

Sociable Smart Cities: Rethinking Our Future through Co-creative Partnerships

Ingrid Mulder^{1,2}

¹ Creating 010, Rotterdam University of Applied Sciences, Wijnhaven 99-107,
3011 WN Rotterdam, The Netherlands

² ID-Studiolab, Faculty of Industrial Design Engineering, Delft University of Technology,
Landbergstraat 15, 2628 CE Delft, The Netherlands
mulderi@acm.org

Abstract. The challenges of tomorrow's society demand new ways of innovation – a shift in thinking, doing and organising. It requires releasing existing paradigms, changing perspectives and doing things differently. In the current work, we envision a sociable smart city that enables transforming society into a more participative domain where participatory innovation takes place. A city that combines best a two worlds; on the one hand, a social city that is people-centred, values active citizenship and embraces community-driven innovation, and, on the other, a smart city that welcomes the possibility of Future Internet and related technology-driven innovations, such as Open Data, Internet of Things and Living Labs offer. The biggest challenges cities face is not the technology, but having an open mindset and a participatory attitude to rethink our future is far more challenging.

Keywords: Co-creative partnerships, empowerment, open mindset, participatory citizenship, social change, transformation design, transforming society.

1 Introduction

Cities are becoming more and more of a focal point for our economies and societies at large, particularly because of on-going urbanization, and the trend towards increasingly knowledge-intensive economies as well as their growing share of resource consumption and emissions. To meet public policy objectives under these circumstances, cities need to change and develop, but in times of tight budgets this change needs to be achieved in a smart way: our cities need to become 'smart cities' [14].

In November 2013, the European Innovation Partnership on Smart cities and communities has shared their "Strategic Implementation Plan" discussing how to put the outlined actions into practice. It is obvious that meeting our societal challenges asks for a deep socio-ecological transition of Europe. This implies changes on a city level, in urban development and our governmental structures, but also changes in our personal lifestyles, such as our consumption patterns, that directly impact our daily lives.

In order to drive such a social change, empowerment is crucial; without willingness and personal commitment of citizens, these challenges cannot be met.

Hence, citizens are at the heart of our cities, they therefore need to be at the heart of change as well.

1.1 Empowering People, Driving Change

In his New Year's speech Ahmed Aboutaleb, the Mayor of Rotterdam, said that the crisis made Rotterdam strong [4]. The city had faced substantial financial setbacks, though the international crisis has not discouraged city's initiatives, but rather made Rotterdam strong.

The Rotterdam. "While across the country the construction sector faces difficult times, in our city still structures of size arise. The Rotterdam, the building by architect Rem Koolhaas on the Wilhelmina Pier is national news sensation. The building is a city within a city, a motor for Rotterdam," said the mayor. He also referred to the Rotterdam Central Station, whose major renovation is almost finished.

Facelift. "The city centre has been given a facelift by numerous attractive projects, such as 'the Meent' and 'Nieuwe Binnenweg', two beautifully restored shopping streets, with the allure of the past and the facilities of the future." The port of Rotterdam shows, despite the crisis still growth. "The port grows to the epicentre of the world in the field of oil storage and oil trade."

Trust and Tolerance. However, not only the construction and port sector demonstrate the success of a city. It is the people that make the city, the Mayor argues. "Together we make the future of Rotterdam. And we do that with tools everyone has: with confidence and tolerance."

Air Singel. As an example he mentioned the Air Singel, a bridge realised by citizens through crowdfunding and awarded best city initiative in 2012. He also referred to those neighbourhoods where residents have made arrangements to make their living environment safer and cleaner. "Or look to those who help their new neighbours learning the Dutch language."

Peace in the City. These are the things that make life meaningful. These small things help. They lead to peace in the city, says the mayor. "Peace is not an abstract concept, it is a verb. Peace cannot be achieved with large conventions, but starts in dealing with people in the neighbourhood, at work or in the city. It starts with something small, something beautiful. It begins with trust."

The recent speech of the Mayor of Rotterdam nicely illustrates a social city open to empower its citizens in order to drive social change. Social innovation is crucial to every city, though driving social change is primary focus in Rotterdam, taken into account the extreme situation in the Southern part of Rotterdam. "On the South there is an accumulation of arrears in housing quality, work and income, training and education. Southern districts have a relatively young population, with many children who grow up in a deprived environment. Their parents are poorly educated, have little to spend and the environment gives little incentive to move forward. It can be said that the Southern part lacks a climate of learning and working" [8].

In a recent meeting the director of the National Program Rotterdam South clearly stated that doing the same in a better and more efficient way is not enough! The current situation in Rotterdam requires radical change and social innovation. It calls for “reshaping society in the direction of a more participative arena where people are empowered, learning is central which make policies more effective” [2].

1.2 Outline

In the current work, we envision a sociable smart city that enables transforming society into a more participative domain where participatory innovation takes place. A city that combines best a two worlds; on the one hand, a social city that is people-centred, values active citizenship and embraces community-driven innovation, and, on the other, a smart city that welcomes the possibility of Future Internet and related technology-driven innovations, such as Open Data, Internet of Things and Living Labs offer. This vision is illustrated with experiences from Rotterdam that demonstrate the power of a sociable smart city, and were helpful in co-designing futures that inform local policy. In keeping with Sangiorgi [11] we address the transformative role of design in order to reshape society while developing and applying methods for participatory innovation.

The challenges of tomorrow’s society demand new ways of innovation – a shift in thinking, doing and organising. New strategies, ideas, concepts or ways of organisation are seen as to deal with societal challenges. It requires releasing existing paradigms, changing perspectives and doing things differently.

2 Towards a Participatory Domain

In his inaugural throne speech on September 17, 2013 the Dutch King stated that the traditional welfare state is slowly but surely turning into a participatory society. “When people shape their own future, they not only add value to their own lives, but also to society as a whole”, was added as an explanation [16].

Since then, the Dutch government considers the so-called DIY-democracy referring to social initiative and social entrepreneurship, as a powerful development that should be embraced. Initiative is with the citizens; the government suites a modest role, although they must actively contribute to the DIY democracy. Differently put, the emphasis moves from citizen participation to the participation of government. It calls for a changing role of government. To facilitate it’s own change, the government has drawn up an agenda with social partners.

Interestingly, the word ‘participatory society’ has been introduced in Dutch politics, years ago. Already in 1991, Wim Kok, a former leader of the Labour Party, addressed that “We are now in a state of transition from a welfare state to an active to a participatory society” [15].

2.1 Citizen Power

The previous policy anecdote nicely demonstrates that participation does not happen because it is on the political agenda. Citizen participation, user participation, and resident participation are all about participation; although different disciplines are involved dealing with different kinds of parlance, they also share a similar approach: participatory design. Whereas participatory design has its roots in the Scandinavian democratic movements, viewing participants as equal, as partner, current participatory practices still too often derive from an unequal relationship. Still too often, it is the designer that wants users to participate, the government that wants citizens to participate. In other words, a top-down approach towards citizen participation.

Having a look at Arnstein’s ladder of citizen participation [1] that distinguish the level of participation, from non-participation to empowered citizens, it is clear that such an unequal relationship does not lead to empowered citizens (see Fig. 1). How can equal partnerships enable turning the public domain into a participatory domain?

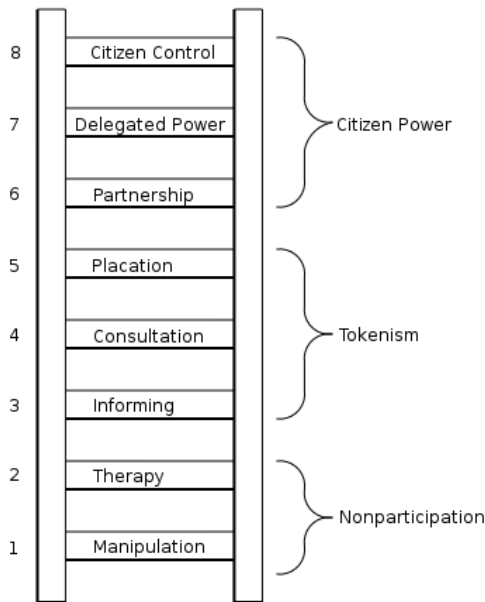


Fig. 1. Ladder of Citizen Participation [1]

2.2 Changing Role of Government

Local governments are increasingly using digital tools to inform and communicate with citizens, and are open for new ways to involve citizens in policymaking. At the same time the popularity of social media has spurred a demand for new forms of self-organising governance by citizens.

It can be said, that citizens' involvement in neighbourhood affairs and collective action are often below the potential given citizens' willingness to contribute. Although the Internet is a promising platform for e-Participation, existing websites, take for example, FixMyStreet emphasises the involvement of citizens, though they do not cultivate active citizenship [13]. Obviously, contemporary cities do not fully benefit from the opportunities a smart city offers.

The challenge is to embrace a new collaborative attitude, a participatory approach, and have a proper infrastructure that supports this social fabric.

3 Co-creative Partnerships Illustrating the Rotterdam Way

The current section briefly reports some initial participatory practices in order to have Rotterdam meet their ambitions of being an open government. These practices illustrate the value of the transformative role of design in order to reshape society.

3.1 Co-creating Services

Early prototyping in the Rotterdam Open Data initiative not only provided many insights, but it also had a larger impact on open innovation in Rotterdam. The active participation and co-creation of multiple partners in the early phases of idea generation managed to put open data on the local policy agenda of the Rotterdam municipality. The board of management of the City Council decided to allow the release of the City Development Service's Public Sector Information as open data, having currently significant amounts of Public Sector Information available in an open data store for experimentation and co-creation of public services in Rotterdam. In addition, the project also introduced the participating creative-industry partners to the potential of using and re-using Public Sector Information and the important role of the creative industry in that endeavor. Citizens played a role by providing the input for the creation of the prototype applications, which in turn act as concrete examples to illustrate the benefit of the cooperation. By animating public servants to free up more Public Sector Information for re-use, potential fuel for other service design applications was created. The final event where applications were presented also acted as a platform where partners with different strategic backgrounds met and discussed the developed applications. The partnership between academia, the creative industry, and the public sector was awarded with additional research funding for two projects to further ensure the release of Public Sector Information. By ensuring participation of the crucial partners, a sustainable infrastructure has been created to co-create public services and foster further innovation with Public Sector Information. The Rotterdam Open Data initiative demonstrates that co-creation can also lead to the development of better public services, with citizens and the private sector contributing data by means of crowdsourcing, and it paves the way for more co-creation through open service development (see [3] for details).

3.2 Open Mindset, Open Future

Release of Public Sector Information through co-creation not only resulted in a policy to opening up public data, it also demonstrated the value of experimentation and co-creation in order to inform social policy. Experiences with co-creative partnership show how to deal with and lower thresholds and being open to empowering, open to share, and open to change. This is in keeping with the open governance model promoted in DG CONNECT's vision on public services [5]. Pre-requisites for a sociable smart city are in place, a city as a true living lab enables co-creative practices and has citizens shaping their own surroundings; making and co-designing the city. The user-driven approach, do-it-yourself mindset, and the participatory character perfectly fit the down-to-earth Rotterdam attitude [7].

3.3 Citizen Power

In keeping with various trends, such as crowdsourcing, open innovation, open government, local municipality of Rotterdam is changing its role from top-down service provider towards a facilitator with their Rotterdammer-centered approach. The municipality of Rotterdam wants to strengthen collaboration with the citizens and organizations. For this purpose, local government launched for example the City Initiative aiming to facilitate active citizenship. Citizens are empowered and stimulated in building a beautiful and attractive city. The City Initiative supports people who are proud of our city and in realizing their ideas in making the city more beautiful and fun. This is in keeping with the participatory design principle that the user is expert of his or her own context [10]. In 2013 citizens proposed over 120 plans. The City Initiative board made a selection of these 120 plans. As a next step, citizens make their voices heard and vote on their preferred initiative. The municipality will provide up to € 2.5 million to realize the plan(s). The huge amounts of citizen initiatives address the existing social fabric, even though it cannot be expected that all citizens are becoming active citizens.

Although this is an example to encourage active citizenship, the Rotterdammer-centered approach implies that municipality has to participate as well. Several workshops and sessions are organised to discuss how participation can happen from all side leading to equal relationships. The mindset is there and it is clear that there is a passionate momentum, but even with motivated and committed civil agents, it is not easy to change an existing organisation. Changes are necessary, a focus on organising rather than the organisation, and a focus on empathy and collaboration rather than policies for the citizens, in order to make a transforming government happen.

3.4 Uncovering Hidden Talent

In the Ik ben STER(k) project [9], gaining trust and bonding with the local community, its gatekeepers and the culturally diverse array of residents has been a crucial strategy to build social capital throughout the whole process in a participatory, bottom-up

approach. This approach allowed the design solution to come from within the community and not from outside, planting a seed for positive change in the local society.

The target community was a group of students from the neighborhood school, a school for drop-outs that gives them a last change to participate in society. The peer-to-peer learning by doing philosophy promoted at FabLab 010 has provided a strong drive in engaging the students in a workshop for talent empowerment facilitated by social media and Open Fabrication technologies. When appropriately facilitated, the skills and talents of these young adults started emerging, unlocking the potential envisioned at the beginning of this adventure and in many cases exceeding expectations by far.

3.5 Rotterdam City Lab: A Space for Co-creative Partnerships

Rotterdam has a FabLab, which started from educational needs [6]. It is designed as a FabLab+ with a strong emphasis on electronic and sensor devices, the Internet of Things, and Open Data (Applab). Although the lab is a prototyping workshop for students in the first place, it is also an interface to the city, a creative hotspot open to citizens enabling co-creation and participatory design. In other words, it is an active learning environment for practicing making, co-creation, and participatory design skills.

In the Applab, students, teachers and researchers, co-create with Rotterdam-based companies, civil agents and citizens in the design of meaningful applications making use of the Rotterdam Open Data, such as the ScoreZe App [12]. ‘ScoreZe’ (meaning: rate them) is an application for location-based quality of life measuring informing city maintenance. In this way, ScoreZe is different than other applications, such as Fix-MyStreet, which do provide citizens with the opportunity to log problems in public space. ScoreZe enables local municipality to re-use citizen-generated data for informing the budgeting of the Rotterdam Municipality maintenance budgeting. Budgeting can be determined based on the norm derived from data gathered by citizens. This participatory gathered data also makes execution of maintenance operations more accurate, since there is more data available about how citizens feel on certain locations at a certain moment in time [13].

3.6 Infrastructure as Social Fabric

Having a unique mobile and wireless infrastructure, enhanced with public screens and Open Data, the foundations for a smart city are there. Public sector information is released and available in the city’s open data store. Currently, initiatives are launched to add crowd-sourced citizen-generated data as well. The city infrastructure has become much smarter aiming to facilitate the social fabric as well. However, to benefit from the opportunities offered by the smart city concept, citizens need to be able to participate fully in an internet-enabled society, through adequate skills and the ability to manage their rights online, such as their privacy.

4 Concluding Remarks

The challenges of tomorrow's society demand new ways of innovation – a shift in thinking, doing and organising. Not only are new strategies, ideas, and ways of organisation needed to cope with societal challenges, but also co-creative partnerships demonstrating a sustainable relationship to make a transforming society happen. It's not about who drives, but finding a mutual drive.

A future city needs to be a sociable smart city that enables transforming society into a more participative domain where participatory innovation takes place. A city that combines best a two worlds; on the one hand, a social city that is people-centred, values active citizenship and embraces community-driven innovation, and, on the other, a smart city that welcomes the possibility of Future Internet and related technology-driven innovations, such as Open Data, Internet of Things and Living Labs offer.

Even though, visions of the future give clear directions, and current achievements in citizen's engagement and empowerment provide a good fundament for establishing a social city, it appears not easy to apply best practises supporting a sociable smart city on a large scale. Differently put, contemporary cities do not fully benefit from smart infrastructures at hand. The biggest challenges are not the technology, the challenge is to embrace a new collaborative attitude, a participatory approach, and have a proper infrastructure that supports this social fabric.

Acknowledgements. Special thanks to my colleagues at Creating 010 for the many fruitful and co-creative discussions. Part of this work has been presented at Digital Cities 8 workshop in Munich, and shared among the workshop participants.

References

1. Arnstein, S.R.: A Ladder of Citizen Participation. *JAIP* 35(4), 216–224 (1969)
2. Bureau of European Policy Advisors, Empowering people, driving change: Social innovation in the European Union. Publications Office of the European Union, Luxembourg (2010)
3. Conradie, P., Mulder, I., Choenni, S.: Rotterdam Open Data: Exploring the release of public sector information through co-creation. In: Proc. of ICE 2012, Munich, Germany, pp. 187–196 (2012), <http://dx.doi.org/10.1109/ICE.2012.6297651> (retrieved on February 7, 2014)
4. Crisis maakt Rotterdam sterk, In: Binnenlands Bestuur (2013) (January 8, 2013)
5. DG CONNECT. A vision for public services. European Commission (June 13, 2013)
6. Mostert-van der Sar, M., Mulder, I., Remijn, L., Troxler, P.: FabLabs in Design Education. In: Proc. of E&PDE 2013, International Conference on Engineering and Product Design Education, September 5-6, pp. 629–634. Dublin Institute of Technology (DIT), Dublin (2013)
7. Mulder, I.: Opening Up: Towards a Sociable Smart City. In: Proc. of Digital Cities 8, From Services to Partnerships, International Workshop Co-Located with the 6th Intl. Conf. on Communities and Technologies (C&T 2013), Munich, Germany, June 30 (2013)

8. National Program Rotterdam Zuid, Uitvoeringsplan 2012-2014 (National Program Rotterdam South, Executive Plan,
<http://www.rotterdam.nl/BSD/Document/Perskamer/RapportNPRZ%20dd%204%20juli%202012.pdf> (retrieved on February 7, 2014)
9. Pucci, E.L.: IK BEN STER(K). A peer-to-peer talent development platform empowering young adults, video (2013), <http://t.co/0u1vGyP7KE>
10. Sanders, E.B.-N., Stappers, P.J.: Co-creation and the new landscapes of design. *CoDesign* 4(1), 5–18 (2008)
11. Sangiorgi, D.: Transformative Services and Transformation Design. *International Journal of Design* 5(2), 29–40 (2011)
12. ScoreZe: An App to rate your neighbourhood,
<https://itunes.apple.com/nl/app/score-ze-applicatie-om-je/id727141950?l=en&mt=8>
13. Stembert, N., Conradie, P., Mulder, I., Choenni, S.: Participatory Data Gathering for Public Sector Reuse: Lessons Learned from Traditional Initiatives. In: Wimmer, M.A., Janssen, M., Scholl, H.J. (eds.) *EGOV 2013. LNCS*, vol. 8074, pp. 87–98. Springer, Heidelberg (2013)
14. Strategic Implementation Plan of the European Innovation Partnership on Smart cities and communities,
http://ec.europa.eu/eip/smartcities/files/sip_final_en.pdf (retrieved on February 7, 2014)
15. Taalbank. Participatiesamenleving: het woord van de dag (Participatory Society: The word of the day) (September 17, 2013),
<http://www.taalbank.nl/index.php/woord-van-de-dag/item/participatiesamenleving> (retrieved on February 5, 2014)
16. Throne Speech 2013. Elsevier,
<http://www.elsevier.nl/Nederland/nieuws/2013/9/Troonrede-2013-volledige-tekst-1365922W/> (retrieved on February 7, 2014)