study how the challenges of open public data are constructed from the perspective of the project group. Underlying the idea of storytelling and narrative inquiry we find the assumption that individuals' sense making and construction of meaning can be captured through the stories they tell (Bailey & Tilley, 2002). Considering the need to unfold the organizational story (Kendall & Kendall, 2012) of the studied innovation competition, we therefore conducted this research as a case study (Yin, 1994; Eisenhardt & Graebner, 2007). The case concerns an innovation competition where citizens were invited to use open public data as basis for developing apps and external web-solutions (see section 4 for more details). The competition was arranged in 2012 and in 2013 as a public-private-business partnership. The case provided us with excellent access to the workings of an open innovation competition as one of the authors participated in 2012 as part of the project group arranging the completion, and in 2013 she could follow the competition as an observer.

3.1 Data Collection

The empirical material is based on a collection of different sources such as interviews, participation, observations, documents, and informal discussions between and during meetings. The participation consisted of 17 project events (Table 1) from the first idea until the evaluation of the innovation competition. The participation material consisted mainly of notes¹. The notes were minutes from meetings, i.e. they were records of the happenings during the meeting and the decisions taken from April 2012 to December 2013, a period of 20 months.

We also carried out interviews (n=7, Table 2) with the members of the project group as well as an interview with a person with extensive experience in arrangement open data competitions. The purpose of the interviews was to get multiple perspectives of the events (Creswell, 2007). The interviews were performed after the competitions first setup in 2012 and before the second setup in 2013. Using our experience of participating in the organization of the competition as a basis for the interviews, we could follow up events, and in more detail ask the respondents to narrate about their experiences of participating in the project and their work with promoting open public data. We asked questions to keep the story going and these questions were developed throughout the interview to stimulate further reasoning by alluding to the topic discussed. In average, the interviews lasted for about one hour each and they were recorded and transcribed.

¹ One of 18 project meetings was recorded and transcribed.

Table 1 Data collection – competition

Project activities	When
Seminar arranged by the County Administrative Board about Open Data (which led to the idea to the competition)	April 2012
First meeting with the representative from the municipality (aim, creating the project and a project group)	May 2012
First meeting with one of the representatives from the university (aim, creating the project and a project group)	May 2012
Second meeting with the representative from the municipality (aim, creating the project and a project group)	June 2012
Second meeting with one of the representatives from the university (aim, creating the project and a project group)	August 2012
First project meeting (aim, creating the project and a project group)	September 2012
Second project meeting (aim, planning the project)	September 2012
Third project meeting (aim, planning the project)	October 2012
Fourth project meeting (aim, planning the project)	October 2012
Fifth project meeting (aim, planning the project)	October 2012
Kick-off at the university (aim, launching the competition)	November 2012
Kick-off at the university (aim, launching the competition)	October 2013
Lunch evaluation	October 2013
Hackathon held during the Global Entrepreneurship Week	November 2013
Jury work	November 2013
Price Award Ceremony	November 2013
Evaluation meeting	December 2013

Table 2 Interviews

Interviews	When
Interview with the representative from the County Administrative Board	December 2012
Telephone interview with representative from Open Stockholm Award, an already completed competition	September 2012
Interview with the representative from the municipality	December 2012
Interview with the representative from the IT consultant business	September 2013
Interview with the project leader from the university	September 2013
Interview with the representative from the municipality	October 2013
Interview with the representative from the County Administrative Board	October 2013

3.2 Data analysis

We analyse the story from multiple perspectives, where each respondent contribute with their story (Bailey & Tilley, 2002). The function of the story of the competition is experiential (Kendall & Kendall, 2012), i.e., to retell the story as it was experienced by the different storytellers. Our own observations have been used as a way of linking the individual stories, and placing them in the organizational context. In a storytelling approach, the story itself is the unit of analysis (Kendall & Kendall, 2012). Following Kendall & Kendall (2012) we have investigated three mechanisms relating to the story: the purpose of the story ('through elaboration of the myth'), the telling of the story ('through vividness'), and the order of the story ('through the use of episodes'). A storyline was used as a way of elaborating the three mechanisms (Kendall & Kendall, 2012), and we have mapped the events from the idea of the competition in 2012 until right after the 2013 competition (see Appendix A).

4 The innovation competition case

The innovation competition studied in this paper was organized in a Swedish municipality, i.e. on local government level. The municipality has a population of approximately 140 000 citizens making it the 7th largest municipality in Sweden. The municipality decided to include work with open data in their strategies on how to carry out the public work: 'To contribute to openness, transparency and easily accessible service [...] the municipality should as far as possible create open data that is free and without limiting licenses. This allows for the development of apps and external web solutions rooted in users' different needs.' (Örebro municipality, 2012)

The case studied is a local business-government-state effort of making public data available and promoting its re-use. The approach to promote re-use was to arrange an open innovation competition. This competition was arranged twice, in 2012 and 2013 and there are plans for arranging it in 2014 too. The initiative for the competition was taken in spring 2012 after an open data seminar held at the County Administrative Board. After the seminar one of the authors of this paper arranged a meeting with a representative from the municipality who on a daily basis works with open public data. Together, we decided to hold a competition to promote re-use of public data. To create the competition a project group was needed. The next task was, thus, to find people interested in taking part. At the university the department working with external relations participated. Besides, also the County Administrative Board and a local IT business became involved. The competition was, hence, a result of collaboration between the university, the municipality, the County Administrative Board and the local IT consultant business. There were different reasons for participating. We, as researchers, wanted to contribute to research on public open data, the department of external relations thought that it was in line with their existing work with open innovations, the municipality participated because the municipality saw open data as a strategically important question, the County Administrative Board was involved because of their work with the Digital Agenda, and the local IT business saw it as an opportunity to promote the own company and brand.

The first competition was arranged in autumn 2012. The preparations consisted of 12 project meetings. Public data was provided by the university, some of the municipalities in the county and the County Administrative Board. Regarding the selection of data we provided the contestants with maps, invoices, lists of schools, fishing waters, nursing homes, car and bicycle traffic flows, income support, grades in school, course evaluation data, visitor data to the largest municipality in the region and minutes from the city council for several of the municipalities in the region, etc.

To market the competition social media (Facebook, Twitter and LinkedIn) was used together with a web page. Besides, there was advertisement in the local newspaper as well as posters put up at the project members' work places and at the campus at the university. Also, e-mails were sent out through the Chamber of Commerce and Industry to all IT companies in the region. At the university we talked to students, asked teachers to inform before class and we sent out information about the competition through the university's learning system. Also, a Kick-off and a Hackathon was arranged at the university, i.e., an event in which programmers and others meet to develop software and to be inspired by each other.

In 2012 the competition was mainly promoted through social media, the web page, and advertising. The promotion was, thus, indirect trying to reach out to a broad audience. With this we, however, did not succeed. At the Kick-off there were only a handful of people (9) and none of the participants showed any interest in the Hackathon. When the registration period expired we had very few contestants, which led to the decision to extend the registration period. This turned, sadly, out to be counter-productive as it did not result in any new contestants, just the loss of some previously interested. The contestants could participate in two categories: a) by developing a completed service, or b) by sending in an idea to a service that could be developed in the future. In total, we received six contributions, four apps and two ideas. Some of these contributions were, however, the result of pressure, i.e. people were directly asked to contribute. In the project group we thought that the marketing that we had done would have been enough, but we were forced to learn the lesson that it is difficult to reach out with the public data agenda and that there is a need for even more marketing.

In autumn of 2013 the competition was arranged again because the strategy was to make it an annual event. This year no researchers were involved in organizing the competition. However, one of the authors of this paper attended the Kick-off and Hackathon as observer, as well as took part in the jury work when the competition was completed to get insight into the outcome of it. In 2013 the project group consisted of pretty much the same people as previous year, i.e. the project leader from the university's department of external relations, the representative from the municipality, and the

representative from the IT consultant business. However, the representative from the County Administrative Board changed, and a representative from the Chamber of Commerce and Industry was added to the group because of the wish to reach out through the Chamber of Commerce and Industry's business networks. The strategy chosen, by project management was to implement the competition so it could be coordinated with other activities within the same period of time. The reason was to make the competition visible to an existing audience, i.e., to boost from established events. The Hackathon, for instance, was this year held during the Global Entrepreneurship Week and the prize award ceremony was held at the national conference for the Digital Agenda.

When launching the competition 2013 there were, hence, some lessons learned and consequently also changes. One lesson was that the marketing needed to be more direct. One strategy chosen was therefore to turn to secondary schools in the region. The hope was that the pupils at secondary schools would be easier to reach out to if they could have the possibility to work with their contributions on school time. This was a hope by project management, which they succeeded with; it was possible to make such an agreement with the teachers. The teachers thereby become intermediaries for the task as it now was their job to recruit pupils, i.e. contestants. This also meant a change in categories to compete in. In 2013 it was possible to compete in one of two categories; one for pupils and one for the others. The idea class was, thus, removed. The reason was that it would be too many categories otherwise, and there was also a wish to get more services than in 2012. Furthermore, more marketing was performed. For instance, interview in radio, presentation at the promotion breakfast and promotion boat (events arranged by the Chamber of Commerce and Industry) etc.

The outcome of the competition 2013 was a larger interest for the Kick-off. Nearly four times as many as 2012 attended the event (39 participants), which indicates that the project management succeeded better this year with getting "the message" out. Two of the approached schools were present. Also the Hackathon attracted a larger audience. Present at the Hackathon was ten pupils and two teachers from the same school. The other school attending the Kick-off was not present at the Hackathon because they did not, unfortunately, manage to get the pupils interested. Furthermore, at the Hackathon were also people from several IT businesses, a representative from the Swedish transport agency, organizers of a local music festival, as well as project members. Also media attended, both TV and radio. In total there were about 50 people present at the Hackathon who mingled with the contestants to see what they were doing. Of the people present, approximately a fifth was contestants; the other participants were there for networking purposes. For instance, the organizers of the music festivals aim was to get hold of someone who could work with their webpage, a task they succeeded with. There was, hence, raised awareness about the competition this year but, sadly, there were not many more contestants. In the end, the outcome of the competition 2013 was four services. This can be compared to the six contributions 2012 (of which four were services, i.e. the same amount).

5 The challenges of public open data competitions

In 2012, when the work with the competition started, there was, in the project group a strong view that citizen would be interested in re-using open public data. We thought that there would be many contestants if we just organized the competition. Re-use of public data is expected to bring lots of benefits and usually the perception on how to reach users seems to be more or less based on the view that if data is made available, people will start using it. This is, hence, based on an assumption of citizens' ability and willingness to take part, which turned out to be a problematic assumption. A common misunderstanding is, according to one of the project members, the perception that citizens in general should use it:

"It's not ordinary citizens, and it does not need to be either. I do not think it is realistic, it's someone who wants the information, it may be the media, for example, who wants to write articles and review public sector. Quite often, however, it is someone who wants to write a service, a web service or an app or something like that and it, in turn, can of course be used by ordinary citizens. So usually there is an intermediary between open data and users of open data."

Citizens in general are, thus, not a reasonable target group for the raw data. This limits the target group drastically. The people interested could, for instance, be someone wanting to develop a service. Hence, we approach the issue of willingness. Willingness comes, presumably, from that people see that they can, in some way, benefit from the re-use. On a higher level this may well be the case but on local it is more difficult to benefit. If the data comes from, and is about, for instance one specific

municipality, it cannot be used to develop a service with national wide interest. This limits the potential for re-use:

"There is a demand at the national level, but not at the municipal level because people do not want to build something for a municipality, they want to build something for Sweden. Then you have to get data from 290 municipalities and it is hard to get data from 290 municipalities and there's not the same data from 290 municipalities and even if the same data would be it is not in the same format, so you still cannot compare it. Data is not apples and apples, its apples and pears, so you still cannot build a national service."

Hence, both the assumption of ability and willingness is problematic at local government level. Local data has limitations and this is one important aspect to bear in mind. If the services are local so is probably also the interest for them. The use of the service that won the competition 2012 is small, only a handful of people have used it, and if there is no interest for the services there is neither any incentive for building them. According to the project leader, the services need to be marketed to get an audience:

"It is much about marketing, if we can offer some coaching of the idea. For example, this service that won the competition last year we have not been very good at picking it up, it's about whom in the project that is responsible for it. If you have a stable project organization someone is responsible for it, we have much left to achieve in this regard. We have to take responsibility to ensure visibility, otherwise it's no good."

When talking about public data re-use one view often brought up is that the benefits will be achieved automatically if just data is made available. As seen, this is not the case at local government level. To promote the data much marketing is necessary and even if there is much marketing (more in 2013 than in 2012), it is not certain that there will be more re-use, which is a problem. To be able to show benefits is believed to be important to get others to cooperate. It is hence a catch 22, cooperation is needed to create examples but without examples it is difficult to get others to cooperate:

"It's a chicken and egg situation. So you have to have some respect for it, it does not go in two weeks, it's a few years before getting this out, and before getting up re-use it is difficult to argue for open data internally in the organization."

As presented, re-use of open public data on local level do not come automatically, at least not in any grand scale and especially not since the knowledge on the subject is limited. However, the representative from the municipality see benefits even if the level of re-use is low:

"This discussion pops up all the time and it's as stupid every time. It's a process that you go through, I've been thinking the same thought myself but now I've been working on this for a few years and got over it and realize that it might enough that it's two people, one person, who can re-use the information for that person can take the information and continue working on it and come to new conclusions that are very interesting for the whole community. Just because a person was able to re-use your raw data, then you have achieved a lot."

Another aspect is that it is not just the data itself that creates engagement. The "mission" does it as well. By promoting public data new "believers" are created, that is, people that will continue spreading the message and by doing so contribute to the agenda without dealing with the data itself. When the project leader talked about the competition at one of the promotion events this was one of the responses (as retold by the project leader):

"... this man that talked to me today he did not even asked about the prizes in the competition, he just liked the mission and wanted to be a part of it. He was not interested in what you could win, he wanted to make a difference."

The project members in this case provide another example. They have taken on the assignment voluntarily and they are working hard with it. Consequently, availability and promotion of public data creates enthusiasts and these enthusiasts are modifiers seeking to change the prevailing circumstances. The project group arranging this competition is planning for a new try in 2014, they have, indeed, not given up.

6 Discussion

In this case, it became very clear that commitment and lack of incentives are key issues for promoting re-use of open public data. Many of the policies addressing public data re-use see open public data as an engine for innovation: '...that can turn Europe's public data into a motor for innovation, growth and

transparency' (European Commission, 2011, p. 11) and a common assumption seems to be that if data is made available people will start using it: 'opening up public data will also foster the participation of citizens in political and social life' (European Commission, 2011, p. 2). As seen in the reported case, it is apparent that open public data creates commitment, and people like the idea when they hear about it. Openness, innovation, creativity etc. are concepts that people usually associate with something good and the public data agenda is therefore persuasive in this regard. Consequently, at "idea level" open public data appeals to people.

However, when it comes to the actual re-use, it is much more difficult to engage citizens. Existing research is addressing challenges related to re-use, but focus is usually on lack of technical competence, and problems understanding the data (e.g., Artigas & Chun, 2013; Graves & Hendler). The importance of motivation and interest seems to be taken more or less for granted. For re-use to happen someone must be willing to devote time and energy. Arranging competitions can provide clear incentives (see e.g., Hjalmarsson et al, 2012). But to get citizens to participate is difficult. Our research has, for instance, illustrated how the monetary award in the competition was insufficient to attract citizens to participate. But incentives are not only related to financial benefits, there are also incentives related to public value. We agree with Kuk & Davies (2011), that grand claims are difficult to make, however, there can be some benefits on the local level. Public local data is geographically limited, which also means that apps and services based on this data might become geographically limited. In order to increase interest, as well as public value, it is necessary to integrate different data sources (Heise & Naumann, 2012; Böhm et al., 2012), and provide public open data which transcends the local.

7 Conclusions

The purpose of this paper has been to analyse the challenges of organizing an innovation competition for promoting citizen re-use of open public data. The 'myth' of the willingness and interests of citizens are constantly constructed and reconstructed in official reports, where citizens' engagements are taken for granted. The contribution of the paper is thus to tell a story on the problems of committing citizens to the public open agenda. There is commitment at idea level (the myth) but in practice this is difficult to realize. Through the use of a storytelling approach, we found three main aspects that are the main challenges: few people have the required skills, it is difficult to transcend the local, and there are not enough incentives to engage those who might have the skills.

We conclude that:

- There is a general lack of knowledge regarding open public data which makes it difficult to reach out.
- The target group is limited. Citizens in general are not the target group for raw data, only people with specific competence is a reasonable target group.
- Only people with interest will become involved, and interest comes from that people see benefits. Local data has limitations in this respect, i.e. the incentives for re-use are not obvious for those who participate.

Incentives and skills are aspects that often are taken for granted and therefore it is important to raise awareness that this is a problem, at the same time people like the idea of open public data. We believe that it will be difficult to reach a high level of re-use on a local government level, partly due to the limitation of the data. Important to recognize is, nevertheless, that only one case has been studied. Consequently, there is a need for further studies on this subject. We would especially welcome more studies focusing citizens' interests and willingness to re-use open public data.

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APPENDIX A

Figure 3. The storyline

Story element	Example from the Open data case
Mythical Quality	“The public” wants to make use of open data
Call to adventure	A business-government-state partnership decided to launch an open innovation competition in order to promote citizen re-use of open public data
The hero	The project team arranging the competition (Hackathon)
The goal is revealed	Make public data available and re-used for innovations
Hero’s inner problem surfaces	The project group had a somewhat naïve view of the public’s interest in participating in open innovation competitions
A new situation arises	Few contestants registered for the Hackathon 2012
The hero is tested	The registration time was prolonged
Enemies or forces of nature intervene	(did not occur in this story)
Hero encounters new obstacles	Some of the previous registered contestants quit
Hero experiences a transformation	There is a change of members in the project group
Hero experiences a setback	No more contestants despite changes in marketing
Hero may be deceived	(did not occur in this story)
The situation is resolved	(did not occur in this story)
Lessons are learned	It is difficult to get ‘the public’ to participate in open data innovation due to lack of skills, time available, difficulties in utilizing the data, and a general lack of knowledge and interest.
Better problem understanding	The project team understands that they have reached out for the ‘wrong’ people and need to be more direct in their marketing. Open data is not for everyone.
Quest is easier next time	The project team decided to direct their attention towards secondary schools.
Celebration time	They managed to increase the interest for the contest for 2013.
Epilogue	The project group continues with a contest also in 2014