Final Paper

Honours Programme: Tackling Inequalities

Digital Urban Government

29 June 2021

Word Count: 3,884

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Introduction

The present paper aims to capture the co-creation process conducted to tackle digital urban government inequalities in the city of Rotterdam. The paper will follow the following structure. Firstly, the urgency that drove the final intervention is presented and discussed by answering several questions. Secondly, the stakeholders, their roles, and their impact on the collaborative process are presented. Thirdly, the co-creation process amongst the team that aimed to tackle the urgency is described in detail. Fourthly, the intervention drafted to tackle the presented urgency is discussed. Lastly, a more detailed reflection of the intervention and the stakeholder roles in such intervention are presented along with a conclusion.

Digital Urban Government Urgency

The first section will discuss the urgency our team aimed to tackle. To formulate a final urgency, we went through an extensive reiterative process. First, we identified potential urgencies around digital urban government. Some of those were foreign language and native language barriers (complexity, illiteracy, etc), structural/social barriers (socioeconomic (SES) background, age, gender, race), and infrastructural/physical barriers (WiFi, equipment, etc.) Narrowing down abstract ideas to a solvable issue was a challenge throughout the process. Therefore, we turned to several stakeholders to gain a deeper understanding of the issues surrounding digital urban government. The stakeholders who participated in the co-creation process were the *Brede Raad 010, ESET, the Rotterdam Library* (Merit van Breukelen), and two civil servants. They discussed in detail the urgencies they deemed most pertinent to solve in this time of digital transition, as well as which groups were most vulnerable during this transition. The group deemed to be the most vulnerable in the digital transition, was those who are 55 years or older. Therefore, we formulated

our urgency as follows: "the lack of attention to mental and physical barriers for using digital services among the 55+ cohort." This urgency aims to capture the barriers presented to this generation who did not grow up in a digitalized world. Mental barriers are the overwhelmed feeling this cohort experiences and sometimes the resistance to being in the digital world. Physical barriers are the lack of hardware or the lack of digital skills.

The urgency aims to tackle a specific type of social inequality. To discuss such inequality, we must first contextualize it by providing Rotterdam-specific characteristics driving certain social inequalities in the digital era. Rotterdam has a goal to become a smart city by 2025, which means that most processes occurring in the city are turned into data points (Thales group, 2021). It also means that the use and dependency on digital tools are indispensable (Mcmillan & Morrison, 2006). While digitalization can bring several benefits to society it can also be the source of various inequalities, such as exclusion from certain social processes (Helsper, 2012). Younger generations are accustomed to the digital world, as digital tools and services have become ubiquitous (Prensky, 2001 as cited in Selwyn, 2009). However, not everyone follows the trend of increasing digitization or develops digital skills. A large proportion of elderly people do not use technologies, such as the Internet (van der Meer, 2020). Apart from the lack of access or the ability to use digital services some people oppose actively engaging with digital services. Thus, digital literacy seems to become an obligation for governmental services, even though it is not a priority for everyone (Lelieveld, 2020). Besides, some want to participate in the development of the digital environment, but cannot due to lack of monetary resources, such as those with low SES status (Digitale overheid, 2020). Therefore, what is at stake in our urgency is those people who will not be able to gain government benefits as they are not yet capable of navigating the digital space.

There are several socio-digital inequalities related to our urgency. Below we will describe how and which of those related to our urgency. The cohort of 55+ in the city of Rotterdam, often have a smaller social network to help them acquire the necessary digital skills. The already mentioned childcare benefits scandal has damaged the trust citizens have in the government and its services (I&O Research, 2021). This distrust in the (increasingly digitized) government services was apparent in our meeting with the members of the *Brede Raad 010*, who represent the citizens of Rotterdam. We see that there is a gap between what the citizens of Rotterdam want and what is felt as an imposition on them by the government. Citizens feel forced to use digital services without having the skills to adequately do so and judge whether these services are safe for them to use (Van Deursen & Van Dijk, 2014). At this moment, over half of the contact between citizens and the government is digital (I&O Research, 2019). This is a worrisome statistic, as there are still pertinent barriers to joining the digital world for different social groups (Hedman & Djerf-Pierre, 2013). Therefore, we aimed to focus on ways our group could aid in alleviating at least one of those barriers.

It is crucial to mention that these social-digital inequalities are addressed by the city of Rotterdam. There are several policies and interventions in place to aid those who are left behind due to the digital transition. An important finding that resulted from research and meetings with stakeholders, was that there is no lack of courses and programs that teach digital skills and that aim to diminish the digital divide. For example, the Rotterdam Library alone offers 33 courses in "digital skills", ranging from mastering google to an introduction to artificial intelligence (Bibliotheek Rotterdam, n.d.). Furthermore, the municipality prioritizes digitizing Rotterdam, as mentioned in its 'Digitaliseringsagenda' (Gemeente Rotterdam, 2020). Its ambition for 2025 is to be an exemplary city when it comes to digitization (Gemeente Rotterdam, n.d.). To achieve this,

Rotterdam has set up various programs. For example, the 2019 'Programma Rotterdam Digitaal' and the 'Rotterdam IT Campus' (IT Campus Rotterdam, 2021) are places to follow training programs that prepare citizens for the digital future. On a national level, the NL DIGIbeter campaign focuses on digitization (Digitale Overheid, 2021). One of its current priorities is in line with the urgency that we are facing. Namely, accessibility for everyone.

Data collection & stakeholder meetings

Discussions with stakeholders made us rethink and reformulate our urgency. It also helped us identify more stakeholders. This process can be divided into roughly three stages, discussed in the following section.

In the first stage, we mostly talked about our own experiences in Rotterdam and how these experiences could be translated to digital inequalities. The different academic and cultural backgrounds in our group led to a broad range of possible urgencies related to our group's focus. For example, as not everyone speaks Dutch we discuss language barrier as a potential inequality, which led us to formulate the first urgency. This also led us to realize the unequal access to digitalized government services. Here the first stakeholder was identified. Namely citizens who do not have access to digital government services. To gain more knowledge and ultimately access to groups who lack behind digitally, we talked to several potential stakeholders. Teije Terhorst, a policy advisor for education for the Rotterdam municipality, talked with us about digital inequalities in primary and secondary education. Merit van Breukelen, the project leader of the Network Digital Inclusion 55+. This project in the library is linked to the municipality, as the municipality subsidizes the project (Meerjarenbeleidsplan Bibliotheek Rotterdam 2021-2024, 2020). Making the municipality an indirect stakeholder.

The second stage began with the talk with Merit van Breukelen. She informed us that there are more than enough courses, training, and tools to teach people digital skills. The problem lies in the lack of awareness about these tools/courses and lack of knowledge from the government's side on the mental or physical barriers that hold people back. Furthermore, we identified the 55+ cohort as being a group in the city of Rotterdam that needed the most urgent help during the digital transition. Indeed, van Deursen and Helsper (2020) note that the older people are, the less digitally literate they are. In particular, critically understanding the safety, reliability, and veracity of the internet is a skill that fewer people have in older age groups (van Deursen & Helsper, 2020). We then reformulated our urgency. We focused on unequal use of digital government services and digital illiteracy. Taking the new findings into account, we decided that we wanted to talk with people that have first-hand experience and knowledge about digital illiteracy.

For the final stage we talked to the Brede Raad, whose goal is to bridge the gap between municipal policy and the inhabitants of Rotterdam by independently advising the mayor and alderman on topics in the social domain (Brede Raad 010, 2021). Talking with many of their volunteers gave us an understanding of what drives the people of Rotterdam to digitalize or not. We then narrowed our urgency to the lack of attention to mental and physical barriers for using digital services among the 55+ cohort. Moreover, we talked to a researcher from the Amsterdam UMC. Their research on digital inclusivity was especially important for our intervention because it led us to rethink our intervention thoroughly (Dedding & Goedhart, 2021). In conclusion, all of the stakeholders impacted our reformulation of the urgency. However, the most important stakeholders are the digitally illiterate cohort of 55+, who were represented by the Brede Raad 010, the Rotterdam library, and the municipality of Rotterdam for subsidizing the Rotterdam library.

Iterative moments

   At the start of the course, we had the opportunity to introduce ourselves by using the team hand. We all agreed on the importance of encouraging digitalization for social inclusion in big cities and the importance to engage with citizens and policymakers in such a process. We first conceptualized our urgency as: *urban digitalization increases existing social inequality and as a result, we risk leaving people behind without a platform to voice their problems.* Then we narrowed down it down by identifying three core ambitions that aligned with our team values (social, cultural, and aesthetic): (1) promoting equal access to digital government services, (2) developing user-friendly interfaces, and (3) integrating digital and non-digital environments without discriminating between social groups. The first ambition led to an interesting discussion, as we were presented with questions such as: who is the actual problem owner? Is it the citizens' problem for not accessing the internet? Or is it the governments' problem for not reaching the citizens? We decided that our final urgency would place responsibility on both groups. The third ambition led our team to reconsider our urgency as it made us question to what extent is it ethical to encourage people to digitize if they do not want to. We realized that our intervention should promote and encourage digital behavior but never impose it. This lesson was reiterated by Emiel Rijhouswer from the Data Empowerment Studio during the fourth Impact Session. He emphasized the importance of working with citizens to find out how they experience social inequality; instead of coming in with a predefined urgency and solution. We then spoke to stakeholders and realized that the problem extends beyond access to the digital environment (Livingstone & Helsper, 2007). If we want to create an intervention that has a long-term impact, we need to teach people how to use and navigate the environment by themselves (Light, 2001). Hence, we updated our urgency to include participant autonomy: *Given the fact that there is a big digital divide, how might we help*

those who are most vulnerable succeed in digital environments. Within this urgency, the idea of succeeding is defined by participants' needs and motivations (e.g., whether they want to use the digital environment to find a job or get involved in local activities, etc). Our role within this new urgency was to provide a point of contact and knowledge.

The next key iterative moment came from our conversation with *Brede Raad 010.* Talking to a broad panel of volunteers representing the citizens of Rotterdam taught us that willingness (or rather the lack of it) to be a digital citizen is a highly relevant issue. Our current urgency stated the main issue, but it did not address the barriers (both physical and mental) that were preventing people from becoming digitally literate. Applying the various inputs, we redefined our urgency to center around the psychological barriers preventing digital literacy (such as concerns over privacy or lack of motivation) (Di Giacomo et. al., 2019). Moreover, our conversation with Merit van Breukelen helped us specify our target group as we realized that people aged over 55 are overlooked in digital inclusion projects. This led to articulate our final urgency as: *The lack of attention to mental and physical barriers regarding the use of digital government services in the 55+ cohort*. The final conceptualization encapsulates the broadness of the issue while simultaneously narrowing it down to a vulnerable group. The final urgency reflects the inclusion of the stakeholder values. The barriers preventing digital inclusion concern stakeholders across multiple domains, so we spoke to people across the private, public, and academic sectors (Porter & Kramer, 2007). Through the completion of group assignments, Miro activities, feedback sessions, Master Classes, and Impact Sessions, we learned that the conceptualization of an urgency is ever-changing. Also, the redefinition of an urgency is crucial because as you delve into an issue and understand it more, your urgency must be adjusted to reflect that.

Intervention

Our intervention consists of setting up an Instagram page to empower younger generations to empower family/friends/acquaintances of the 55+ cohort and a complimentary poster campaign to increase awareness of library services. We aim to increase the development of digital skills among the older generation through their contact with trusted younger and more digitally literate ones. Therefore, we will bridge the gap between generations, help overcome loneliness, and the feeling of being isolated and unsafe in the digital world. Younger generations will be able to work as a mediator to guide the older generations towards the usage of technological skills. The poster aims to increase the interest and awareness of the services provided by the local Libraries and aims to not only reach younger generations but a wider audience; as well as those who are not online yet.

Our intervention is relevant in the urban socio-digital context as various groups in society left behind during the digital transition (Pick & Azari, 2008; Gilbert, 2010). Exclusionary practices in the offline world are further perpetuated in the digital environment (Helsper, 2012; Yu et. al., 2018). Hence, making them a pressing issue to address. For the elderly, their lack of digital literacy or motivation is the reason for their exclusion from the digital world. If they are not only then they might miss out on government services or become more isolated. Our intervention aims to tackle such inequality by increasing awareness of the available tools and benefits of their usage. This intervention aims to empower older generations to be online by creating awareness of the available tools to increase their digital skills tailored to their personal needs. The intervention strives to reach those citizens by increasing the connection amongst generations and the connection between government and citizens. As Merit van Breukelen mentioned (personal communication), the first step to improve digital skills is by increasing an individual's personal motivation to do it.

The drafted intervention is not only relevant to tackle the presented inequality but is also relevant to our stakeholders. Our intervention is in line with the previous efforts made by the civil servants. They analyzed the inequalities in the city of Rotterdam from a governmental point of view, noting that there was a general distrust in the use of IT services by citizens. To overcome this problem, we have prepared a project that can involve the over 55 through their younger family, friends, or acquaintances who will make them further aware of the need to use modern technological tools. Furthermore, it aims to complement the efforts done by the library to increase digital literacy, by increasing the personal motivation of that cohort. Most importantly, it is relevant to the citizens, represented by the Brede Raad, as the intervention aims to generate value and impact specifically to the group represented by this stakeholder. It is relevant as it aims to be the most inclusive to this group and it aims to generate impact by diminishing future inequalities.

We must acknowledge that it is not an easy task to include everyone in an intervention or project. Even when we think that we are inclusive there is always a group left out (Chana Joffe-Walt, 2020). Claims of inclusivity implies that a group or several groups are excluded (Lister, 2007). Ideally, our intervention welcomes everyone who has a stake in the issue of digital urban government. In this case, our stakeholders are the groups who have a stake in the presented issue. Our intervention aims to generate impact by tackling three elements; namely: 1) value; 2) collaboration; and 3) methods (Leclercq, 2021). These elements will be further discussed.

Our intervention aims to create value for all the publics who have a stake in the issue. By the public's values we mean what is of interest to the collective; in other words, what is the shared value amongst all publics (Steen & Van Bueren, 2017). We aimed to generate impact through collaboration. To identify the values of our stakeholders we used the shared value method to uncover common values amongst all stakeholders (Porter & Kramer, 2007). The collective value

we identified was social value. Hence, the intervention's short-term impact is creating value for all stakeholders in the social sphere (Porter & Kramer, 2007; Leclercq, 2021). The social value is created mainly through the Instagram page, as it aims to include the targeted group in the digital transition, as well as, to increase interaction between the stakeholders. Hence, connecting the target group closer to other generations to support them as well as with local government and other institutions who can help alleviate digital inequalities.

The short-term impact would be measured through metrics provided by social media of engagement rates with the target community. The Instagram page can act as a good source of connection between local government and its citizens in the long run. In the future, the page would ideally communicate new digital advances and generate a high level of engagement by the target group and other citizens who have a stake in the issue.

The intervention relates to the identity and values of our team in several ways. While our team is very diverse in many aspects; we all had one common ambition to generate positive and inclusive change. We identified two crucial values: 1) stimulation; 2) self-direction, which are under the umbrella of openness to change (Schwartz, 1994). Our intervention is the result of such shared value we had, as we had to undergo an extensive reiterative process that necessitated our openness to change. We changed our urgency, and our intervention several times, everyone remained open to new ideas and new directions. Furthermore, our intervention aims to aid people in being more open to the digital transition by providing them with the necessary tools to navigate this new world.

The team coordination and participation was a key factor to the creation of final intervention. These factors lead to a great preparation for the meeting with the stakeholders, which was crucial to the creation of the final intervention. A limitation we encountered was the limited

time to come up with an intervention, as we were not able to fully implement it the way we would have liked to. Nevertheless, we hope our stakeholders can take the idea forward in the near future.

In this section we will discuss the stakeholder reflections on the intervention. Specifically, they reflected on the potential impact of our intervention. Firstly, ESET talked about the possibility of snowballing the impact of our intervention in a way that could be easily replicated within and outside of the Netherlands. This outcome contained a higher level of impact than we ever expected. They also saw our intervention as something that could be done by their company to increase their corporate social responsibility (CSR). They noted that our intervention inspired them to "tackle digital inequality as a broader topic" and to take their "CSR initiatives to the next level." (Personal communication). However, as we changed the direction of our intervention, ESET could not remain as the main stakeholder. Nevertheless, our intervention generated an indirect impact as we provided ideas for others to find ways to tackle inequalities.

Merit, the representative of the Rotterdam Library focusing on the *Netwerk Digitale Inclusie 55+*, provided us with various suggestions, which were in line with those of the Brede Raad. They mentioned that we should be cautious not to distribute all information digitally, as our target group is not online (i.e., go to a market, care homes). Hence, we deem it important for our intervention to use other offline resources. The Brede Raad also cautioned us to keep in mind the access barriers. Specifically, the problem of not being able to buy hardware is also important. They both expressed their satisfaction and positive attitude regarding our process and intervention. A comment that was raised was that having family members help each other can lead to tension in the relationship (Dedding & Goedhart, 2021). We discussed this potential setback and have considered it whilst developing our urgency.

Conclusion

Through our collaboration with the library and meetings with various stakeholders, we discovered many of the challenges they are facing. We realized that those affected struggle with a smaller network to help them gain access to digital services. Our intervention tackles this urgency specifically because it focuses on both gaining more visibility for the services and helping the 55+ age cohort. Many of the stakeholders are working on solutions to tackle some aspects of our urgency. The library itself offers a wide range of courses on digital services, access to computer technology, and staff willing to help. Talking to these stakeholders we were able to discuss possible solutions. This was most helpful in showing us areas that the library and *Brede Raad* are already very active and therefore do not require further projects. We also discussed some wider structural avenues with some of the stakeholders. We discussed the difficulties that the 55+ age cohort face because of the rapid digitalization of government services. We realized together that these issues require a solution made up of multiple interventions in various communities.

Further investments in the stakeholder network are needed to develop the solutions. Before developing a full solution to this urgency, some further interventions could be to look at the wider causes of the digital divide. This particular stakeholder network contains people and organisations with different approaches to tackling our urgency. To develop a solution, we would suggest a higher focus on structural causes of the inequalities caused by the digital divide. This would include broadening the stakeholder network to include councilors and organizations in the social care sector or the welfare sector. Our main suggestion further the intervention would be to propose a series of focus groups with potential users and associated stakeholders of the problem. These focus groups would be designed around experience and feedback from the live Instagram page, including the design and impact.

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